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Environment and Planning Committee



Inquiry into ecosystem decline in Victoria

Volume 1

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About the Committee

Functions

The functions of the Legislative Council Environment and Planning Committee are to inquire into and report on any proposal, matter or thing concerned with the arts, environment and planning the use, development and protection of land.

The Environment and Planning Committee may inquire into, hold public hearings, consider and report on any Bills or draft Bills referred by the Legislative Council, annual reports, estimates of expenditure or other documents laid before the Legislative Council in accordance with an Act, provided these are relevant to its functions.

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Terms of reference

Inquiry into ecosystem decline in Victoria

On 30 October 2019 the Legislative Council agreed to the following motion:

That this House requires the Environment and Planning Committee to inquire into, consider and report, within 12 months*, on the decline of Victoria's ecosystems and measures to restore habitats and populations of threatened and endangered species, including but not limited to—

- a) the extent of the decline of Victoria's biodiversity and the likely impact on people, particularly First Peoples, and ecosystems, if more is not done to address this, including consideration of climate change impacts;
- b) the adequacy of the legislative framework protecting Victoria's environment, including grasslands, forests and the marine and coastal environment, and native species;
- c) the adequacy and effectiveness of government programs and funding protecting and restoring Victoria's ecosystems;
- d) legislative, policy, program, governance and funding solutions to facilitate ecosystem and species protection, restoration and recovery in Victoria, in the context of climate change impacts;
- e) opportunities to restore Victoria's environment while upholding First Peoples' connection to country, and increasing and diversifying employment opportunities in Victoria; and
- f) any other related matters.

* The reporting date for this Inquiry was extended to 2 December 2021.

Chair's foreword

This is an important report. A healthy natural environment is essential for our wellbeing and the elements of the natural environment are interconnected. Damage to one part of the environment, to one ecosystem, has a knock-on effect on others.

Victoria's ecosystems are currently facing serious decline. Population growth and spread has put pressure on ecosystems, which has led to the degradation and loss of many native species and habitats. In addition, climate change brings new challenges and threats to our biodiversity and ecosystems.

This Inquiry, which is the largest undertaken by the Committee, covers a very broad range of issues. The Inquiry received nearly 1,000 substantive submissions which illustrated the importance of this issue to the Victorian community.

The Committee heard from a wide range of people and organisations, and these submitters and witnesses expressed a variety of views. Most witnesses and submissions acknowledged the problems. In many cases, the disagreements were in the solutions.

The report, which is in two volumes, provides an overview of governance arrangements, details some of the key drivers of ecosystem decline, highlights some of the issues facing threatened species and landscapes that are impacting ecosystem decline and biodiversity loss and looks at compliance, monitoring and data collection.

Chapter 1 highlights why ecosystem decline matters and provides an overview of the Inquiry process and report.

Chapter 2 acknowledges that much of Australia's environmental regulation stems from standards, principles and obligations developed at the international level. It outlines how international treaties have shaped national and state policy and legislative frameworks governing environmental management. It describes the responsibilities of Victorian government agencies in relation to the environment and acknowledges evidence that these arrangements could be improved through the introduction of national environmental standards being developed by the Commonwealth Government.

In Chapter 3, the Committee recognises the centrality of biodiversity to First Nations peoples' knowledge and wellbeing. We acknowledge that Traditional Owners' understanding of Country encompasses cultural obligations to care for land, waters and species. We reflect evidence received which demonstrated that an important element of self-determination is respecting Traditional Owners as knowledge-holders in relation to land and water management, and supporting them to protect, maintain and apply this knowledge.

The Chapter also summarises the key legislative and policy mechanisms that seek to facilitate Traditional Owner land and water rights in Victoria, including recognition and settlement agreements, cultural heritage management and future treaty processes.

We describe the ways in which Traditional Owners are currently able to care for Country through, for example, cultural fire practices, and the management and use of land resources.

Chapter 4 concedes that invasive plants and animals are now present in all terrestrial and aquatic environments across Victoria and have become a key driver of ecosystem decline. We consider the efficacy of the legislative and policy framework governing the importation, movement, management and control of invasive species in Victoria. We found that this framework would benefit from being modernised and simplified. We also recommend that the management and control of invasive species be better coordinated and funded, and that research into more effective and humane methods of controlling invasive faunal species is prioritised.

Chapter 5 explores the challenge which climate change presents to environmental management and examines the efficacy of the Victorian Government's legislative and policy response. We found that stakeholders to the Inquiry were generally supportive of its initiatives. However, we also identified that environmental resilience to climate change could be enhanced by introducing a greater legislative emphasis on biodiversity restoration, by promoting connectivity between ecosystems and through systematic revegetation. In this Chapter, we also acknowledge the devastating impact of bushfires on biodiversity values and discuss efforts to support the recovery of fauna and flora following the 2019–20 Black Saturday fires.

Chapter 6 highlights the devastating impact of habitat loss and fragmentation on native species. It looks at the legacy of land clearing and the ways in which our remaining native vegetation is protected, through Victorian planning schemes and other legislation. We found that there is room for improvement in the native vegetation regulatory framework and how offsetting arrangements are provided for under Commonwealth legislation. We also recommend the introduction of a statewide accreditation process for ecologists and other environmental professionals contributing to environmental impact assessment processes. The Chapter also looks at the State's forestry operations and the diverse views of stakeholders on the Victorian Forestry Plan.

Chapter 7 explores the status of threatened species in Victoria and the adequacy of the legislative and policy framework aimed at their protection. Despite policy goals to protect and restore threatened species, the status of native species across the State is continuing to decline. We find that many of the legislative tools available under Victorian legislation are underutilised or poorly implemented, and that some legislative provisions are overly complex, overlapping, or outdated. While the Government's policy goals in this space are laudable, we consider that greater investment is needed to implement them. In addition, the Committee found that legislation and policy could be better integrated and that strategies of First Nations peoples should inform the State's biodiversity actions.

In Chapter 8, the Committee undertakes a high-level examination of public and private land management. There are diverse protected areas across the State that are managed on a long-term basis for the conservation of nature, which are representative of the unique and diverse biodiversity in our regions. We found that additional funding is

needed to ensure management of these areas is active and adaptive, and that the development of a new Public Land Act presents an opportunity to modernise and simplify the existing legislative framework in this space. In terms of biodiversity on private land, we acknowledge the important work of private landholders, volunteers and other bodies in undertaking conservation and restoration activities and look at the ways they could be better supported to carry out this work. We note the successes of conservation covenants, primarily through Trust for Nature, and the need to expand these and other initiatives. The Chapter also looks at the ways in which biodiversity is considered in fire management in Victoria, including in terms of Traditional Owner cultural fire practices.

Chapter 9 examines environmental governance in Victoria and the implementation of legislation and policy. We consider the roles of various public bodies and the need for a whole-of-government approach and accountability. We found that there is space for improvement in scientific governance and recommend the establishment of a Chief Biodiversity Scientist to provide scientific leadership and coordination of publicly-funded biodiversity research. We also recommend that training on ecological literacy is implemented for all Victorian public servants and that the functions of the Commissioner for Environmental Sustainability are expanded to include undertaking performance audits in relation to environmental outcomes. The Government's biodiversity strategy is examined at a high level, including in terms of allocated funding and the planning of actions towards its goals.

The Chapter also considers the importance of supporting First Nations-led strategies, plans and other initiatives in biodiversity management, in line with the principle of self-determination. We examine the roles of local government authorities in ecosystem protection, conservation and restoration at a community level. Lastly, public awareness and engagement are considered, including the crucial work of Victoria's many dedicated environmental volunteers.

In Chapter 10, we look at the ways in which compliance and enforcement of environmental laws are carried out, including through the Office of the Conservation Regulator. The Chapter considers key challenges, including the complex regulatory environment and the application of penalties. We found that penalties must act as a deterrent and be balanced with the costs of compliance, while also noting that effective communication and engagement with individuals is key to preventing future offences. We recommend the establishment of an independent agency with responsibility for environmental regulation and the streamlining of the regulatory framework. We also consider the need for greater support and enhanced powers for local government authorities in order to protect the State's remaining native vegetation.

Finally, Chapter 11 considers the importance of comprehensive, up-to-date environmental monitoring and data collection to inform initiatives to protect Victoria's biodiversity values. We found that current monitoring and data collection isn't capable of identifying the extent of native species decline, and as such, is unable to provide a meaningful basis for policy interventions. However, recent work in improving monitoring and data collection is beginning to steer strategic investment in this space. The

Committee found that greater investment is needed to support more comprehensive environmental monitoring and data collection, in line with the scale of the task at hand. We recommend that the Victorian Government support Traditional Owners to deliver Reading Country programs. We also recommend that it refines and ensures the useability of biodiversity databases, and that professional assessors be required to upload biodiversity data into a central, publicly available government database.

The different views expressed in submissions and in evidence given at public hearings were also reflected within the Committee itself.

Committee members had different perspectives on some of the problems and challenges to ecosystems, both in their manifestation and in the most appropriate solutions.

Despite these differences, I would like to thank the Committee members for both the substantial commitment and work that they have done throughout the Inquiry. The size of the task and complexity of the subject matter has required an enormous effort from all members. I would also like to express my appreciation for the fact that despite differences, members have remained professional and courteous throughout.

I would particularly like to thank the secretariat of the Committee for their diligence, hard work and professionalism in managing enormous amounts of information and in assisting the Committee throughout in navigating such a broad and complex subject.

I would like to thank Michael Baker, the Committee Manager for his management of the Inquiry. I would particularly like to thank Alice Petrie, Inquiry Officer and Samantha Leahy, Research Assistant for their tremendous work preparing the draft report for the Committee—collecting, analysing and disseminating such an enormous volume of material was a herculean task and they carried it out with great professionalism and skill. Further, I would like to thank Cat Smith for her professional and seamless administrative assistance throughout the Inquiry. Thanks also goes to Holly Mclean, who provided additional research assistance earlier in the Inquiry before moving to a new role.

The Committee is aware that without the support of the professional staff of the Committee Office, our task would be very much more difficult.



Ms Sonja Terpstra MLC
Chair

Findings and recommendations

1 Introduction

RECOMMENDATION 1: That the Victorian Government consider referring a parliamentary inquiry into the health of rivers, waterways and the marine environment. 3

3 First Nations and biodiversity

FINDING 1: Traditional Owners have intrinsic connection and belonging to Country. The impacts of biodiversity decline, as observed by Traditional Owner groups, are significant and ongoing. Ensuring that Traditional Owners have a major role in caring for, and healing, Country is critical. 46

4 Invasive species

FINDING 2: Lists of noxious weed and pest animal species declared under the *Catchment and Land Protection Act 1994 (Vic)* are not comprehensive and exclude invasive plants and animals with the potential to devastate Victoria's biodiversity values. Moreover, the control of noxious weeds and pest animals declared under the Act requires better enforcement. 70

RECOMMENDATION 2: That the Victorian Government review the administration and enforcement of the *Catchment and Land Protection Act 1994 (Vic)* to ascertain if the functions prescribed under the Act could be more appropriately undertaken by another agency. 70

FINDING 3: Where native species come into competition for resources in an agricultural setting, there is a shift in how they are viewed. They move from being revered to being regarded as a pest species, resulting in Authority to Control Wildlife permits to kill them being issued. The Committee notes that this directly impacts the biodiversity and native environment of an area or landscape. 70

FINDING 4: Administration of the legislative framework for the management of invasive species should be a responsibility of the Minister for Environment and the Department of Environment, Land, Water and Planning, to ensure its focus is on preserving biodiversity values as opposed to facilitating Victorian agriculture. 71

FINDING 5: Conflicting classification systems for plants and animals provided for by the *Catchment and Land Protection Act 1994* (Vic), *Flora and Fauna Guarantee Act 1988* (Vic) and *Wildlife Act 1975* (Vic) are impeding the effective control of noxious weeds and pest animals. The classification schemes under each Act require review and harmonisation to ensure ecosystems are managed and protected efficiently.

84

RECOMMENDATION 3: That the Victorian Government resource and monitor research into innovative deer control methods, including, but not limited to, methods aimed at curbing pest deer reproduction and fertility.

84

FINDING 6: The Victorian legislative framework for the management of invasive species should be modernised to ensure it aligns with best practice biosecurity or environmental conservation approaches.

90

RECOMMENDATION 4: That the Victorian Government review the legislative framework for the management of invasive species with a view to developing a legislative reform package. The review should consider:

- the economic impact (including agricultural and environmental) of invasive species in Victoria
- the formulation of legislative provisions to prioritise prevention and early intervention measures to control invasive species
- the simplification and harmonisation of the complex classification systems for plants and animals under the *Catchment and Land Protection Act 1994* (Vic), *Flora and Fauna Guarantee Act 1988* (Vic) and *Wildlife Act 1975* (Vic) to facilitate the more effective control of noxious weeds and pest animals across land tenures
- the merits of shifting to a permitted 'safe list' approach defining which taxa non-indigenous to Victoria can be introduced, sold, or kept in the State, as opposed to the current practice of listing restricted pest species under the *Catchment and Land Protection Act 1994* (Vic)
- expanding the application of the legislative framework to include the management and control of invasive fish or invertebrates and native invasive plants and animals
- making the administration of the legislative framework for the management of invasive species a responsibility of the Minister for Environment and the Department of Environment, Land, Water and Planning, to ensure its focus is on preserving biodiversity values as opposed to a focus on facilitating Victorian agriculture.

91

RECOMMENDATION 5: That the Victorian Government consider supporting regional, cross-tenure coordination of pest animal and noxious weed management which includes Traditional Owners, local government authorities, catchment management authorities, private landowners, environmental groups and the broader community.

95

RECOMMENDATION 6: That the Victorian Government allocate adequate resources to administer and fully implement the *Catchment and Land Protection Act 1994 (Vic)* and the *Invasive Plants and Animals Policy Framework*.

99

RECOMMENDATION 7: That the Victorian Government consider phasing out the use of 1080 baits to control invasive species. This should occur in conjunction with increased government support for the research and wider use of more effective and humane methods for controlling pest animals. This phase-out should begin in July 2022, beginning in national parks in the first year. It should then be expanded into agricultural and other applications in the second year and be completed by December 2023.

106

RECOMMENDATION 8: That the Victorian Government trial the reintroduction of dingoes as an apex predator into suitable Victorian ecosystems to assess the ecological benefits. The trial, if agreed to by the Victorian Government, should take place within no later than two years of such agreement and should:

- take place with the support and close involvement of Traditional Owners
- take place in a park or conservation reserve where dingoes previously occurred, but have since suffered localised extinction
- be designed with input from ecologists and dingo experts
- encompass the collection of baseline ecological data to support the evaluation of post-trial outcomes and the identification of any impacts to biodiversity and ecosystems processes.

The trial should be accompanied by:

- the cessation of lethal control for pest species in the trial area
- consultation with adjoining public and/or private land managers in order to ensure support for the implementation of non-lethal protection of agricultural livestock, including the use of companion guard animals to protect stock
- the introduction of a compensation scheme for farmers whose livestock is predated by dingoes
- comprehensive monitoring and reporting on the impact of the reintroduction of dingoes on biodiversity values in the trial area.

106

FINDING 7: There are conflicting views on the impact of cats across a range of landscapes. However, significant concerns exist about the impact of cats on biodiversity. Humane approaches to the management of cats must be prioritised. **113**

FINDING 8: De-sexing is an effective and humane method for controlling owned, semi-owned or unowned cat populations in urban landscapes. **113**

RECOMMENDATION 9: That the Victorian Government consider implementation of the following measures:

- the standardisation of cat definitions across legislation, policy and stakeholder groups in line with the definitions utilised in the RSPCA’s *Identifying Best Practice Domestic Cat Management in Australia* (2018)
- the establishment of a state-based advisory group to guide a more coordinated approach to domestic cat management
- the implementation of consistent and effective approaches to domestic cat management across local government areas, modelled on the Banyule City Council example, which also:
 - minimise the impact of domestic cats on Victoria’s biodiversity values and wildlife by focusing on reproductive control measures as a priority and offering rehoming measures where this can be achieved
 - provide ongoing funding for programs that encourage responsible cat ownership, such as subsidised de-sexing and/or microchipping programs up to and including trap, control, neuter and release measures. These programs should involve local government authorities as key partners in the roll out of localised de-sexing programs
 - is adaptable and responsive to areas adjacent to significant biodiversity values or areas where unowned or semi-owned domestic cats are a particular issue
 - prioritises funding for humane reproductive control methods over programs which prioritise lethal control methods.

113

5 Climate change

FINDING 9: Climate change is almost exclusively driven by burning fossil fuels for energy, as well as greenhouse gas emissions produced from agriculture and changes to the land and marine environment. **117**

FINDING 10: Detailed, localised projections of climate change can inform appropriate planning and adaptation measures to increase the resilience of Victoria’s biodiversity values to the varied impacts of climate change. **122**

FINDING 11: Climate change is a major driver of ecosystem decline. 122

RECOMMENDATION 10: That the Victorian Government, in coordination with research partners, conduct further research and analysis to improve localised climate projections for both Victoria’s agricultural and biodiversity values. As part of this research, the Government should:

- ensure projections are fulsome—identifying climate change impacts beyond predicting rainfall—and incorporate new modelling and findings made by the Intergovernmental Panel on Climate Change
- identify innovative opportunities to improve the ongoing monitoring, protection and leveraging of localised climate projections through the use of tools such as digital spatial capability, data analytics and predictive modelling, citizen science and environmental economic accounting
- seek opportunities to maximise investment opportunities with diverse stakeholders.

122

FINDING 12: Climate change is already driving ecosystem decline across Victoria with devastating impacts for native floral and faunal species. 128

FINDING 13: Climate change is contributing to the decline of Country and impacting the health and wellbeing of Traditional Owners. 136

RECOMMENDATION 11: That the Victorian Government review environmental legislation with a view to ensuring that it:

- articulates clear standards for environmental restoration
- imposes a general duty on public and private land managers to restore or enhance biodiversity in partnership with Traditional Owners
- is underpinned by ministerial guidelines describing how environmental restoration and enhancement should be undertaken by public land managers and emphasising that this duty goes further than simply avoiding harm to biodiversity. These guidelines should highlight the importance of empowering Traditional Owners to drive environmental restoration on Country.

142

RECOMMENDATION 12: That the Victorian Government review funding and other support available to land managers, including Traditional Owners, to ensure they are properly supported and resourced to undertake environmental conservation and restoration. This should include:

- funding and support which secures co-benefits (such as economic stimulus, employment and training opportunities) alongside environment restoration, and which focuses on facilitating positive outcomes for young Victorians, Traditional Owners and Victorians who have lost work due to the COVID-19 pandemic
- development and delivery of a program enabling private land managers and Traditional Owner organisations to access ecological expertise and education to support environmental restoration. This program should also seek to facilitate partnerships between private land managers and Traditional Owners in undertaking restoration activities.

142

RECOMMENDATION 13: That the Victorian Government, in collaboration with Traditional Owner corporations, provide funding and other resources to support the development of revegetated biolinks to increase connectivity between ecosystems. Opportunities for corporate and philanthropic collaboration on such projects should be explored.

149

FINDING 14: Ecosystems, such as forests and wetlands, are an important part of the global carbon cycle and, if well managed, can sequester a large quantity of carbon over long periods of time.

154

FINDING 15: Climate change is driving more frequent and severe bushfires in Victoria. More frequent and severe fires are devastating native faunal populations and threatening the viability of the State's ash forests, rainforests and other sensitive flora populations.

161

6 Habitat loss and fragmentation

FINDING 16: The ongoing removal and degradation of native vegetation is a key driver of ecosystem decline and is threatening Victorian biodiversity.

170

RECOMMENDATION 14: That the Victorian Government consider the introduction of a statewide accreditation process for ecologists and other environmental professionals contributing to environmental impact assessment processes. This accreditation process should encompass a professional code of conduct and standards for data and other information submitted as part of environmental impact assessments.

179

RECOMMENDATION 15: That the Victorian Government ensure local government authorities have adequate staff, with appropriate training available, to work collaboratively with applicants in applying the *Guidelines for the removal, destruction or lopping of native vegetation*. Caution should be taken not to further erode and fragment ecosystems by applying a piecemeal approach. A whole-of-ecosystem approach must be applied when making decisions.

184

RECOMMENDATION 16: That the Victorian Government amend the *Guidelines for the removal, destruction or lopping of native vegetation* to ensure they:

- incorporate the ‘like for like’ principle in offsetting arrangements, whereby habitat loss is compensated for through the protection and enhanced management of another site capable of serving similar ecological functions
- includes strong specification that potential offset sites must not be:
 - already subject to environmental protections
 - already being managed to improve habitat and biodiversity values
 - previously used in an offsetting capacity
- only permit offsets to be used as a last resort.

189

FINDING 17: Offsetting arrangements provided for by the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) are contributing to ecosystem decline.

195

FINDING 18: The full implementation of recommendations made as part of the independent review of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) will help to ensure that the environmental impacts of developments under this legislation are adequately compensated through offsetting arrangements.

195

RECOMMENDATION 17: That the Victorian Government review how the environmental impacts of developments are offset in Victorian environmental impact assessment processes to ensure they reflect the findings and recommendations of the independent review of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth).

196

FINDING 19: The Department of Environment, Land, Water and Planning has not delivered the Western Grassland Reserve and the Grassy Eucalypt Woodlands Reserve by 2020, as specified in the Melbourne Strategic Assessment program.

204

RECOMMENDATION 18: That the Victorian Government consider funding the immediate purchase or leasing of remnant high quality grasslands within the proposed Western Grassland Reserve and the 36 reserves proposed by the Melbourne Strategic Assessment within Melbourne’s urban growth boundary. These areas should be urgently acquired to facilitate ecologically sound management to conserve and restore biodiversity values.

205

RECOMMENDATION 19: That the Victorian Government develop and fund initiatives to ensure that the biodiversity values of private land earmarked for inclusion in the Western Grassland Reserve, the Grassy Eucalypt Woodlands Reserve, and the 36 reserves proposed by the Melbourne Strategic Assessment within Melbourne’s urban growth boundary, are properly managed prior to the acquisition of this land. This should encompass consideration of:

- land tax exemptions for landowners who manage their properties for conservation
- implementation of comprehensive and ongoing weed control programs
- community engagement initiatives to ensure landowners are aware of the value of remnant grasslands, how they can be protected, their obligations to control noxious weeds under the *Catchment and Land Protection Act 1994* (Vic), and to engage them in agreed land management plans
- measures to enforce Environmental Significance Overlays
- the introduction of restrictions limiting development and other actions likely to disturb existing hydrology.

205

RECOMMENDATION 20: That the Victorian Government articulate an ambitious vision for the establishment of the Western Grassland Reserve and the Grassy Eucalypt Woodlands Reserve. This vision should outline how Traditional Owners, environmental groups and the broader community will be engaged with the restoration and promotion of the grassland reserves’ unique biodiversity assets.

206

RECOMMENDATION 21: That the Victorian Government consider, as part of its comprehensive review of the *Code of Practice for Timber Production 2014*, mandating adaptive, variable retention approaches to native timber harvesting in Victorian state forests.

219

RECOMMENDATION 22: That the Victorian Government work with First Nations experts in Country and fire to examine the impacts of salvage logging on the regeneration of bushfire-impacted forest ecosystems, as well as the impacts on threatened species following a major bushfire event, with a view to incorporating the findings into forestry policy to support forest recovery in the aftermath of major bushfires. 228

RECOMMENDATION 23: That the Victorian Government review the definitions of forests utilised in forestry regulation and operations. Consideration should be given to expanding the definition of ‘old growth’ to include mature trees and/or forests with more than 10% but less than 50% regrowth. 233

FINDING 20: The Victorian Forestry Plan strikes the right balance between increasing the conservation of Victorian forests and providing time and support to successfully transition the forestry industry to a more environmentally sustainable, plantation-based supply. 236

7 Threatened species

FINDING 21: According to recent research from the Threatened Species Recovery Hub and Victoria’s *State of the Environment 2018*, native species of flora and fauna are experiencing significant declines in population size and distribution. Species that have already been listed as threatened are not being holistically protected. 239

FINDING 22: Key threats to native species in Victoria include climate change, changes to fire frequency and intensity, invasive species, land clearing and changes to rivers, wetlands and floodplains. 241

FINDING 23: It is crucial to prevent further decline in native species—not just for individual species themselves, but for the vast array of ecosystems services they provide. 242

FINDING 24: Only a small proportion of action statements for threatened species and communities and potentially threatening processes are in place, despite these being a mandatory requirement under the *Flora and Fauna Guarantee Act 1988 (Vic)*. 253

RECOMMENDATION 24: That the Victorian Government ensure, as a matter of urgency, that all threatened species and communities and potentially threatening processes listed under the *Flora and Fauna Guarantee Act 1988* (Vic) have action statements in place and that appropriate funding is allocated to their implementation. An action plan which identifies priority action statements should be developed to facilitate this process.

253

RECOMMENDATION 25: That the Department of Environment, Land, Water and Planning undertake regular assessment and revision of the conservation status of species listed under the *Flora and Fauna Guarantee Act 1988* (Vic) to ensure that species population changes are monitored, and the most appropriate conservation status is recommended. This will help to inform action statements and any related conservation management activities and will prevent continued species decline from going unnoticed.

253

FINDING 25: Critical habitat determinations and habitat conservation orders under the *Flora and Fauna Guarantee Act 1988* (Vic) have not been utilised to protect areas of habitat for threatened species and communities.

257

RECOMMENDATION 26: That the Victorian Government amend the *Flora and Fauna Guarantee Act 1988* (Vic) to specify circumstances where the Secretary of the Department of Environment, Land, Water and Planning must make a declaration of critical habitat.

257

RECOMMENDATION 27: That the Victorian Government allocate adequate resources to administer and fully implement the *Flora and Fauna Guarantee (Amendment) Act 2019* (Vic), including communicating the Act's changes to relevant stakeholders and the broader community. The resourcing of the *Flora and Fauna Guarantee Act 1988* (Vic) should include locating staff close to ecosystems, equipped with job descriptions that are sufficiently process complete and with appropriate authority limits so that they can operate more efficiently and effectively.

258

FINDING 26: The *Wildlife Act 1975* (Vic) is outdated and does not meet community expectations around the protection and conservation of wildlife.

263

RECOMMENDATION 28: That the Victorian Government consider, in relation to dingoes and dingo-dog hybrids:

- revoking the Order in Council made under the *Wildlife Act 1975* (Vic) that declared dingoes as ‘unprotected wildlife’
- funding and fully implementing Action Statement No. 248 for the dingo under the *Flora and Fauna Guarantee Act 1988* (Vic), which identifies various actions for its conservation including genetic research into the current genetic definition of the dingo
- working with Agriculture Victoria to improve non-lethal strategies for protecting livestock in areas where there are increased levels of predation
- developing other mechanisms to support landowners to use non-lethal means to manage dingoes and wild dogs in relation to potential impacts on livestock
- reviewing the Fox and Wild Dog Bounty program.

264

FINDING 27: The Authority to Control Wildlife permit system under the *Wildlife Act 1975* (Vic) inhibits the conservation of threatened species in Victoria through the issuing of permits to control threatened species by non-lethal or lethal means.

266

RECOMMENDATION 29: That the Victorian Government ensure that future amendment of the *Wildlife Act 1975* (Vic), in conjunction with the recommendations made by the independent panel undertaking review of the Act, at a minimum:

- prevents the use of the Authority to Control Wildlife permit system in relation to species listed as threatened under the *Flora and Fauna Guarantee Act 1988* (Vic) or *Environment Protection and Biodiversity Conservation Act 1999* (Cth)
- takes into consideration the views of Traditional Owners in relation to wildlife and habitat protection, noting the particular importance of native species as part of living culture and heritage.

266

FINDING 28: The provision contained in the *Kangaroo Harvest Management Plan 2021–2023* to suspend the Kangaroo Harvesting Program in response to environmental factors or significant natural events that may affect short-term changes in kangaroo populations in a harvesting zone or zone segment (local government area) is an important tool to prevent further decline of native species.

270

RECOMMENDATION 30: That the Victorian Government ensure that suspension of the Kangaroo Harvesting Program occurs in the aftermath of any event likely to have an impact on kangaroo populations, such as bushfires, as provided for in the *Kangaroo Harvest Management Plan 2021–2023*. Suspension should be accompanied in every circumstance with proactive compliance and enforcement activities to ensure that illegal harvesting activity does not take place during a period of suspension of the program. 270

FINDING 29: The Victorian Government’s biodiversity strategy, *Protecting Victoria’s Environment – Biodiversity 2037*, sets important goals around protecting and restoring threatened species in Victoria. However, the plan lacks the necessary funding for full implementation of its goals and actions. 283

RECOMMENDATION 31: That the Victorian Government consider significantly increasing the funding allocated to threatened species and habitat conservation activities under *Protecting Victoria’s Environment – Biodiversity 2037*. 283

RECOMMENDATION 32: That the Victorian Government ensure that *Protecting Victoria’s Environment – Biodiversity 2037* and the *Flora and Fauna Guarantee Act 1988* (Vic) are complementary in terms of the key principles and objectives of the Victorian Government’s approach towards threatened species management, and that the State’s biodiversity strategy is updated in conjunction with any future legislative change. 283

RECOMMENDATION 33: That the Victorian Government review and incorporate, if and where appropriate, features of New South Wales’ *Saving our Species* program into community engagement and communications strategies for threatened species activities under *Protecting Victoria’s Environment – Biodiversity 2037*. 290

FINDING 30: Both landscape-scale and individual species approaches are important in threatened species management to ensure the best outcomes for species. Evaluation of the correct balance between these approaches must be outcomes-based and reviewed on an ongoing basis in order to ensure that actions are achieving desired outcomes for threatened species management, conservation and restoration. 292

FINDING 31: Country plans convey important aspirations and strategies for caring for Country, including strategies to conserve and restore threatened species. Victoria’s biodiversity strategy, *Protecting Victoria’s Environment – Biodiversity 2037*, should recognise the importance of Country plans as central to the protection of biodiversity and threatened species and establish how they will be supported in their implementation. 295

RECOMMENDATION 34: That the Victorian Government incorporate into *Protecting Victoria's Environment – Biodiversity 2037* how the strategies contained in Country plans, created by First Nations peoples, will assist in informing the State's biodiversity actions, including in relation to the conservation of threatened species. **295**

RECOMMENDATION 35: That the Victorian Government investigate whether amendment of the *Flora and Fauna Guarantee Act 1988 (Vic)* to include emergency listing provisions could provide additional legislative protection for species where significant events have critically impacted their chance of survival. **297**

8 Land management

RECOMMENDATION 36: That the Victorian Government consider providing additional funding, as recommended by the Victorian Environmental Assessment Council, to enable Parks Victoria to manage the newly created national parks in Victoria's central west region. **310**

FINDING 32: Development of a new Public Land Act presents an important opportunity to modernise and simplify the existing legislative framework for the management of public land. This process provides an important opportunity to advance Traditional Owner self-determination in land management in Victoria. **313**

FINDING 33: Active and adaptive land management is crucial to ensuring effective management of protected areas. **315**

RECOMMENDATION 37: That the Victorian Government increase funding for Parks Victoria to undertake active and adaptive land management in the State's parks and reserves, and consider increasing this funding to 1% of Gross State Product. **318**

FINDING 34: The *Victorian Traditional Owner Cultural Landscapes Strategy* provides important direction for future partnerships between Traditional Owners, the Victorian Government and other relevant stakeholders in relation to the management of, and care for, Victoria's cultural landscapes. **322**

RECOMMENDATION 38: That the Victorian Government:

- commit to the vision identified in the Traditional Owner-led *Victorian Traditional Owner Cultural Landscapes Strategy* and provide public reporting on progress towards implementation
- progress Traditional Owner-led development of contemporary cultural indicators to inform future environmental reporting.

322

FINDING 35: Trust for Nature undertakes important work in biodiversity conservation, restoration and protection on private land through the use of conservation covenants. However, limitations in relation to its funding mechanisms has meant that it is unable to meet demand for covenants.

334

RECOMMENDATION 39: That the Victorian Government consider enhanced support for Trust for Nature in permanently protecting important conservation values on private land, including:

- continuing to increase funding allocations to the Trust to enable it to pursue identified strategic goals and to increase its capacity to support additional conservation covenants, including through its Revolving Fund
- engaging with pastoralists who may want to sell their property in order to purchase land with high conservation value for conservation and restoration purposes
- supporting local government authorities to offer rate rebates and other incentives to landowners who include a conservation covenant on their property
- investigating mechanisms to encourage new landowners to retain conservation covenants
- working with Trust for Nature to increase the ways in which First Nations peoples are involved in conservation and restoration activities on private land.

335

RECOMMENDATION 40: That the Victorian Government explore other options to assist private landowners in land conservation efforts outside of the use of conservation covenants, that includes, but is not limited to, working with local government authorities and First Nations peoples to promote broader conservation and restoration activities on private land alongside existing agricultural practices.

335

FINDING 36: Victorian Landcare groups undertake critical biodiversity protection, conservation and restoration activities that provide significant value to Victoria, including on private land.

339

RECOMMENDATION 41: That the Victorian Government establish a scheme that offers a suite of incentives to support private landowners to undertake conservation and/or restoration activities on their land, including:

- support for local government authorities to offer property rate reductions for landholders who undertake prescribed conservation and/or restoration activities on their properties that improve biodiversity outcomes
- consideration of various approaches and options to reflect the differing needs, means and motivations of different landowners.

344

RECOMMENDATION 42: That the Victorian Government undertake to improve education and other supports for landholders to realise financial and ecological benefits through biodiversity-friendly farming activities.

346

RECOMMENDATION 43: That the Victorian Government continue to investigate research and other partnerships to support a more comprehensive statewide system of soil health and land condition monitoring, noting that soil health is not only critical to the survival of our ecosystems, but also impacts air quality.

349

RECOMMENDATION 44: That the Victorian Government ensure that *Protecting Victoria's Environment – Biodiversity 2037* contains specific targets or actions relating to the impacts of bushfires and fire management activities on biodiversity values. In conjunction with a whole-of-government approach to implementation of the plan, this would ensure that work being undertaken under the *Safer Together: A new approach to reducing the risk of bushfire in Victoria* program occurs in collaboration with the goals identified in the State's biodiversity strategy. This could include, for example, targets in relation to ecosystem resilience monitoring as part of current bushfire management initiatives. In addition, where possible, such work should also be responsive to the vision articulated in the *Victorian Traditional Owner Cultural Fire Strategy*.

360

FINDING 37: Cultural fire is an important component of management of Country for Traditional Owner groups. The vision for the future of cultural fire in Victoria, as articulated by Traditional Owners in the *Victorian Traditional Owner Cultural Fire Strategy*, must be supported and implemented by the Victorian Government.

365

RECOMMENDATION 45: That the Victorian Government continue to work with local government authorities and other relevant land managers to promote and enable partnerships between these bodies and Traditional Owner groups, in order to realise the vision articulated in the *Victorian Traditional Owner Cultural Fire Strategy*, and achieve greater use of cultural fire on Country.

365

RECOMMENDATION 46: That the Victorian Government work in collaboration with Traditional Owners to offer accredited qualifications in conservation and Indigenous land management, such as, for example, the Certificate III in Indigenous Land Management offered in NSW. 366

9 Governance and implementation

RECOMMENDATION 47: That the Victorian Government consider the establishment of a Chief Biodiversity Scientist to provide scientific leadership and coordination of publicly-funded biodiversity research across the environment portfolio, and to promote the use of biodiversity science and data within government policy, programs and initiatives. 374

FINDING 38: Some stakeholders have concerns regarding perceived conflicts in policy areas within the Department of Environment, Land, Water and Planning and partnering agencies. 375

RECOMMENDATION 48: That the Victorian Government establish a standalone Department of the Environment, with its own Minister, that has the sole purpose of protecting the environment and, in particular, native species. 375

RECOMMENDATION 49: That the Victorian Government ensure that the new public authority duty introduced by the *Flora and Fauna Guarantee Amendment Act 2019* (Vic) be effectively implemented, including through:

- information and education for public authorities and the broader community on the new requirements of the Act
- development of ministerial guidelines which provide practical advice to support the implementation of the duty, with a public consultation process
- demonstration of how the Victorian Government will ensure that public authorities are responsive to their obligations in relation to the duty.

379

RECOMMENDATION 50: That the Victorian Government investigate and implement whole-of-government training on ecological literacy for all Victorian public servants. 381

RECOMMENDATION 51: That the Victorian Government consider expanding the powers of the Commissioner for Environmental Sustainability, under the *Commissioner for Environmental Sustainability Act 2003* (Vic), to include functions to undertake performance audits in relation to environmental outcomes on a regular basis, and for key programs or agencies, at least every four years. This role could potentially be facilitated through the Victorian Auditor-General's Office. **382**

RECOMMENDATION 52: That the Victorian Government undertake a review of funding mechanisms for programs or policies that have significant impacts on Victoria's biodiversity, with a view to ensuring that cost recovery mechanisms are appropriate and capable of adequately funding their objectives. **385**

RECOMMENDATION 53: That the Victorian Government ensure continued support for, and implementation of, the findings and recommendations of key audits and inquiry reports, including recent reports of the Commissioner for Environmental Sustainability and Victorian Auditor-General's Office. **386**

RECOMMENDATION 54: That the Victorian Government increase future funding allocations for *Protecting Victoria's Environment – Biodiversity 2037* to ensure that the targets identified in the plan are able to be achieved. **389**

FINDING 39: Partnerships for co-investment in *Protecting Victoria's Environment – Biodiversity 2037's* actions are crucial in the successful delivery of the strategy. This includes in terms of maximising investment and facilitating broader community momentum on biodiversity conservation. **391**

RECOMMENDATION 55: That the Victorian Government expedite the completion and release of a Biodiversity Investment Prospectus in order to facilitate and attract opportunities for co-investment in biodiversity conservation. This Prospectus should identify appropriate investment models, incorporate checks and balances for conservation and restoration activities, and specify how the economic viability and scientific rigour of co-investment proposals will be assessed. **391**

FINDING 40: The Biodiversity Response Planning Program is an innovative, area-based planning approach for on-ground actions that will support the implementation of *Protecting Victoria's Environment – Biodiversity 2037*. **393**

RECOMMENDATION 56: That the Victorian Government review, assess and identify legislative or other barriers which prevent greater Traditional Owner leadership in biodiversity protection, restoration and broader management. This should be undertaken with a view to increasing Traditional Owner involvement in land and water management in Victoria, including in relation to sole management of Country as a matter of priority.

398

RECOMMENDATION 57: That the Victorian Government continue to support First Nations-led strategies, plans and other initiatives in biodiversity management, in line with the principle of self-determination. This work should also include:

- recognising the fundamental connection of First Nations peoples to Country across government and ensuring that staff of government bodies have appropriate cultural knowledge
- continuing to strengthen whole-of-government partnerships with First Nations groups
- ensuring Traditional Owners are able to speak for Country in relation to decision-making that impacts the environment, including regarding biodiversity protection, conservation and restoration activities
- supporting the development of partnerships between Traditional Owners and public and private land managers to ensure meaningful and collaborative relationships in order to best protect biodiversity.

398

FINDING 41: Local government authorities play a key role in biodiversity protection, conservation and restoration. However, they often face significant resourcing challenges in managing local biodiversity values.

402

RECOMMENDATION 58: That the Victorian Government work with local government authorities to improve financial and other supports available for councils to specifically undertake localised biodiversity initiatives, including in relation to activities contributing to the targets identified in *Protecting Victoria’s Environment – Biodiversity 2037*.

402

FINDING 42: The COVID-19 pandemic has highlighted the importance of Victoria’s environment and biodiversity values for many within the community. The post-pandemic phase presents a critical opportunity for building on the ways in which individuals and communities value and connect with nature.

405

FINDING 43: The general environmental duty, introduced by the *Environment Protection Amendment Act 2018* (Vic), is an important step forward in environmental protection and recognises the responsibility of all members of the Victorian community in preventing environmental harms.

406

RECOMMENDATION 59: That the Victorian Government explore the feasibility of the further introduction and use of general duties that can be connected to conservation and ecosystem restoration in Victoria. 407

FINDING 44: The Victorian community generally feels connected to nature. However, there are opportunities to address identified barriers to improve environmental knowledge and connection through more targeted education campaigns for the broader community and specific campaigns for school children using age appropriate approaches, materials and experiences. This will ensure that opportunities to learn about the importance of protecting Victoria’s biodiversity are maximised. 409

RECOMMENDATION 60: That the Victorian Government review current educational initiatives, programs and curriculum in Victorian schools to ensure the facilitation of comprehensive education on the important of healthy ecosystems and functioning biodiversity. 410

FINDING 45: Volunteers play a vital role in protecting, conserving and restoring Victoria’s ecosystems. 413

10 Compliance and enforcement

RECOMMENDATION 61: That the Victorian Government, in light of the evidence received by this Committee, considers the establishment of an independent agency with responsibility for regulatory activities in relation to conservation and the environment. Regulatory responsibilities of this agency should include, at a minimum, those currently overseen by the Office of the Conservation Regulator within the Department of Environment, Land, Water and Planning. As part of this process, the Victorian Government should seek to streamline regulatory activities. Further, additional resourcing should be provided to the newly-formed regulator to ensure that it is able to continue to effectively carry out its compliance and enforcement functions. 423

RECOMMENDATION 62: That the Victorian Government streamline environmental regulatory activities in Victoria by considering the establishment of a single office to act as a first point of contact for environmental regulation, with functions to undertake broad-based public communication and engagement activities and provide information and advice on environmental issues that fall across the various regulators. Guidance and communication should be widely distributed and appropriate for differing accessibility needs. This office should ideally be situated in a new independent agency with responsibility for environmental and conservation regulation. 426

FINDING 46: Penalties for crimes that harm Victoria’s ecosystems and biodiversity must act as an effective deterrent and be balanced with the costs of complying with relevant regulations. **430**

RECOMMENDATION 63: That the Victorian Government undertake a review of penalties for offences that threaten Victoria’s ecosystems and biodiversity in order to ensure that they act as an appropriate deterrent, including in relation to penalties for offences under the *Planning and Environment Act 1987* (Vic). **431**

FINDING 47: Comprehensive, up-to-date data and modelling on the condition and extent of native vegetation across the State is an important tool for decision-makers in the application and enforcement of the native vegetation clearing regulations. **438**

RECOMMENDATION 64: That the Victorian Government continue to support the development of data and mapping on the coverage and condition of native vegetation across the State, and investigate mechanisms for ensuring this can support the inclusion or overlaying of approved native vegetation removals and offsets to support decision-making. **438**

RECOMMENDATION 65: That the Victorian Government consider amending the *Planning and Environment Act 1987* (Vic) to ensure that local government authorities are able to effectively investigate suspected offences, including:

- minimising the notice required to be provided to the occupier of the land subject to investigation
- allowing a person with particular technical expertise who is supporting an investigation to accompany an authorised officer without the specific authorisation of the Minister
- ensuring the statute of limitations allows adequate time for responsible authorities to effectively investigate and finalise a suspected offence
- allowing enforcement orders to require actions be taken on land other than where an offence took place where all other onsite options have been exhausted. **439**

RECOMMENDATION 66: That the Victorian Government consider including information regarding native vegetation and the requirements of the native vegetation clearing regulations as part of Planning Property Reports produced through VicPlan. **441**

FINDING 48: Many councils do not have adequate resourcing to effectively undertake compliance and enforcement activities in relation to environmental laws within their municipalities, with significant and ongoing impacts on biodiversity in Victoria.

443

RECOMMENDATION 67: That the Victorian Government provide greater support to local government authorities to undertake compliance and enforcement activities in order to protect biodiversity, including through:

- providing specific resources to enable important compliance and enforcement activities with a focus on protecting biodiversity values, in conjunction with the goals identified in *Protecting Victoria's Environment – Biodiversity 2037*
- increasing opportunities for education and training in undertaking best practice compliance and enforcement
- supporting and facilitating peer networks and working groups to promote information-sharing
- providing additional resourcing to ensure that they have suitably qualified staff available to undertake compliance and enforcement.

444

11 Monitoring and data

FINDING 49: The *Biodiversity Monitoring Framework* and *Biodiversity 2037 Monitoring, Evaluation, Reporting and Improvements Framework* are beginning to steer strategic investment in environmental monitoring and data collection to support the implementation of *Protecting Victoria's Environment – Biodiversity 2037*.

454

FINDING 50: Environmental monitoring and data collection in Victoria are insufficient, and too patchy and incomplete to accurately identify the extent of native species in decline. This is hampering efforts to effectively categorise native species as threatened under Victorian or Commonwealth environmental legislation.

461

FINDING 51: Without adequate monitoring of threatened native species, the factors driving decline cannot be properly identified or assessed over time and it is difficult to design effective interventions to restore species.

461

FINDING 52: Despite the need for improved monitoring and data collection being well documented, the distribution and abundance of many invasive terrestrial and marine plant, animal and pathogen species remains poorly understood.

465

RECOMMENDATION 68: That the Department of Environment, Land, Water and Planning adopt a leadership role and work proactively with its delivery partners to ensure that environmental monitoring and data collection are coordinated, comprehensive and made publicly available. 467

FINDING 53: Funding for ongoing, comprehensive environmental monitoring and data collection to inform and evaluate efforts to reverse ecosystem decline in Victoria is inadequate. Whilst an increase in resources is required to support this important task, work is also needed to develop an appropriate and fit for purpose framework to ensure data collection is consistent in order to inform responses to ecosystem decline. 471

RECOMMENDATION 69: That the Victorian Government provide increased, ongoing funding to support comprehensive environmental monitoring and data collection addressing priority knowledge gaps that support the implementation of *Protecting Victoria’s Environment – Biodiversity 2037*. Funding should be commensurate with the importance of reversing ecosystem decline in Victoria and the scale of this objective. 472

RECOMMENDATION 70: That the Victorian Government consider providing ongoing funding to Traditional Owner organisations to support the delivery of Reading Country programs, which will facilitate the collection and analysis of environmental data related to the health of Country. 472

RECOMMENDATION 71: That the Victorian Government continue its dialogue with First Nations peoples as custodians of the land to ensure that Traditional Owners play a significant role in informing Government responses to protecting native flora and fauna. 472

FINDING 54: Citizen science projects, which are designed by professional scientists and involve volunteers, can engage the community in environmental issues and collect data vital to the management of Victoria’s unique biodiversity values. Citizen science projects can complement professional scientific research projects. 475

RECOMMENDATION 72: That the Victorian Government investigate mechanisms to require biodiversity data obtained by professional assessors to be uploaded into a central, publicly available government database (such as the Victorian Biodiversity Atlas) within a prescribed period from the date of assessment. This could include environmental impact assessments undertaken as part of mining operations and planning and development projects. 478

RECOMMENDATION 73: That the Victorian Government refine the operation of the Victorian Biodiversity Atlas and the VBA Go mobile application to make these more user-friendly to upload environmental data. Refinement of the Victorian Biodiversity Atlas should be accompanied by an awareness campaign to encourage the Victorian community to contribute to the Atlas and expand data collection across the State.

478

RECOMMENDATION 74: That the Victorian Government consider providing ongoing funding to local government authorities to support them to undertake robust data collection and environmental monitoring in areas with significant biodiversity values. The Department of Environment, Land, Water and Planning should auspice a rolling application process for the funding, and data collected should be added to the Victorian Biodiversity Atlas to ensure it informs Victorian Government environmental policy and program development and implementation.

479

What happens next?

There are several stages to a parliamentary inquiry.

The Committee conducts the Inquiry

This report on the Inquiry into ecosystem decline in Victoria is the result of extensive research and consultation by the Legislative Council's Environment and Planning Committee at the Parliament of Victoria.

We received written submissions, spoke with people at public hearings, reviewed research evidence and deliberated over a number of meetings. Experts, government representatives and individuals expressed their views directly to us as Members of Parliament.

A Parliamentary Committee is not part of the Government. Our Committee is a group of members of different political parties (including independent members). Parliament has asked us to look closely at an issue and report back. This process helps Parliament do its work by encouraging public debate and involvement in issues. We also examine government policies and the actions of the public service.

You can learn more about the Committee's work, including all of its current and past inquiries, at: <https://www.parliament.vic.gov.au/epc-lc>.

The report is presented to Parliament

This report was presented to Parliament and can be found at: <https://www.parliament.vic.gov.au/epc-lc/article/4455>.

A response from the Government

The Government has six months to respond in writing to any recommendations we have made. The response is public and put on the inquiry page of Parliament's website when it is received at: <https://www.parliament.vic.gov.au/epc-lc/article/4456>.

In its response, the Government indicates whether it supports the Committee's recommendations. It can also outline actions it may take.

1 Introduction

1.1 About the Inquiry

The Inquiry into ecosystem decline in Victoria is the largest, in both its scope and its community reach, undertaken by the Committee in the 59th Parliament, and one of the most extensive the Committee has ever undertaken. In addition to receiving nearly 1,000 substantive submissions, the Committee held 16 full days of public hearings, with evidence being given by more than 130 witnesses.

Most of the Inquiry was undertaken during the COVID-19 pandemic and the Committee needed to adapt to the restrictions that the pandemic caused, including shifting most of its public hearings to be held via videoconference, with both members of the Committee and witnesses attending remotely. The Committee was also forced to shift two regional visits to be held remotely due to the inability for the Committee to travel to regional Victoria from Melbourne while public health restrictions were in place.

1.2 Terms of reference

On 30 October 2019 the Legislative Council agreed to the following motion:

That this House requires the Environment and Planning Committee to inquire into, consider and report, within 12 months, on the decline of Victoria's ecosystems and measures to restore habitats and populations of threatened and endangered species, including but not limited to—

- (a) the extent of the decline of Victoria's biodiversity and the likely impact on people, particularly First Peoples, and ecosystems, if more is not done to address this, including consideration of climate change impacts;
- (b) the adequacy of the legislative framework protecting Victoria's environment, including grasslands, forests and the marine and coastal environment, and native species;
- (c) the adequacy and effectiveness of government programs and funding protecting and restoring Victoria's ecosystems;
- (d) legislative, policy, program, governance and funding solutions to facilitate ecosystem and species protection, restoration and recovery in Victoria, in the context of climate change impacts;

- 1
- (e) opportunities to restore Victoria’s environment while upholding First Peoples’ connection to country, and increasing and diversifying employment opportunities in Victoria; and
 - (f) any other related matters.

While the initial tabling deadline was late October 2020, the Committee’s workload at the time of the original motion with another significant inquiry was such that the start of this Inquiry was delayed. For this reason, the Legislative Council passed a number of motions to extend the tabling deadline. This was as a result of changes to the schedule due to both the impacts of the COVID-19 pandemic and the expansion of the Inquiry, with a significant number of additional hearings scheduled. In all, motions were passed by the Legislative Council on 30 October 2019, 17 March 2021 and 8 June 2021 as well as on the resolution of the Committee itself on 1 June 2020.¹ A motion was agreed in September by the Legislative Council to set the tabling date as 18 November 2021 and a further and final reporting date of 2 December 2021 was agreed by the Council on 26 October 2021.

1.3 Inquiry methodology and approach

The Committee started work on the Inquiry in June 2020 by sending letters to key stakeholders seeking submissions. It also advertised the call for submissions in newspapers and on the Parliament’s social media platforms, including to the Parliament’s approximate 80,000 Facebook followers and its Twitter community. As the Inquiry continued, additional invitations were sent to stakeholders to participate through both providing submissions and attending public hearings, leading to extensions to the tabling date as discussed above.

Following two extensions of the deadline to provide a submission to the Inquiry, the Committee received a total of 916 substantive submissions, and a further two pro forma submissions² which were signed by a total of 1,695 individuals. In total, 2,611 people submitted to the Inquiry in some form. A full list of individuals and organisations who provided submissions and witnesses who appeared at public hearings is provided in Appendix A.

After reviewing the submissions, the Committee identified a significant number of individuals and organisations to invite to appear at public hearings to provide oral evidence. Over the course of the following eight months, the Committee held 16 days of public hearings and received evidence from 135 people, both as individuals and a total of 43 organisations. This is amongst the most hearings ever held by the Committee for a single inquiry.

1 This resolution was made pursuant to Temporary Orders of the Legislative Council agreed on 23 April 2020, which enabled the Committee to amend its own tabling dates. These Temporary Orders ceased to operate after June 2020.

2 Pro forma submissions are a single submission prepared by an individual or organisation which is then shared in the community and submitted in identical form, or largely unchanged, by a number of people. It is similar to individuals signing a petition.

The Committee had intended to visit three regional areas to hold hearings during the Inquiry. While the Committee was able to visit Shepparton and hold two days of hearings in late April 2021, planned visits to both western and eastern Victoria were rescheduled and then cancelled as a result of COVID-19 outbreaks and restrictions of movement between Melbourne and regional Victoria. The Committee therefore held hearings with witnesses from those regions via videoconference instead. The Committee was disappointed in not being able to physically travel to the regions, but received high quality evidence from those who attended. It was also able to broadcast the hearings live on the Parliament's website in order to maintain a level of accessibility for the people in those regions.

1.4 Scope of the Inquiry

As can be seen from the terms of reference, the scope of this Inquiry was substantial, and the Committee has tried to cover as many of the diverse and multi-layered issues as possible in the time available. In this section, an overview of the key areas to be covered in the report is provided.

Not all elements of ecosystem decline and the many threats to biodiversity were able to be addressed in detail. The sheer volume and complexity of the issues forming part of the terms of reference would require more significant resourcing than what has been available. The critical importance of these issues means that the Committee considers that more work needs to be done on these areas.

In particular, the Committee has focussed its attention largely on terrestrial ecosystems and has not covered the vitally important marine and river environments in this report. It acknowledges the very serious concerns about the decline in biodiversity in these ecosystems. Proper consideration of challenges relating to the health of rivers, waterways and the marine environment is essential and the Committee believes this should be the subject of a separate, discrete Inquiry.

RECOMMENDATION 1: That the Victorian Government consider referring a parliamentary inquiry into the health of rivers, waterways and the marine environment.

The Committee is aware that marine and river environments are under threat from a number of sources, including coastal development and infrastructure, runoff of excessive nutrients and sediments from catchments, high levels of water consumption, altered flow regimes, pollution and the introduction of existing and new marine pests,³ along with the impacts of climate change.

³ Department of Environment, Land, Water and Planning, *Protecting Victoria's Environment – Biodiversity 2037*, 2017, p. 10.

The Victorian Government's biodiversity strategy, *Protecting Victoria's Environment – Biodiversity 2037* (Biodiversity 2037), acknowledged that 'altered hydrological regimes and ongoing demands for water are placing increasing pressure on Victoria's marine and waterway ecosystems'.⁴

The health of marine and river environments is vital not only in its own right but because of the interconnectedness of ecosystems and resulting flow-on effects for terrestrial environments. As stated in Biodiversity 2037, which is discussed later in this report:

marine and coastal habitats – seagrasses, saltmarshes and mangroves – support high levels of biodiversity, mitigate the effects of storm surges and sea level rise, and sequester carbon. These habitats can bury carbon at a rate up to 57 times faster than tropical rainforests, and can store carbon for thousands of years. It's estimated that vegetated coastal habitats contribute 50 per cent of carbon burial in the oceans (otherwise known as 'blue carbon').⁵

Both Biodiversity 2037 and submissions to the Committee suggested that there are substantial gaps in our knowledge about marine environments as well as declines in, and threats to, marine ecosystems. In its submission, Australian Marine Ecology stated:

there are large knowledge gaps in our present understanding of marine ecosystems in Victoria. There have been few standardised ecological long-term monitoring programs. These were being confined to the abalone stock assessment program that included some other reef species, subtidal reef monitoring program and intertidal reef monitoring program.⁶

The submission stated that standardised ecosystem monitoring was discontinued in 2015 and that 'there have been sporadic large-scale investigations, but generally they have been few and far between, with major ecosystem changes in between to glean key ecosystem processes'.⁷

In the Committee's view, in order to provide meaningful insights into the issues raised regarding marine, river and other waterway environments, a further discrete Inquiry is needed which can focus on issues specific to these environments. While the Committee is unable to formally commit to such an Inquiry during the current Parliament, due to the remaining time available, it recommends that the new Committee in the next Parliament undertake a discrete and comprehensive inquiry into the decline of marine, river and other waterway ecosystems.

⁴ Ibid., p. 47.

⁵ Ibid., p. 32.

⁶ Australian Marine Ecology, *Submission 815*, p. 6.

⁷ Ibid.

1.5 Why does ecosystem decline matter?

Victoria's ecosystems are facing serious decline. Biodiversity 2037 acknowledges that the 'wonderful tapestry of plant and animal life that makes up our terrestrial, waterway and marine environments has been under sustained pressure for nearly two centuries', leading to the degradation and loss of native species and habitat.⁸

It is impossible to separate the environment we live in from our own prosperity and our survival. A healthy natural environment is essential for our wellbeing and the elements of the natural environment are interconnected. Damage to one part of the environment, to one ecosystem, has a knock-on effect on others. As stated in Biodiversity 2037:

Biodiversity encompasses all components of the living world: the number and variety of plants, animals and other living things, including fungi and micro-organisms, across our land, rivers, coast and ocean. It includes the diversity of their genetic information, the habitats and ecosystems within which they live, and their connections with other life forms and the natural world.⁹

Since European settlement, Victoria's population growth and spread has put pressure on the environment, leading to the degradation and loss of numerous native species and habitats. According to Biodiversity 2037:

Victoria is the most intensively settled and cleared state in Australia, with over 50 per cent of the state's native vegetation cleared since European settlement. More recently, climate change has brought new and challenging threats to biodiversity.¹⁰

In order for the Victorian community to thrive and prosper, it is essential that our natural environment, of which we are a part, also continues to thrive.

During the Inquiry, the Committee heard that 'human health is indivisible from healthy, biodiverse ecosystems'.¹¹ Doctors for the Environment Australia told the Committee in its submission that 'when we allow biodiversity and ecosystems to decline or be lost, we compromise the essentials for survival - our food security, our water resources, the air we breathe and the stability of our climate'.¹²

The submission stated that humans are:

fundamentally dependent on biodiverse ecosystems and "ecosystem services", which are the benefits people obtain from nature. These include the provisioning services of food, water, timber, and fibre; regulating services such as pollination, water purification, climate regulation and pest and disease control; cultural services such as recreation, aesthetic enjoyment, and spiritual fulfillment; and supporting services such as soil formation, photosynthesis, and nutrient cycling.¹³

⁸ Department of Environment, Land, Water and Planning, *Protecting Victoria's Environment - Biodiversity 2037*, p. 4.

⁹ Ibid.

¹⁰ Ibid.

¹¹ Doctors for the Environment Australia, *Submission 725*, p. 3.

¹² Ibid.

¹³ Ibid., p. 7.

In short, the submission from Doctors for the Environment Australia suggested that without biodiversity and healthy ecosystems, human beings cannot survive.¹⁴

The submission also stressed that as well as physical health, a healthy natural environment also has substantial benefits to mental health. It stated that ‘spending time addition, it provided that:

nature exposure can reduce stress, moderate anxiety and depression and improve attention and self-esteem. Time in nature has also been shown to reduce blood pressure and risk of cardiovascular disease as well as improve immune function and blood glucose control in diabetics.¹⁵

It further suggested that ‘children appear to particularly benefit from having contact with nature from an early age, with research showing associations of this with improved concentration, gross-motor skills, emotional and cognitive development and sense of self-worth’.¹⁶

In the Committee’s view, the evidence presented during this Inquiry makes clear that mitigating and reversing ecosystem decline is of great importance and needs concerted action to be taken across all levels of government, industry and the community at large.

1.6 The report

This report is divided into four Parts, which are arranged into broad focus areas.

Part A is an introductory section, which provides a general overview of the report and environmental governance arrangements as well as the central role that First Nations peoples play, and could play, in biodiversity management now and into the future.

Part B contains chapters that consider the drivers of ecosystem decline, including the introduction of invasive species, climate change and its impact on ecosystems and habitat destruction, caused by human activity such as development and forestry.

Part C of the report contains chapters that deal with threatened species and landscape issues such as land management.

Finally, Part D contains chapters that discuss governance, compliance and monitoring and data.

The Committee has used both the submissions and the evidence given at public hearings, as well as a review of the substantial literature on ecosystem management, in reaching its findings and recommendations. An overview of each Chapter is provided below.

¹⁴ Ibid.

¹⁵ Ibid.

¹⁶ Ibid.

1.6.1 Governance and regulatory framework

Chapter 2 of the report is intended to provide background on the governance arrangements that underpin policy development in environmental management. It provides an overview of the legislative and regulatory framework that currently governs the management of ecosystems and the environment in Victoria. This includes not only the Victorian legislative framework, but the relevant Commonwealth legislative arrangements and international treaty obligations. The Chapter also provides an overview of the domestic allocation of responsibilities and some of the views from stakeholders on the balance of these responsibilities, as well as an overview of the specific legislation at the state and national level.

The Chapter also provides an overview of key policies and documents upon which many of the policies rest. It discusses the roles of state government agencies, as well as the important role that local government authorities play in this space.

1.6.2 First Nations and biodiversity

Chapter 3 seeks to draw attention to some of the evidence received by the Committee from First Nations and Traditional Owners. It recognises that biodiversity is central to First Nations ways of knowing, and acknowledges the significant impacts of the ongoing decline of biodiversity on Country. It outlines the current legislative and policy framework for Traditional Owner land and water rights in Victoria and highlights some of the mechanisms through which Traditional Owners are able to care for Country.

The Committee recognises the importance of ensuring that Traditional Owner voices are central in all conversations regarding biodiversity. For this reason, Traditional Owner views and recommendations for future change are incorporated throughout the report rather than solely concentrated in one chapter.

The Committee heard from Traditional Owners in both submissions and at public hearings, as well as on Country in Shepparton. The evidence received is reflected in the Chapter. In particular, the Committee considers issues such as the importance of Country to Traditional Owners; land and water rights in law; cultural heritage; and the policy framework and settings relevant to Traditional Owner roles in land and water management, including potential future Treaty with Traditional Owners. It also considers ways of caring for Country, including issues such as self-determination; the use of cultural fire; the role of Traditional Owners in the management of lands and resources, including through Country plans; and the potential for a central role for Traditional Owners in the management of water resources.

The Committee was fortunate to have a demonstration of cultural burning on Country while in Shepparton for hearings and this provided invaluable context for the substantial amount of evidence received about traditional fire and land management. The Committee is grateful to both the Yorta Yorta people, whose land we were on, and the Firestick Alliance, who explained the practices the Committee observed.

As stated above, it is not the Committee's intention to compartmentalise the central role that Traditional Owners should be playing in looking after Country and it recognises that their voices should be key to every conversation around ecosystem decline and recovery. Therefore, Traditional Owner views are considered throughout the report.

1.6.3 Invasive plants and animals

The introduction of many new species of plants and animals since European settlement has seen substantial damage to the balance of ecosystems in Australia. The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services defines invasive species as exotic plants or animals which disrupt the ecological functioning of natural systems by out-competing local and indigenous species for resources.¹⁷

Chapter 4 of the report addresses the issue of invasive species, which are now present in all terrestrial and aquatic environments across Victoria and are damaging the environment, impacting agricultural businesses, creating public health and safety risks and reducing liveability of communities. They include animals, plants, insects, pathogens and diseases.

The evidence gathered throughout the course of the Inquiry suggests that invasive species have become a key driver of ecosystem decline, impacting Victorian biodiversity values by:

- damaging habitat, altering the natural composition of vegetation, impacting the quality of waterways and increasing forests' vulnerability to fire
- outcompeting native flora and fauna for habitat, food, refuge and other resources
- preying on native fauna, driving population decline.

The Committee does not list and analyse the impact of every invasive species, as these are far too numerous. Instead, the use of selective case studies presented during the Inquiry helps to illustrate the damage that invasive species can have on native species and ecosystems.

The Chapter seeks to explain what invasive species are and how they drive ecosystem decline; provides an overview of the legislative and coordination framework for controlling invasive species, including the various stakeholder views of this framework; and the economic impacts and funding of control measures. Case studies are provided for illustrative purposes, but the Committee recognises there are a substantial number of invasive species that cause damage to sensitive and vulnerable ecosystems.

¹⁷ Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, *Models of drivers of biodiversity and ecosystem change*, <<https://ipbes.net/models-drivers-biodiversity-ecosystem-change>> accessed 13 October 2021.

1.6.4 Climate change

Chapter 5 focusses on the impact of climate change on ecosystem decline. In August 2021, the Intergovernmental Panel on Climate Change released its sixth assessment report on climate change. This report noted that human influence has warmed the climate at a rate that is unprecedented in at least the last 2,000 years and that climate change is already having an impact in every region in the world.¹⁸

In this Chapter, the Committee identifies the measurable impacts of climate change and provides an overview of how climate change drives ecosystem decline in Victoria.

The Chapter considers the legislative and policy framework pertaining to climate change, some of the challenges in undertaking ecosystem conservation and restoration and the mitigation strategies being put in place or considered. It also discusses the impact of climate change on bushfires and biodiversity. As with all issues, the views of stakeholders are considered in detail throughout the Chapter.

1.6.5 Habitat loss and fragmentation

Another key driver in ecosystem decline has been human activity, including development and forestry operations, which have had an impact on the destruction of habitat for native animals. Chapter 6 outlines some of the key drivers of habitat destruction, including agricultural uses, such as grazing stock and cropping; development and urban expansion, such as the construction of houses, roads and other major infrastructure; native timber harvesting; resource extraction such as mining; degradation related to invasive pest species, such as rabbits; soil erosion; climate change and bushfires.

Victoria's natural areas have declined substantially since European settlement. The Chapter discusses evidence that states that Victoria is now the most intensively settled and cleared state in Australia and that over 50% of native vegetation has been removed during the two centuries since Europeans arrived.

In this Chapter, the Committee examines how environmental considerations inform development processes. This includes the role of ecological information in informing environmental impact assessments, the operation and efficacy of the *Guidelines for the removal, destruction or lopping of native vegetation* and the environmental impact offsetting provisions under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth).

The Committee also considers issues related to the native timber industry and its impact on forest habitat, including VicForests' native timber harvesting operations and concerns that have been raised about forestry practices.

¹⁸ Intergovernmental Panel on Climate Change, *Climate Change 2021: The Physical Science Basis, Summary for policymakers: Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge University Press, 7 August 2021, p. 7.

1.6.6 Threatened species

A substantial and extremely concerning number of species of both plants and animals are threatened with extinction in Victoria.

The Victorian *State of the Environment 2018*—a five-year statutory environmental assessment of the health of different elements of Victoria’s environment—noted that Victoria has the highest number of threatened species by subregion in Australia, with over 700 fauna and flora species and ecological communities listed as threatened under Victoria’s threatened species framework. The report suggests that between one quarter and one third of all terrestrial plants, birds, reptiles, amphibians and mammals, along with numerous invertebrates and ecological communities, are considered to be at risk of extinction.

The Inquiry was provided with evidence from Carolyn Jackson, Acting Deputy Secretary, Environment and Climate Change at the Department of Environment, Land, Water and Planning (DELWP), that a new list of threatened species had recently been completed and the total number of threatened species had risen to just under 2,000 species.¹⁹

Chapter 7 of the report explores the current status of threatened species at both state and national levels and the main threats to these species and their habitats. It sets out the regulatory framework, including processes for ‘listing’ species as threatened, as well as the key policies aimed at protecting threatened species. The Chapter considers Traditional Owner roles in species conservation and emergency response frameworks.

1.6.7 Land management

In Chapter 8, the Committee considers the management of land in Victoria, across both public and private tenures. The Chapter considers the fact that while the overarching goals of biodiversity conservation span both categories, each are subject to different rules and types of governance that give rise to different conservation challenges.

The Chapter outlines the governance structure in this space, at both Commonwealth and State levels. It discusses key issues in land management, including protected areas and changes to the legislative framework, and canvasses some of the key concerns raised in evidence. The Chapter also examines the role played by Traditional Owners in land management and the potential for a more central role.

In terms of private land management, the Chapter discusses a range of issues including various policy settings and approaches, the directions identified in *Biodiversity 2037*, conservation covenants and the role of Trust for Nature, and various other initiatives.

¹⁹ Carolyn Jackson, Acting Deputy Secretary, Environment and Climate Change, Department of Environment, Land, Water and Planning, Public hearing, Via videoconference, 10 August 2021, *Transcript of evidence*, p. 3.

Finally, Chapter 8 deals with the vital area of fire management, including fire suppression strategies. The Chapter includes a detailed discussion of cultural burning that Traditional Owners use to manage and care for the landscape.

1.6.8 Governance and implementation

In Chapter 9, the Committee considers the framework for environmental governance in Victoria, including the role of DELWP and scientific governance. It also considers issues relating to governance for Traditional Owners and local government authorities, as well as the broad implementation of Biodiversity 2037.

The Committee considers that the fact that the environment has such a broad importance and impact, including on the community's physical, mental and economic health, a whole-of-government approach is essential to ensure a cohesive and coordinated effort in addressing current and future challenges.

In this Chapter, the Committee provides an overview of the governance framework, including looking at the role played by DELWP, scientific governance structures, and the need for a whole-of-government approach and accountability in this space.

The Committee also provides a detailed discussion on Biodiversity 2037, the Victorian Government's long-term strategy for mitigating the decline in native species and improving the general state of the environment. In addition to considering the funding of programs moving forward, the Committee discusses the need for partnerships with the private sector, along with other investment strategies.

Biodiversity 2037 also acknowledges the important role that Traditional Owners will play in addressing ecosystem decline and the Chapter considers issues such as self-determination and ongoing challenges in this area.

In addition, the Chapter looks at the role of local government authorities, which have the potential to play a very significant part in managing the challenges of ecosystem decline through localised action. The Committee highlights some projects and programs being run by councils, as well as the work some are doing in collaboration with Traditional Owners, particularly in terms of land management.

On a broader level, in this Chapter the Committee considers public awareness, education and engagement with environmental challenges and the need for the entire community to both value and act in the best interests of the environment. In fact, such engagement has been codified with recent amendments to the *Environment Protection Act 2017* (Vic), which introduced a general environmental duty that places a proactive obligation on persons undertaking activities that may impact the environment. This duty provides that a person engaging in an activity that has the potential to cause harm to human health or the environment, from pollution or waste, must minimise risks of that harm happening as much as reasonably practicable.

1.6.9 Compliance and enforcement

Chapter 10 outlines compliance and enforcement mechanisms in relation to environmental laws in Victoria. It considers the role of the Office of the Conservation Regulator and challenges in relation to compliance and enforcement. It also looks at the role of local government authorities in this space, including in terms of their powers, communication and engagement activities and resourcing.

The challenges relating to compliance and enforcement covered in the Chapter include the highly complex and confusing regulatory environment and the penalties that currently exist for breaches of environmental laws. The Chapter also considers the role of local government authorities in compliance and enforcement in areas such as native vegetation and the powers these bodies have in enforcing compliance. The Chapter also looks at the role that communication and community engagement by local government authorities can play in compliance with environmental laws and regulations. Finally, the resourcing available to local government authorities to meet their obligations is considered.

1.6.10 Monitoring and data

A recurring theme during the Inquiry was the issue of the importance of data collection and monitoring to inform policy development to prevent ecosystem decline. In Chapter 11, the Committee considers the role of monitoring and data collection, covering issues such as the approach detailed in Biodiversity 2037, and some of the tools that are being used. It also discusses the Monitoring, Evaluation, Reporting and Improvements Framework and Biodiversity Monitoring Framework. The Committee also considers the views of the Commissioner for Environmental Sustainability as expressed in the *State of the Environment 2018* Report on the importance of monitoring and data collection and the need to expand this work.

In this Chapter, the Committee examines the impacts of inadequate environmental monitoring and data collection, noting that this is a national, rather than just a Victorian, problem. One of the key areas of concern is the impact on threatened species management of poor or inadequate data and monitoring. This was also cited in evidence as a significant problem in controlling invasive species. The Committee considers some of the barriers to monitoring and data collection and examines some of the issues that need to be considered in resourcing, coordination, establishment of databases and monitoring across different land tenures.

1.7 Conclusion

As stated at the outset, this has been an enormously broad, wide-ranging and complex inquiry. The terms of reference cover a range of issues and the Committee received a significant number of submissions and heard from a variety of witnesses.

While the Committee has been made aware during the Inquiry of a number of concerns within the community, it has been extremely encouraged by the level of engagement with the issue of ecosystem decline. This is clearly an area of substantial public interest, and that can only be a positive in addressing some of the challenges in reversing damage and restoring vital ecosystems.

The Committee has noted that the long-term policy of the Victorian Government, as outlined in Biodiversity 2037, has been largely supported by stakeholders throughout the Inquiry.

In the Committee's view, the first step in addressing the many challenges is the acknowledgement of the extent of the problem. It is clear from the evidence received that the issue of ecosystem decline, and its multiple and significant impacts, is recognised, and substantial work is being done at government, industry and community levels to find solutions. The Committee recognises that there are tensions within the community about the way forward, but these tensions tend to be around solutions to the problem, rather than any genuine dispute about the problem itself. Such tensions are manageable and there is clearly scope for cooperation and policy adaptation using diverse approaches.

We are currently in a period of substantial change, and transformational action is essential for Victoria to address the challenges of ecosystem decline. The recommendations in this report are aimed at encouraging this further action to mitigate biodiversity and ecosystem decline. The time for action is now.

Overview of the governance and regulatory framework

Victoria's precious ecosystems are at incredible risk. The cumulative effects of a rapidly changing climate and bushfires that are increasing in size and intensity, habitat loss and fragmentation through continuing land clearing, and invasive plants and animals, threaten our native plants and animals, ecosystems and the crucial services they provide. Biological diversity helps to maintain a functioning biosphere that supports human life, such as through clean water and productive agriculture.¹ Without urgent action, its ongoing decline will have critical consequences.

These are global challenges. The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services' (IPBES) 2019 *Global Assessment of Biodiversity and Ecosystem Services* reported that biodiversity is 'declining faster than at any time in human history'. Most ecological services are not fully replaceable or are irreplaceable.²

Environmental law and policy, in responding to global challenges of this nature, are inherently complex. Environmental challenges are multifaceted and diverse, with wide-ranging social, economic and political impacts. Effective responses must reflect emerging science and research, work holistically across issues, incorporate various governance structures and actors and remain dynamic to changing social debate. With regard to biodiversity, a comprehensive suite of legislation, policy and agreements, at various levels of government, give effect to Victoria's commitments and actions.

This Chapter provides an overview of Australia's international obligations in relation to biodiversity and the ways in which they impact domestic regulation of environmental matters. It outlines the legislative and policy framework relating to biodiversity in Victoria, as well as the responsibilities of different actors at the Commonwealth, State and local government levels.

2.1 International obligations

Much of our domestic environmental regulation stems from standards, principles and obligations developed at the international level. The key treaty in this space is the United Nations *Convention on Biological Diversity* (CBD), which was signed by 150 nations at the 1992 Rio Earth Summit and entered into force on 29 December 1993. The CBD, which was ratified by Australia in 1993, seeks to conserve biological diversity,

1 Philippe Sands and Jacqueline Peel, *Principles of international environmental law*, 4th edn, Cambridge University Press, 2018, p. 385.

2 Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, *Global Assessment of Biodiversity and Ecosystem Services: Summary for policymakers*, 2019, p. 10.

ensure the sustainable use of its components and provide for the fair and equitable sharing of benefits arising from the utilisation of its genetic resources.³

Particular treaty commitments, binding upon States, include to:

- adopt a national biodiversity strategy
- identify and monitor important features of biological diversity
- establish a system of protected areas to conserve important biodiversity
- adopt measures for the recovery and rehabilitation of threatened species, and their reintroduction into their natural habitats
- integrate biodiversity conservation and sustainable use into decision-making and adopt measures to avoid or minimise adverse impacts
- adopt incentives to encourage the conservation and sustainable use of biodiversity
- promote and encourage public awareness of the importance of conserving biodiversity
- introduce environmental impact assessment processes for projects that are likely to have significant adverse effects on biodiversity.⁴

In 2010, the States Parties to the CBD adopted the *Strategic Plan for Biodiversity 2011–2020*. The Plan established an overarching framework for protecting biodiversity, with parties agreeing to translate this framework into revised national biodiversity strategies and action plans within a two-year period. Importantly, the Strategic Plan included the Aichi Biodiversity Targets, which are 20 targets organised under five strategic goals:

- address the underlying causes of biodiversity loss by mainstreaming biodiversity across government and society
- reduce the direct pressures on biodiversity and promote sustainable use
- improve the status of biodiversity by safeguarding ecosystems, species and genetic diversity
- enhance the benefits to all from biodiversity and ecosystem services
- enhance implementation through participatory planning, knowledge management and capacity building.⁵

The Commonwealth Government acted on its commitments in accordance with the Strategic Plan by introducing *Australia's Biodiversity Conservation Strategy 2010–2030*.⁶

³ *Convention on Biological Diversity*, opened for signature 5 June 1992, 1760 UNTS 79 (entered into force 29 December 1993) art 1.

⁴ *Ibid.*, arts 6, 7, 8, 9, 10, 11, 13, 14.

⁵ *The Strategic Plan for Biodiversity 2011–2020 and the Aichi Biodiversity Targets*, Conference of the Parties to the Convention on Biological Diversity, 10th mtg, Agenda item 4.4, UNEP/CBD/COP/DEC/X/2 (29 October 2010), p. 7.

⁶ Natural Resource Management Ministerial Council, *Australia's Biodiversity Conservation Strategy 2010–2030*, Commonwealth Government, Canberra, 2010.

Victoria's biodiversity strategy, *Protecting Victoria's Environment – Biodiversity 2037* (Biodiversity 2037), states that its vision and goals are consistent with those of the CBD and the Commonwealth strategy.⁷

At the Rio Earth Summit, a second important agreement was negotiated—the United Nations *Framework Convention on Climate Change* (UNFCCC).⁸ The UNFCCC has near universal membership, with 197 State Parties. Within the framework of this treaty, the *Paris Agreement* was negotiated and entered into force in November 2016. The Paris Agreement commits signatory countries to limit global warming to no more than 2°C above pre-industrial levels.⁹

There are various other international agreements and documents which have implications for Australia's domestic environmental law and policy. This includes the United Nations *Declaration of the Rights of Indigenous Peoples* (UNDRIP), which was adopted by the UN General Assembly on 13 September 2007 and endorsed by Australia in 2009. UNDRIP enshrines the rights of Indigenous peoples to self-determination, to own and use their traditionally owned lands and waters, and to maintain and strengthen their distinctive spiritual relationship with the lands and waters.¹⁰

Other relevant agreements include the *Convention on International Trade in Endangered Species of Wild Fauna and Flora*, *Ramsar Convention on Wetlands*, *Convention on Migratory Species* and *World Heritage Convention*.

2.2 Domestic allocation of environmental responsibilities

Responsibilities for environmental regulation in Australia are largely shared between the Commonwealth Government and the states and territories. As described by Professors Lee Godden, Jacqueline Peel and Jan McDonald, this division of legislative powers has led to a 'fragmented, but at times overlapping responsibility for environmental matters between the spheres of government'.¹¹

Cooperation in environmental governance between the Commonwealth and the states and territories stems primarily from the *Intergovernmental Agreement on the Environment* (IGAE), concluded in 1992.¹² The roles established in the IGAE complement various decisions of the High Court of Australia regarding the extent of Commonwealth powers in relation to the environment.¹³

7 Department of Environment, Land, Water and Planning, *Protecting Victoria's Environment – Biodiversity 2037*, 2017, p. 7.

8 *United Nations Framework Convention on Climate Change*, opened for signature 3 June 1992, 1771 UNTS 107 (entered into force 21 March 1994).

9 *Paris Agreement*, signed 22 April 2016, ATS 24 (entered into force 4 November 2016) art 2.

10 *United Nations Declaration on the Rights of Indigenous Peoples*, GA Res 61/295, UN Doc A/RES/61/295 (2 October 2007, adopted 13 September 2007) arts 3, 25, 26.

11 Lee Godden, Jacqueline Peel and Jan McDonald, *Environmental Law*, 2nd edn, Oxford University Press, 2018, pp. 108–109.

12 *Intergovernmental Agreement on the Environment*, May 1992.

13 Lee Godden, Jacqueline Peel and Jan McDonald, *Environmental Law*, p. 116.

The Commonwealth Government has responsibilities for the adoption and implementation of international obligations, as well as matters of national environmental significance. It also has statutory responsibility for protecting the environment in relation to proposals involving the Commonwealth.¹⁴ However, as noted in a recent review of national environmental law, over time, the Commonwealth's role has shifted and overlapped with the roles of the states and territories.¹⁵

The states and territories have responsibilities for developing and implementing policy for environmental matters within their jurisdictions, outside of those deemed to be of national significance.¹⁶

2.3 Commonwealth

2.3.1 *Environmental Protection and Biodiversity Conservation Act 1999 (Cth)*

The *Environmental Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) is the Commonwealth Government's primary environmental legislation. Its objectives include:

- protection and management of nationally significant environmental sites, species and ecological communities
- conservation of biodiversity
- establishment of a streamlined national environmental assessment and approvals process
- protection and management of important natural and cultural places
- control of international movement of wildlife, wildlife specimens and products made or derived from wildlife
- promotion of ecologically sustainable development
- recognition of First Nations peoples in the conservation and ecologically sustainable use of biodiversity
- promotion of First Nations peoples' knowledge of biodiversity in cooperation with the owners of knowledge.¹⁷

A list of the nationally significant environmental sites, species and ecological communities protected under the EPBC Act are outlined in Box 2.1.

¹⁴ Professor Graeme Samuel AC, *Independent Review of the EPBC Act – Final Report*, report for Department of Agriculture, Water and the Environment, Commonwealth of Australia, Canberra, October 2020, pp. 41–42.

¹⁵ *Ibid.*, p. 42.

¹⁶ Lee Godden, Jacqueline Peel and Jan McDonald, *Environmental Law*, p. 117.

¹⁷ Commonwealth Department of Agriculture, Water and the Environment, *Environment Protection and Biodiversity Conservation Act 1999: About the EPBC Act*, <<https://www.environment.gov.au/epbc/about>> accessed 14 February 2021.

BOX 2.1: Matters of national environmental significance

Matters protected under the EPBC Act as matters of national environmental significance include:

- world heritage properties
- national heritage places
- wetlands of international importance (listed under the *Ramsar Convention on Wetlands*)
- listed threatened species and ecological communities
- migratory species protected under international agreements
- Commonwealth marine areas
- the Great Barrier Reef Marine Park
- the environment, where nuclear actions are involved
- the environment, where actions proposed are on, or will affect, Commonwealth land and the environment
- the environment, where Commonwealth agencies are proposing to take an action.

Source: Department of Sustainability, Environment, Water Population and Communities, *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy*, October 2012, p. 5.

The EPBC Act aims to balance the protection of matters of national environmental significance with society's economic and social development by establishing a legal framework and decision-making process based on principles of ecologically sustainable development.

Proposed developments or other actions likely to have a significant impact upon matters of national environmental significance must be referred for an environmental impact assessment under the Act.¹⁸ In Victoria this assessment may occur through the environmental impact assessment process established by the *Environment Effects Act 1978* (Vic) (EE Act), as a result of a 2014 agreement struck between the Commonwealth and Victorian Governments. This bilateral agreement provides that development likely to have a significant impact on matters of national environmental significance can undergo an environmental impact assessment under the EE Act in the same manner as any other Victorian development. The subsequent assessment is provided to the Commonwealth Government for the final decision to approve or reject the project.¹⁹

¹⁸ Department of Sustainability, Environment, Water, Population and Communities, *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy*, Commonwealth Government, Canberra, 2012, p. 5.

¹⁹ Department of Environment, Land, Water and Planning, *Environment assessment*, 2021, <<https://www.planning.vic.gov.au/environment-assessment/environmental-assessment-bilateral-agreement>> accessed 3 October 2021.

In order to conserve biodiversity, the EPBC Act also establishes a process for listing nationally threatened species and ecological communities, native migratory species and marine species as threatened. There are a number of categories for listing threatened species and communities, which are:

- extinct
- extinct in the wild
- critically endangered
- endangered
- vulnerable
- conservation dependent.²⁰

Once listed, species and ecological communities may have conservation advice and recovery plans developed to prevent further decline in status.²¹ In addition, key threatening processes can also be listed under the EPBC Act, which are those that threaten the survival of a native species or ecological community. This includes, for example, land clearance and certain invasive species.²²

2019 review of the EPBC Act

In October 2019, the Commonwealth Government appointed Professor Graeme Samuel AC (supported by an independent panel) to undertake a statutorily mandated 10-year review of the operation of the EPBC Act and the extent to which it is meeting its objectives. This review is also known as the Samuel's Review. Its Final Report, including 38 recommendations to improve the operation of the Act, was published in October 2020. This followed an Interim Report released in June 2020.

The Samuel's Review found that the EPBC Act is 'complex and cumbersome', and requires 'fundamental reform' to ensure it can:

- set clear environmental outcomes and actively plan to deliver these
- measure effectiveness to ensure that environmental protections delivered by the EPBC Act are adequate
- respect and harness the knowledge of Traditional Owners in environmental management.²³

A key reform recommended by the review to achieve these objectives is the adoption of enforceable national environmental standards. It concluded that standards are needed to describe outcomes, management practices and decision-making processes that

²⁰ *Environment Protection and Biodiversity Conservation Act 1999* (Cth) ss 178–179.

²¹ *Ibid.*, pt 13 div 5.

²² Commonwealth Department of Agriculture, Water and the Environment, *Species Profile and Threats Database: Listed Key Threatening Processes*, <<http://www.environment.gov.au/cgi-bin/sprat/public/publicgetkeythreats.pl>> accessed 16 November 2021.

²³ Professor Graeme Samuel AC, *Independent Review of the EPBC Act – Final Report*, p. viii.

contribute to effective environmental protection. The report envisaged that national environmental standards would encompass a suite of nine standards dealing with various aspects of the EPBC Act, as shown in Box 2.2.

BOX 2.2: National environmental standards

The Samuel's Review envisions a suite of nine national environmental standards encompassing:

- matters of national environmental significance
- Commonwealth actions and actions involving Commonwealth land
- transparent processes and robust decisions, including:
 - judicial review
 - community consultation
 - adequate assessment of impacts on matters of national environmental significance—including climate considerations
 - disclosure of emissions profile
 - quality regional planning
- Indigenous engagement and participation in decision-making
- compliance and enforcement
- data and information
- environmental monitoring and evaluation of outcomes
- environmental restoration, including offsets
- wildlife permits and trade.

The Samuel's Review developed four of the envisioned national environmental standards and called for the remainder to be developed without delay. The four standards already created relate to:

- matters of national environmental significance
- Indigenous engagement and participation in decision-making
- compliance and enforcement
- data and information.

Source: Professor Graeme Samuel AC, *Independent Review of the EPBC Act – Final Report*, report for Department of Agriculture, Water and the Environment, Commonwealth of Australia, Canberra, October 2020, Appendix B: Recommended National Environmental Standards, October 2020.

The Samuel's Review suggested that the new standards should inform all actions and decisions made by the national Minister for Environment and the states and territories under the EPBC Act, including the formation of policy, programs and regional planning, as well as the assessment and approval of development or other projects. State and territory environmental impact assessment processes accredited under the EPBC Act and the outcomes achieved through these processes should also be consistent with the standards. The review suggested that the standards will support states and territories to manage the environment more holistically:

The Standards enable the intended outcomes of the EPBC Act to be more effectively integrated into broader environmental management responsibilities and activities of others (such as States and Territories) – so long as they can demonstrate that they can act consistently with the Standards. A management plan, regional plan, environmental planning policy, development assessment and approval regulation or control, or program of investment should individually, or as part of a broader system of management, demonstrate that the outcomes in the Standards are being achieved.²⁴

Other recommendations made by the review relate to:

- streamlining environmental approvals, particularly by accrediting states and territories to approve projects that meet the requirements of the EPBC Act, underpinned by the new national environmental standards
- strengthening independent assurance, to give business and the community confidence that environmental approvals are delivering environmental objectives
- improving the collection and availability of data and information to support decision-making, and modernising the systems that underpin the operation of the Act.²⁵

The Commonwealth Government responded to the Samuel's Review in June 2021. It noted that the EPBC Act has undergone numerous reviews since its introduction which all found that the Act is dated and does not interact well with state and territory arrangements for environmental management.²⁶ It agreed to the key reforms recommended by the review, including the adoption of national environmental standards. However, it noted that the 'detailed standards [already] developed by the Review go well beyond existing EPBC Act requirements' and suggested that adopting them 'may add more process and more uncertainty, which will delay implementation of the approval bilateral agreements with the states and territories'. The Commonwealth Government will therefore develop its own interim standards to be reviewed after two years of operation.²⁷

²⁴ Ibid., p. 3.

²⁵ Commonwealth Department of Agriculture, Water and the Environment, *A pathway for reforming national environmental law*, Commonwealth of Australia, Canberra, June 2021, p. 6.

²⁶ Ibid., p. 2.

²⁷ Ibid., pp. 9-10.

The Commonwealth Government is also negotiating new bilateral agreements with states and territories to accredit their environmental regulatory systems so that they can assess the environmental impacts of developments and issue approvals on behalf of the Commonwealth Government. These agreements will be underpinned by the new national environmental standards and oversight will be provided at the national level. The Commonwealth Government has stated that these arrangements will make approvals for development or other projects more efficient:

Single-touch approvals will provide for a simpler, faster assessment and approval process. This will increase certainty for investors, reduce costs for business, boost productivity and create jobs while protecting the environment.²⁸

Stakeholder feedback

Many Inquiry stakeholders supported the findings and general principles of the Samuel's Review, particularly the introduction of national environmental standards. For example, the Local Government Professionals Biodiversity Planning Network and Ecological Consultants Association of Victoria urged the Commonwealth Government to undertake the recommended reforms.²⁹

Professor Lee Godden, Director of the Centre for Resources, Energy and Environmental Law at the University of Melbourne, expressed general support for the recommendations of the Samuel's Review at a public hearing. She suggested that national environmental standards, streamlined approval processes and a move to regional planning could inform the simplification and better integration of state environmental law:

I think that there are opportunities, for example, if there is a move to national standards, to think about how those standards might work to streamline and to join up some of the areas of [state] environmental law. I think we have got the classic silo problem, and if you think, for example, of the development approval context, there is just an immense layering of different sorts of requirements ... I think it is fair to say that moves to more strategic environmental assessment and broader bioregional planning could underpin some of those movements to streamline. I know Victoria some years ago invested considerable attention in thinking about bioregional planning. I would suggest that perhaps there should be some reversion to thinking about that as, if you like, the baseline on which decision-making occurs, so that therefore your decision-makers are much better placed to think about things like cumulative impacts, because that is one of the things that typically falls through the cracks when you are making decisions on a project-by-project basis.³⁰

²⁸ Ibid., p. 11.

²⁹ Biodiversity Planning Network, *Submission 523*, pp. 9–10; Ecological Consultants Association of Victoria, *Submission 499*, p. 23.

³⁰ Professor Lee Godden, Director, Centre for Resources, Energy and Environmental Law, University of Melbourne, Public hearing, Melbourne, 20 April 2021, *Transcript of evidence*, p. 24.

Other submitters were less supportive of the Samuel's Review, particularly its recommendation to accredit states and territories to assess the environmental impact of developments and provide approval on behalf of the Commonwealth Government.

Environmental Justice Australia pointed out that the EPBC Act protects matters of national environmental significance in accordance with Australia's international obligations such as those relating to the conservation of threatened species, preservation of internationally significant wetlands and world heritage sites, and the protection of migratory bird species. It argued that Victorian environmental impact assessment processes for development provide inadequate protection for biodiversity and are therefore 'not up to the task of protecting MNES [matters of national environmental significance]'. Further, it felt that Victorian environmental legislation more generally is inadequate for this purpose.³¹

Speaking to the Committee in Melbourne, Matt Ruchel, Executive Director of the Victorian National Parks Association, also expressed opposition to the devolution of national approvals for development under the EPBC Act to the states and territories:

we are opposed to the devolution of powers. The federal laws in some ways are stronger but narrower, I suppose, in simple terms. But again, they have had spasmodic enforcement. The federal government under a range of international obligations as well as being in charge of lots of the money has a clear responsibility on environment and should not abdicate it by handing it back to states, who often struggle anyway with dealing with the multiple of problems.³²

Matt Ruchel asserted that the Victorian Government is responsible for considerable ongoing land clearance and habitat loss in Victoria in conjunction with its projects, increasing the importance of national government oversight of development under the EPBC Act:

I suppose, from the outside looking in ... one of the biggest drivers of clearing in Victoria, for example, is state projects. So the state government is the biggest clearer in the state, pretty much, through major projects and so on. If you remove the federal oversight and the hoops that are jumped through there, you are sort of approving it for yourself in a sense. There is a sort of core conflict of interest there.³³

Stakeholder feedback on the Samuel's Review recommendations relating to offsetting arrangements in environmental impact assessment processes is explored in Chapter 6.

2.3.2 Key policies and other documents

The key environmental policy at the national level is *Australia's Strategy for Nature 2019–2030* (Strategy for Nature), which provides the overarching framework for

³¹ Environmental Justice Australia, *Submission 760*, p. 20.

³² Matt Ruchel, Executive Director, Victorian National Parks Association, Public hearing, Melbourne, 11 May 2021, *Transcript of evidence*, p. 22.

³³ *Ibid.*, p. 23.

national, state and territory and local government nature strategies, legislation, policies and actions. *Australia's Strategy for Nature* has three main goals:

- connect Australians with nature
- care for nature in all its diversity
- share and build knowledge.³⁴

Australia's Biodiversity Conservation Strategy 2010–2030 sets out a vision for conserving the nation's biodiversity, in accordance with its international commitments discussed above. It outlines the main threats to Australia's biodiversity and sets a number of priorities for action.³⁵

The Commonwealth Government conducts five-yearly reviews of the state of Australia's environment, with the next report scheduled to be released in early 2022. State of the environment reporting provides information on environmental and heritage conditions, trends and pressures.³⁶

The most recent iteration of the Commonwealth Government's *Threatened Species Strategy* was released in May 2021. It establishes a 10-year vision for the conservation of threatened species, with two high-level objectives: to improve the trajectories of priority threatened species by 2031, and to improve the condition of priority places by 2031.³⁷ Identified areas for direct action include mitigating new and established threats; conserving, restoring and improving habitat; emergency preparedness and response; and climate change adaptation and resilience.³⁸

The national policy response for invasive species is through two main documents: the *Australian Weeds Strategy 2017 to 2027* and *Australian Pest Animal Strategy 2017 to 2027*. These strategies provide national frameworks for addressing issues relating to invasive species and their impacts on the environment, while also maintaining sustainable primary industries.³⁹

Australia's Strategy for the National Reserve System 2009–2030 sets national priorities for coordination and action, between jurisdictions and other stakeholders, in relation to the National Reserve System of protected areas.⁴⁰

³⁴ Australia's Nature Hub, *Australia's Strategy for Nature 2019–2030: Australia's national biodiversity strategy and action plan*, report prepared by Biodiversity Working Group, report for Meeting of Environment Ministers, Commonwealth of Australia 2019, p. 11.

³⁵ Natural Resource Management Ministerial Council, *Australia's Biodiversity Conservation Strategy 2010–2030*.

³⁶ Commonwealth Department of Agriculture, Water and the Environment, *State of the Environment (SoE) reporting*, <<https://www.environment.gov.au/science/soe>> accessed 7 October 2021.

³⁷ Commonwealth Government, *Threatened Species Strategy 2021–2031*, Canberra, 2021, p. 5.

³⁸ *Ibid.*, p. 28.

³⁹ Invasive Plants and Animals Committee, *Australian Pest Animal Strategy 2017–2027*, Commonwealth Government, Canberra, 2017; Invasive Plants and Animals Committee, *Australian Weeds Strategy 2017–2027*, Commonwealth Government, Canberra, 2017.

⁴⁰ Natural Resource Management Ministerial Council, *Australia's Strategy for the National Reserve System 2009–2030*, Commonwealth Government, May 2009.

In addition, the *National Forest Policy Statement* establishes criteria for a comprehensive, adequate and representative system of reserves within forests in Australia. The Statement has been agreed to by the Commonwealth, State and Territory Governments and criteria has been incorporated into Victoria's forest management system through five Regional Forest Agreements.⁴¹

2.4 Victoria

2.4.1 Primary legislation

The legislative framework relating to the protection of Victoria's ecosystems is broad and complex. The key Acts, which are discussed throughout subsequent Chapters of this Report, are outlined in Table 2.1 below.

Table 2.1 Victorian legislation informing environmental management and protection

Legislation	Purpose	Features/mechanisms
<i>Flora and Fauna Guarantee Act 1988</i> (Vic)	Provides for the conservation and management of native Victorian flora and fauna.	<ul style="list-style-type: none"> Imposes a duty on public agencies and ministers to consider potential biodiversity impacts when exercising their functions. Provides for the listing of threatened species and ecological communities and potentially threatening processes. Establishes management processes and conservation and control measures to conserve and protect threatened species or communities, or to address threatening processes.
<i>Catchment and Land Protection Act 1994</i> (Vic)	Provides for the management and protection of water catchments and the control of noxious weeds and pest animals.	<ul style="list-style-type: none"> Provides for the establishment of catchment management authorities and regional catchment strategies. Establishes a system of controls on noxious weeds and pest animals that regulates their importation, trade, movement, keeping and release. Imposes obligations on landowners to prevent the spread of, and as far as possible, eradicate, any pest animals or noxious weeds occurring on their land.
<i>Wildlife Act 1975</i> (Vic)	Provides for the protection, conservation, sustainable management and use of wildlife.	<ul style="list-style-type: none"> Provides for the creation, management and enforcement of state wildlife reserves, nature reserves, wildlife management cooperative areas, prohibited areas and sanctuaries. Establishes the Authority to Control Wildlife permit system to enable the management and control of wildlife. Establishes an offence to kill, take, control or harm wildlife without a permit or licence. Provides for the granting of permits to conduct whale watching and dolphin and seal swim tours.

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Legislation	Purpose	Features/mechanisms
<i>Water Act 1989</i> (Vic)	Provides for the management of water resources, including their equitable use and conservation.	<ul style="list-style-type: none"> Establishes the functions and powers of catchment management authorities in relation to the management of waterways, floodplains and regional drainage. Defines the rights of the Crown, individuals and water corporations to water.
<i>Forests Act 1958</i> (Vic)	Provides for the management, protection and use of state forests.	<ul style="list-style-type: none"> Provides for the development of Forest Management Plans to maintain and improve State forests. Establishes obligations with respect to fire management within state forests, parks managed under the <i>National Parks Act 1975</i> (Vic) and protected public land. Provides for the following regulations governing the use of state forests: <ul style="list-style-type: none"> <i>Forests (Domestic Firewood) Regulations 2012</i> (Vic) <i>Forests (Fire Protection) Regulations 2004</i> (Vic) <i>Forests (Licences and Permits) Regulations 2009</i> (Vic) <i>Forests (Recreation) Regulations 2010</i> (Vic) <i>Forests (Tour Operator Licence Fee) Regulations 2011</i> (Vic)
<i>Climate Change Act 2017</i> (Vic)	Provides for the management of climate change risks and the transition to net zero carbon emissions.	<ul style="list-style-type: none"> Imposes a duty to consider climate change and emissions reduction targets in government policy formulation and decision-making. Establishes emissions reduction targets. Establishes a five-yearly, statewide climate change strategy. Provides for the development of Climate Change Adaptation Plans.
<i>Environment Protection Act 2017</i> (Vic)	Provides for the continuation and enhancement of the Environment Protection Authority and a general environmental duty for all Victorians.	<ul style="list-style-type: none"> Provides for the functions, powers and duties of the Environment Protection Authority to protect human health from pollution. Imposes a general environmental duty on all Victorians, as well as businesses, to mitigate the risk that activities will give rise to pollution that could harm human health or the environment.
<i>National Parks Act 1975</i> (Vic)	Provides for the protection, management and use of national and other protected areas.	<ul style="list-style-type: none"> Provides for the appointment of a National Parks Advisory Council to advise the Minister in relation to the administration of the Act. Requires the preparation of an annual report on the workings of the Act. Provides for the <i>National Parks Regulations 2013</i> (Vic) which prescribe activities including: <ul style="list-style-type: none"> preservation and protection of flora and fauna protection of structures and park facilities protection of water supply catchment areas safety, enjoyment, recreation and education of visitors proceedings of the National Parks Advisory Council and other advisory committees fees and charges for the use of park services, facilities and goods.

Legislation	Purpose	Features/mechanisms
<i>Planning and Environment Act 1987</i> (Vic)	Provides for the development, protection and use of land.	<ul style="list-style-type: none"> Establishes broad objectives, principles and rules governing the Victorian planning system. Provides for the objectives, preparation and amendment of the Victorian Planning Provisions and planning schemes. Establishes planning procedures and legal instruments. Defines the roles and responsibilities of the Minister, local government authorities, government departments, the community and other stakeholders in the planning system.
<i>Environmental Effects Act 1978</i> (Vic)	Provides for the assessment of proposed projects (works) that are capable of having a significant effect on the environment.	<ul style="list-style-type: none"> Empowers the Minister for Planning to require private and public development to undergo an environmental impact assessment process. Provides for the development of ministerial guidelines to prescribe a process for environmental impact assessments under the Act and to determine the type of projects which must undergo this process.
<i>Traditional Owner Settlement Act 2010</i> (Vic)	Provides for Victorian Government recognition of Traditional Owners.	<ul style="list-style-type: none"> Establishes an out-of-court settlement process for native title claims in exchange for withdrawing any future native title claims. Provides for settlement packages, which may include: <ul style="list-style-type: none"> a Recognition and Settlement Agreement to recognise a Traditional Owner group and their rights over Crown land a Land Agreement granting land in freehold title for cultural or economic purposes, or as Aboriginal title to be jointly managed in partnership with the State a Land Use Activity Agreement enabling Traditional Owners' input into activities on public land a Funding Agreement to enable Traditional Owner corporations to manage their obligations and undertake economic development activities a Natural Resource Agreement to recognise Traditional Owners' rights to take and use specific natural resources and provide input into the management of land and natural resources.
<i>Aboriginal Cultural Heritage Act 2006</i> (Vic)	Provides for the protection of Aboriginal cultural heritage.	<ul style="list-style-type: none"> Establishes the Victorian Aboriginal Heritage Council to advise the Minister for Aboriginal Affairs on cultural heritage management. Establishes Registered Aboriginal Parties, enabling First Nations' involvement in cultural heritage decision-making. Establishes the Victorian Aboriginal Heritage Register, cultural heritage management plans and cultural heritage permit processes to manage activities that impact Aboriginal cultural heritage. Provides for sanctions and penalties to prevent harm to Aboriginal cultural heritage.

Legislation	Purpose	Features/mechanisms
<i>Crown Land (Reserves) Act 1988</i> (Vic)	Provides for the reservation and use of Crown Land for various public purposes.	<ul style="list-style-type: none"> • Provides for preserving areas of ecological significance and the development of public utilities. • Provides for the management of reserved Crown lands through powers, licences, offences and penalties. • Provides for the following regulations informing the use of Crown land: <ul style="list-style-type: none"> – <i>Crown Land (Reserves) (Domestic Firewood) Regulations 2012</i> (Vic) – <i>Crown Land (Reserves) (Tour Operator Licence Fee) Regulations 2021</i> (Vic) – <i>Crown land (Reserves) (Nature Conservation Reserve) Regulations 2004</i> (Vic)
<i>Victorian Conservation Trust Act 1972</i> (Vic)	Provides for the acquisition, preservation and maintenance of areas that are ecologically significant and support the preservation of wildlife and native plants for public scientific and educational purposes.	<ul style="list-style-type: none"> • Provides for the establishment of Trust for Nature, a corporate body, which supports the preservation and conservation of ecologically significant habitat and native species. • Provides for the establishment of a conservation covenant program enabling landowners to permanently protect native vegetation on their properties.

Source: *Flora and Fauna Guarantee Act 1988* (Vic); *Catchment and Land Protection Act 1994* (Vic); *Wildlife Act 1975* (Vic); *Water Act 1989* (Vic); *Forests Act 1958* (Vic); *Climate Change Act 2017* (Vic); *Environment Protection Act 2017* (Vic); *National Parks Act 1975* (Vic); *Planning and Environment Act 1987* (Vic); *Environmental Effects Act 1978* (Vic); *Traditional Owner Settlement Act 2010* (Vic); *Aboriginal Cultural Heritage Act 2006* (Vic); *Crown Land (Reserves) Act 1988* (Vic); *Victorian Conservation Trust Act 1972* (Vic).

2.4.2 Key policies and strategies

Biodiversity 2037

In 2017, the Victorian Government launched Biodiversity 2037, a long-term plan for managing Victoria's biodiversity. It defines biodiversity as:

Biodiversity encompasses all components of the living world: the number and variety of plants, animals and other living things, including fungi and micro-organisms, across our land, rivers, coast and ocean. It includes the diversity of their genetic information, the habitats and ecosystems within which they live, and their connections with other life forms and the natural world.⁴²

Biodiversity 2037 acknowledges that the condition of Victoria's biodiversity is continuing to decline. It notes that over one third of Victoria's plant and animal species are of conservation concern and are classified as near-threatened, threatened, or rare. It recognises that the quality and extent of native species habitat continues to decrease and that habitat loss is a major threat to biodiversity, along with weeds, pest animals, changed fire and water regimes, and climate change. It concedes that biodiversity has

⁴² Department of Environment, Land, Water and Planning, *Protecting Victoria's Environment – Biodiversity 2037*, p. 4.

been 'historically under-valued and is not accounted for in the economy, yet it provides enormous benefit to society'.⁴³

Biodiversity 2037 sets two goals aimed at reversing ecosystem decline: Victorians value nature, and Victoria's natural environment is healthy. These are underpinned by a number of specific targets to be achieved by 2037, as shown in Figure 2.1.

Figure 2.1 Biodiversity 2037's goals and targets



Source: Victorian Government, *Protecting Victoria's Environment – Biodiversity 2037: Summary*, 2017, p. 1.

Biodiversity 2037 also establishes a series of priority actions to achieve these goals and targets.

⁴³ Victorian Government, *Protecting Victoria's Environment – Biodiversity 2037: Summary*, 2017, p. 2.

Table 2.2 Biodiversity 2037 priority actions

1. Deliver cost-effective results utilising decision support tools in biodiversity planning processes to help achieve and measure against the targets.	6. Embed consideration of natural capital into decision-making across the whole of government, and support industries to do the same.	11. Increase incentives and explore market opportunities for private landholders to conserve biodiversity.	16. Build capacity to increase Aboriginal participation in biodiversity management.
2. Increase the collection of targeted data for evidence-based decision-making and make all data more accessible.	7. Help to create more liveable and climate-adapted communities.	12. Adopt a collaborative biodiversity response planning approach to drive accountability and measurable improvement.	17. Deliver excellence in management of all land and waters.
3. Raise the awareness of all Victorians about the importance of the state's natural environment.	8. Better care for and showcase Victoria's environmental assets as world-class natural and cultural tourism attractions.	13. Support and enable community groups, Traditional Owners, non-government organisations and sections of government to participate in biodiversity response planning.	18. Maintain and enhance a world-class system of protected areas.
4. Increase opportunities for all Victorians to have daily connections with nature.	9. Establish sustained funding for biodiversity.	14. Engage with Traditional Owners and Aboriginal Victorians to include Aboriginal values and traditional ecological knowledge in biodiversity planning and management.	19. Adopt a whole-of-government approach to implementing the Plan.
5. Increase opportunities for all Victorians to act to protect biodiversity.	10. Leverage non-government investment in biodiversity.	15. Support Aboriginal access to biodiversity for economic development.	20. Establish a transparent evaluation process to report on progress towards delivering the Plan.

Source: Victorian Government, *Protecting Victoria's Environment – Biodiversity 2037: Summary*, 2017, p. 1.

Biodiversity 2037 frames this work as a responsibility shared across all levels of government, environmental organisations, research institutes and the broader community.⁴⁴ It prescribes a landscape-scale approach to biodiversity restoration aimed at balancing the management of ecosystems and ecological processes for the benefit of all species with targeted intervention to protect species of conservation concern.⁴⁵

The plan establishes a 'common measure' to guide biodiversity planning, target-setting and progress monitoring, known as 'Change in Suitable Habitat':

Change in Suitable Habitat considers the type, extent and configuration of habitat for a species, and the factors that influence how much a species can make use of this habitat. Change in Suitable Habitat is the increase in likelihood that a species will still exist at

⁴⁴ Department of Environment, Land, Water and Planning, *Protecting Victoria's Environment – Biodiversity 2037*, p. 13.

⁴⁵ *Ibid.*, p. 17.

a location at a future time (e.g. 50 years) in response to sustained management of relevant threats. It is expressed as the percentage increase in likelihood when comparing sustained management to no management⁴⁶

It also commits to the use of a Strategic Management Prospects tool to inform biodiversity decision-making. This tool synthesises expert estimates of the benefits of different management actions under climate change with consideration of the connections and spatial arrangement of different species to strategically rank possible management options for each species.⁴⁷

Biodiversity 2037 acknowledges that additional data and environmental monitoring is needed to inform the management and protection of biodiversity to reverse ecosystem decline.⁴⁸ Knowledge gaps and priorities for data collection and research are identified using the *Biodiversity Monitoring Framework*, developed in 2020.⁴⁹ Biodiversity 2037 also commits the Department of Environment, Land, Water and Planning to work with delivery partners to fill knowledge gaps through targeted data gathering, coordinating and sharing datasets, and ensuring that information is integrated across different environments.⁵⁰

The implementation of Biodiversity 2037 and progress towards its goals, targets and priority actions is being monitored and evaluated according to the *Biodiversity 2037 Monitoring, Evaluation, Reporting and Improvements Framework*. This framework describes key performance indicators for Biodiversity 2037 and establishes how they should be monitored.⁵¹ This process is being complemented by the Commissioner for Environmental Sustainability's five-yearly State of the Environment report, which will include an assessment of the Plan's progress towards its goals and targets.⁵²

State of the Environment 2018

In March 2019, the Victorian Commissioner for Environmental Sustainability published the *State of the Environment 2018* report (SoE 2018), 'an environmental report card that measures the health of Victoria's environment'.⁵³ The report informs environmental regulatory and policy development, decision-making and management in a number of ways. In particular, it:

- establishes a comprehensive scientific baseline of the condition of Victoria's environment through the assessment of 170 key biophysical and socio-economic indicators

⁴⁶ Ibid., p. 19.

⁴⁷ Ibid.

⁴⁸ Ibid., p. 22.

⁴⁹ Department of Environment, Land, Water and Planning, *Biodiversity Knowledge Framework: Summary*, 2020, p. 1.

⁵⁰ Department of Environment, Land, Water and Planning, *Protecting Victoria's Environment - Biodiversity 2037*, 2017, p. 22.

⁵¹ Ibid., pp. 21-22.

⁵² Department of Environment, Land, Water and Planning, *Protecting Victoria's Environment - Biodiversity 2037*, p. 52.

⁵³ Office of the Commissioner for Environmental Sustainability, *Victorian State of the Environment 2018 Report: Summary Report*, 2018, p. 3.

- highlights areas of environmental management that are working well and those that would benefit from improvement
- exposes gaps in environmental monitoring and research programs that would benefit from additional data collection
- makes 20 recommendations to the Victorian Government to ‘leverage effort and investment, build on current initiatives, target improvement in multiple environmental outcomes and focus on addressing the gaps required to deliver contemporary policy and legislative frameworks and targets’.⁵⁴

SoE 2018 is informed by the United Nations Sustainable Development Goals and the United Nations System of Environmental-Economic Accounting. It represents the first attempt in Australia to apply the Sustainable Development Goals to environmental reporting at the state and territory level.⁵⁵

At a public hearing, Dr Gillian Sparkes, Victoria’s Commissioner for Environmental Sustainability, informed the Committee that the report identified the protection and management of biodiversity as a ‘big issue’ and an area which would benefit from enhanced environmental monitoring and data collection:

We had 170 indicators assessed in the State of the Environment report. Thirty-five were assessed directly in the biodiversity chapter of the State of the Environment report—a total of 52 if you take into account other biodiversity-related indicators across other chapters of the report, such as forest, fire and land. Twenty-nine per cent were assessed as low performing and 40 per cent had poor quality data. If we look at where spatial information can improve our understanding and management of biodiversity, 30 of the 170 indicators could be improved through investment in spatial information and earth observation, with 37 per cent of those 30 relating to biodiversity indicators.⁵⁶

The Victorian Government issued its response to SoE 2018 in December 2020. It noted that its response is ‘driven by understanding what matters most to the community and by focusing work on delivering better environmental outcomes for all Victorians’.⁵⁷ It supported seven recommendations in full, two in part, 10 in principle and did not support one of the 20 recommendations.⁵⁸

Recommendations supported by the Victorian Government were concerned with improving the acquisition, quality, access and management of environmental data; enhancing specific policies or programs; and providing opportunities for community involvement in monitoring and caring for our environment.⁵⁹

⁵⁴ Ibid., pp. 3–5.

⁵⁵ Ibid., pp. 4–5.

⁵⁶ Dr Gillian Sparkes, Commissioner, Commissioner for Environmental Sustainability Victoria, Public hearing, Melbourne, 3 December 2020, *Transcript of evidence*, pp. 2–3.

⁵⁷ Victorian Government, *Victorian Government response to the State of the Environment 2018 report*, 10 December 2020, p. 6.

⁵⁸ Ibid.

⁵⁹ Ibid., p. 6.

The recommendation not supported related to the establishment of a pollen-monitoring network:

That Victoria's Chief Environmental Scientist, supported by relevant government agencies and research partners, lead the establishment of a contemporary pollen-monitoring network to enable community access to information on pollen levels in the air in a timely manner, through actions including increasing the number of locations monitored, the frequency of the monitoring, and automating the monitoring process.⁶⁰

While the Victorian Government acknowledged the benefits a pollen-monitoring network would deliver to individuals with hayfever, it felt that this benefit was already being delivered by an established pilot program.⁶¹

Policies and other documents

There are a wide range of Victorian policies, strategies and other documents which impact on biodiversity, including:

- *Victoria's Climate Change Strategy*—a five-yearly, statewide climate change strategy describing how the Victorian Government will work with businesses and the community to achieve interim carbon emissions reduction targets and adapt to the impacts of climate change.⁶²
- *Invasive Plants and Animals Policy Framework*—establishes the Victorian Government's approach to the management of existing and potentially invasive species.⁶³
- *Victorian Forestry Plan*—outlines the Victorian Government's commitment to transition native timber industry away from harvesting in state forests and towards plantation-based harvesting. It describes initiatives to support industry and affected regional communities.⁶⁴
- *Guidelines for the removal, destruction or lopping of native vegetation*—require land managers to apply for a permit before clearing native vegetation and outline a three-step approach to be adhered to, encompassing avoiding, minimising or offsetting destruction to native vegetation.⁶⁵

⁶⁰ Ibid., p. 12.

⁶¹ Ibid.

⁶² Department of Environment, Land, Water and Planning, *Climate Change Act 2017: Overview: Factsheet*, 2017; Department of Environment, Land, Water and Planning, *Victoria's Climate Change Strategy: Our pathway for reducing emissions and building resilience to the impacts of climate change*, 2021, <<https://www.climatechange.vic.gov.au/victorias-climate-change-strategy>> accessed 14 November 2021.

⁶³ Victorian Government, *Invasive Plants and Animals Policy Framework*, 2010, p. 5.

⁶⁴ Victorian Government, *Victorian Forestry Plan*, 2019.

⁶⁵ Department of Environment, Land, Water and Planning, *Guidelines for the removal, destruction or lopping of native vegetation*, Victorian Government, Melbourne, 2017, pp. 3, 24.

- *Safer Together: A new approach to reducing the risk of bushfire in Victoria*—the Victorian Government’s policy, and program of the same name, which aims to bring responsible agencies together to improve bushfire preparedness and reduce bushfire risks across private and public land.⁶⁶
- *Code of Practice for Bushfire Management on Public Land*—informs the management of bushfires by establishing two goals: to minimise the impact of fire on human life, communities and infrastructure; and to maintain or improve the resilience of natural ecosystems.⁶⁷
- *Kangaroo Harvest Management Plan 2021–2023*—permits the commercial harvesting of eastern grey and western grey kangaroos on private land in designated harvest zones within Victoria and guides sustainable harvesting practices.⁶⁸

Key policies and strategies relating to Traditional Owners are discussed in Chapter 3.

2.4.3 Government agencies

Managing and conserving Victoria’s biodiversity values is a responsibility shared by all levels of government. Table 2.3 describes the responsibilities of key Victorian Government agencies involved in environmental management.

Table 2.3 Roles of Victorian Government organisations in environmental management

Government body	Role
Department of Environment, Land, Water and Planning	Government agency responsible for the overarching governance and administration of ecosystems and biodiversity protection in Victoria. It is focused on achieving the following outcomes: <ul style="list-style-type: none"> • reduced impact of major bushfires and other emergencies on people, property and the environment • zero emission, climate-ready economy and community • healthy, resilient and biodiverse environment • reliable, efficient, accessible, safe and sustainable energy services • productive and effective land management • safe and sustainable water resources • a quality built environment • sustainable and effective local government.
Office of the Conservation Regulator	Office within the Department of Environment, Land, Water and Planning responsible for the oversight of compliance with environmental regulation. This includes in relation to native timber harvesting, fire prevention, use of public land, and wildlife and biodiversity.
Parks Victoria	A statutory authority responsible for managing 3,000 land and marine parks and reserves in Victoria which encompass 18% of land, 75% of wetlands and 70% of coastline. Parks and reserves are managed for the purposes of conservation, recreation, leisure, tourism or water transport.

⁶⁶ Victorian Government, *Safer Together: A new approach to reducing the risk of bushfire in Victoria*, Melbourne, 2015.

⁶⁷ Victorian Government, *Code of Practice for Bushfire Management on Public Land*, Melbourne, 2012, p. 1.

⁶⁸ Department of Environment, Land, Water and Planning, *Victorian Kangaroo Harvest Management Plan: 2021–2023*, Victorian Government, Melbourne, 2021, p. 2.

Government body	Role
Agriculture Victoria	Government agency responsible for growing and protecting profitable, sustainable agriculture across Victoria. This includes managing invasive plant and animal species under the <i>Invasive Species and Animals Policy Framework</i> and the <i>Catchment and Land Protection Act 1994</i> (Vic).
Victorian Environmental Assessment Council	Established under the <i>Victorian Environmental Assessment Council Act 2001</i> (Vic), the Council conducts investigations, assessments and provides advice as requested by the Victorian Government relating to the protection and ecologically sustainable management of the environment and natural resources of public land.
Commissioner for Environmental Sustainability	Appointed under the <i>Commissioner for Environmental Sustainability Act 2003</i> (Vic) to provide independent scientific reporting on the state of the natural environment and to encourage decision-making that facilitates ecologically sustainable development. Responsible for preparing: <ul style="list-style-type: none"> • a five-yearly State of the Environment report • a five-yearly State of the Marine and Coasts report • a five-yearly State of the Yarra and its Parklands report • a five-yearly State of the Forests report • an annual Strategic Audit Report for the implementation of environmental management by select agencies.
Environment Protection Authority	An independent statutory authority responsible for protecting human health and the environment by reducing the harmful effects of pollution and waste.
VicForests	A state-owned business responsible for the harvest, commercial sale and regeneration of native timber from Victoria's state forests.
Traditional Owner corporations	<p>Traditional Owner corporations have diverse roles and responsibilities in relation to environmental governance under different legislation, as well as other local, state and regional partnerships and consultation mechanisms.</p> <p>Six Traditional Owner corporations have been formally recognised as the Traditional Owners of Country in Victoria, in accordance with Recognition and Settlement Agreements with the Victorian Government, entered into under the <i>Traditional Owner Settlement Act 2010</i> (Vic).</p> <p>11 Traditional Owner corporations are recognised as Registered Aboriginal Parties for the purpose of undertaking functions relating to cultural heritage under the <i>Aboriginal Heritage Act 2006</i> (Vic). These are:</p> <ul style="list-style-type: none"> • Barengi Gadjin Land Council Aboriginal Corporation • Bunurong Land Council Aboriginal Corporation • Dja Dja Wurrung Clans Aboriginal Corporation • Eastern Maar Aboriginal Corporation • First Peoples of the Millewa-Mallee Aboriginal Corporation • Gunaikurnai Land and Waters Aboriginal Corporation • Gunditj Mirring Traditional Owners Aboriginal Corporation • Taungurung Land and Waters Council Aboriginal Corporation • Wadawurrung Traditional Owners Aboriginal Corporation • Wurundjeri Woi Wurrung Cultural Heritage Aboriginal Corporation • Yorta Yorta Nations Aboriginal Corporation.

Government body	Role
Catchment management authorities	<p>Responsible for the integrated planning and coordination of land, water and biodiversity management in each of Victoria's 10 catchment and land protection regions:</p> <ul style="list-style-type: none"> • Corangamite • East Gippsland • Glenelg Hopkins • Goulburn Broken • Mallee • North Central • North East • Port Phillip and Westernport • West Gippsland • Wimmera.

Sources: VicForests, *Our organisation*, <<https://www.vicforests.com.au/about-vicforests/our-organisation>> accessed 16 November 2021; Environment Protection Authority, *About the EPA*, <<https://www.epa.vic.gov.au/about-epa>> accessed 16 November 2021; Department of Environment, Land, Water and Planning, *Catchment Management Framework*, <<https://www.water.vic.gov.au/waterways-and-catchments/our-catchments/catchment-management-framework>> accessed 16 November 2021; Victorian Aboriginal Heritage Council, *About Registered Aboriginal Parties*, <<https://www.aboriginalheritagecouncil.vic.gov.au/victorias-registered-aboriginal-parties>> accessed 16 November 2021; Commissioner for Environmental Sustainability Victoria, *About*, 2021, <<https://www.ces.vic.gov.au/about>> accessed 15 November 2021; Victorian Environmental Assessment Council, *About us*, <<https://www.veac.vic.gov.au/about-us/what-we-do>> accessed 16 November 2021; Parks Victoria, *About us*, <<https://www.parks.vic.gov.au/about-us>> accessed 16 November 2021; Victorian Government, *About the Conservation Regulator*, <<https://www.vic.gov.au/about-us-conservation-regulator>> accessed 16 November 2021; Agriculture Victoria, *Our role*, <<https://agriculture.vic.gov.au/about/our-role>>; Department of Environment, Land, Water and Planning, *What we do*, <<https://www.delwp.vic.gov.au/our-department/what-we-do>> accessed 16 November 2021.

2.5 Local government authorities

As discussed throughout this Chapter, the management and protection of Victorian biodiversity is a responsibility shared across all levels of government, non-government organisations, business and the community more broadly. Local government authorities lead this work at the community level. Protecting environmental values is a logical extension of their responsibility to administer local planning schemes.

Local government authorities are responsible for making most of the planning decisions that affect their municipality. This work requires them to consider potential impacts on biodiversity, such as the destruction of native vegetation. For example, they decide whether or not to grant a planning permit for a development, and what permit conditions are appropriate to protect the environment. Decisions are made in accordance with local planning schemes, based on the Victorian Planning Provisions.⁶⁹

All local planning schemes incorporate guidance documents to inform this important work, such as the *Guidelines for the removal, destruction or lopping of native vegetation*. These Guidelines require developers to avoid or minimise loss of vegetation and offset the environmental impacts of habitat destruction which can't be avoided.⁷⁰

⁶⁹ Department of Environment, Land, Water and Planning, *Local planning information*, <<https://www.planning.vic.gov.au/guide-home/local-planning-information>> accessed 7 October 2021.

⁷⁰ Department of Environment, Land, Water and Planning, *Native vegetation*, <<https://www.environment.vic.gov.au/native-vegetation/native-vegetation>> accessed 7 October 2021.

Local government authorities also lead proactive initiatives aimed at educating and engaging landowners and the broader community in efforts to conserve and improve biodiversity values around their municipalities. For example, initiatives being pursued by the Shepparton City Council were highlighted at a public hearing in that municipality. Sharon Terry, Manager Environment at Greater Shepparton City Council, gave an overview of the Council's One Tree Per Child project. This project is delivering the dual benefits of increasing native vegetation in urban environments and fostering young people's connection to nature:

One of our most significant from a biodiversity point of view is the One Tree Per Child project, which has evolved from our National Tree Day project. The One Tree Per Child project started off in 2016 and we had a target of planting 16,664 Indigenous plants for each child or each person under the age of 18 in Greater Shepparton. Each year since then we have incrementally increased that by 10 per cent. So this year our target is almost 25,000 plants. And to date we have planted over 90,000 Indigenous trees, shrubs, grasses and forbs and herbs as well. Those plants have gone into urban environments, but also our native open space and we have restricted that just to council managed land for a number of reasons.⁷¹

In a submission to the Inquiry, Nillumbik Shire Council described environmental advisory services provided by the Council and noted that it facilitates volunteering opportunities in local conservation reserves. It said that during the last 12 to 18 months, it has engaged with 22 'Friends' groups to arrange opportunities for volunteers to contribute to the maintenance of local reserves. It estimated the annual value of this volunteer work at approximately \$540,000. In addition, the Council provided 211 land owners with advice relating to the control of foxes, rabbits and deer, blackberries and other weeds, erosion management, revegetation projects, pasture management and sustainable agriculture.⁷²

In lieu of a whole-of-government strategy on green infrastructure, local government authorities have been driving this agenda and pioneering new approaches to sustainable urban development.⁷³ For example, Shepparton City Council is investing in expanding its suburban trees through an 'urban forest strategy', and is leading sustainable urban water design through the inclusion of wetlands in housing developments to treat storm water before it enters river systems.⁷⁴

Local government authorities are also responsible for managing, protecting and restoring biodiversity values in a range of smaller conservation reserves, parks and green spaces. For example, Hume City Council owns and maintains 95 conservation reserves across 704 hectares of land, providing habitat for over 471 native plant and 131 native animal species. In the 2019–20 financial year, management of these areas cost

⁷¹ Sharon Terry, Manager Environment, Greater Shepparton City Council, Public hearing, Shepparton, 28 April 2021, *Transcript of evidence*, p. 23.

⁷² Nillumbik Shire Council, *Submission 392*, p. 16.

⁷³ Department of Environment, Land, Water and Planning, *Protecting Victoria's Environment – Biodiversity 2037*, p. 32.

⁷⁴ Sharon Terry, *Transcript of evidence*, p. 23.

over \$2.1 million. Hume City Council noted that the ‘community values this investment as it recognises the important and continuing role that local government can play in biodiversity conservation’.⁷⁵

Hume City Council stated that local government authorities cooperate with Traditional Owners on many biodiversity issues. It noted by way of example that it is in the process of establishing a formal land management partnership with the Wurundjeri Woi Wurrung Cultural Heritage Aboriginal Corporation.⁷⁶

Lastly, local government authorities have important legislated responsibilities for climate change adaptation to increase the resilience of, and protect, Victorian biodiversity values. Under s 9(2)(c) of the *Local Government Act 2020* (Vic), local government authorities are required to ‘promote the economic, social and environmental sustainability of the municipal district, including mitigation and planning for climate change risks’.⁷⁷ Local government authorities around Victoria are already undertaking this work. For example, Brimbank City Council has adopted the *Brimbank Climate Emergency Plan 2020–2025* and planned transitional actions through the *Transforming Brimbank - Environmental Agenda*.⁷⁸ Similarly, Nillumbik City Council is pursuing practical measures to increase the resilience of biodiversity within its municipality:

Nillumbik Council is already actively undertaking biodiversity adaptation actions such as managing and restoring habitat connectivity through projects such as Rivers to Ranges; managing ecosystem processes such as facilitating the dispersal of the Charming Spider Orchid and encouraging positive land use changes for biodiversity through providing an advisory service for residents together with the Council’s Land Management Incentive Program grants.⁷⁹

The Council is also seeking to facilitate local business support for climate change adaptation through the development of a ‘Biodiversity Across Boundaries advocacy prospectus’. This prospectus will outline ‘investment opportunities to help protect biodiversity, enhance habitat and build climate resilient landscapes across Nillumbik and North-East Melbourne’.⁸⁰

The Committee acknowledges the significant leadership role undertaken by local government authorities in managing and restoring Victorian biodiversity. Local government efforts and achievements are highlighted throughout the Report.

⁷⁵ Hume City Council, *Submission 736*, pp. 1–2.

⁷⁶ *Ibid.*, p. 4.

⁷⁷ Department of Environment, Land, Water and Planning, *Local Government Climate Change Adaptation Roles and Responsibilities under Victorian Legislation: Guidance for local government decision-makers*, 2020, p. 10.

⁷⁸ Brimbank City Council, *Submission 926*, p. 3.

⁷⁹ Nillumbik Shire Council, *Submission 392*, p. 8.

⁸⁰ *Ibid.*, p. 22.

3

First Nations and biodiversity

This Chapter discusses the centrality of biodiversity to First Nations ways of knowing, and the impacts of the ongoing decline of biodiversity on Country. It outlines the current legislative and policy framework for Traditional Owner land and water rights in Victoria and highlights some of the mechanisms through which Traditional Owners can care for Country.¹

This Chapter is general in nature and does not speak on behalf of First Nations or Traditional Owner groups, and is not representative of the views of all groups. It instead draws attention to some of the evidence received by the Committee.

The Committee recognises the importance of ensuring that Traditional Owner voices are central in all conversations regarding biodiversity. For this reason, Traditional Owner views and recommendations for change are incorporated throughout the report rather than solely concentrated in one Chapter. This Chapter introduces topics and includes references to more detailed discussion in other parts of the report.

The Committee hopes that these views will be heard, supported and incorporated into future legislative and policy action undertaken by the Victorian Government.

3.1 Importance of Country

Throughout the Inquiry, First Nations groups told the Committee about the importance of biodiversity and healthy land and waters. This is an interconnected, holistic notion of Country that encompasses all living species as well as water and landscapes.

Gunditj Mirring Traditional Owners Aboriginal Corporation stated in its submission: 'Our ancestors understood the connection between all living things on Mirring [Country] and knew that to maintain the delicate balance all species needed to be looked after.'² Dja Dja Wurrung Clans Aboriginal Corporation similarly explained the connection between these elements:

The Dja Dja Wurrung world view is to see ourselves as part of Country, we are embedded in Country, we are Country just as our Ancestors and Murrups (spirits) are also part of Country. Our Ancestors and Murrups including plants and animals, from the smallest to the largest, Soil, gatijin (water) and wi (fire), are all a part of our living landscape. They hold our knowledge they hold our Lore.³

1 Throughout this report, the term Traditional Owners is used to refer to First Nations groups who hold traditional rights and interests over particular Country.

2 Gunditj Mirring Traditional Owners Aboriginal Corporation, *Submission 908*, p. 1.

3 Dja Dja Wurrung Clans Aboriginal Corporation, *Submission 635*, p. 4.

Traditional Owner groups described how this understanding of Country also encompasses cultural obligations in terms of care and restoration. For example, Billy Briggs, Forestry Project Officer at Eastern Maar Aboriginal Corporation, outlined at a public hearing the connection between belonging and care for Country:

we as Aboriginal people, we do not own country—we belong to it. It is like if you have children, you do not own your children, but they belong to you, so they are a part of you. You care for your children, and when you get older your children are going to look after you. It is the same sort of scenario with country.⁴

Matthew Shanks, Strategic Advisor, Cultural and Natural Resource Management at Taungurung Land and Waters Council Aboriginal Corporation explained these obligations for Taungurung people:

The Taungurung people have been custodians of Country for countless generations, undertaking our cultural obligations to care for Country and ensuring the health of Country as if she was one of our own kin.⁵

Traditional Owners effectively managed Country throughout significant events and changes to landscapes in the period prior to colonisation. Gunditj Mirring Traditional Owners Aboriginal Corporation described this in its submission:

The 59 Clans that made up the Gunditjmara Nation sustainably managed Mirring for thousands of years. During this time there were major events that changed Mirring, such as, volcanoes erupting, sea levels rising and falling, floods, droughts and bushfires. These major events had huge impacts on our ancestors, but they always found a way to not only survive, but thrive.⁶

Dja Dja Wurrung Clans Aboriginal Corporation similarly told the Committee of how Dja Dja Wurrung people had carried out these obligations:

We managed djandak [Country] sustainably for millennia through following our Lore and ensuring we met our Obligations to care for djandak. Through taking this approach we not only enabled species to live through massive changes in climate, volcanic eruptions and massive shifts in ecosystems all whilst nurturing a productive and prosperous environment.⁷

The Victorian Government has recognised the inherent connection of First Nations groups to Country and the ways in which this influences land and water management. In its submission, the Department of Environment, Land, Water and Planning (DELWP) outlined its understanding of Traditional Owner connections to Country and the many social, cultural, health and ecological implications:

⁴ Billy Briggs, Forestry Project Officer, Eastern Maar Aboriginal Corporation, Public hearing, Via videoconference, 16 June 2021, *Transcript of evidence*, p. 37.

⁵ Matthew Shanks, Strategic Advisor, Cultural & Natural Resource Management, Taungurung Land and Waters Council Aboriginal Corporation, Public hearing, Shepparton, 27 April 2021, *Transcript of evidence*, p. 22.

⁶ Gunditj Mirring Traditional Owners Aboriginal Corporation, *Submission 908*, p. 1.

⁷ Dja Dja Wurrung Clans Aboriginal Corporation, *Submission 635*, p. 3.

Victorian Traditional Owners and Aboriginal people aspire to self-determination and greater involvement in the management of their traditional lands (Country). Traditional Owners are the custodians of their traditional lands and as such, assert it is both their right and their duty to maintain and restore the health and wellbeing of Country, including its flora and fauna and other ecosystem values such as waterway health, riparian and other landscapes. These obligations connect across communities and language groups, extending to downstream communities, throughout catchments and over connected aquifer and groundwater systems. Indeed, many Traditional Owner Groups equate the health and wellbeing of their people with that of Country and see the two aspects as inextricably intertwined.

There is a strong alignment between place and water for Traditional Owners. For example, 95% of the 35,000 Aboriginal places and sites recorded on the Victorian Aboriginal Heritage Register occur within one kilometre of a waterway or water body and 30% are within 100 metres. For tens of thousands of years, Aboriginal people have been stewards of waterways, managing these sensitive ecological systems through drought and flood. Traditional Owners have always had a cultural obligation to look after water and share it in a pure state down the river complex and have done so using ceremony and the deep knowledge passed down through the generations.⁸

3.1.1 Biodiversity decline

In line with the value of Country outlined above, and the inherent and intangible connection between people, land and water, the decline of Victoria's biodiversity has a significant impact for First Nations groups.

Dja Dja Wurrung Clans Aboriginal Corporation stated in its submission that: 'Ecosystem decline has been occurring since colonisation, dispossession and invasion of our land.'⁹ The Corporation advocated for the 'moral impacts of the continuing decline' to be addressed, including in relation to: 'extinction of Bunjil's creations including Wi (fire), Gatjin (water) and djandak (Country), the knowledge, places and Murrup (spirits) connected to these and Djaara (people) who are intrinsically connected to these'.¹⁰

Wathaurong Aboriginal Corporation noted the decline in health of Country following European settlement. The reasons for this decline include the introduction of non-native species, grazing of sheep and cattle that destroyed the crops of Wadawurrung Ancestors, diversion of waterways and the destruction, shooting of native animals and removal of native flora. It also highlighted the impacts of forced dispossession:

and, of course, the forced removal, land dispossession and the massacring of Wadawurrung People – severely damaging the spirit, connections and traditional practices that carefully nurtured and managed ecosystems for tens of thousands of years.¹¹

⁸ Department of Environment, Land, Water and Planning, *Submission 927*, p. 12.

⁹ Dja Dja Wurrung Clans Aboriginal Corporation, *Submission 635*, p. 3.

¹⁰ *Ibid.*, p. 4.

¹¹ Wathaurong Aboriginal Corporation, *Submission 89*.

At a public hearing, Monica Morgan, Chief Executive Officer of Yorta Yorta Nation Aboriginal Corporation, described the impacts of land clearing and biodiversity loss on Yorta Yorta Country:

In Victoria, our Yorta Yorta Country, 2 per cent of our Country is actually what you would call bushland, national parks, Crown land. The rest of it is cleared farm land. So, the biodiversity that is within our Country is absolutely at zero per cent.

And so, for Yorta Yorta people, our Country, our culture, our people are united with biodiversity. Our totems, our being, and who we are as a people are reflected in those. So, for instance, my uncle told us about our connection to the broлга. It no longer comes into the Barmah National Park, in many of the national parks anymore.¹²

Gunditj Mirring Traditional Owners Aboriginal Corporation outlined in its submission the extent of the impacts of dispossession of Country on Gunditjmarra people, including on obligations to care for landscapes and species. It described this loss as ‘devastating to Mirring, and to Gunditjmarra’, but stated that responsibilities to Mirring remain.¹³ The submission outlined the extent and diversity of these effects:

The effects that this has on our people is profound and is as complex and interconnected as the ecosystems we’re trying to protect. We consider our totem as family, so when we can’t hear or see them in the landscape it’s felt as a great loss. The species we hold in high regard all have needs in regards to food, shelter and safety. Gunditjmarra see Mirring as an extension of ourselves, so if it’s not healthy, neither are we. We belong to Mirring and as such have a role to play in the various ecosystems, just like any of the other species that reside within.

The decline in ecosystems and associated biodiversity has numerous effects on Gunditjmarra people ... our hunting and agriculture and aquaculture practices are significantly affected. The associated activities regarding these all play an important role in our ability to practice Culture, continue connection to Mirring and each other through kinship. It impacts on ability to use our Dhauwurd Wurrung language that we are currently rematriating. Some of the species that we have our own language for no longer appear in our landscape. Our Elders, who have witnessed this decline over long period of time feel great loss. Our children are unable to build connection with culturally significant species that will shape who they will become and how they will fulfil their obligations to Mirring. Our people who live off Mirring also feel the sense of loss through the noticeable changes with each visit home.¹⁴

The submission also described how rising sea levels would affect the accessibility of coastal hunting grounds and important cultural heritage sites, such as shell middens, camping grounds and Dreaming places. It noted competing pressures around water

¹² Monica Morgan, Chief Executive Officer, Yorta Yorta Nation Aboriginal Corporation Public hearing, Shepparton, 27 April 2021, *Transcript of evidence*, p. 3.

¹³ Gunditj Mirring Traditional Owners Aboriginal Corporation, *Submission 908*, p. 1.

¹⁴ *Ibid.*, pp. 2-3.

allocations which impact Mirring, as well as the loss of connectivity of forests which allows animals to ‘move safely between feeding grounds and to find water’.¹⁵

At a public hearing, Erin Rose, Budj Bim World Heritage Executive Officer at Gunditj Mirring Traditional Owners Aboriginal Corporation, explained that endangered volcanic plains and native grasslands are important for cultural reasons and that these are under significant threat. She highlighted the changes to water management which affect cultural use of water and impact fish species such as the kooyang (short-finned eel).¹⁶

Matthew Shanks from Taungurung Land and Waters Council Aboriginal Corporation described the plants and animals that had been diminished or lost on Taungurung Country, with wide-reaching impacts:

For the Taungurung, a staple plant food was the Mirnong or Yam Daisy, which provided a reliable source of carbohydrate. Mirnong and other tubers are quite rare to find in our river flats and flood plains that are now over-compacted and utilised for mono-cultural cropping or grazing ... The Cherry Balert was a valuable food source but is rarer to find on Taungurung Country due to land clearing and forestry activities and when they are found, they are fruiting for a shorter season. Wattle seed, collected by our community for a variety of food and medicinal reasons are less abundant year after year and medicinal species were often found lining waterways and billabongs. With the increase of grazing and cropping, the conditions of these species has decreased dramatically.

One of my Elders who has used and relied on Old Man Weed and River Mint for toothaches and other pain relief is unable to find them in places she has harvested for decades often due to the impact cattle and sheep have had on stream beds and the drainage of swamps and billabongs due to irrigation and damming, drastically altering the natural flow of water on Country. Barramul, or emu, was found roaming open plains and open lands of Taungurung Country and was a source of food for our people.

Now Barramul is rarely found on Taungurung Country except in the north west due to habitat destruction of various forms. Emu play a key role on Country due to the vast distances they can travel, spreading seed and their scat. Returning emu to Country is an objective the Taungurung nation seeks to achieve in the future. Emu’s one of our major totems.¹⁷

In its submission to the Inquiry, DELWP acknowledged many of the impacts of biodiversity decline described by Traditional Owners. It highlighted some of the ways in which these impacts affect the enjoyment of Traditional Owner rights and interests, including to:

- enjoy their distinctive culture and identity;
- maintain their spiritual, material and economic relationship with the land and its natural resources;

¹⁵ Ibid., p. 3.

¹⁶ Erin Rose, Budj Bim World Heritage Executive Officer, Gunditj Mirring Traditional Owners Aboriginal Corporation, Public hearing, Via videoconference, 16 June 2021, *Transcript of evidence*, pp. 1-2.

¹⁷ Matthew Shanks, *Transcript of evidence*, p. 22.

- access and remain on the land;
- camp on the land;
- use and enjoy the land;
- take natural resources on, or depend on the land;
- conduct cultural and spiritual activities on the land; and
- protect places and areas of importance on the land.¹⁸

The submission noted that climate change threatened to destroy important sites of cultural and spiritual importance, due to hotter temperatures, increased and more severe flooding, soil erosion, drought and bushfire. It described the ‘loss of Aboriginal places and the resulting loss of history, culture and heritage’ as ‘detrimental to all Victorians’.¹⁹

FINDING 1: Traditional Owners have intrinsic connection and belonging to Country. The impacts of biodiversity decline, as observed by Traditional Owner groups, are significant and ongoing. Ensuring that Traditional Owners have a major role in caring for, and healing, Country is critical.

3.2 Land and water rights

The *Charter of Human Rights and Responsibilities Act 2006* (Vic) recognises the cultural rights of Aboriginal persons, including their enjoyment of identity and culture, and the maintenance of relationships with the land and waters and other resources with which they have connection under traditional law and customs.²⁰ Land and water rights are also recognised in a number of other ways, including through legislative and policy frameworks.

The following sections provide an overview of some of the key legislative and policy mechanisms that seek to facilitate Traditional Owner land and water rights in Victoria. These include recognition and settlement agreements, cultural heritage management, various policies and future treaty processes.

3.2.1 Recognition and settlement

The *Traditional Owner Settlement Act 2010* (Vic) (TOS Act) established an out-of-court native title settlement regime, through which First Nations Peoples can negotiate with the Victorian Government to access a number of agreements and rights to Country.

¹⁸ Department of Environment, Land, Water and Planning, *Submission 927*, p. 13.

¹⁹ Ibid.

²⁰ *Charter of Human Rights and Responsibilities Act 2006* (Vic) s 19.

The overarching agreement entered into is a Recognition and Settlement Agreement, with a number of additional agreements which may form part of a settlement package:

- Land Agreement—facilitates the handing back of public land, such as parks and reserves, to a Traditional Owner group. This land is usually subject to joint management arrangements by Traditional Owners and the Victorian Government.²¹
- Land Use Activity Agreement—establishes a mechanism for consulting and negotiating with Traditional Owners in relation to activities that have a significant impact on Traditional Owner rights on public land within their settlement area.²²
- Natural Resource Agreement—facilitates Traditional Owner access to, and use of, natural resources within a settlement area. This could include, for example, rights to access the land, hunt, camp or conduct cultural activities.²³
- Funding Agreement—provides for funding to be granted to a Traditional Owner group in order to give effect to a Recognition and Settlement Agreement. For example, through the employment of staff and the establishment of consultation processes.²⁴

At the time of writing, the Victorian Government had finalised TOS Act settlements with six Traditional Owner groups: Dja Dja Wurrung, Gunaikurnai, Gunditjmara, Taungurung, Wotjobaluk, Jaadwa, Jadawadjali, Wergaia and Yupagalk, and Yorta Yorta peoples.²⁵

The state biodiversity plan, *Protecting Victoria's Environment – Biodiversity 2037* (Biodiversity 2037), notes the Victorian Government's expectations for the future of native title determinations and TOS Act settlements:

It is a basic human right for Traditional Owners and Aboriginal Victorians to practise their culture, and to enjoy the economic benefits that flow from healthy ecosystems. Over time it is expected that most of the state will be covered by native title determinations and/or settlement agreements that recognise the special relationship of Traditional Owners with their lands and waters, and that recognise their right to participate as equal partners in Victoria's management of natural resources.²⁶

3.2.2 Cultural heritage

The *Aboriginal Heritage Act 2006* (Vic) provides for a system of protection of Aboriginal cultural heritage, which is the 'knowledge and lore, practices and people, objects and places that are valued, culturally meaningful and connected to identity and

²¹ See, *Traditional Owner Settlement Act 2010* (Vic) pt 2 div 2. Land is granted as either Aboriginal title or estate in fee simple. Land granted as Aboriginal title, and some land granted as fee simple, is to be jointly managed with the Victorian Government in conjunction with a Traditional Owner Land Management Agreement, entered into in accordance with the *Conservation, Forests and Lands Act 1987* (Vic).

²² *Ibid.*, pt 4 div 2.

²³ *Ibid.*, pt 6 div 2–3.

²⁴ *Ibid.*, pt 5.

²⁵ Department of Environment, Land, Water and Planning, *Agreements with Traditional Owners*, 14 July 2021, <<https://www.forestsandreserves.vic.gov.au/joint-management/agreements-with-traditional-owners>> accessed 3 September 2021.

²⁶ Department of Environment, Land, Water and Planning, *Protecting Victoria's Environment – Biodiversity 2037*, 2017, p. 5.

Country'.²⁷ Under the Act, Aboriginal organisations can be appointed as Registered Aboriginal Parties (RAPs), granting them certain decision-making responsibilities in relation to the protection of Aboriginal cultural heritage for an area they speak for.

The Aboriginal Heritage Council, which is made up of Traditional Owner groups, appoints RAPs on the basis of connection to Country in a particular area. Traditional Owners who have negotiated a TOS Act settlement are automatically registered as the RAP of their settlement area. However, other Traditional Owner groups that do not have a TOS Act settlement can also be recognised as a RAP, provided that their RAP area does not overlap with land subject to a TOS Act settlement.²⁸

There are currently 11 RAPs, covering approximately 75% of the state:

- Barengi Gadjin Land Council Aboriginal Corporation
- Bunurong Land Council Aboriginal Corporation
- Dja Dja Wurrung Clans Aboriginal Corporation
- Eastern Maar Aboriginal Corporation
- First People of the Millewa Mallee Aboriginal Corporation
- Gunaikurnai Land and Waters Aboriginal Corporation
- Gunditj Mirring Traditional Owners Aboriginal Corporation
- Taungurung Land and Waters Council Aboriginal Corporation
- Wadawurrung Traditional Owners Aboriginal Corporation
- Wurundjeri Woi Wurrung Cultural Heritage Aboriginal Corporation
- Yorta Yorta Nation Aboriginal Corporation.²⁹

3.2.3 Policy

There are various Victorian policies that interact with Aboriginal land and water rights. These are discussed throughout the report. Some of the key policies include:

- *Victorian Aboriginal Affairs Framework 2018–2023*—the Victorian Government’s overarching policy for working with Aboriginal Victorians, which sets out whole-of-government ‘enablers and principles’ for self-determination and commitment to structural and systemic change.³⁰

²⁷ Victorian Aboriginal Heritage Council, *Aboriginal Cultural Heritage*, 31 March 2021, <<https://www.aboriginalheritagecouncil.vic.gov.au/aboriginal-heritage>> accessed 3 September 2021.

²⁸ Victorian Aboriginal Heritage Council, *Become a Registered Aboriginal Party in Victoria*, 23 July 2020, <<https://www.aboriginalheritagecouncil.vic.gov.au/become-registered-traditional-owner-victoria>> accessed 3 September 2021.

²⁹ Victorian Aboriginal Heritage Council, *Victoria’s current Registered Aboriginal Parties*, 2021, <<https://www.aboriginalheritagecouncil.vic.gov.au/victorias-current-registered-aboriginal-parties>> accessed 18 October 2021.

³⁰ Department of Premier and Cabinet, *Victorian Aboriginal Affairs Framework 2018–2023*, Victorian Government, Melbourne, 2018.

- *Self-Determination Reform Framework*—the framework guides public sector work to enable self-determination, in conjunction with the *Victorian Aboriginal Affairs Framework 2018–2023*.³¹
- *Pupangarli Marnmarnepu ‘Owning Our Future’ Aboriginal Self-Determination Reform Strategy 2020–2025*—in line with the above frameworks, DELWP released this strategy to enable Aboriginal self-determination across its policy areas, including through partnerships between DELWP staff, Traditional Owners and Aboriginal Victorians.³²
- *Victorian Traditional Owner Cultural Fire Strategy* (Cultural Fire Strategy)—articulates Traditional Owner aspirations in relation to cultural burning and provides policy direction across government fire and land management agencies to support Traditional Owners to undertake cultural burning on Country.³³
- *Victorian Traditional Owner Cultural Landscapes Strategy* (Cultural Landscapes Strategy)—developed by Traditional Owners, with support from DELWP and Parks Victoria, the Strategy establishes a framework and actions for planning and managing Country in line with cultural obligations.³⁴
- *Water for Victoria*—the state water policy recognises Aboriginal values in water and seeks to support greater participation in water planning and management frameworks. The Victorian Aboriginal Water Program, a partnership between Traditional Owners and DELWP, delivers a number of actions under the plan, and facilitates participation in waterway management as well as reconnection to water for cultural, economic, customary and spiritual purposes.³⁵
- *Traditional Owner Game Management Strategy*—aims to ensure the rights and interests of Traditional Owners are facilitated through the management of declared game species.³⁶

In terms of biodiversity policy, Biodiversity 2037 acknowledges ‘the fundamental connection between the rights and wellbeing of Traditional Owners and Aboriginal Victorians and the health of the natural environment’. It recognises Traditional Owners’ cultural, spiritual and economic connections to land, biodiversity and resources, and obligations to manage traditional lands and waters.³⁷ Biodiversity 2037 identifies three key priority actions relating to biodiversity and Traditional Owners:

- Priority 14—Engage with Traditional Owners and Aboriginal Victorians to include Aboriginal values and traditional ecological knowledge in biodiversity planning and management.

31 Department of Premier and Cabinet, *Self-Determination Reform Framework*, Victorian Government, Melbourne, 2019.

32 Department of Environment, Land, Water and Planning, *Pupangarli Marnmarnepu ‘Owning Our Future’: Aboriginal Self-Determination Reform Strategy 2020–2025*, 2019.

33 Victorian Traditional Owner Cultural Fire Knowledge Group, *Victorian Traditional Owner Cultural Fire Strategy*, 2019.

34 Victorian Traditional Owners, *Victorian Traditional Owner Cultural Landscapes Strategy*, Victorian Government, 2021.

35 Department of Environment, Land, Water and Planning, *Water for Victoria: Water plan*, Victorian Government, 2016, Chapter 6; Department of Environment, Land, Water and Planning, *The Aboriginal Water Program*, 26 May 2021, <<https://www.water.vic.gov.au/aboriginal-values/the-aboriginal-water-program>> accessed 3 September 2021.

36 *Traditional Owner Game Management Strategy*, Victorian Government, 2021.

37 Department of Environment, Land, Water and Planning, *Protecting Victoria’s Environment – Biodiversity 2037*, pp. 5, 42.

- Priority 15—Support Aboriginal access to biodiversity for economic development.
- Priority 16—Build capacity to increase Aboriginal participation in biodiversity management.³⁸

In its submission, DELWP advised that implementation of Biodiversity 2037, alongside other government initiatives, has led to progress in these priority areas. The submission stated that a key consideration during implementation had been on bringing Traditional Owner voices to the forefront:

A particular focus has been around genuine engagement with Traditional Owners around biodiversity and their aspirations for Country, joint planning including through Biodiversity Response Planning and working together to bring traditional knowledge into broader biodiversity planning and priority setting.³⁹

3.2.4 Treaty

Victoria's ongoing treaty process is likely to have impacts for Traditional Owner land and water rights in the future. While there is no determined scope of future treaty or treaties, these could include the enhancement of existing rights or laws, and the transfer of decision-making power and resources to facilitate greater self-determination.⁴⁰

The Victorian Government committed to discussing treaty with First Nations in February 2016, followed by a two-year period of consultation and engagement with First Nations communities.⁴¹ In late 2018, the *Advancing the Treaty Process with Aboriginal Victorians Act 2018* (Vic) (Advancing the Treaty Process Act) was enacted to progress work towards treaty, including through facilitating an Aboriginal Representative Body to develop elements to support future treaty negotiation processes.⁴²

In December 2019, the First Peoples' Assembly of Victoria was declared to be the Aboriginal Representative Body in accordance with the Advancing the Treaty Process Act. Since its establishment, the Assembly has worked with the Victorian Government to develop a treaty negotiation framework, self-determination fund and an independent Treaty Authority. Once this process is complete, treaty negotiations will commence between the Victorian Government and First Nations groups.⁴³

³⁸ Ibid., p. 60.

³⁹ Department of Environment, Land, Water and Planning, *Submission 927*, p. 13.

⁴⁰ Aboriginal Victoria, *Treaty process*, 2020, <<https://www.aboriginalvictoria.vic.gov.au/treaty-process>> accessed 8 September 2021.

⁴¹ First Peoples' Assembly of Victoria, *The Treaty journey so far*, 2020, <<https://www.firstpeoplesvic.org/about/the-treaty-journey-so-far>> accessed 8 September 2021; Hamish Fitzsimmons, 'Victorian Government to begin talks with First Nations on Australia's first Indigenous treaty', *ABC News*, 26 February 2016, <<https://www.abc.net.au/news/2016-02-26/victoria-to-begin-talks-for-first-indigenous-treaty/7202492>> accessed 18 October 2021.

⁴² Intergovernmental Panel on Climate Change, *Climate Change 2021: The Physical Science Basis, Summary for policymakers: Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge University Press, 7 August 2021, p. 1.

⁴³ Aboriginal Victoria, *Treaty process*.

3.3 Caring for Country

As discussed in Section 3.1, Traditional Owners told the Committee that a holistic understanding of Country encompasses cultural obligations to care for land, waters and species.

The following sections discuss the importance of self-determination in ensuring Traditional Owners are able to meaningfully care for Country, and outline some of the ways in which this currently takes place.

3.3.1 Self-determination

In its submission, DELWP acknowledged that First Nations peoples have been excluded ‘from planning and decision-making for over 200 years’, leading to a separation from land and cultural connection to water.⁴⁴ Biodiversity 2037 seeks to address these deficits and further ‘aspirations for Country and self-determination’ through a number of priority areas, aimed broadly at increasing Traditional Owner participation in biodiversity management.

As enshrined in the United Nations Declaration on the Rights of Indigenous Peoples, endorsed by Australia, Indigenous peoples have the right to self-determination, which includes the free pursuit of economic, social and cultural development. In exercising this right, Indigenous peoples have the right to autonomy or self-government in matters relating to their internal and local affairs.⁴⁵ In terms of biodiversity, the principle of self-determination promotes Aboriginal-led management of Country.

DELWP stated in its submission that DELWP is seeking to create a workplace ‘that recognises and respects the cultural safety of Aboriginal Victorians, as an underpinning principle of self-determination’.⁴⁶ In response to the Victorian Government’s Self-Determination Reform Framework, DELWP developed *Pupangarli Marnmarnepu ‘Owning Our Future’ Aboriginal Self-Determination Reform Strategy 2020–2025*. This strategy identifies a number of self-determination outcomes in conjunction with DELWP’s work, including that Traditional Owners’ rights on Country are supported so that their aspirations for land, water and culture are realised. In order to fulfil this outcome, the report identifies a number of actions:

- Recognise and implement the decisions that Traditional Owners make over cultural fire practices.
- Recognise and implement the decisions that Traditional Owners determine over sustainable management of water resources.
- Recognise and implement the decisions that Traditional Owners make over traditional lands and resources.

⁴⁴ Department of Environment, Land, Water and Planning, *Submission 927*, p. 12.

⁴⁵ UN General Assembly, *United Nations Declaration on the Rights of Indigenous Peoples: resolution / adopted by the General Assembly, 2 October 2007, A/RES/61/295*, art 3.

⁴⁶ Department of Environment, Land, Water and Planning, *Submission 927*, p. 14.

- Celebrate and support the preservation and promotion of Aboriginal cultures and languages across Victoria.⁴⁷

The ways in which Traditional Owners are currently able to care for Country, in terms of cultural fire practices, water resources, and lands and resources, are outlined in the following sections.

The Committee received evidence that a further key element in ensuring self-determination in land and water management is the maintenance, protection of and respect for, cultural knowledge. This includes ensuring that Traditional Owners remain the knowledge-holders, and that traditional knowledge is respected by government and other bodies.

Nathan Long, Program Manager, Land Strategy Djandak at Dja Dja Wurrung Clans Aboriginal Corporation, explained at a public hearing the importance of considering both science and traditional knowledge in biodiversity management:

we are looking for the harmony between the science and the knowledge. It is very much coming at it from an understanding of how the science respects the knowledge. Because in the past, science puts itself in a position to question the knowledge, rather than support the knowledge.

...

by understanding cultural knowledge, you can understand where these things should be. Science is an enabler to understand that well, if yam daisies should be here, why are not they here? How do we go through a process of understanding how much damage has been done to the soil, what are the weeds doing, how we have to change the fire regimes, or the grazing regimes? Are there problems with slugs, are there problems with snails, are there problems with fertilisers that have been put there, are there problems with chemicals that have been put there? Has the water regime changed? ... so science enables us to heal country, whilst the knowledge gives a direction and the objectives and the reasons behind why you do it. So science informs, the knowledge is the thing that guides and directs.⁴⁸

Uncle Russell Mullett, Registered Aboriginal Party Manager at Gunaikurnai Land and Waters Aboriginal Corporation, spoke about research taking place on Gunaikurnai Country and the need to incorporate both sets of knowledge:

Sometimes cultural knowledge sits at the back of scientific knowledge, and what we are trying to build here is a collaboration with the researchers, using our cultural knowledge and scientific knowledge together. No one is more important than the other; it is equally important to work together on those sorts of aspects.⁴⁹

⁴⁷ Department of Environment, Land, Water and Planning, *Pupangarli Marnmarnepu 'Owning Our Future'*, p. 13.

⁴⁸ Nathan Wong, Program Manager, Land Strategy Djandak, Dja Dja Wurrung Clans Aboriginal Corporation, public hearing, Shepparton, 27 April 2021, *Transcript of evidence*, p. 18.

⁴⁹ Uncle Russell Mullett, Registered Aboriginal Party Manager, Gunaikurnai Land and Waters Aboriginal Corporation, Public hearing, Via videoconference, 26 August 2021, *Transcript of evidence*, p. 44.

Gunditj Mirring Traditional Owners Aboriginal Corporation noted in its submission that there had been a shift in recent years away from consulting with Traditional Owners towards giving them the lead. They outlined broad benefits from this shift in approach:

Western approaches to land management has some merit, but through the effective engagement of traditional owners and applying traditional knowledge and land management techniques will have better outcomes for Mirring and all the species that depend on it.⁵⁰

3.3.2 Cultural fire

Cultural fire reflects one facet of obligations to care for Country. Although cultural fire practices vary across Countries, a key emphasis is that burning occurs using the right type of fire, at the right time, in the right way and for the right reasons.⁵¹

At a public hearing, Dr Victor Steffensen, Co-founder of the Firesticks Alliance Indigenous Corporation, explained to the Committee how burns are determined by the needs of particular Country and the values involved in the practices:

It is a burning technique that follows the soils and the trees, and the curing of the landscape. And that is based on maintaining landscapes through old knowledge systems that were part of cultural practices, for men and women.

But, also, the burning for that way is to burn for food, and to ensure that there was a lot of biodiversity and ground cover always on site after fire. So, it was very gentle types of burning, and maintain the health of the landscape to build this resilience also against wildfires. When we look at the burning structure, it is a very, not only in maintaining land, it is following those ecosystems, but also on the landscape now we also an unbalanced landscape, which is sick landscape, another way to say it, where the ecosystems have the wrong vegetation and the wrong fuel layers.

And that consists of burning—adjusting your burns, again, on different timing, based on those soils, to burn for the right vegetation to come back again, to get back to the baseline of health that Aboriginal people have managed over thousands of years.⁵²

As noted in Section 3.2.3, the Cultural Fire Strategy sets out Traditional Owner visions for cultural burning in Victoria and establishes policy direction for the Victorian Government in this space. This Strategy states that government approaches to fire management have historically emphasised the protection of life and property and ‘impeded Traditional Owner rights and obligations to care for Country’. However, it provides that Traditional Owners are increasingly being recognised as partners in land and water management. It advocates for adoption of a number of actions at regional and statewide levels in order to facilitate the return of cultural fire onto the landscape and to allow for healing and caring for Country.⁵³

⁵⁰ Gunditj Mirring Traditional Owners Aboriginal Corporation, *Submission 908*, pp. 5–6.

⁵¹ Victorian Traditional Owner Cultural Fire Knowledge Group, *Victorian Traditional Owner Cultural Fire Strategy*, 2020, pp. 7–8.

⁵² Dr Victor Steffensen, Co-founder, Firesticks Alliance Indigenous Corporation Public hearing, Shepparton, 27 April 2021, *Transcript of evidence*, p. 5.

⁵³ Victorian Traditional Owner Cultural Fire Knowledge Group, *Victorian Traditional Owner Cultural Fire Strategy*, p. 4.

Traditional Owner groups told the Committee about the importance and value of cultural fire practices. For example, Erin Rose from Gunditj Mirring Traditional Owners Aboriginal Corporation described it as ‘a great practice for regeneration and protection of the cultural values but also to create a healthier ecosystem, so you are not having the really large-scale burns’.⁵⁴

Cultural burning is discussed further in Chapter 8.

3.3.3 Lands and resources

Obligations to care for Country encompass management of landscapes, ecosystems and natural and living resources.

In discussing the importance of a healthy landscape and Traditional Owner management of Country, Dr Steffensen noted that benefits included green economic opportunities as well as cultural indicators and knowledge. He told the Committee:

when we apply certain practice to landscapes, through indigenous management, there are seven-fold benefits that come from that. So, for example, when we burn, we are looking after trees. We are looking after the animals. It is creating employment. It is creating education for people. It is building the bridge of reconciliation between black and white people of Australia. It is just to name a few. So, I know and understand and also seen evidence that young people improve their lives when we get them on Country.

...

it is also evident that non-Indigenous people also see the value in this, as well, and also improve their relationship with Aboriginal people, and also improve their relationship with the land, including third generation farmers, who can see the benefit of this knowledge to improve landscapes, to improve their livelihoods, as well.

So, it is a really important initiative that this Country is missing out on. And Australia has the opportunity to demonstrate this to the world, and lead in—in the battles against climate change, and also lead in—in activities that show how we can actually live with landscapes and sustainably through thousands of years of knowledge, that the Aboriginal people have successfully done over those thousands of years, to live sustainably.⁵⁵

The Cultural Landscapes Strategy was released in August 2021. It aims to ‘embed, at a statewide level, Traditional Owner management of Country’ in order to effect transformational change in land and water management.⁵⁶

⁵⁴ Erin Rose, *Transcript of evidence*, p. 2.

⁵⁵ Dr Victor Steffensen, *Transcript of evidence*, p. 2.

⁵⁶ Victorian Traditional Owners, *Victorian Traditional Owner Cultural Landscapes Strategy*, p. 8.

Table 3.1 The Cultural Landscapes Strategy strategic framework

	Restoring the knowledge system	Strengthening Traditional Owner Nation resilience	Traditional Owner cultural landscapes planning	Embedding Traditional Owner knowledge and practice	Traditional Owner Cultural landscapes management
Objective	To restore and protect the Traditional Owner knowledge system	To strengthen Traditional Owner Nation resilience to enable delivery of our contemporary role as custodians of Country	To enable Traditional Owner cultural landscapes planning	To embed Traditional Owner knowledge and practice into policy, planning and the management of Country	To enable the application of Traditional Owner cultural objectives, knowledge and practice in the management of public land
Areas	<ul style="list-style-type: none"> • Reading Country Programs • Traditional Owner led research partnerships • Traditional Owner knowledge and practice networks 	<ul style="list-style-type: none"> • Strengthening the government funding model for Traditional Owner Corporations and Nations • Natural Resource Management (NRM) based Economic Development • Diverse Self Determination Pathways for Diverse Nations 	<ul style="list-style-type: none"> • Cultural governance guides decision making • Development of planning frameworks that are tailored and appropriate to each group's pathway • System development for assessing health of Country 	<ul style="list-style-type: none"> • Institutional arrangements of the Government are enhanced to reflect Traditional Owner rights regarding management of Country • Two-way capacity is developed • Co-Governance arrangements are in place 	<ul style="list-style-type: none"> • Country Management programs are established • Cultural landscapes are managed by Traditional Owners through shared governance arrangements and Sole Management is established • Collaborative management pilots in priority cultural landscapes

Source: Victorian Traditional Owners, *Victorian Traditional Owner Cultural Landscapes Strategy*, 2021, pp. 11–13.

DELWP stated in its submission that this strategy would provide direction to the Victorian Government about how self-determination should be enabled in land management. DELWP and Parks Victoria will work in partnership to deliver the strategy.⁵⁷

At a public hearing, Matthew Shanks from Taungurung Land and Waters Council Aboriginal Corporation noted that the Cultural Fire and Cultural Landscapes Strategies were founded on traditional knowledge:

Both the cultural landscape strategy and cultural fire strategy was founded on traditional knowledge. Stories and information, practiced knowledge was passed on from Elders. And a key part of it was actually analysing Dreamtime stories and putting them into sort of contemporary like policy statements and things like that. We did that right at the beginning with Traditional Owners from all around the state and then to test if that held true at the end. And spoiler, it did.

⁵⁷ Department of Environment, Land, Water and Planning, *Submission 927*, p. 30.

The cultural landscape strategy is a statewide strategy so it—and it does step out sort of a pathway to achieving the outcomes in it, but it is really at that statewide level, so it has some sort of high-level measures of success and that sort of thing. But what it really talks about is supporting individual nations to do that sort of—do that work within their territories and in their Country because I think it is—I think most would agree that local knowledge and knowledge of, intimate knowledge of landscape of Country of your farm, of a national park and all that sort of stuff is, that is all managed by people locally.⁵⁸

The Committee recognises the importance of the Victorian Government following the direction of Traditional Owner-led strategies such as the Cultural Landscapes Strategy, which is considered further in Chapter 8. In addition, some of the specific areas contained in the Cultural Landscapes Strategy are discussed throughout this report. Reading Country programs are discussed in Chapter 4 and funding for Traditional Owner corporations is discussed in Chapter 9. The third objective identified in the strategy, Traditional Owner cultural landscapes planning, is supported by Country plans (and any sub-strategies, where present). Country plans are outlined in the following section and discussed in more detail in Chapter 7.

Country plans

Country plans, also known as Caring for Country plans and Whole-of-Country plans, are developed by Traditional Owners as a vision for Country.⁵⁹ These may include aspirations and strategies for how to ensure Country is healthy and supports biodiversity.

For example, *Dhelkunya Dja*, the Dja Dja Wurrung Country Plan, identifies aspirations in relation to land, rivers and waterways. Some of the objectives for land include understanding the extent of damage to Dja Dja Wurrung Country caused by mining, building capacity to remediate toxic land, having sick areas of land handed back and being effectively resourced to conduct the required remediation. Objectives for rivers and waterways include having a recognised and legitimate role in water governance and ensuring that all waterways are healthy, with the right water in the right place at the right time.⁶⁰

Traditional Owners emphasised the importance and the value of Country plans in evidence to the Committee. Monica Morgan from Yorta Yorta Nation Aboriginal Corporation described the knowledge informing these plans:

And I think the most important thing that needs to be understood is that First Nations people have the knowledge, have the processes, and have the intent to carry through and be here for thousands of generations just like our generations before us. So, we have a whole of Country plan. And in that whole of Country plan it looks at de-commodifying, returning water to a natural state, using bush and proper practices, such as firestick burning.⁶¹

⁵⁸ Matthew Shanks, *Transcript of evidence*, p. 28.

⁵⁹ Department of Environment, Land, Water and Planning, *Pupangarli Marnmarnepu 'Owning Our Future'*, p. 3.

⁶⁰ Dja Dja Wurrung Clans Aboriginal Corporation, *Dhelkunya Dja: Dja Dja Wurrung Country Plan 2014–2034*, 2014, pp. 20–22.

⁶¹ Monica Morgan, *Transcript of evidence*, pp. 4–5.

Rodney Carter, Group Chief Executive Officer of the Dja Dja Wurrung Group, told the Committee of the aspirational lens that *Dhelkunya Dja* aimed to provide:

for us to use harmony, we are practically—it is idealistic, it is a dream, it is a vision, and we would want to aspire to it. So a lot of our country plan, and this idea of our philosophy that we bring is visionary, and it is something to aspire to. It is always challenging whether we actually practically get to that point.⁶²

Country plans, and the ways in which they are considered in terms of state biodiversity planning, are discussed further in Chapter 7.

Joint management

As outlined in Section 3.2.1, the TOS Act provides a mechanism for the joint management of agreed areas of public land by Traditional Owners and the Victorian Government. This occurs where a Land Agreement has been included in a settlement, and in conjunction with a Traditional Owner Land Management Agreement, entered into in accordance with the *Conservation, Forests and Lands Act 1987* (Vic).⁶³

In joint management arrangements, a Traditional Owner Land Management Board is established to enable Traditional Owner knowledge to inform management of the land. Members are made up of persons nominated by the Traditional Owner group and persons nominated by the State to represent the Victorian Government and the broader community.⁶⁴

At the time of writing, joint management arrangements were in place with Gunaikurnai, Dja Dja Wurrung, Taungurung and Yorta Yorta peoples.⁶⁵

Monica Morgan from Yorta Yorta Nation Aboriginal Corporation told the Committee how joint management of Barmah National Park was contributing towards caring for Country:

And so, our of that we have a joint management arrangement, where we are putting together a process by which land management and biodiversity and climate change and all those types of assaults that are happening on our Country right now, we start looking at ways of being able to look after Country. To be able to bring our people back onto Country. To employ people. To strengthen our culture and our connections.⁶⁶

In its submission, DELWP stated that joint management arrangements have ‘proved highly-valued by Traditional Owners for the management status it affords and related outcomes that can be obtained’.⁶⁷

62 Rodney Carter, Group Chief Executive Officer, Dja Dja Wurrung Group, Public hearing, Shepparton, 27 April 2021, *Transcript of evidence*, p. 18.

63 *Conservation, Forests and Lands Act 1987* (Vic) pt 8A div 5.

64 Department of Environment, Land, Water and Planning, *Joint management*, 2021, <<https://www.forestsandreserves.vic.gov.au/joint-management/strengthening-our-partnership-with-traditional-owners>> accessed 9 September 2021.

65 Ibid.

66 Monica Morgan, *Transcript of evidence*, p. 4.

67 Department of Environment, Land, Water and Planning, *Submission 927*, p. 17.

However, there are limited means through which sole management of land can be carried out.

At the time of writing, consultation processes were underway in relation to a new Public Land Act, which will simplify and modernise the existing legislative framework in relation to public land. This proposed legislation is considered in more detail in Chapter 8, including in terms of opportunities to address legislative barriers currently preventing greater agency for Traditional Owners in land management.

The importance of self-determination in Traditional Owner roles in biodiversity governance is discussed in more detail in Chapter 9. Joint management is considered further in Chapter 8.

3.3.4 Water resources

In terms of the management of water resources, there is currently no Traditional Owner-led strategy in this space.

As outlined in Section 3.2.3, *Water for Victoria*, the state water policy, recognises Aboriginal values in water and aims to provide for greater participation in water planning and management. This primarily takes place through the Victorian Aboriginal Water Program. Under the program, the following actions of *Water for Victoria* are delivered:

- recognising Aboriginal values and objectives of water
- including Aboriginal values and traditional ecological knowledge in water planning
- supporting Aboriginal access to water for economic development
- building capacity to increase Aboriginal participation in water management
- increasing Aboriginal inclusion in the water sector
- supporting economic development through Aboriginal participation.⁶⁸

DELWP acknowledged in its submission the challenges associated with facilitating greater water rights for Traditional Owners:

Traditional Owners and Aboriginal Victorians desiring to attain water rights for cultural and spiritual purposes are competing in a time where water is scarcer, rules are more complex and the price more expensive. Currently, Traditional Owner and Aboriginal Victorian groups own only 0.1% of water entitlements in Victoria. Victorian water entitlements have been allocated to support urban and regional growth, irrigated agriculture and, more recently, the environment. Whilst stakeholders representing these interests have had the opportunity over time to develop their capabilities and understanding of the complexities of water management, Traditional Owners have not,

⁶⁸ Department of Environment, Land, Water and Planning, *Water for Victoria*, pp. 98, 160; Department of Environment, Land, Water and Planning, *Submission 927*, p. 29.

meaning they have little influence in this complex space. In addition, some Traditional Owner organisations are limited in their resourcing. This in turn inhibits their ability to properly engage in projects relating to healing Country.⁶⁹

Traditional Owners expressed concerns regarding the health and management of waterways and advocated for further self-determination in this space. For example, Matthew Shanks from Taungurung Land and Waters Council explained that irrigation and damming had altered the natural flow of water on Country, impacting the availability of culturally important plants.⁷⁰

Monica Morgan explained the nature of the water regime on Yorta Yorta Country and the ways in which management of, and care for, the waterways intersects with other elements of Country:

What is important for us is the water regime. If you do not get the water regime then it is a folly to burn, because they co-exist. All seasons co-exist, and there is a different process for each. One season needs to flood. The other season is to burn, before the summer comes. And to then, before the growing of the grasses. So, there has to be a process. Unfortunately, the commodification of water has upset the balance of how the water flows, particularly along the Murray into the Goulburn, and you do not have the flood events happening in the right time of the year.

Instead, you have got the water events happening in summer and not in the winter, spring. You have got them in summer, autumn. And for us to have a seasonal approach to how we have flood, how we have fire, how we have all our other practices that may occur, like the weaving and all the gathering of medicines and traditional foods and those things, they all need to be inter-played into a proper calendar. It is all out of whack at the moment, particularly down here.⁷¹

As noted in Chapter 1, water management was not able to be considered as part of this Inquiry.

⁶⁹ Department of Environment, Land, Water and Planning, *Submission 927*, pp. 12–13.

⁷⁰ Matthew Shanks, *Transcript of evidence*, p. 22.

⁷¹ Monica Morgan, *Transcript of evidence*, pp. 5–6.

PART B: DRIVERS OF ECOSYSTEM DECLINE

4 Invasive species

4.1 Introduction

This Chapter:

- outlines the legislative and policy framework guiding the management of invasive species in Victoria
- explores potential strategies for improving invasive species management in Victoria
- discusses issues informing the management, control and eradication of invasive species as a general driver of ecosystem decline.

This Chapter does not seek to review and address the impact of each individual invasive species present in Victoria. Rather, case studies have been included throughout to illustrate some of the issues posed by individual invasive species.

4.2 What are invasive species and how are they driving ecosystem decline?

Since colonisation, many new species of plants and animals have been deliberately and inadvertently introduced into the Victorian environment. While some of these species have proven to be benign, many more introduced plants and animals have become highly invasive and damaging to biodiversity values.¹ The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services defines invasive species as exotic plants or animals which disrupt the ecological functioning of natural systems:

Invasive species out-compete local and indigenous species for natural resources, with negative implications for biodiversity.²

Invasive species are now present in all terrestrial and aquatic environments across Victoria and are damaging the environment, impacting agricultural businesses, creating

¹ Victorian Government, *Weeds and Vertebrate Pests: Module 1 within the invasive plants and animals policy framework*, Department of Primary Industries, 2010, p. 5.

² Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, *Models of drivers of biodiversity and ecosystem change*, <<https://ipbes.net/models-drivers-biodiversity-ecosystem-change>> accessed 13 October 2021.

public health and safety risks and reducing liveability of communities.³ They encompass animals, plants, insects, pathogens and diseases.⁴

Invasive species have become a key driver of ecosystem decline, impacting Victorian biodiversity values by:

- damaging habitat, altering the natural composition of vegetation, impacting the quality of waterways and increasing forests' vulnerability to fire⁵
- outcompeting native flora and fauna for habitat, food, refuge and other resources⁶
- preying on native fauna, driving population decline.⁷

Invasive species continue to be one of the biggest challenges facing threatened native species in Australia.⁸ A 2018 review of threatened native species listed under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) found that 82% of threatened species listed under the Act (1,257 species) were affected by invasive species, positioning them as a major threat to native wildlife.⁹ In evidence presented to the Committee, Andrew Cox, Chief Executive Officer of the Invasive Species Council, attributed responsibility for most native animal extinctions in Australia to invasive species:

To help you understand the scale of the threat from invasive species ... It is worth remembering that most extinctions in Australia of our mammals and frogs and birds have been caused by invasive species. Of the roughly 30 mammal extinctions in Australia, about three-quarters of those were caused by invasive species. Mostly cats and foxes, but there are other causes as well—black rats.¹⁰

The devastating impact of invasive species can be illustrated by a case study. Box 4.1 describes the expansion of feral pig populations in Victoria and the impact they are having on biodiversity values.

³ Department of Environment, Land, Water and Planning, *Submission 927*, p. 8.

⁴ Invasive Species Council, *Our Work*, <<https://invasives.org.au/our-work/invasive-species>> accessed 4 November 2021.

⁵ Invasive Species Council, *Submission 943*, p. 3; Australian Deer Association, *Submission 667*, p. 5; East Gippsland Conservation Management Network, *Submission 831*, p. 2; Commonwealth Government, *Invasive species are a potent, persistent and widespread threat to Australia's environment*, 2017, <<https://soe.environment.gov.au/theme/overview/topic/invasive-species-are-potent-persistent-and-widespread-threat-australias>> accessed 5 November 2021.

⁶ Upper Goulburn Landcare Network, *Submission 671*, p. 1.

⁷ Invasive Species Council, *Submission 943*, p. 5; Ecological Consultants Association of Victoria, *Submission 499*, p. 8; RSPCA Victoria, *Submission 735*, p. 6.

⁸ Department of Environment, Land, Water and Planning, *Submission 927*, pp. 7, 9.

⁹ Invasive Species Council, *Submission 943*, p. 1.

¹⁰ Andrew Cox, Chief Executive Officer, Invasive Species Council, Public hearing, Melbourne, 24 February 2021, *Transcript of evidence*, p. 1.

BOX 4.1: Case study—Pigs

Feral or wild pigs are an established pest animal in Victoria.

Feral pigs in Australia are the descendants of the domestic breeds (*So scrofa*) which accompanied early European arrival. They are smaller, more muscular and leaner than domestic varieties with larger snouts and tusks, smaller ears, longer and more coarse hair and shorter hindquarters. They have small eyes and poor eyesight, but well-developed senses of smell and hearing.

Feral pigs are primarily nocturnal and restrict most of their activity to the cooler parts of the day at dawn and dusk. The home range of adult male pigs varies between 10 to 50 km² depending on the habitat, while an adult female's home range can be anywhere between 10 and 20 km². Feral pigs prefer moist environments such as rainforest areas, paperbark swamps, marshes, and subalpine grasslands.

Breeding and distribution

Feral pigs do not have a defined breeding season and can breed throughout the year. Average litter sizes vary from five to six piglets, but up to 10 piglets can be born under good conditions. In these conditions female pigs can have two litters in just over a year.

Feral pig populations exist around Victoria in low densities. Established populations inhabit land along the Murray River, near Mansfield, Kinglake, the Grampians and Lancefield.

Impact of pigs on the environment

Feral pigs can cause serious damage to ecosystems by:

- selectively feeding, trampling and rooting for underground plants and invertebrates
- competing with native wildlife for food, water and shelter
- preying on wildlife, such as earthworms, insects, amphibians, reptiles, ground-nesting birds, small mammals, freshwater crayfish, frogs, turtles and their eggs
- wallowing and rooting for food along watercourses and swamps destroying vegetation and habitat, causing erosion and impacting water quality.

Source: Agriculture Victoria, *Pigs (feral or wild)*, 2021, <<https://agriculture.vic.gov.au/biosecurity/pest-animals/priority-pest-animals/pig-feral-or-wild>> accessed 5 October 2021.

Many invasive species present in Victoria, like foxes, rabbits and cats, are already widespread. Others, like deer and pigs, are expanding their range quickly.¹¹ Phenomenon that disturb habitat (such as climate change, drought, floods and bushfires) can

¹¹ Invasive Species Council, *Submission 943*, p. 2.

exacerbate the spread of invasive species.¹² Andrew Cox presented an example to the Committee that illustrated how climate change can promote the spread of invasive species:

there is a strong relationship between how climate change, as it occurs, favours invasive species. A good example is the mountain pygmy possum. As the snow melts earlier, there is less protection from predators like foxes, so it succumbs. Weeds are more favourable and spread more easily in warmer climates. So the two major threats are intertwined, and the impacts of climate change in many cases, or a large number of cases, will be manifest through invasive species causing declines of the native species when they are under climate change stress.¹³

The economic impact of invasive species is not well understood but is estimated to be substantial. In 2008, the Victorian Commissioner for Environmental Sustainability estimated that pest plants and animals cost Victoria \$900 million annually.¹⁴ However, subsequent State of the Environment reports published by the Commissioner have not included an estimation. The Invasive Species Council noted a 2014 study which found that pest animals cost Australia an average of \$600 million annually and a 2018 study where researchers estimated the mean cost of weed management in Australia to be almost \$5 billion (primarily incorporating spending by agriculture).¹⁵

While government policy refers to invasive species, Victorian legislation does not categorise plants or animals as ‘invasive’. Rather, legislation refers to invasive species as pest species, noxious weeds, wildlife or domestic animals. This Chapter uses the terms pest species and invasive species interchangeably.

4.3 Policy and legislative framework for controlling invasive species

A framework for the control of invasive species in Victoria is provided by the *Catchment and Land Protection Act 1994* (Vic) (CaLP Act), *Flora and Fauna Guarantee Act 1988* (Vic) (FFG Act) and the *Invasive Plants and Animals Policy Framework*.

The CaLP Act provides for the declaration of invasive plants as ‘noxious weeds’ and animals as ‘pests’. It establishes mechanisms to control their movement into and around the State. In contrast, the FFG Act provides for the management of processes that threaten Victoria’s biodiversity values. It enables the impact of an invasive species to be declared a ‘potentially threatening process’ and provides tools for addressing this impact.

A similar approach is adopted at the national level. Pest species are regulated by the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) through their

¹² Ibid., p. 5; Upper Goulburn Landcare Network, *Submission 671*, p. 1; Victorian National Parks Association, *Submission 102*, p. 32.

¹³ Andrew Cox, *Transcript of evidence*, p. 2.

¹⁴ Commissioner for Environmental Sustainability Victoria, *State of the Environment Report - Victoria 2008*, 2008, p. 311.

¹⁵ Invasive Species Council, *Submission 943*, p. 8.

listing as 'key threatening processes', which are processes that 'threaten the survival, abundance or evolutionary development of a native species or ecological community'. Once listed, a threat abatement plan can be implemented to reduce the spread and impact of the process.¹⁶

The next sections outline the parameters and operation of this framework as it relates to invasive species.

4.3.1 **Catchment and Land Protection Act 1994 (Vic)**

The CaLP Act is the primary legislation aimed at regulating invasive species. It provides for a 'system of controls on noxious weeds and pest animals' which regulates their importation, trade, movement, keeping and release.¹⁷

The nomination of plants and animals as pest species is provided for under s 58(1) of the CaLP Act. Plants may be declared to be a state prohibited weed, a regionally prohibited or controlled weed, or a restricted weed. Animals can be declared as either a prohibited pest animal, a controlled pest animal, a regulated pest animal, or an established pest animal.¹⁸ The different categories relate to the abundance of the pest species and the severity of restrictions that apply. Table 4.1 defines the different pest categories provided by the CaLP Act.

Table 4.1 Category definitions under the *Catchment and Land Protection Act 1994 (Vic)*

Plants	Animals
State prohibited <ul style="list-style-type: none"> • It does not occur in Victoria, or • It occurs in Victoria but it is reasonable to expect that it can be eradicated from the State. 	Prohibited pest animals <ul style="list-style-type: none"> • It did not occur naturally in the wild in Australia before European settlement, and • It has a high potential to become a serious threat to primary production, Crown land, the environment or community health in Victoria, and • It should only be kept in high security collections approved by the Minister.
Regionally prohibited <ul style="list-style-type: none"> • It does not occur in or is not widely distributed throughout the region, and • It is capable of growing or spreading further in the region, and • It is reasonable to expect that it can be eradicated from the State. 	Controlled pest animals <ul style="list-style-type: none"> • It did not occur naturally in the wild in Australia before European settlement, and • It has a high potential to become a serious threat to primary production, Crown land, the environment or community health in Victoria, and • It should only be kept in high security collections approved by the Minister.

¹⁶ Commonwealth Department of Agriculture, Water and the Environment, *Threatened species & ecological communities: Key threatening processes under the EPBC Act*, <<https://www.environment.gov.au/biodiversity/threatened/key-threatening-processes>> accessed 8 November 2021.

¹⁷ *Catchment and Land Protection Act 1994 (Vic)*, s 1; Department of Environment, Land, Water and Planning, *Submission 927*, p. 20.

¹⁸ *Catchment and Land Protection Act 1994 (Vic)*, s 58(1).

Plants	Animals
<p>Regionally controlled weeds</p> <ul style="list-style-type: none"> • It occurs in the region • It is capable of spreading further in the region and should be stopped from doing so, and • To prevent its spread, continuing control measures are required. 	<p>Regulated pest animals</p> <ul style="list-style-type: none"> • It did not occur naturally in the wild in Australia before European settlement • It is, or has the potential to become a serious threat to primary production, Crown land, the environment or health in Victoria, and • It should only be kept in collections or at premises approved by the Minister.
<p>Restricted weeds</p> <ul style="list-style-type: none"> • It poses an unacceptable risk of spreading in Victoria and is a serious threat to another state or territory. • Trade in these weeds (either as plants, seeds or contaminants in other materials) is prohibited. 	<p>Established pest animal</p> <ul style="list-style-type: none"> • It is established in the wild in Victoria, and • It is a serious threat to primary production, Crown land, the environment or health in Victoria, and • It should be eradicated or controlled or its spread in the wild should be prevented.

Note: Consolidated lists of declared noxious weeds and pest animals are available at: Agriculture Victoria, *Consolidated lists of declared noxious weeds and pest animals*, <<https://agriculture.vic.gov.au/biosecurity/protecting-victoria/legislation-policy-and-permits/consolidated-lists-of-declared-noxious-weeds-and-pest-animals>> accessed 8 November 2021.

Source: *Catchment and Land Protection Act 1994* (Vic) pt 8 div 1.

Once declared an established pest species, landowners have obligations under the CaLP Act to prevent the spread of, and as far as possible eradicate, those pest animals occurring on their land. Landowners must also eradicate regionally prohibited weeds and prevent the growth and spread of regionally controlled weeds.¹⁹

The Victorian Government can issue Directions Notices or Land Management Notices to landowners that fail to comply with their obligations under the Act. A Land Management Notice may prohibit or regulate land management practices. It can require landowners to undertake specific actions to improve land management practices, minimise land degradation or rehabilitate degraded land.²⁰ A Directions Notice instructs a landowner to undertake specific measures to control or eradicate any regionally prohibited weed, regionally controlled weed or established pest animal.²¹

Responsibility for administering and enforcing the CaLP Act lies primarily with Agriculture Victoria. Penalties for not complying with a Directions Notice or Land Management Notice can include:

- a \$38,000 fine for not managing noxious weeds
- a \$76,000 fine for importing, keeping, releasing or selling a prohibited pest animal.²²

¹⁹ Ibid., s 20.

²⁰ Ibid., s 38.

²¹ Ibid., s 70(B).

²² Agriculture Victoria, *Invasive species laws and the Catchment and Land Protection Act 1994*, <<https://agriculture.vic.gov.au/biosecurity/protecting-victoria/legislation-policy-and-permits/invasive-species-laws-and-the-catchment-and-land-protection-act-1994>> accessed 10 November 2021.

Table 4.2 Examples of noxious weeds and pest animals declared under the *Catchment and Land Protection Act 1994* (Vic)

Pest animals		Noxious weeds	
Classification	Examples	Classification	Examples
Prohibited pest animals	<ul style="list-style-type: none"> • shrew opossums • red pandas • mongooses • camels • horses 	State prohibited weeds	<ul style="list-style-type: none"> • alligator weed • hawkweed • branched broomrape • salvinia • nodding thistle
Controlled pest animals	<ul style="list-style-type: none"> • lions • giraffes • ocelots • European badgers 	Regionally prohibited weeds	<ul style="list-style-type: none"> • tiger pear • African daisy • amsinckia
Regulated pest animals	<ul style="list-style-type: none"> • java sparrows • ostriches 	Regionally controlled weeds	<ul style="list-style-type: none"> • blackberry • cape broom • cape tulip (one-leaf) • horehound
Established pest species	<ul style="list-style-type: none"> • red foxes • European hares • pigs • goats • rabbits • goats 	Restricted weeds	<ul style="list-style-type: none"> • apple of Sodom • bridal creeper • Chilean needle grass • climbing asparagus

Note: There is overlap between different categories of pest animals and noxious weeds, with some animals and weeds included in multiple categories. This is particularly true of noxious weeds which may be categorised as regionally prohibited, regionally controlled or restricted in different regions.

Sources: Agriculture Victoria, *Catchment and Land Protection Act 1994: Declaration of certain animals to be prohibited pest animals, controlled pest animals, regulated pest animals or established pest animals*, <<https://agriculture.vic.gov.au/biosecurity/protecting-victoria/legislation-policy-and-permits/consolidated-lists-of-declared-noxious-weeds-and-pest-animals>> accessed 5 October 2021; Agriculture Victoria, *Victorian Noxious Weed List*, <<https://agriculture.vic.gov.au/biosecurity/protecting-victoria/legislation-policy-and-permits/consolidated-lists-of-declared-noxious-weeds-and-pest-animals>> accessed 5 October 2021.

Stakeholder views

Evidence submitted to the Inquiry suggested that the CaLP Act is underutilised and poorly enforced. The Invasive Species Council pointed out that only 129 pest plants are listed under the CaLP Act. It estimated that this represents approximately 10% of all environmental weeds present in Victoria. The Council noted that the remaining 90% of weeds are still able to be bought, sold and moved around the State without being subject to controls.²³

In addition, the Committee received a submission that suggested that weeds and pest animals that have been declared under the CaLP Act are poorly controlled, as the legislation is not effectively enforced. The Victorian National Parks Association suggested that the CaLP Act is not properly enforced because it is too complex:

²³ Invasive Species Council, *Submission 943*, p. 7.

Greater enforcement of current laws is needed. Species of plants can be declared as noxious weeds under the *Catchment and Land Protection Act 1994*. The Act defines noxious weeds in Victoria into four categories ... With the categories for species varying between Catchment Management Areas, this makes understanding regulations difficult and makes it easy for those selling restricted or controlled weeds to sell these species and continue to help their spread.²⁴

Similarly, the Ecological Consultants Association of Victoria noted that a survey of its members and subscribers (whom are typically ecologists) found that implementation and enforcement of the CaLP Act is considered to be limited:

The Victorian Government's approach to managing noxious weeds under the CaLP Act was considered to be very poor. The legislative mechanism exists to enforce the management on invasive weeds on private land, however, it was considered 'the use of this mechanism is poorly funded, sporadic, and rarely strategic with regards to reducing the worst impacts of weed invasion'.²⁵

The Victorian National Parks Association also felt that Agriculture Victoria's enforcement of the CaLP Act was focused on controlling the impact of pest species (particularly noxious weeds) on agriculture and 'neglect[ed] environmental concerns'.²⁶

The Invasive Species Council similarly observed in a submission that 'the mission, culture and priorities of the organisation responsible for responding to the invasive species threats is critical to effective action'. It asserted that Agriculture Victoria's focus is on protecting agricultural assets and that, as a result, biodiversity values may not be adequately protected from invasive species:

While there are many overlapping invasive species threats in common between agriculture and the environment, there are also many that only impact the environment or directly conflict with agricultural interests. As a result, these environmental threats do not receive the attention they deserve.²⁷

Professor David Cantrill, Executive Director, Science at the Royal Botanic Gardens Victoria, provided an example illustrating the tensions that can arise when balancing agricultural values with environmental protection:

The other bit in that invasive species space ... to me, it comes down to how we value things and the different sets of values that we place in different settings ... tall wheatgrass ... is a really good illustrative example, because tall wheatgrass is particularly good in saline-damaged environments. It is a good pasture species. So introducing that would have economic benefit for the State and for the farmers because you increase the amount of arable space. You can start to generate income off the land that was once not so productive. So you can actually value, 'What does that mean to the economy?'. But on the other hand, because it is so good in saline environments, that grass will invade

24 Victorian National Parks Association, *Submission 102*, pp. 34–35.

25 Ecological Consultants Association of Victoria, *Submission 499*, p. 20.

26 Victorian National Parks Association, *Submission 102*, pp. 34–35.

27 Invasive Species Council, *Submission 943*, p. 9.

saline environments, native saline environments, which contain threatened species. So how do you weigh those things up? Because we are very focused on the economics, the environment often gets left behind. So we need to work out some way of better valuing that system when we are making those decisions.²⁸

The Invasive Species Council called for Agriculture Victoria's administration and enforcement of the CaLP Act to be reconsidered:

The objectives and methods needed to manage the state's 3 million hectares of public conservation reserves differs from those needed to manage agricultural land – Agriculture Victoria's primary area of expertise.²⁹

The Council advocated for the Department of Environment, Land Water and Planning (DELWP) to take over the administration of invasive species management (including biosecurity aspects), reporting to the Minister for Environment. Alternatively, the Council suggested the establishment of a specialised environmental government agency guided by ecological sustainable development principles with a biosecurity focus.³⁰ The Council made three arguments in support of shifting responsibility for invasive species away from Agriculture Victoria to an agency more focused on the environment. It suggested that:

- more invasive species threaten environmental values than agricultural assets and the impact of pest plant and animal species on the natural environment is more difficult to manage
- much of Victoria's ecosystems are managed by the State, whereas agricultural lands are managed by private landowners and industry. Moreover, there are commercial incentives for agricultural management of invasive species, whereas the management of invasive species in conservation reserves relies on government investment
- Agriculture Victoria has a conflict of interest in relation to invasive species. For example, Agriculture Victoria promotes tall wheat grass for saline areas, a species listed as a potentially threatening process under the FFG Act.³¹

The Committee accepts Inquiry stakeholders' characterisation of the CaLP Act as underutilised and poorly enforced. This feedback is consistent with stakeholders' assessment of other key environmental legislation, such as the FFG Act (see Section 4.3.2 and Chapter 7) and the *Wildlife Act 1975* (Vic) (Wildlife Act) (see Chapter 7).

²⁸ Professor David Cantrill, Executive Director, Science, Royal Botanic Gardens Victoria, Public hearing, Melbourne, 21 April 2021, *Transcript of evidence*, p. 5.

²⁹ Invasive Species Council, *Submission 943*, p. 8.

³⁰ *Ibid.*, p. 11.

³¹ *Ibid.*, pp. 11, 12.

FINDING 2: Lists of noxious weed and pest animal species declared under the *Catchment and Land Protection Act 1994* (Vic) are not comprehensive and exclude invasive plants and animals with the potential to devastate Victoria's biodiversity values. Moreover, the control of noxious weeds and pest animals declared under the Act requires better enforcement.

RECOMMENDATION 2: That the Victorian Government review the administration and enforcement of the *Catchment and Land Protection Act 1994* (Vic) to ascertain if the functions prescribed under the Act could be more appropriately undertaken by another agency.

Noxious weeds and pest animals that could be environmentally devastating cannot be permitted to be imported, bought, sold and moved around Victoria without limitations. It is therefore critical that the list of declared noxious weeds and pest animals under the CaLP Act comprehensively identifies the invasive species that pose a threat to Victoria's biodiversity values. This is particularly important as the climate changes and conditions become more favourable to introduced species.

The Committee commends Agriculture Victoria for its careful protection of agricultural assets. Livestock and cropping are essential to the Victorian economy, the health of citizens and the wellbeing of communities in regional areas. However, the natural environment is central to the health, social and economic wellbeing of Victorians and must be protected from the impacts of introduced invasive species. Indeed, a valuation of the economic benefit delivered by national parks alone provides some indication of the possible costs of biodiversity loss to the Victorian economy. Tourism spending associated with national parks is estimated at approximately \$1.4 billion annually, and visits to national parks are estimated to deliver health benefits that save the State between \$80 million and \$200 million per year from the avoidance of disease. National parks are estimated to save the Victorian Government a further \$46 million per year on avoided infrastructure costs from flooding and through water purification which saves approximately \$33 million annually in metropolitan areas and \$50 million a year in non-metropolitan areas.³²

FINDING 3: Where native species come into competition for resources in an agricultural setting, there is a shift in how they are viewed. They move from being revered to being regarded as a pest species, resulting in Authority to Control Wildlife permits to kill them being issued. The Committee notes that this directly impacts the biodiversity and native environment of an area or landscape.

The enforcement of legislation controlling the importation and movement of pest animals and noxious weeds around the State must be well organised, properly funded, consistent and focused on both agricultural and biodiversity assets. It should prioritise invasive species known to pose the greatest risk to Victoria's agricultural and biodiversity values.

³² Department of Environment, Land, Water and Planning, *Protecting Victoria's Environment – Biodiversity 2037*, 2017, p. 5.

The Committee therefore considers it appropriate that the administration and enforcement of the CaLP Act be undertaken by an agency with a more holistic view of environmental and ecosystem protection.

FINDING 4: Administration of the legislative framework for the management of invasive species should be a responsibility of the Minister for Environment and the Department of Environment, Land, Water and Planning, to ensure its focus is on preserving biodiversity values as opposed to facilitating Victorian agriculture.

Environmental governance is explored further in Chapter 9, and compliance and enforcement are examined in Chapter 10.

4.3.2 *Flora and Fauna Guarantee Act 1988 (Vic)*

As described in more detail in Chapter 7, the FFG Act primarily provides for the conservation of threatened species and ecological communities. However, it also provides for the management of processes that threaten Victoria's biodiversity values.

Under the FFG Act, the impact of an invasive species may be declared a potentially threatening process if its influence on the natural environment threatens the survival or evolutionary development of a range of flora and fauna.³³ Anyone from the community may nominate a potentially threatening process. The Scientific Advisory Committee, comprised of scientists experienced in flora or fauna conservation and/or ecology, advises the Minister for Environment on the listing of potentially threatening processes. A list of identified processes (the Processes List) is gazetted and published on DELWP's website.³⁴

The current Processes List includes specific degradation and predation by a range of invasive species, including loss of habitat caused by feral horses, feral goats and cattle in the Alpine region. It also encompasses the impact of invasive weeds such as blackberries and tall wheat grass on native vegetation.³⁵

The Act establishes 'management processes' and 'conservation and control measures' to conserve and protect native flora and fauna listed as threatened species or communities, or to address potentially threatening processes.³⁶ These include:

- action statements—setting out what has been done as well as future plans to conserve or manage a species or community of flora or fauna, or to address a threatening process³⁷

³³ *Flora and Fauna Guarantee Act 1988 (Vic)*, s 3(16).

³⁴ Department of Environment, Land, Water and Planning, *Conserving threatened species: Flora and Fauna Guarantee Act Threatened List*, 2021, <<https://www.environment.vic.gov.au/conserving-threatened-species/threatened-list>> accessed 11 November 2021.

³⁵ Department of Environment, Land, Water and Planning, *Flora and Fauna Guarantee Act 1988 Processes List: December 2016*, 2016, <https://www.environment.vic.gov.au/_data/assets/pdf_file/0012/50241/201612-FFG-Processes-list.pdf> accessed 13 October 2021.

³⁶ *Flora and Fauna Guarantee Act 1988 (Vic)*, pts 4 and 5.

³⁷ *Ibid.*, s 19.

- critical habitat determinations—declaring specific habitat as critical to the survival of a species or a community of flora or fauna³⁸
- flora and fauna management plans—establishing a plan to manage and conserve a species or community of flora or fauna, or mitigate the impact of a threatening process³⁹
- public authority management agreements—assigning responsibilities to authorities to manage a species or community of flora or fauna, or to address a threatening process⁴⁰
- habitat conservation orders—protecting critical habitat by conserving, protecting or managing flora, fauna, land or water; prohibiting damaging activities or development within the relevant habitat; and requiring any person who wishes to undertake an activity within the habitat to seek a permit from the Minister.⁴¹

The Act mandates the development of an action statement ‘as soon as possible’ after a threatening process is declared. None of the other management processes and conservation and control measures outlined above are mandatory.⁴²

However, despite being mandatory, action statements have not yet been prepared for all listed threatening processes. Moreover, the Scientific Advisory Council submitted that whether or not action statements are in place, all listed threatening processes are continuing to drive ecosystem decline in Victoria:

Human utilisation of water, land, forest and sea resources and the importation of species for human use (horses, rabbits, deer, cattle, bees, goats, blackberries, pasture grasses) are the most consequential of threatening processes. Despite the listing of processes and the requirement for these to have action statements, only 14 of the 44 PTPs [potentially threatening processes] currently have action statements ... For those PTPs for which Action Statements are available, remedial actions have been identified, and can be put into policy and implemented (e.g. some actions from the ‘Alteration to the natural flow regimes of rivers and streams Action Statement’ are in place statewide), but for PTPs for which Action Statements are not currently available it is not known if remedial action is occurring, or how it might be directed. The listed PTPs (whether they have Action Statements or not) are still acting on Victoria’s biodiversity, and in some cases, accelerating biodiversity loss.⁴³

Action statements have been prepared for four of the 21 potentially threatening processes related to invasive species. They include:

- *Introduction of live fish into waters outside their natural range within a Victorian river catchment* (prepared in September 2003)

³⁸ Ibid., s 20.

³⁹ Ibid., s 23.

⁴⁰ Ibid., s 25.

⁴¹ Ibid., s 27.

⁴² Ibid., s 19.

⁴³ Victorian Scientific Advisory Committee, *Submission 439*, p. 3.

- *Predation of native wildlife by the cat Felis catus* (prepared in 1997 and updated in 2004)
- *Predation of native wildlife by the introduced Red Fox Vulpes vulpes* (prepared in October 2002)
- *The introduction of exotic organisms into Victorian marine waters* (prepared in 2000 and updated in 2004).⁴⁴

In commenting on the adequacy of the FFG Act and the impact of action statements, the Scientific Advisory Committee noted that since the Act came into effect in 1988, only one potentially threatening process has been de-listed—the use of lead shot in cartridges for the hunting of waterfowl. It stated that this process had a ‘very defined cause and solution’ and that for most of the listed processes, ‘solutions are neither easy to define or implement’.⁴⁵

Stakeholder views

Stakeholder views on the implementation and enforcement of the FFG Act were very similar to those expressed in relation to the utilisation and enforcement of the CaLP Act discussed in the previous section. For example, it is the Invasive Species Council’s view that the Processes List provided for by the FFG Act is not comprehensive and that management processes and conservation and control measures are underutilised. It submitted:

The potentially threatening processes listed under the FFG Act are not comprehensive and there are many additional invasive species threats in Victoria that would qualify for listing, including those already present in Victoria as well as likely threats from other parts of Australia and overseas.⁴⁶

The Council was also critical of the lack of action statements for listed potentially threatening processes related to invasive species and suggested that existing action statements are outdated:

The statements were prepared between 1997 and 2003. There has been no clear process for reviewing action statement implementation.⁴⁷

Issues relating to the underutilisation, implementation and enforcement of the FFG Act are described in detail in Chapter 7, as are the Committee’s views on stakeholder suggestions for improvement.

⁴⁴ Department of Environment, Land, Water and Planning, *Conserving threatened species: Action statements*, 2021. <<https://www.environment.vic.gov.au/conserving-threatened-species/action-statements>> accessed 19 August 2021.

⁴⁵ Victorian Scientific Advisory Committee, *Submission 439*, p. 3.

⁴⁶ Invasive Species Council, *Submission 943*, p. 2.

⁴⁷ Ibid.

4.3.3 *Invasive Plants and Animals Policy Framework*

The *Invasive Plants and Animals Policy Framework* establishes the Victorian Government's approach to the management of existing and potentially invasive species. It sits within the *Whole of Government Biosecurity Strategy for Victoria*.⁴⁸

According to the framework, the Victorian Government conceptualises invasive species management as a responsibility shared across State Government, local government authorities, catchment management authorities, industry, private landowners and the community:⁴⁹

It is not feasible or cost-effective for government to enforce or fund the control of all currently declared noxious invasive plant and animal species in the state, nor is it reasonable to apply regulation to a greatly increased number of species and expect effective action against them all.⁵⁰

Instead, the policy commits the Victorian Government to investing in the control of invasive species in:

- cases where landowners or industry have no interest in doing so (where there is a market failure), or
- where government investment offers the most cost-effective solution.

It confirms that the Victorian Government will invest to 'meet its responsibilities as a manager of public land and waters, including protecting assets and managing adverse effects on adjoining landowners'.⁵¹ For example, the Good Neighbour Program helps public land managers reduce the spread of weeds and pests to private land.⁵²

The roles and responsibilities of different organisations prescribed by the policy are described in Table 4.3.

48 Victorian Government, *Invasive Plants and Animals Policy Framework*, 2010, p. 5.

49 Ibid., pp. 20–21; Department of Environment, Land, Water and Planning, *Submission 927*, p. 20.

50 Victorian Government, *Invasive Plants and Animals Policy Framework*, p. 10.

51 Ibid., pp. 10, 12.

52 Department of Environment, Land, Water and Planning, *Submission 927*, p. 26.

Table 4.3 Roles and responsibilities under the *Invasive Plants and Animals Policy Framework*

Organisation	Role
Victorian Government (primarily managed by Agriculture Victoria with support from the Department of Jobs, Precincts and Regions, Department of Environment, Land, Water and Planning and Parks Victoria)	<ul style="list-style-type: none"> • establish and maintain a statewide strategic direction for invasive species • provide preparedness, prevention, eradication and containment for those invasive species that are not yet present across their full potential range and for which government intervention can be justified • provide pre-border and border biosecurity at a state level • engage with industry to minimise the risks of new incursions and to maximise protection from biosecurity risks • act where required as a regulator and enforcer in relation to invasive species and the techniques used to manage them by providing appropriate legislation and resources to achieve compliance • manage invasive plants and animals on public land including where necessary to protect adjoining land, and as required to fulfil responsibilities under relevant legislation • manage state prohibited weeds wherever they occur • provide policy and funding for strategic research • engage with the community in pursuing coordinated action against widely established invasive plants and animals • engage with catchment management authorities and regional communities in community education, pest management planning, implementation and reporting on private and public land and in freshwater environments
Catchment management authorities	<ul style="list-style-type: none"> • develop regional invasive plant and animal strategies to address invasive plants and animals in private and public lands in accordance with regional catchment strategies and any relevant state policy, framework, strategy, plan or guideline • prioritise action needed to address invasive plants and animals and monitor, evaluate and report (to the extent achievable given available resources) on delivery of these actions by relevant agencies • manage invasive plants and animals associated with waterways
Local government authorities	<ul style="list-style-type: none"> • meet all responsibilities as land managers in relation to declared weeds and pest animals • ensure that their actions do not spread or exacerbate invasive plant and animal problems • address local weed issues in whatever manner seen to be fit, including local laws, provided that such actions do not duplicate or conflict with the CaLP Act or other relevant legislation • ensure that planning decisions do not exacerbate weed and pest problems • provide education and incentives to improve land management in municipalities and be advocates for effective invasive plant and animal management
Landholders	<ul style="list-style-type: none"> • responsibilities for both private and public landholders are to address their obligations under the CaLP Act and any local laws with respect to declared weeds and pest animals • public land managers also have obligations under other Acts that must be met by undertaking further invasive plant and animal management

Source: Adapted from Victorian Government, *Weeds and Vertebrate Pests: Module 1 within the invasive plants and animals policy framework*, Department of Primary Industries, 2010, pp. 18–19.

Management approach for invasive species

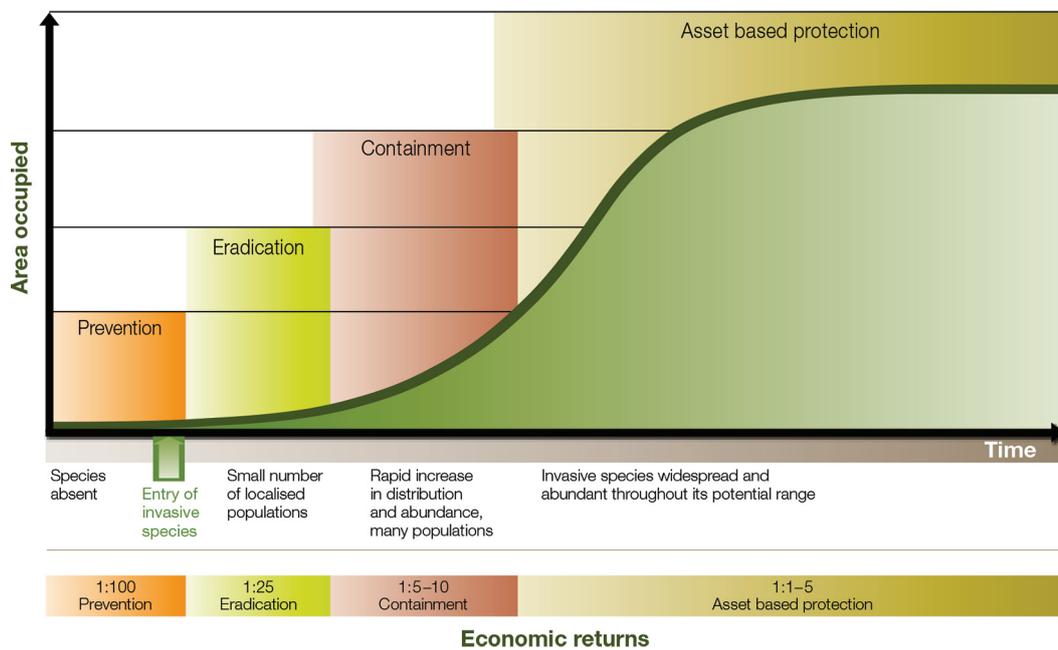
The *Invasive Plants and Animals Policy Framework* prescribes a management approach for invasive species which comprises four stages:

- prevention—interventions to stop potentially invasive species entering Victoria
- eradication—removal and destruction of all traces of an invasive species, including seeds for plant species
- containment—eradication beyond the perimeters of a designated area, or interventions to prevent a species crossing out of the area (such as fencing)
- asset-based protection—rather than a statewide approach, asset-based protection is the prioritisation of high-importance agricultural or environmental assets. Resources are allocated to eradicate pest species from the area.⁵³

Whether or not an invasive species can be prevented from entering Victoria, the abundance of any established populations and their impact on biodiversity, agricultural or social values informs the management stage pursued.

Figure 4.1 illustrates the relationship between the different stages of management, invasive species abundance and economic investment.

Figure 4.1 Generalised invasive species curve showing management stages and economic return on investment



Source: Victorian Government, *Invasive Plants and Animals Policy Framework*, 2010, p. 14.

⁵³ Victorian Government, *Invasive plants and animals: Policy framework*, p. 4.

4.4 Improving the legislation and policy framework for invasive species

Many stakeholders to the Inquiry felt that Victoria's approach to the control and eradication of invasive species could be strengthened. For example, in its submission, the Victorian Farmers Federation was critical of invasive species management on public land. It claimed that inadequate control of pest plants and animals is disincentivising farmers from pursuing native revegetation on their properties:

There are many examples where crown land is overrun with pest plants and animals, with no funding to managing these issues. Biodiversity values in these areas are very low. This can place additional pressure on neighbouring land holders in increased costs of managing invasive weeds and greater impact on production from pest animals and wildlife. In these circumstances farmers are increasingly avoiding revegetation if that vegetation creates a refuge for foxes breeding up on the crown land to predate livestock – up to 75% of prime lambs being lost to predation.⁵⁴

Patrick Medway AM, Honorary Secretary, Chief Executive Officer and Treasurer of the Australian Wildlife Society, provided evidence at a public hearing. He noted that despite national and state funding for invasive species control and eradication, pest animals such as cats and foxes remain prevalent:

We have never been able to wipe out any of the invasive species yet, from cane toads to rabbits to foxes or otherwise. Feral cats are a plague on the whole country, and you see pictures in almost any wildlife movie or video referring to feral cats and the damage they do. Again, they are great survivors. They eat everything from lizards right through to bird species. We have not, despite the money being spent at federal and state and council level, successfully removed feral cats or foxes or wild dogs to some extent. It is just an ongoing saga.

Now, we keep spending money, we keep pursuing it.⁵⁵

Richard Hughes, Victorian Campaign Manager at The Wilderness Society, told the Committee at a public hearing in Melbourne that invasive species need to be better controlled:

we are certainly advocating for controls around invasive species, plants and animals, and we think it is an important aspect of conservation in the environment, including within the regulatory framework.⁵⁶

⁵⁴ Victorian Farmers Federation, *Submission 882*, p. 4.

⁵⁵ Patrick Medway AM, Honorary Secretary, Chief Executive Officer and Treasurer, Australian Wildlife Society, Public hearing, Melbourne, 23 February 2021, *Transcript of evidence*, pp. 18–19.

⁵⁶ Richard Hughes, Victorian Campaigns Manager, The Wilderness Society, Public hearing, Melbourne, 11 March 2021, *Transcript of evidence*, p. 34.

Several submitters commented on the complexity of the legislative framework for declaring invasive species as pests and managing their impact on Victoria's biodiversity values. For example, the Invasive Species Council characterised legislation as a 'mixed bag' of ineffective laws:

Victoria's legislative framework to manage invasive species is a mixed bag. Measures are often not specifically formulated or effective in managing invasive species to protect ecological values. Instead, the focus of invasive species management often reflects ... interests of agriculture, recreational hunting and fishing lobbyists, and plant and bird collectors. This has resulted in a hodgepodge of confusing and ineffectual legislation.⁵⁷

The Invasive Species Council and other submitters referred to invasive deer to illustrate the complexities of Victoria's legislative framework for controlling and eradicating invasive species.

The Committee received significant evidence relating to pest species. It has chosen to provide case studies on two species in the interests of brevity, but acknowledges that many more noxious weeds and pest animals play a role in ecosystem decline.

4.4.1 Case study—Deer

There are four established species of exotic deer in Victoria: sambar deer (*Cervus unicolor*), hog deer (*Axis porcinus*), red deer (*Cervus elaphus*) and fallow deer (*Dama dama*). The combined population of these species has been estimated at between several hundred thousand and up to a million animals in the wild. Sambar deer are the most widespread and common species in Victoria with populations across eastern Victoria, French Island, Timboon and the Grampians.⁵⁸

Another two deer species, chital deer (*Axis axis*) and rusa deer (*Cervus timorensis*) have established pest populations in other Australian states, such as New South Wales, but to date are mostly contained in farms in Victoria.⁵⁹

⁵⁷ Invasive Species Council, *Submission 943*, p. 5.

⁵⁸ Department of Environment, Land, Water and Planning, *Victorian Deer Control Strategy*, Victorian Government, 2020, p. 9.

⁵⁹ *Ibid.*

BOX 4.2: Case study—Deer

The estimated breeding distribution of deer in Victoria is shown in the figure below.

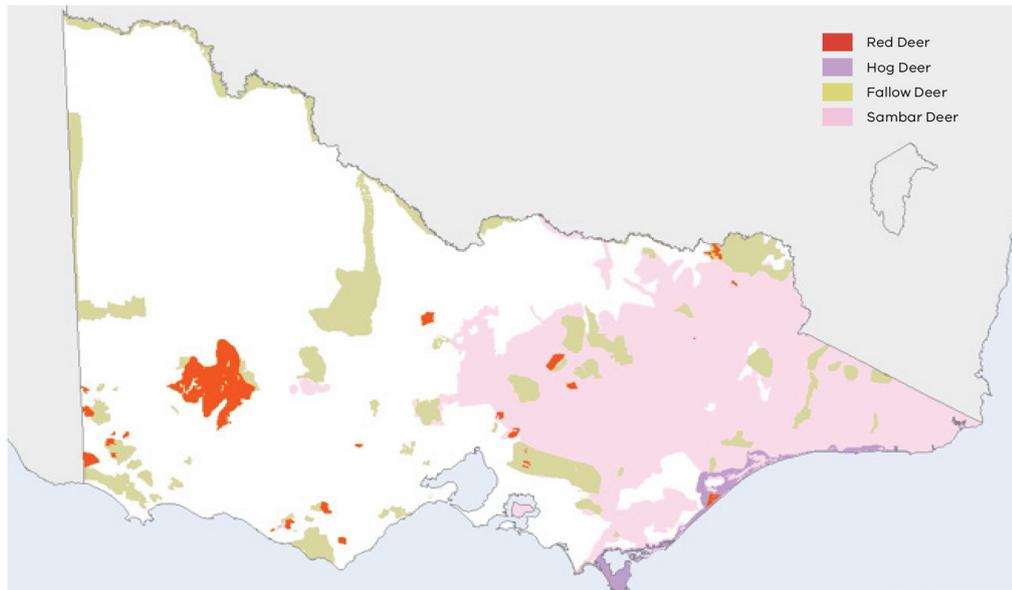
The estimated breeding distribution of deer in Victoria

Figure taken from: Department of Environment, Land, Water and Planning, *Victorian Deer Control Strategy*, 2020, p. 9.

Impact of deer on the natural environment

Invasive deer species are driving ecosystem decline through:

- selective browsing—the practice of eating specific species of plants and avoiding others which can contribute to changes in forest composition
- antler rubbing—male deer rub their antlers on trees to remove the velvet covering that grows on them during the summer, damaging and sometimes ringbarking the tree
- pugging—the compaction and disturbance of soil structure that promotes water retention on the surface and creates bogs
- trail creation—trampling native vegetation
- competing with native herbivores for food—as deer population density increases in an area, the abundance and diversity of plants available for native herbivores may decline.

Sources: Department of Environment, Land, Water and Planning, *Victorian Deer Control Strategy*, 2020, p. 9; Invasive Species Council, *Submission 943*, p. 13; Australian Deer Association, *Submission 667*, pp. 2, 5; East Gippsland Conservation Management Network, *Submission 831*, p. 2.

Status of invasive deer under Victorian legislation

Invasive deer species have a complex and seemingly contradictory status under Victorian legislation. Table 4.4 shows that some varieties of deer (hog, red, sambar, fallow, rusa, chital, sika and wapiti deer) are currently defined as protected wildlife under the Wildlife Act (the Wildlife Act is described further in Chapter 7). Of those varieties, some (hog, red, sambar, fallow, rusa and chital deer) are also classified as game, which means they can be hunted by licensed hunters. All other species of deer are defined as prohibited pest animals under the CaLP Act.⁶⁰

Table 4.4 The conflicting status of exotic deer under Victorian legislation

Status	Legislation	Deer species	Intent/obligation
Protected wildlife	<i>Wildlife Act 1975</i> (Vic)	Chital, fallow, hog, red, rusa, sambar, sika, sikared hybrids and wapiti	Offence to hunt, take, or destroy protected wildlife unless authorised
Game species	<i>Wildlife Act 1975</i> (Vic)	Chital, fallow, hog, red, rusa and sambar	Can be hunted by licensed game hunters according to prescribed methods, seasons (Hog Deer only) and time of day
Problem deer on private land (unprotected species)	Governor in Council Order under the <i>Wildlife Act 1975</i> (Vic)	All deer species, except hog deer	Problem deer on private property can be controlled without a licence or permit
Prohibited pest animal	<i>Catchment and Land Protection Act 1994</i> (Vic)	All species except: chital, fallow, hog, red, rusa, sambar, sika, sikared hybrids and wapiti	This declaration prohibits the bringing into Victoria, keeping, selling, or releasing of these animals without a permit. Government has a responsibility to take all reasonable steps to control prohibited pest animals on any land in the State.
Exotic fauna	<i>National Parks Act 1975</i> (Vic)	All species of deer	The <i>National Parks Act 1975</i> (Vic) requires the extermination or control of exotic fauna (including deer) in national and state parks, wilderness parks and other reserves.
Potentially threatening process	<i>Flora and Fauna Guarantee Act 1988</i> (Vic)	Sambar Deer	Recognises that Sambar Deer pose a significant threat to the survival and evolutionary development of numerous plant taxa and ecological communities.

Source: Department of Environment, Land, Water and Planning, *Victorian Deer Control Strategy*, Victorian Government, 2020, p. 16.

The Invasive Species Council submitted that the governance arrangements for deer are 'complex and confused'. It noted that public land managers such as Parks Victoria and local government authorities must currently seek authorisation to manage deer on public land, whereas a Governor in Council Order has temporarily permitted private landowners to control deer on their properties without a permit. Moreover, it argued that the protected status of deer under the Wildlife Act 'signals to landowners that

⁶⁰ *ibid.*, p. 16.

there is no need to control deer on their land unless their own interests are being impacted'. It acknowledged that deer are listed as a potentially threatening process under the FFG Act but pointed out that this status does not 'compel any action by the state or landowners'.⁶¹

The Invasive Species Council called for all species of invasive deer to be classified as pest species as a priority.⁶²

Similarly, the Local Government Professionals Biodiversity Planning Network submitted that defining some species of deer as game species is inconsistent with best practice invasive species management:

Allowing Sambar, Fallow, Red and Hog Deer to remain as 'game' under the *Wildlife Act 1975* in Victoria because they are 'already established in the wild in Victoria and beyond eradication with current control methods', is inconsistent with best practice pest animal management. In the wild, deer are invasive pests and should be unequivocally recognised as such. All feral deer species in Victoria need to be removed as 'game' under the *Wildlife Act 1975* ...⁶³

At a public hearing, Daniel Miller, General Manager, On Country at Gunaikurnai Land and Waters Aboriginal Corporation, expressed concern that deer are being maintained as a game species to enable hunting to the detriment of other biodiversity values:

promoting those species so that you can maintain a resource to hunt I know I certainly take exception to and I think most Traditional Owners would ... I continue to be concerned about the promotion of species [such as deer] that do not belong in our landscape at the detriment of those that do.⁶⁴

The Local Government Professionals Biodiversity Planning Network suggested that State Government management is currently attempting to simultaneously manage deer populations as both a protected game species and a pest species. It suggested that the species could be more effectively managed if this conflict is resolved:

If all deer species are legislated as pest animals in Victoria, more opportunities for research into alternative control methods are likely to be realised, along with potential funding sources made available.⁶⁵

Dr Nadine Richings of EnRICHed Pursuits also commented on the potential for additional funding and research into humane deer control methods to develop techniques for limiting the breeding and fertility of the species:

If we understand enough about that species, enough about their reproductive biology, and we put enough funding towards it, we can effectively control the breeding of

⁶¹ Invasive Species Council, *Submission 943*, pp. 6–7.

⁶² *Ibid.*, p. 10.

⁶³ Local Government Professionals, Biodiversity Planning Network, *Submission 523*, p. 12.

⁶⁴ Daniel Miller, General Manager, On Country, Gunaikurnai Land and Waters Aboriginal Corporation, Public hearing, Melbourne, 26 August 2021, *Transcript of evidence*, p. 45.

⁶⁵ Local Government Professionals Biodiversity Planning Network, *Submission 523*, p. 12.

any species without doubt. Secondly, we need to talk more about fertility control. There is not a single answer. The species all vary a little bit. We are also talking about anything that we would have to do to control the breeding of an introduced species. We would have to look at a delivery mechanism, which is beyond reproductive biology, but the delivery mechanisms are critical. You could have something that in terms of reproductive biology will work, but you have got to make sure that you deliver it.⁶⁶

The Upper Maribyrnong Catchment Group recommended that the Victorian Government declare deer a pest species under the CaLP Act and remove their status as a protected species under the Wildlife Act.⁶⁷ Macedon Ranges Shire Council submitted a similar suggestion:

Declaring Deer a “pest” species under the *Catchment and Land Protection Act 1994*, removing them from the list of protected “game” under the *Wildlife Act 1975* and finalising the Victorian Deer Management Strategy will establish the necessary pre-conditions to tackle this pest species.⁶⁸

However, Barry Howlett, Executive Officer of the Australian Deer Association, argued at a public hearing that game legislation is designed to regulate recreational hunters, not deer, and that hunters make a significant contribution to controlling the impacts of invasive deer in Victoria:

Game licensing is a means of managing the hunters, not the deer. Efforts to dismantle game licensing are, logically, seen by hunters as back door efforts to dismantle public land hunting. It certainly smacks of an undisclosed agenda ...

There are great examples of hunters and hunting groups making significant contributions to improving biodiversity and addressing ecosystem decline in Victoria, both through what we might term as the conventional deer control programs—that is, volunteers killing deer in a coordinated and targeted way—and through other initiatives such as the extensive deer monitoring programs in the Alps, the erection of exclusion fencing around alpine bogs, revegetation of degraded state game reserves to rehabilitate habitat and restore biodiversity and innovative hunter-funded weed removal programs to protect nationally listed threatened plant species and improve hunting opportunities at the same time.⁶⁹

The Committee acknowledges and accepts that hunting as a sport has support from a limited minority of the community. Recreational hunting is not a focus of this Inquiry and the Committee makes no findings or recommendations regarding hunting as a sport.

The Committee observes that recreational hunting should not be considered in the same context as government initiatives to control or eradicate invasive pest species. Accredited hunters can play a role in culling efforts, but these efforts are strictly

⁶⁶ Nadine Richings, EnRIChed Pursuits, Public hearing, 21 April 2021, *Transcript of evidence*, p. 23.

⁶⁷ Upper Maribyrnong Catchment Group, *Submission 904*, p. 5.

⁶⁸ Macedon Ranges Shire Council, *Submission 412*, p. 2.

⁶⁹ Barry Howlett, Executive Officer, Australian Deer Association, Public hearing, Melbourne, 24 February 2021, *Transcript of evidence*, p. 10.

controlled and moderated by government. Culling pest species is not the same as hunting on private property or for sport. These two forms of hunting should not be conflated, and require disambiguation, especially in the context of the damage that pest species are having on ecosystems.

The Committee notes the findings of the Victorian Environment, Natural Resources and Regional Development Committee's *Inquiry into the control of invasive animals on Crown land*. The Committee reported its findings in 2017, including that recreational hunting alone is insufficient to control pest animals.⁷⁰ Indeed, given pest deer are estimated to be in the thousands, recreational hunting is having a negligible impact on controlling deer populations.

In a submission to the Inquiry, the Invasive Species Council pointed out that deer are not the only invasive species whose legal status is impeding their effective management. It noted that other invasive species classified as game under the Wildlife Act, such as exotic pheasants and quail, cannot be classified as pests under the CaLP Act.⁷¹ Neither can native species that occur outside their natural range and damage ecosystems:

several of the most serious invasive plant species in the state are indigenous to one area, but become serious threats to biodiversity when introduced into others.

Of the top 20 environmental weeds in Victoria, three are indigenous to Victoria but naturalised outside their pre-European range: sweet pittosporum, coast wattle and coast tea-tree. Sweet pittosporum is a major invader, causing significant damage to the forests right across the state including in the Dandenongs, Yarra Ranges and the Otways, far from its natural range. Coast wattle and coast tea-tree both invade areas outside their natural range. Listing these species under the CaLP Act would assist land managers to legally carry out ecological management, where appropriate.

Currently, listing is not possible as the CaLP Act has a clause that prohibits the listing of species that naturally occur in ecological communities listed under the FFG Act, and sweet pittosporum, coast wattle and coast tea-tree all occur within an FFG-listed community.⁷²

The Council argued that any invasive species (native, exotic or game) must be able to be listed as a pest or weed under the CaLP Act or as a potentially threatening process under the FFG Act to enable their harmful impact to be effectively managed. It advocated for legislative reform to resolve this issue and enable the appropriate management of harmful native species.⁷³

Clear and consistent evidence to the Inquiry illustrated that deer are a widespread invasive species, profoundly damaging to Victoria's ecosystems. As such, the

⁷⁰ Parliament of Victoria, Joint Statutory Committee on Environment, Natural Resources and Regional Development, *Inquiry into the control of invasive animals on Crown land*, 2017, pp. xxi-xxxii.

⁷¹ Invasive Species Council, *Submission 943*, p. 10.

⁷² Ibid.

⁷³ Ibid.

Committee shares stakeholders' views that legislation should effectively support land manager efforts to control and humanely eradicate deer across all land tenures.

The Committee believes that requiring public land managers to seek authorisation under the Wildlife Act each time they undertake deer control on Crown lands presents an obstacle to the management of deer on public lands. Legislation should facilitate the effective and humane control of deer across all tenures.

The Committee acknowledges and notes that the Victorian Government is implementing the *Victorian Deer Control Strategy*, introduced in 2020, that foreshadows legislative changes aimed at resolving the complexities in the legal status of deer.

In the Committee's view, consideration should be given to removing deer as a protected species under the Wildlife Act. The Committee believes this will be assisted by funding research to develop more humane control methods. The Committee acknowledges that legal classification issues are also impeding the effective management of other invasive species such as exotic pheasants and quail, and native plant species that occur outside their natural range. These classification issues also require resolution. Recommendation 4 addresses these issues.

FINDING 5: Conflicting classification systems for plants and animals provided for by the *Catchment and Land Protection Act 1994* (Vic), *Flora and Fauna Guarantee Act 1988* (Vic) and *Wildlife Act 1975* (Vic) are impeding the effective control of noxious weeds and pest animals. The classification schemes under each Act require review and harmonisation to ensure ecosystems are managed and protected efficiently.

Lastly, the Committee notes that the *Victorian Deer Control Strategy* recognises that the control of deer is currently restricted by the limited number of viable control methods. The strategy notes that increased research and trialling of alternative methods of deer control is required and commits to monitoring the outcomes of research to determine the effectiveness and suitability of new control methods. The Committee observes that shooting alone is neither the most effective nor humane method for controlling pest deer. It contends that the development of more effective and humane methods of controlling deer, such as techniques that limit reproduction and fertility, should be encouraged and prioritised.

RECOMMENDATION 3: That the Victorian Government resource and monitor research into innovative deer control methods, including, but not limited to, methods aimed at curbing pest deer reproduction and fertility.

4.4.2 New legislation with a greater focus on prevention and early eradication

Some stakeholders to the Inquiry advocated for the development of new invasive species legislation with a greater focus on preventing new species from entering Victoria and establishing a population.⁷⁴

The Invasive Species Council noted that the need for modern invasive species legislation was recognised by the Victorian Government when it introduced the Invasive Species Control Bill 2014 (Vic) (Invasive Species Control Bill) into the Victorian Parliament.⁷⁵

The Invasive Species Control Bill was developed following a review of the legislative framework for the management of invasive plants and animals conducted by the former Department of Primary Industries in 2011. The review found that incremental changes to the noxious weeds and pest animals provisions of the CaLP Act over the years had not kept pace with Victoria's evolving invasive plant and animal policy, or its approach to biosecurity management. The review recommended 'major reform to modernise the legislative framework for the management of invasive species'.⁷⁶

The Invasive Species Control Bill was subsequently developed and introduced into the Victorian Parliament. According to its Explanatory Memorandum, the Bill sought to address the following issues with the management of invasive species:

Inadequate legislative provisions to enable prevention and early intervention. Prevention and early intervention to manage risk generally provide the most cost-effective means for achieving positive biosecurity outcomes while invasive species that are more widespread are best managed through approaches that emphasise containment and protection of our most valuable assets.

Overreliance on a complex system of declaration categories to determine the responsibilities for managing specific invasive species. For example, the CaLP Act relies on four declaration categories to regulate noxious weeds and four categories to regulate pest animals. Although the principles for managing these weeds and pest animals are similar, the categories are not, making it difficult for people to comply with, understand and work with this Act.

The limitation of legislation to a narrow range of invasive animals. For example, under the CaLP Act, the Minister cannot recommend invasive fish or invertebrates for declaration. These groups of invasive species are only partially covered by other biosecurity and fisheries legislation, effectively resulting in gaps in our legislative framework for the management of invasive species in Victoria.⁷⁷

⁷⁴ For example, see: *ibid.*; Victorian National Parks Association, *Submission 102*.

⁷⁵ Invasive Species Council, *Submission 943*, p. 7.

⁷⁶ *Invasive Species Control Bill 2014: Explanatory Memorandum*, <http://classic.austlii.edu.au/au/legis/vic/bill_em/iscb2014283/iscb2014283.html> accessed 11 November 2021.

⁷⁷ *Ibid.*, p. 6.

However, stakeholders such as the Invasive Species Council were critical of the Bill. The Council felt that ‘while this Bill would have provided broader powers than current legislation, they were highly discretionary’ and failed to include ‘best-practice biosecurity measures’ already operating in states such as Queensland, New South Wales and Tasmania. It suggested that the Bill failed to resolve issues around conflicting classification of plants and animals across legislation because its new powers couldn’t be used for species listed under the Wildlife Act. In addition, the Bill did not adopt a permitted list approach or incorporate a strong focus on prevention.⁷⁸

The Invasive Species Control Bill lapsed shortly after a second reading was moved when the 57th Parliament of Victoria was prorogued in November 2014 for a general election.⁷⁹ The Bill has not been reintroduced to subsequent parliaments.

In submissions to the Inquiry, the Invasive Species Council and Victorian National Parks Association argued that legislative reform remains necessary to modernise Victoria’s approach to managing invasive species.

The Invasive Species Council said that the *Invasive Plants and Animals Policy Framework* outlines a logical and cost-effective approach to managing existing and potential invasive species in Victoria incorporating prevention, eradication, containment and asset protection. However, it felt that Victoria’s current legislation is not well aligned with, or reflective of, this approach.⁸⁰ Andrew Cox noted that new exotic plant species become established in Victoria each year:

If you look at our weeds, in Victoria 25 per cent of the plants naturalised in Victoria are exotic ... Every year another 10 new plant species are established in Victoria. So while we have learned a lot of lessons around how we have either accidentally or deliberately introduced species into Victoria, those trends are still continuing; we do not seem to have learned the lessons of the impacts of invasive species and why it is important to address this problem.⁸¹

Andrew Cox argued that a greater focus on prevention and early eradication is cost effective and minimises the impact on the environment:

you should keep the species from ever arriving in the first place. For example, we should stop selling weedy plants in plant nurseries, because escapees from people’s gardens are the biggest threats, because of the growth rate of weedy plants. Preventing them ever being in the gardens to escape is one of the best things, the cheapest things and the most feasible things you can do to stop the problem ever occurring. So investment in prevention and early action will yield benefit-cost ratios of 100 to 1, 1000 to 1 or even greater. One-off costs for eradication will solve a management cost in perpetuity.⁸²

⁷⁸ Ibid., p. 10; Invasive Species Council, *Submission 943*, pp. 9–10.

⁷⁹ Victorian Government, *Victorian Government Response to the Victorian Environmental Assessment Council’s Statewide Assessment of Public Land Final Report*, 2017.

⁸⁰ Invasive Species Council, *Submission 943*, p. 7.

⁸¹ Andrew Cox, *Transcript of evidence*, p. 1.

⁸² Ibid., p. 2.

The Invasive Species Council provided an example that they felt demonstrated the poor alignment between the *Invasive Plants and Animals Policy Framework*, legislation and how invasive species are approached. Box 4.3 describes the infiltration of the smooth newt into Victoria, the Victorian Government's response and the Invasive Species Council's criticism.

BOX 4.3: Case study—Smooth newts

Smooth newts (*Lissotriton vulgaris*) are lizard-like animals that grow up to approximately 10 cm in length, originating from Europe and western Asia. They range in colour from pale brown to olive green and typically have an orange belly with dark spots. Their paddle-like tail aids with swimming and males develop a transparent crest along their spines during their breeding season in spring and early summer. Smooth newts have a semi-aquatic lifestyle, are carnivorous and are generally nocturnal.

A small population of smooth newts was discovered in the south-eastern suburbs of Melbourne in 2011. The source of the population is thought to be the illegal pet trade. Smooth newts were discovered at four additional sites in 2012 and another two sites in 2013 using e-DNA sampling.

An assessment by the Commonwealth Government determined that the smooth newt presents a moderate invasive species risk and concluded that the impact on native plants and animals is uncertain. Potential impacts could encompass predation, competition and disease spread. Eradication of the smooth newt was estimated to cost approximately \$300,000. According to the Invasive Species Council, the former Victorian Department of Environment and Primary Industries determined the feasibility of eradicating the smooth newt as low to moderate and decided not to take any control action.

The Invasive Species Council was highly critical of this decision, asserting that 'experts recommended a preventative course of action':

For the Invasive Species Council, this poor decision-making represents both the flaws in Australia's national biosecurity response systems and the low priority given to stopping invasive species that harm the environment at the Federal and State levels.

In 2016, the Invasive Species Council commissioned a new assessment of the smooth newt population in Melbourne. It found that the species was still present in at least one of the previous sites as well as a new site. In 2019, the Council commissioned further assessments. If the eradication of the smooth newt is still demonstrated to be feasible, the Invasive Species Council would like Agriculture Victoria to take immediate steps to remove the species from the State. Alternatively, it is also advocating for a long-term containment program.

Sources: Agriculture Victoria, *Smooth newt: Lissotriton vulgaris*, 2021, <<https://agriculture.vic.gov.au/biosecurity/pest-animals/priority-pest-animals/smooth-newt>> accessed 12 November 2021; Invasive Species Council, *Submission 943*, pp. 15-16; Invasive Species Council, *Case Study: Smooth Newt*, November 2017.

The Victorian National Parks Association made similar points in relation to the control of invasive plant species. It suggested that the current approach of listing restricted plant species is slow to react to the threat posed by exotic species and restricts species only after they are established:

The current listing system or black list system, results in bans on species that have already established, which is often too late to eradicate them. This system can also be slow and onerous and does not operate with the urgency needed to avoid new infestations of pest plants.⁸³

Addressing the Committee at a public hearing, Richard Hughes from the Wilderness Society also advocated for a greater emphasis on preventing new invasive species from entering the State:

I would argue that, in terms of being effective, actually preventing new invasive [species] coming into the country or the State is the point in time that you want to address the potential for new species ... That is not necessarily just through quarantine, but it is also ... sometimes about regulating industry and plants and animals.⁸⁴

The Southern Dandenongs Landcare Group provided examples of plants with 'demonstrated weed potential' in the Dandenong Ranges being sold by local nurseries:

Many exotic species with weed potential are still presently distributed.

In 2020 a range of introduced plants with demonstrated weed potential and naturalised infestations in the Dandenong's were available for sale including: - Gossamer Wattle (*Acacia floribunda*), English Ivy (*Hedera helix*) and Portuguese Laurel (*Prunus lusitanica*).⁸⁵

The Landcare Group called for the CaLP Act to be adapted to prohibit nurseries from selling potential weeds.⁸⁶

The Victorian National Parks Association argued that it is important that Victoria adopts a more precautionary and proactive approach to weed listing and assessment as climate change is likely to trigger the more rapid spread of weeds through events such as fire, floods and drought.⁸⁷ It noted that the current approach of listing restricted plant species is quite reactive. There are no limitations on the trade and cultivation of noxious weeds unless they have become a problem:

Currently, imports of new plant and animal species are possible unless they are on a 'prohibited' list. This allows the import of potential weeds and pest animals until they have become a problem, at which point eradication may be impossible.⁸⁸

⁸³ Victorian National Parks Association, *Submission 102*, p. 35.

⁸⁴ Richard Hughes, Victorian Campaigns Manager, Wilderness Society, Public hearing, Melbourne, 11 March 2021, *Transcript of evidence*, p. 35.

⁸⁵ Southern Dandenongs Landcare Group, *Submission 718*, p. 3.

⁸⁶ *Ibid.*

⁸⁷ Victorian National Parks Association, *Submission 102*, p. 35.

⁸⁸ *Ibid.*, p. 39.

It suggested that moving to a permitted safe list approach would trigger risk assessment of all species prior to being introduced into the State:

To improve regulations, Victoria should establish a permitted or ‘white list’ approach for listing of potential pest plant species prior to species being brought into state ... With a permitted species list, all species would need to undergo a weed risk assessment prior to being permitted entry into the state. This type of assessment would be undertaken on existing traded species and require risk assessments of all new taxa proposed for introduction into the state.⁸⁹

The Association noted that the Western Australian Government adopted this approach in relation to noxious weeds in 1997.⁹⁰

The Association said it is important that assessments of the risk of exotic plants consider both potential impacts on agriculture and Victoria’s natural environment. It claimed that, to date, risk assessments have focussed on measuring the potential impact on agriculture as it is easier to economically quantify than damage to the natural environment. It suggested that a new framework is needed to guide holistic assessments:

The best way to stop invasive pest plant species from damaging natural areas and agricultural areas is to prevent the import of high risk species into the state. A new framework is needed to assess the environmental risk of plants prior to them being able to be sold and distributed across the state and into areas where they will cause serious ecological harm.

This is lacking in the state’s current framework where emphasis is placed on plants that do harm to agricultural assets but mostly does not investigate or legislate against the ecological damage done by pest weed species on the environment. This could be due to the easy nature of calculating the economic costs of pest plants on agriculture and the impossible task of calculating the cost of pest weed species on natural areas, ecosystem function and ecosystem services.

Weed costs are virtually impossible to predict or calculate in advance. And when environmental harm is involved there is no real acceptable way of measuring it. After a plant becomes a significant established weed it is likely to remain in the landscape forever.⁹¹

The Invasive Species Council called for the development of new biosecurity legislation to strengthen the State’s response to invasive species:

To facilitate ecosystem and species protection and restoration, it’s vital to develop new stand-alone biosecurity legislation to strengthen the approach to harmful invasive species. The environment must be a central focus for this legislation, along with agriculture ... An appropriate Act needs to incorporate the risk management and biosecurity approach outlined in the IPAPF [*Invasive Plants and Animals Policy*

⁸⁹ Ibid., p. 35.

⁹⁰ Ibid.

⁹¹ Ibid., p. 34.

Framework] to effectively prevent, eradicate and control invasive species that threaten the natural environment.⁹²

The Invasive Species Council believed that this legislation should contain ‘an explicit commitment to [the] prevention of invasive species as a fundamental starting point for all biosecurity activities’. It would also like to see legislation shift Victoria to a ‘permitted safe list’ approach defining which taxa non-indigenous to Victoria can be introduced, sold, or kept in the State—rather than the current practice of listing restricted pest species under the CaLP Act. For non-native plants and animals not on the permitted list, the Council advocated for legislation to require an independent risk assessment to be undertaken, informed by the ‘precautionary principle’ before potentially being added to the permitted list. Moreover, the Council suggested that this legislation should fall within the remit of the Minister for Environment and be administered by DELWP to ensure its focus is on preserving biodiversity values—as opposed to furthering Victorian agriculture. It advocated for legislation to incorporate ecological sustainable development principles, including the precautionary principle, the conservation of biodiversity, intergenerational equity, valuation and pricing and public participation. Lastly, it suggested that the legislation should prompt a new assessment of existing invasive species:

A requirement for systematic risk assessment and categorisation of already introduced species to guide actions to eradicate, contain or control harmful species ...⁹³

However, the Victorian Farmers Federation warned that regulation is not a panacea and stopping the spread of weeds requires direct action and resourcing.⁹⁴

It appears to the Committee that the need to modernise invasive species legislation is broadly recognised across government agencies and environmental stakeholders. Indeed, witnesses and submitters to this Inquiry have raised similar concerns with the operation of legislation that the Invasive Species Control Bill was developed to address.

FINDING 6: The Victorian legislative framework for the management of invasive species should be modernised to ensure it aligns with best practice biosecurity or environmental conservation approaches.

Approximately a decade has elapsed since the former Department of Primary Industries first reviewed the legislative framework for the management of invasive species and identified the need for legislative reform. In this time, the threat profile posed by invasive species that are already within Victoria has changed, as has the State’s connectedness to different regions of the globe. Technology and invasive species management techniques have also evolved. As such, the Committee believes that a fresh review of the legislative framework for the management of invasive species is merited to identify how best to modernise legislation.

⁹² Invasive Species Council, *Submission 943*, p. 9.

⁹³ *Ibid.*, pp. 9–10.

⁹⁴ Victorian Farmers Federation, *Submission 882*, pp. 7–8.

RECOMMENDATION 4: That the Victorian Government review the legislative framework for the management of invasive species with a view to developing a legislative reform package. The review should consider:

- the economic impact (including agricultural and environmental) of invasive species in Victoria
- the formulation of legislative provisions to prioritise prevention and early intervention measures to control invasive species
- the simplification and harmonisation of the complex classification systems for plants and animals under the *Catchment and Land Protection Act 1994* (Vic), *Flora and Fauna Guarantee Act 1988* (Vic) and *Wildlife Act 1975* (Vic) to facilitate the more effective control of noxious weeds and pest animals across land tenures
- the merits of shifting to a permitted 'safe list' approach defining which taxa non-indigenous to Victoria can be introduced, sold, or kept in the State, as opposed to the current practice of listing restricted pest species under the *Catchment and Land Protection Act 1994* (Vic)
- expanding the application of the legislative framework to include the management and control of invasive fish or invertebrates and native invasive plants and animals
- making the administration of the legislative framework for the management of invasive species a responsibility of the Minister for Environment and the Department of Environment, Land, Water and Planning, to ensure its focus is on preserving biodiversity values as opposed to a focus on facilitating Victorian agriculture.

4.4.3 Regional coordination

Some stakeholders felt that regional coordination of invasive species management could improve environmental outcomes. For example, the Invasive Species Council suggested that management of pest plants and animals across land tenures at the regional level is generally not well-integrated. The Council called for the establishment of regional pest animal and plant committees:

there is no statewide governance arrangement that facilitates regional pest animal and weed planning and guarantees accountability.

The situation would be improved by the establishment of regional pest animal and weed committees comprising local governments, other land managers, Traditional Owners and community representatives to develop strategies and allocate resources for weed eradication and control. These committees would best operate at the catchment level, overseen by each catchment management authority.⁹⁵

⁹⁵ Invasive Species Council, *Submission 943*, p. 11.

The Council noted that many Traditional Owner corporations have already established land management teams and should be involved in the management of invasive species on Country if it aligns with their objectives:

Invasive species management provides a great opportunity to increase Indigenous connection with country, if meaningful engagement and community driven programs are supported.

Strategic pest plant and animal management is essential to restore the diversity and abundance of native species – ultimately improving the health of the landscape. First Peoples should be involved in identifying priority locations and species to manage, as well as involved in the physical management effort, if that aligns with their objectives.⁹⁶

The Invasive Species Council asserted that New South Wales has already adopted a regional approach to invasive species management, and it is much more comprehensive than Victoria's current approach.⁹⁷

The Australasian Native Orchid Society Victorian Group also submitted in favour of coordinating invasive species management at the regional level. It provided an example of noxious weed management that illustrated the importance of ensuring invasive species management is coordinated across land tenures in a region and is ongoing:

In Victoria, pest species control is often piecemeal, of limited duration, uncoordinated across land tenures and therefore opportunities to counter population surges are lost.

As an example, in the Omeo district around the Omeo Valley, English Broom is a major problem thickly blanketing hillsides, whole valleys, stream edges and water catchments. This blanketing growth occurs equally on prime pasture, State Forests and National Parks where a host of rare and common orchids occur. The seed of English Broom can remain active in the soil for up to 40 years. In one instance DELWP brought in skilled Contractors on a fixed term contract. The problem looked insurmountable but miraculously after two years the bulk of the blanketing growth has been removed leaving manageable remnant patches to be cleaned up. The Contractors had a small wheeled vehicle that allowed them to take spray into every nook and cranny. After 3 or 4 years they had eradicated most of the English Broom and the problem was easily manageable. However, the fixed term contract expired, further funding was withdrawn and there was no further follow-up. All that time, effort and expense was wasted, as after a few years the broom returned to again blanket these places. Small scale on-going maintenance was all that was needed but unfortunately it did not occur.⁹⁸

The Group asserted that this example demonstrates the need for permanent, regional and cross-tenure bodies to manage invasive species. It suggested that this type of network could be based on an organisation like Forest Fire Management Victoria which incorporates a rural, land-based workforce:

⁹⁶ Ibid., pp. 12–13.

⁹⁷ Ibid., p. 11.

⁹⁸ Australasian Native Orchid Society (Victorian Group), *Submission 913*, pp. 3–4.

Perhaps a model for an effective body for Victorian pest species management and eradication might be something like Forest Fire Management, a specialist rural based land management body employing a locally skilled workforce to carry out ongoing pest species management activities.⁹⁹

At a public hearing, Dr Bruce Lindsay, Senior Lawyer at Environmental Justice Australia, also highlighted the cross-tenure nature of invasive species. He felt that it is important that private landowners and community groups are organised and given the opportunity to contribute to invasive species management. He also called for farmers to be compensated for this work:

On the issue of invasive species, invasive species are not a tenure-based issue; they traverse all tenures. They are a fundamental problem to ecosystem health across all tenures, and I think in that respect both public and private actors have a fundamental and crucial role to play in the exercise. Indeed in law, under section 20 of the Catchment and Land Protection Act, and section 21, they have positive duties—private landowners and public landowners—to manage these problems. I do think that there is a real need to make sure that farmers are properly compensated for that kind of work and that there are properly organised and systemic programs that allow farmers, non-landowners and other actors who are interested—community groups, the government itself—to undertake the work of invasive species management and to reduce the pressure on landscapes.¹⁰⁰

Similarly, Friends of the Earth (Melbourne) submitted that the community should be better coordinated to contribute to the control of invasive species. It highlighted the environmental and community benefits which flowed from a program for the control of hawkweed which involved the general public:

We should also build the capacity for the community to be involved in government control programs, where appropriate. One example, which could be replicated for other species, is the program to control Hawkweed from the Bogong High Plains. For many years, summer field trips have been organised where volunteers join with Parks Victoria staff to identify and remove Hawkweed. These sorts of programs have various benefits: direct ecological outcomes, greater community understanding of the threats posed by invasive species, and a sense of ownership/ involvement in seeking solutions to the problems posed by these species. It also provides good value for money to achieve ecological outcomes, as volunteers provide a considerable proportion of the actual physical work.¹⁰¹

The Research Centre for Future Landscapes and Local Government Professionals Biodiversity Planning Network advocated for landscape-scale invasive species management and control across land tenures.¹⁰²

⁹⁹ Ibid.

¹⁰⁰ Dr Bruce Lindsay, Senior Lawyer, Environmental Justice Australia, Public hearing, Melbourne, 11 March 2021, *Transcript of evidence*, p. 25.

¹⁰¹ Friends of the Earth (Melbourne), *Submission 178*, p. 7.

¹⁰² Local Government Professionals Biodiversity Planning Network, *Submission 523*, pp. 10–11; La Trobe University Research Centre for Future Landscapes, *Submission 682*, p. 2.

The Nillumbik Shire Council described how local government authorities can coordinate efforts to control invasive species at the regional level. It described its efforts to mobilise the community to tackle the South African weed orchid (*Disa bracteata*), the only non-native orchid in Victoria and a new arrival to the Nillumbik area:

Council orchestrated a successful community awareness campaign during Spring 2019, timed with the flowering of this weed. A video, calling people to action, was produced to create awareness, get people looking for the weed, and to ask landowners to call council if they spotted the weed. The video reached more than 17,000 people on Facebook and was shared 48 times – a hugely successful result in the Nillumbik context; and a flyer was also delivered to 1,900 post office boxes across Nillumbik’s rural areas.

As a result of the campaign, six new outbreaks were identified. It’s good news though. Because we’re aware of the outbreaks, they can be treated next season. And additional campaign videos have been produced for release in Spring 2020 as we continue the hunt for any other local outbreaks.¹⁰³

Nillumbik Shire Council stated that private landowners contribute the ‘greatest effort and investment in weed control’. However, it noted that this effort and investment is encouraged and enforced by local government authorities.¹⁰⁴ It recommended the collaborative eradication of invasive plants and animals across land tenures, led by government agencies:

- A collaborative and ongoing approach between private landowners, Parks Victoria, and state and local governments is necessary for pest management to have efficacy.
- Government agencies need to be good neighbours and adopt a leadership role in responsible and timely invasive species management on Crown Land ...
- A spectrum of techniques are needed to achieve positive land and ecosystem management, ranging from engagement, education and incentivisation to targeted enforcement.¹⁰⁵

Wombat Forestcare also highlighted the importance of invasive species control on public land being complemented by education, incentives and regulation which encourages private landowners to control pest plants and animals on their properties.¹⁰⁶

The examples of regionally coordinated efforts to manage invasive species across land tenures which were provided by Inquiry stakeholders, particularly noxious weeds, demonstrates the environmental and social benefits of this approach. The Committee sees value in local government authorities working with other public land managers (such as Traditional Owner groups and catchment management authorities), private landowners, environmental groups and members of the public to contribute to pest management.

¹⁰³ Nillumbik Shire Council, *Submission 392*, pp. 11–12.

¹⁰⁴ *Ibid.*, p. 11.

¹⁰⁵ *Ibid.*, p. 25.

¹⁰⁶ Wombat Forest Care, *Submission 315*, p. 4.

The Committee notes that, according to the *Invasive Plants and Animals Policy Framework*, the Victorian Government's responsibilities include:

- establishing and maintaining a statewide strategic direction for invasive species
- engaging with the community in pursuing coordinated action against widely established invasive plants and animals
- engaging with catchment management authorities and regional communities in community education, pest management planning, implementation and reporting on both private and public land and in freshwater environments.¹⁰⁷

The Committee would like to see the Victorian Government consider the introduction of regional coordination for pest management to facilitate these responsibilities.

RECOMMENDATION 5: That the Victorian Government consider supporting regional, cross-tenure coordination of pest animal and noxious weed management which includes Traditional Owners, local government authorities, catchment management authorities, private landowners, environmental groups and the broader community.

4.4.4 Economic impacts and funding for control measures

As noted in Section 4.1, the economic impact of invasive species is not well understood. The Invasive Species Council argued that without a good understanding of the economic impact of invasive species, the extent of the problem will not be fully appreciated and budget allocation for management and control activities will not be commensurate.¹⁰⁸ It called for the costs of managing invasive species for ecological purposes (as opposed to agricultural purposes) to be documented so that long-term, commensurate funding for management initiatives can be factored into Victorian Government budget projections. In addition, it called for the efficacy of these initiatives to be monitored to inform ongoing adjustments to funding.¹⁰⁹

The Invasive Species Council stated that: 'investment needs to be spread across all phases of the invasion curve, with strong investment needed in prevention and early action to limit future control costs' for pest plants and animals.¹¹⁰

The Victorian Farmers Federation also called for greater transparency and reporting in relation to the true cost of invasive species. It suggested that State of the Environment reporting should include an estimate of the cost of invasive species to the Victorian economy and biodiversity. It felt that this could better inform funding for management

¹⁰⁷ Victorian Government, *Weeds and Vertebrate Pests*, p. 18.

¹⁰⁸ Invasive Species Council, *Submission 943*, p. 9.

¹⁰⁹ *Ibid.*, p. 12.

¹¹⁰ *Ibid.*, p. 9.

and control.¹¹¹ The Federation claimed that funding of invasive species management on public lands has been inadequate for approximately a decade:

As the 2010 [Victorian Auditor-General's Office] report highlighted, there was no dedicated funding for crown land managers to meet their CALP Act responsibilities, which is largely still true to the present day.¹¹²

The Federation observed that government budget cycles are not conducive to long-term funding for invasive species management, and that pest control projects are not politically high-profile. It claimed that this results in inaction on invasive species management on public lands,¹¹³ which, in turn, makes pest plants and animals more difficult and expensive to control on private land:

Where there are weed and pest animal problems on crown land, this land acts as a 'reservoir' for seeds and a breeding ground / safe haven for pest species. Natural and introduced species then forage cross public and private land, spreading weed seeds (and potentially disease) and causing damage to fences and crops. The cost to private landholders managing invasive species is higher when their neighbours, including the crown, are not managing spread on their land and the success of the action decreases, with direct costs and lost production attributable to poor stewardship by the crown.¹¹⁴

However, Dr Jim Radford, Principal Research Fellow at the Research Centre for Future Landscapes at La Trobe University, pointed out that there are some examples of long-running programs in place to control pest animals, such as the Southern Ark program:

There are some great programs—the Ark programs—that show that we can address it with significant, sustained investment. I think those programs are wonderful in that they demonstrate what can be achieved with a dedicated and sustained program, and that does lead to bounce back in recovery in some of those target fauna.¹¹⁵

At a public hearing, James Todd, Executive Director of the Biodiversity Division at DELWP, informed the Committee that the Southern Ark program operating in East Gippsland is the 'largest ever pest and herbivores and predator control program in the State's history' and that hundreds of threatened native species have benefitted.¹¹⁶

The Victorian Farmers Federation called for the Victorian Government to fund catchment management authorities to undertake invasive species control. It also suggested that funding should be allocated to invasive species management on conservation reserves based on the extent of the problem in each area. Further, the Federation called on the Victorian Government to require public land managers to

111 Victorian Farmers Federation, *Submission 882*, p. 7.

112 *Ibid.*, p. 6.

113 *Ibid.*, p. 7.

114 *Ibid.*, p. 6.

115 Dr Jim Radford, Principal Research Fellow, Research Centre for Future Landscapes, La Trobe University, Public hearing, Melbourne, 21 April 2021, *Transcript of evidence*, p. 56.

116 James Todd, Executive Director, Biodiversity Division, Department of Environment, Land, Water and Planning, Public hearing, Melbourne, 10 August 2021, *Transcript of evidence*, p. 8.

include a statement explaining how they have fulfilled their responsibilities to manage pest plants and animals under the CaLP Act in their annual reports. It felt that this measure would enhance accountability and action on invasive species.¹¹⁷

Friends of the Earth (Melbourne) similarly felt that invasive species management on public lands is underfunded in Victoria. It submitted:

Currently, national parks and reserves receive less than 0.5% of state government expenditure ... Park managers need significantly more funding for core frontline capacity to deal with the many pressures placed on parks, particularly for pest plant and animal control.¹¹⁸

The Hamilton Field Naturalists Club expressed a similar sentiment in a written contribution to the Inquiry. It asserted that 'control of weeds and pest animals on any crown land is a very rare phenomenon and is never sustained'.¹¹⁹

The Victorian National Parks Association submitted specifically in relation to the cost of, and funding for, the management of invasive weeds in Victoria. It advocated for increased funding of long-term management of weed species on both public and private land.¹²⁰ The Association submitted:

Many land managers cite a need for sustained long term funding to adequately fund the planning and removal of pest plant species. Sustained rolling 4 to 5 year funding blocks, with decade's long horizons for pest weed management programs would lead to a strategic and long term reduction of weeds and allow landscape scale approaches to weed removal to be more effective and sustained.¹²¹

BEAM Mitchell Environment Group provided some examples illustrating the current misalignment between funding cycles and effective pest plant control:

I was involved in extensive blackberry control programs on private land and crown frontages with Landcare and the GBCMA [Goulburn Broken Catchment Management Authority] after the 2009 fires. A lot of work was achieved but, as with all programs, the essential follow-up funding did not happen and the weeds are as abundant as if we were never there. I was also involved, as part of a Landcare Biolink project on Dry Creek, with gorse control, working with PPA and Crown Land Management staff. With staff, contractor and volunteer work and with some prosecutions, we achieved a lot. Again, the project has stopped and the weeds are returning.

The Government needs to realise that large initial programs to control weeds need to be followed up for years or even decades with staffing and funds, or the whole program is a total waste of resources and good will.¹²²

¹¹⁷ Victorian Farmers Federation, *Submission 882*, p. 7.

¹¹⁸ Friends of the Earth (Melbourne), *Submission 178*, p. 5.

¹¹⁹ Hamilton Field Naturalists Club, *Submission 111*, p. 1.

¹²⁰ Victorian National Parks Association, *Submission 102*, p. 36.

¹²¹ *Ibid.*, p. 34.

¹²² BEAM Mitchell Environment Group, *Submission 690*, p. 8.

Nillumbik Shire Council made a similar observation. It noted that long-term investment is needed to support coordinated pest control initiatives:

In the peri urban area, with small lot sizes relative to broad acre agriculture areas, it is more labour intensive to achieve cooperation across the larger number of landowners on landscape scale action. The investment by the State government in projects such as Nillumbik's Sugarloaf Link deer, foxes and weed control project is welcome. However continuing investment is required to maintain the level of coordination, and where necessary enforcement resourcing which is required to work with landowners to achieve and maintain landscape scale outcomes.¹²³

The Victorian National Parks Association noted that the Weeds and Pests on Public Land Program, managed by DELWP, supports a range of control measures across public land that could be expanded with increased funding. It cautioned that the effectiveness of weed management programs must be monitored to refine pest control techniques and ensure that public money is being well spent.¹²⁴ The Association noted that funding the physical removal and control of weeds could provide long-term skilled employment opportunities to regional communities.¹²⁵

The Upper Maribyrnong Catchment Group submitted that funding should be increased for these types of programs:

Victorian Government [should] significantly increase funding for the Roadside Weed and Pest Animal Program to provide greater incentive for local governments to undertake pest plant and animal control on the rural roadsides they manage to improve site condition, biodiversity and ecological connectivity.¹²⁶

The Committee acknowledges that the economic impact (both agricultural and environmental) of invasive species in Victoria is not well understood. It also recognises that stakeholders feel that government funding for the management of invasive pest animals and noxious weeds is not consistently commensurate with the scale of the issue presented by some species. Certain programs, like the Southern Ark project for fox control, are appropriately scaled and long-term in order to have an important protective influence on Victorian biodiversity values. However, other programs are too short-term or limited to provide lasting benefit to ecosystems.

The Committee accepts that a better understanding of the economic impact (both environmental and agricultural) of invasive species in Victoria could help focus attention on invasive species management and ensure it is funded appropriately. That is why Recommendation 4 of this report invites the Victorian Government to consider the economic impact (including agricultural and environmental) of invasive species in Victoria as part of a review of the legislative framework for the management of invasive species.

¹²³ Nillumbik Shire Council, *Submission 392*, p. 20.

¹²⁴ Victorian National Parks Association, *Submission 102*, p. 34.

¹²⁵ *Ibid.*, p. 36.

¹²⁶ Upper Maribyrnong Catchment Group, *Submission 904*, p. 3.

RECOMMENDATION 6: That the Victorian Government allocate adequate resources to administer and fully implement the *Catchment and Land Protection Act 1994 (Vic)* and the *Invasive Plants and Animals Policy Framework*.

4.4.5 1080 baiting, dingoes and the ecological benefits of apex predators and their role in the landscape

A range of poison baits, such as 1080 bait, have been used in Australia to control pest animals for decades. They have had wide application, especially in the control of wild dogs where both buried baits and the aerial dropping of baits have been applied.¹²⁷

Several stakeholders were critical of lethal control programs for invasive pest animals, such as 1080 poisonous baiting for cats, wild dogs and foxes. The Australian Pet Welfare Foundation claimed that baiting is ineffective against pest animals, such as cats, because they reproduce quicker than they can be exterminated using baits:

Firstly, cats are difficult to kill in sufficient numbers to reduce overall numbers. The average density of cats in natural environments is 0.27 cats/km² (Legge et al. 2017), which is approximately 1 cat/300 hectares or 100 cats/30,000 hectares. Typically baiting does not remove more than 20% of cats, so for every 100 cats, the removal of 20% leaves 40 females each producing an average of 5 kittens a year (200 kittens), and these kittens can produce more kittens by 6 months of age (Nutter et al. 2004). Although at least 75% of kittens die before 6 months, enough survive to maintain the same number (Nutter et al. 2004).¹²⁸

The Australian Dingo Foundation made a similar claim. It pointed out that 1080 poison baiting programs have been deployed in Australia since the 1950s but have failed to eradicate any pest species. It asserted that baiting has achieved ‘nothing besides a temporary disturbance in the populations of “pests” in a given region with numbers quickly bouncing back to pre-baiting densities or worse’.¹²⁹

The Foundation ‘vehemently’ opposed 1080 poison baiting and characterised it as ‘cruel’ and ‘grossly inhumane’. The Foundation submitted a quote from the World League for the Protection of Animals, describing the effect of the poison on different animals:

Compound 1080 poison is a slow killer. When ingested (usually through baited food) the animal suffers a prolonged and horrific death. Herbivores take the longest to die - up to 44 hrs, while carnivores can take up to 21 hrs before finally succumbing to final effects of the poison. The speed of death is dependent on the rate of the animal’s metabolism. 1080 should be outlawed in Australia, not only for its cruelty but also because we simply do not know what might be the long-term effects of continually pouring substantial amounts of this poison into the environment.¹³⁰

¹²⁷ Victorian National Parks Association, *Submission 102*, p. 37; Australian Dingo Foundation, *Submission 689*, p. 23.

¹²⁸ Australian Pet Welfare Foundation, *Submission 742*, p. 10.

¹²⁹ Australian Dingo Foundation, *Submission 689*, p. 23.

¹³⁰ *Ibid.*, p. 20.

In evidence presented to the Committee, Dr Ernest Healy, Secretary of the Association for Conservation of Australian Dingoes, suggested that even where lethal control programs successfully control one pest species, rival invasive predator populations often increase as their competition is suppressed:

in eastern Victoria ... the use of 1080 poison to kill foxes ... has knocked back the fox population and released cats, because the cats tend not to eat the poison used to kill the foxes. Once the cat population explodes because you have suppressed foxes—because foxes do suppress cats, so once you take away the foxes the cats explode and run riot on small native species.¹³¹

Dr Kylie Cairns of the Centre for Ecosystem Science in the School of Biological, Earth and Environmental Sciences at the University of New South Wales, made the same point. At a public hearing, she referred to environmental data collected by the Arthur Rylah Institute for Environmental Research:

Essentially the Arthur Rylah Institute found that after aerial baiting dingo abundance dropped by 27 per cent, as well as fox abundance dropping by 23 per cent, but feral cat abundance and density increased by 21 per cent.¹³²

In a submission to the Inquiry, the Victorian National Parks Association warned that there is 'significant capacity for baits to be taken by non-target, native species such as the endangered Spot-tailed Quoll'. The Association said that a recent 1080 baiting trial on Western Kangaroo Island examined the impact of poison on non-target species. It found that while baiting has the potential to significantly benefit the wildlife on the island, 'impacts on non-target species (particularly the bush rat and common brushtail possum) may be high':

In the study, bait take and consumption was assessed both by remote cameras and by the presence of a biomarker in mammalian whisker samples taken post-baiting and found the following key results were found:

"Cats encountered baits on very few occasions and took a bait on only one occasion in August (<1% of 576 baits deployed). Non-target species accounted for over 99% of identifiable bait takes. In both seasons, >60% of all baits laid was taken by either the common brushtail possum (*Trichosurus vulpecula*), bush rat (*Rattus fuscipes*) or Australian raven (*Corvus coronoides*). In November, Rosenberg's goanna (*Varanus rosenbergi*) and southern brown bandicoot (south-eastern subspecies; *Isodon obesulus obesulus*), listed nationally as endangered, also took baits (3% and 1% respectively). The Kangaroo Island dunnart (*Sminthopsis fuliginosus aitkeni*), listed nationally as endangered, approached a bait on only one occasion, but did not consume it. Evidence of bait consumption was visible in the whiskers of captured common brushtail possums (100% of post-baiting captured individuals in August, 80% in November), bush rats (59% in August and 50% in November), house mice

¹³¹ Dr Ernest Healy, Secretary, Association for Conservation of Australian Dingoes, Public hearing, Melbourne, 24 February 2021, *Transcript of evidence*, p. 41.

¹³² Dr Kylie Cairns, Centre for Ecosystem Science, School of Biological, Earth and Environmental Sciences, University of New South Wales, Public hearing, Melbourne, 23 February 2021, *Transcript of evidence*, p. 27.

(*Mus musculus*) (45% in November) and western pygmy-possums (*Cercartetus concinnus*) (33% in November).¹³³

The Association called for research into more humane and effectively targeted bait and bait delivery mechanisms for invasive pest species.¹³⁴

The Australian Dingo Foundation asserted that baits laid for wild dogs and foxes contain enough poison to easily kill dingoes, a threatened native species, and many other native species:

Besides Dingoes, many Australian native species are highly sensitive to 1080 poison include herbivores - possums, macropods and wombats - (with the exception of some species in the south-west corner of WA), many birds, including red-browed firetail, crimson rosella and white-winged chough, native rodents, including plains mouse, bush rat, swamp rat and cane field rat and dasyurids, including stripe-faced dunnart, brown antechinus, spotted-tailed quoll and perhaps the eastern quoll.¹³⁵

Similarly, Dr Cairns said that the impact of aerial baiting on dingoes is poorly studied but what is known is that 'it will kill between 70 and 90% of the dingoes in an area'.¹³⁶

In a presentation to the Committee, Dr Ernest Healy from the Association for Conservation of Australian Dingoes asserted that even sub-lethal doses of 1080 may be negatively impacting native species:

I think the 1080 poison is used so intensively and continually on a landscape scale we are not really sure what the full ramifications of using that poison in the environment are, particularly in relation to sublethal doses ... there is not a lot of research on what the longer term sublethal implications are for all of those different taxa that digest the poison—what the longer term impact may be in terms of their survivability, their fertility and whether there are any long-term flow-ons.¹³⁷

In contrast, DELWP provided written evidence to the Committee which indicated that 1080 baiting can form part of an effective native species protection strategy. It referred to the Southern Ark project, which aims to reduce the number of foxes and support the recovery of native species populations across one million hectares of state forests, national parks and private land in East Gippsland. DELWP observed that the project has increased the area of occupancy and population size of the long-footed potoroo. It also noted that these results appear to be confirmed by analysis being completed by the Arthur Rylah Institute for Environmental Research:

DELWP's Arthur Rylah Institute for Environmental Research (ARI) is completing an analysis using Foxnet, that is showing predator threat has declined due to the Southern Ark fox control. The results are expected to be released later in 2021. In addition, ARI

¹³³ Victorian National Parks Association, *Submission 102*, pp. 37–38.

¹³⁴ Victorian National Parks Association, *Submission 102, Attachment 1*, p. 38.

¹³⁵ Australian Dingo Foundation, *Submission 689*, p. 21.

¹³⁶ Dr Kylie Cairns, *Transcript of evidence*, p. 30.

¹³⁷ Dr Ernest Healy, *Transcript of evidence*, p. 41.

is completing a specific analysis of the response of Long-footed Potoroos to predator control and their persistence after the 2019-20 fires.¹³⁸

Dr Healy pointed out that dingoes are also deliberately targeted with lethal control methods, including baiting and hunting. He explained that a ‘wild dog bounty’ in operation offers hunters \$120 for each pelt of pure or hybrid dingo culled under the scheme.¹³⁹ He said that 2,000 dingo pelts were harvested under the scheme between 2011 and 2018:

You are looking at over 2,000 dingo scalps handed in over that period. The bounty is currently \$120 per dingo scalp. To get that in perspective, recent research by the Arthur Rylah Institute has shown that the density of dingoes in eastern Victoria is somewhere around 2.6 per 100 square kilometres—2.6 per 100 square kilometres. There are not that many dingoes out there, and that is exactly what you would expect from an apex predator. It is like lions in Africa; there are not a lot of lions in Africa. They are at the top of the food chain, and compared to the antelope and buck that they eat, there are a very small number of them—and this applies to dingoes in Victoria. So 2000-odd scalps handed in over just several years can potentially have a massive impact on the dingo population in Victoria and its environmental function as apex predator. The bounty is seriously problematic. Again, it puts a bounty on the head of a listed threatened species...¹⁴⁰

The Committee heard that dingoes, a threatened native species, are targeted with lethal control methods because of the false distinction made between the ecological value of pure and hybrid dingoes and because of the ‘myth’ that dingoes present a significant threat to agricultural animals, such as sheep.¹⁴¹ The distinction between pure dingoes, hybrid dingoes and wild dogs, the wild dog bounty, and the ramifications for the species’ preservation are explored in detail in Chapter 7.

Dr Healy suggested that government data (obtained through FOI requests) on general livestock predation shows that between 3,207 and 2,247 sheep were killed during 2014 and 2017.¹⁴² This represents less than 200 per one million sheep each year in Victoria. Dr Healy asserted that this data also indicates that the introduction of aerial baiting programs for dingoes in 2014 ‘did not have a significant impact on stock loss numbers’.¹⁴³ Dr Cairns made a similar point at a public hearing.¹⁴⁴ She questioned whether it is right to remove a native threatened species from the wild because of its small impact on agriculture:

¹³⁸ Department of Environment, Land, Water and Planning, hearing, response to questions on notice received 30 August 2021, p. 2.

¹³⁹ Dr Ernest Healy, *Transcript of evidence*, p. 36; Dr Ernest Healy, Secretary, Association for Conservation of Australian Dingoes, *Presentation to Legislative Council’s Inquiry into Ecosystem Decline in Victoria*, supplementary evidence received 24 February 2021, p. 22.

¹⁴⁰ Dr Ernest Healy, *Transcript of evidence*, pp. 38–39.

¹⁴¹ Dr Ernest Healy, *Presentation to Legislative Council’s Inquiry into Ecosystem Decline in Victoria*, pp. 3–5; Dr Ernest Healy, *Transcript of evidence*, p. 36; Dr Kylie Cairns, *Transcript of evidence*, p. 28.

¹⁴² These figures relate to general predation of livestock, not predation specifically attributed to dingoes.

¹⁴³ Dr Ernest Healy, *Presentation to Legislative Council’s Inquiry into Ecosystem Decline in Victoria*, pp. 14–15.

¹⁴⁴ Dr Kylie Cairns, *Transcript of evidence*, p. 30.

It is sort of an interesting question to think about: how would we react if we proposed removing lions from the wild because of their impact on farmers? We would not think that that was acceptable. Instead we would be thinking: how do we coexist with those lions, allow farming to continue and minimise the impact of predators on those cattle but also make sure we do have lions in the environment?¹⁴⁵

The Australian Dingo Foundation suggested it doesn't make ecological sense to kill dingoes in this manner because the species helps control invasive herbivore and carnivore populations through their role as an apex predator:

Ecologically, Dingoes fill the niche of apex land predator within Australia at the top of the food chain. Dingoes are ecosystem regulators, providing ecological stability and resilience with the entire ecosystem's health hinging on their performance ...

Dingoes prey on and regulate the populations of both introduced and native herbivores such as kangaroos, rabbits, deer, feral pigs and goats, which in turn improves vegetation cover and indirectly gives life to many small-medium mammals, marsupials, native birds, reptiles and other species. Without the suppression effects of Dingoes, herbivore numbers explode, leading to overgrazing, loss of flora, erosion, less drought resistance, resulting in exacerbating issues associated with global warming / climate change.

Dingoes also kill, as well as suppress the hunting behaviours of destructive invasive mesopredators, such as feral cats and foxes, which ensures the survival of many native animals at the bottom of the food chain.¹⁴⁶

Moreover, the Committee heard that programs which cull dingoes break down social structures within their family units and are the primary cause of the hybridisation of dingoes with wild dogs. Hybridisation is a serious concern for the conservation of dingoes.¹⁴⁷ The Foundation said that the only method to restore healthy functioning ecosystems is to stop the 'slaughter of dingoes' and allow their populations to stabilise.¹⁴⁸

Dr Cairns also highlighted the ecological benefits of dingoes and advocated for the reintroduction of dingoes to the natural environment:

The re-establishment of top predators like wolves and dingoes and lions and tigers can assist in ecosystem restoration and build resilience against climate change and biological invasions. Dingoes are Australia's top land predator. They play an essential role in regulating large herbivores like kangaroos and wallabies but also invasive pests such as feral goats, and they also play a role in suppressing and mediating the impact of invasive predators such as foxes and feral cats in some cases. The presence of dingoes can be beneficial to many small marsupials as well as reptiles and birds, because of their

¹⁴⁵ Ibid., p. 29.

¹⁴⁶ Australian Dingo Foundation, *Submission 689*, p. 5.

¹⁴⁷ Ibid., p. 6.

¹⁴⁸ Ibid., p. 23; Dr Kylie Cairns, *Transcript of evidence*, p. 27.

impact on foxes and cats. Dingoes are also incredibly important to Traditional Owners, or First Nations people, many of whom consider dingoes to be a totem animal.¹⁴⁹

Dr Cairns said that the removal of top predators has been detrimental to the environment and to ecosystems and biodiversity around the world. She noted that populations of top predators are now being reintroduced or allowed to recover in many places such as North America and Europe.¹⁵⁰

Dr Healy suggested that research has demonstrated that the removal of dingoes from ecosystems disrupts natural processes, 'right down to not only small vegetation, but soil chemistry'.¹⁵¹ He similarly highlighted international trials demonstrating the benefits of reintroducing apex predators:

That is what the best research to date has shown in the US with the reintroduction of wolves. It sort of pegged back the size of the wolf prey populations, elk and deer, and there was then less pressure on the vegetation. Much of the overgrazed vegetation revived and was restored. Even in the rivers you find beaver coming back. There were these flow-on effects right through the ecosystem, so it really put to bed this sort of simplistic idea that, well, you can take certain animals out of an ecosystem because it is economically expedient to do so, or convenient, and somehow get away with it and all the rest will somehow stay the same. It is simply not like that.¹⁵²

Dr Healy suggested that the Victorian Government should explore options for trialling the reintroduction of dingoes into habitats where they once naturally occurred, for example, in the Murray Sunset National Park or in the Grampians National Park. He recommended that this be accompanied by a scheme offering farmers financial compensation for verified stock loss, as an alternative to lethal control.¹⁵³

However, Dr Healy cautioned that any trial must be carefully managed, encompass comprehensive scientific monitoring and ensure good communication with nearby land managers and farmers:

there would have to be a number of scientific research projects set up around that to continually monitor. You would have to engage the surrounding landholders and get them onside and get them engaged and make sure that they feel that they would be sufficiently compensated for any losses that did occur. It would even be a good opportunity to trial the idea of a financial compensation scheme for verified stock loss. If that works, and that situation becomes acceptable to the landholders, then that might be something [that] could be run with more widely.¹⁵⁴

149 Dr Kylie Cairns, *Transcript of evidence*, pp. 25–26.

150 *Ibid.*, p. 29.

151 Dr Ernest Healy, *Transcript of evidence*, p. 43.

152 *Ibid.*

153 Dr Ernest Healy, *Presentation to Legislative Council's Inquiry into Ecosystem Decline in Victoria*, p. 28.

154 Dr Ernest Healy, *Transcript of evidence*, p. 42.

In addition, Dr Healy recommended that a trial coincide with the cessation of 1080 baiting in the area, so that the ecological merit of reintroducing dingoes could be monitored and assessed without complicating factors.

Dr Cairns noted that several reintroduction trials have already been proposed by ecologists across Australia. She suggested that a trial should reintroduce dingoes into an ecosystem where they have been eradicated and where no 1080 baiting is occurring. She also advocated for comprehensive monitoring of the trial to determine the benefits of 'rewilding' dingoes, as well as collaboration with nearby land managers to limit the impact of dingoes on agricultural animals.¹⁵⁵

The Committee acknowledges that Victorian Government agencies' current use of 1080 bait is carried out in accordance with prescribed standards. Kylie White, Deputy Secretary – Environment and Climate Change at DELWP, said:

We use 1080 and any other chemicals according to the standards that we must meet to use that, and that includes the appropriate use of 1080 baits, the way in which they are buried and then the way in which they are monitored.¹⁵⁶

Dr Cairns suggested that farmers near the trial area should be supported to pursue non-lethal strategies for protecting sheep, including electric fences and livestock guardian dogs. She conceded that farmers could also be permitted to trap or shoot a specific dingo known to be causing issues for their stock.¹⁵⁷

Traditional Owners have also expressed support for the reintroduction of dingoes and other apex predators into their historical habitats. For example, the Dja Dja Wurrung Clans Aboriginal Corporation submitted that they have a 'vision' for dingoes (Gal Gal) and quolls (Yung) to be more present in their traditional lands:

These key species as examples have suffered to the level of being completely removed from Country. On djandak [country] they have purpose and are needed as the meso predator Yung (the Quoll), the apex predator Gal Gal (Dingo) ... The loss of these species and the associated degradation of Country are carried by Djaara [Traditional Owners] to this day and the continued degradation and ongoing decline continue to impact and affect Djaara.¹⁵⁸

The evidence the Committee received in relation to 1080 baiting to control pest species is mixed. Evaluations of some baiting programs have demonstrated that this form of lethal control has the potential to significantly benefit some native wildlife by reducing competition or predation by invasive species. However, as stakeholders highlighted, it can be inhumane and can impact the health of, or even be lethal to, native species. Moreover, baiting may not protect native wildlife unless it is combined with control strategies for other invasive species present in an ecosystem.

¹⁵⁵ Dr Kylie Cairns, *Transcript of evidence*, pp. 29, 31.

¹⁵⁶ Kylie White, Deputy Secretary, Environment and Climate Change, Department of Environment, Land, Water and Planning, Public hearing, Melbourne, 3 December 2020, *Transcript of evidence*, p. 18.

¹⁵⁷ Dr Kylie Cairns, *Transcript of evidence*, pp. 28, 31.

¹⁵⁸ Dja Dja Wurrung Clans Aboriginal Corporation, *Submission 635*, pp. 5–6.

RECOMMENDATION 7: That the Victorian Government consider phasing out the use of 1080 baits to control invasive species. This should occur in conjunction with increased government support for the research and wider use of more effective and humane methods for controlling pest animals. This phase-out should begin in July 2022, beginning in national parks in the first year. It should then be expanded into agricultural and other applications in the second year and be completed by December 2023.

In contrast to stakeholder views on the use of 1080 baiting, the Committee considers the evidence supporting the reintroduction of dingoes into Victorian ecosystems to be compelling. As Australia's apex predator, dingoes play an important role in regulating large herbivore populations (for example, kangaroos which may be overabundant in some areas) and can help suppress invasive pest species such as feral goats, foxes and cats. The presence of dingoes in an ecosystem can be beneficial to small marsupials, reptiles, birds and plants. Dingoes are also culturally significant to Traditional Owners, some of whom are actively advocating for their return to Country.

The Committee would like to see the ecological benefits of the reintroduction of dingoes into Victorian ecosystems comprehensively assessed through a trial.

RECOMMENDATION 8: That the Victorian Government trial the reintroduction of dingoes as an apex predator into suitable Victorian ecosystems to assess the ecological benefits. The trial, if agreed to by the Victorian Government, should take place within no later than two years of such agreement and should:

- take place with the support and close involvement of Traditional Owners
- take place in a park or conservation reserve where dingoes previously occurred, but have since suffered localised extinction
- be designed with input from ecologists and dingo experts
- encompass the collection of baseline ecological data to support the evaluation of post-trial outcomes and the identification of any impacts to biodiversity and ecosystems processes.

The trial should be accompanied by:

- the cessation of lethal control for pest species in the trial area
- consultation with adjoining public and/or private land managers in order to ensure support for the implementation of non-lethal protection of agricultural livestock, including the use of companion guard animals to protect stock
- the introduction of a compensation scheme for farmers whose livestock is predated by dingoes
- comprehensive monitoring and reporting on the impact of the reintroduction of dingoes on biodiversity values in the trial area.

4.4.6 Case study—Cats

Europeans brought cats (*Felis catus*) to Australia during the 17th to 19th centuries as pets and to release into the wild to control mice and rabbits. Cats are originally from Europe, Asia and Africa.¹⁵⁹

BOX 4.4: Cats

Feral cats are widely distributed throughout mainland Victoria and on several adjacent islands. It is difficult to estimate the total feral cat population as it fluctuates with breeding conditions. For example, cat populations are known to rapidly decline during droughts when food becomes scarce. However, researchers have estimated the number of feral cats is estimated to be between approximately 1.4 million (after periods of extensive drought) and 5.6 million (after periods of extensive rain). Domestic cats in Victoria are estimated to be above 4 million, comprised of approximately 3.77 million owned cats and 0.7 million semi-owned cats.

Reproduction in feral and domestic cats is similar. Female cats have an average of two litters per year (in spring and in late summer or early autumn). Litter sizes typically range from two to seven kittens. Feral cats can live up to seven years and their high reproductive ability maintains population growth despite a high mortality rate among kittens.

Feral cats live in a diverse range of ecosystems including forests, deserts and alpine areas. Their home range can vary between <1 km² and 10km² if food resources are scarce. Males typically have larger home ranges than females.

The Australian Pet Welfare Foundation submitted that further research is needed to establish the actual prevalence of feral, owned, semi-owned and unowned cats in Victoria, especially in regions where cats are endangering native wildlife and biodiversity values.

Impact of cats on native species

Cats are skilled hunters that prey on many native species in the natural environment, including small mammals, birds and reptiles. It is broadly acknowledged that feral cats have contributed to the extinction of over 20 Australian mammals and were associated in the failure of several endangered species reintroduction programs (numbat, bilby, bandicoot) in natural areas.

Sources: Agriculture Victoria, *Cat (feral or wild)*, <<https://agriculture.vic.gov.au/biosecurity/pest-animals/priority-pest-animals/cat-feral-or-wild>> accessed 12 November 2021; Australian Pet Welfare Foundation, *Submission 742*, pp. 5, 6; Department of Sustainability and Environment, 'Predation of Native Wildlife by the Cat *Felis catus*', pp. 1, 3.

¹⁵⁹ Department of Sustainability and Environment, 'Predation of Native Wildlife by the Cat *Felis catus*', *Action Statement: Flora and Fauna Guarantee Act 1988*, no 80, 2004, p. 1.

According to Agriculture Victoria, feral cats do not provide economic value:

Feral cats have no economic value. The cost of feral cat management and research has been estimated at \$2 million per year nationally. The economic loss inflicted by feral and domestic cats, based on bird predation alone, has been estimated at \$144 million annually.¹⁶⁰

Research also indicates that domestic or urban cats impact Australian wildlife. Research that reviewed 66 studies of pet cat predation (including 24 Australian studies) found that domestic cats have a significant environmental impact:

The per capita kill rate of pet cats is 25% that of feral cats. However, pet cats live at much higher densities, so the predation rate of pets per square kilometre in residential areas is 28–52 times larger than predation rates by feral cats in natural environments, and 1.3–2.3 times greater than predation rates per km² by feral cats living in urban areas. Pet cats kill introduced species more often than do feral cats living in natural environments, but, nonetheless, the toll of native animals killed per square kilometre by pet cats in residential areas is still much higher than the toll per square kilometre by feral cats. There is no evidence that pet cats exert significant control of introduced species. The high predation toll of pet cats in residential areas, the documented examples of declines and extirpations in populations of native species caused by pet cats, and potential pathways for other, indirect effects (e.g. from disease, landscapes of fear, ecological footprints), and the context of extraordinary impacts from feral cats on Australian fauna, together support a default position that pet cat impacts are serious and should be reduced.¹⁶¹

However, the Australian Pet Welfare Foundation questioned ‘the widespread perception that free-roaming urban cats, whether owned, semi-owned or unowned, contribute to declines in urban native wildlife through predation’. It suggested that many studies have relied on modelling data rather than actual population assessments, and so have not conclusively demonstrated that urban cat predation is impacting native wildlife in or adjacent to urban areas.¹⁶² The Foundation suggested that additional research is needed to determine the actual impact of owned, semi-owned and unowned domestic cats on urban wildlife, and to identify the most effective control and management strategies. The Foundation recommended that funding for cat control and management strategies should be tied to their ability to deliver a measurable increase in native wildlife, and not to other measures such as number of feral cats culled.¹⁶³

Cats are also able to carry and transmit disease. Diseases such as toxoplasmosis and sarcosporidiosis can be transmitted by cats to humans, domestic stock and some native animals. Feral cats have the potential to spread a variety of exotic diseases if they gain

¹⁶⁰ Agriculture Victoria, *Cat (feral or wild)*, 2021, <<https://agriculture.vic.gov.au/biosecurity/pest-animals/priority-pest-animals/cat-feral-or-wild>> accessed 12 November 2021.

¹⁶¹ John C. Z. Woinarski Sarah Legge, Chris R Dickman, Brett P. Murphy, Leigh-Ann Wooley and Mike C. Calver, ‘We need to worry about Bella and Charlie: the impacts of pet cats on Australian wildlife’, *CSIRO Publishing: Wildlife Research*, vol. 47, 2020, p. 523.

¹⁶² Australian Pet Welfare Foundation, *Submission 742*, pp. 7–9.

¹⁶³ *Ibid.*, p. 9.

entry to Victoria (including rabies), which could seriously threaten livestock, wildlife and human health in the event of an outbreak.¹⁶⁴

The legal status and control of cats in Victoria

On 26 July 2018, ‘feral or wild’ cats were declared an established pest species under the CaLP Act on areas of Crown land managed by DELWP, Parks Victoria, the Phillip Island Nature Park and the four Alpine Resort Management Boards. The declaration requires these Crown land managers to implement feral cat control measures. Control methods for feral cats include trapping, exclusion fencing, shooting and 1080 bait poisoning.¹⁶⁵

Feral or domestic cats have not been declared an established pest on private land. Indeed, animals that are widely kept as domestic pets cannot be declared a pest animal under the CaLP Act.¹⁶⁶ This means that farmers and other private landholders are not required to control feral cat populations on their properties.¹⁶⁷

However, according to Agriculture Victoria, private landholders are permitted to manage cats roaming on their property in accordance with current laws:

In essence, on private land, cage trapping as per these procedures is the only control option for cats (feral or otherwise). This is because it is not straightforward to determine if a trapped cat is feral or un/owned without scanning for a microchip. Therefore, any cats trapped on private land must be handed to the local Council so they can be scanned. If a private landowner destroys a cat on their land, they risk liability if it was an owned cat that was roaming ...¹⁶⁸

Trapped cats must be handed into the relevant council who will assess the animal to determine health, ownership and suitability for rehoming. Owned cats or those suitable for rehoming are sent to the pound for a minimum of eight days. Councils may humanely destroy ‘wild, uncontrollable, or diseased cats immediately’.¹⁶⁹

The Australian Pet Welfare Foundation was critical of declaring feral cats as pest animals. It was concerned that the declaration moves Crown land managers’ focus from conserving threatened species towards reducing cat populations, which has been demonstrated to be extremely difficult:

Firstly, cats are difficult to kill in sufficient numbers to reduce overall numbers ... Typically baiting does not remove more than 20% of cats, so for every 100 cats, the

¹⁶⁴ Agriculture Victoria, *Cat (feral or wild)*, <<https://agriculture.vic.gov.au/biosecurity/pest-animals/priority-pest-animals/cat-feral-or-wild>> accessed 17 August 2021; Department of Sustainability and Environment, ‘Predation of Native Wildlife by the Cat *Felis catus*’.

¹⁶⁵ Agriculture Victoria, *Cat (feral or wild)*.

¹⁶⁶ Department of Environment, Land, Water and Planning, *Declaration of the feral cat as an established pest animal on public land in Victoria*, Information Sheet, 2018, <https://www.environment.vic.gov.au/_data/assets/word_doc/0025/124837/Feral-cat-declaration-information-sheet.docx> p. 2.

¹⁶⁷ Agriculture Victoria, *Cat (feral or wild)*.

¹⁶⁸ Ibid.

¹⁶⁹ Agriculture Victoria, *Humane cage trapping of cats*, 2021, <<https://agriculture.vic.gov.au/livestock-and-animals/animal-welfare-victoria/poact-act-1986/humane-vertebrate-pest-control/humane-cage-trapping-of-cats>> accessed 12 November 2021.

removal of 20% leaves 40 females each producing an average of 5 kittens a year (200 kittens), and these kittens can produce more kittens by 6 months of age (Nutter et al. 2004) ... Secondly, unless 30-50% of the population is removed every 6 months, no progressive decrease in cat numbers occurs (Miller et al. 2014, Boone et al. 2019) ... Finally, unless other pest species such as rabbits, foxes and rats are also effectively controlled (additional costs), the effect of removing cats can worsen the situation ... Therefore, removal of cats needs to be targeted to areas it is shown to benefit wildlife, not just because they are classed as a pest species.¹⁷⁰

It therefore recommended that for feral cats:

future government funding should be tied to management strategies that result in a measurable increase in the numbers of endangered native species, rather than being assessed by how many cats are killed.¹⁷¹

In contrast, RSPCA Victoria expressed the view in a submission to the Inquiry that feral cats have such a significant impact on native wildlife that measures to humanely control them are appropriate:

Feral cats have significant impacts on Australia's native wildlife species. Research has suggested that collectively, feral cats kill more than three billion animals per year. We acknowledge that because of these adverse impacts, it is necessary to manage feral cat populations in Victoria. However, we again reiterate that any control activities must be humane, target-specific and effective.¹⁷²

The Australian Pet Welfare Foundation also suggested that the 'trap, adopt or kill' policy for cats roaming on private land could be improved by incorporating de-sexing to more effectively manage feral cat populations:

The scientific basis for contemporary community cat programs shows that when high intensity de-sexing of all cats, targeted to areas of high cat impoundments or complaints, is combined with components of trap-adopt-or-return home methods, this can be successful in managing semi-owned and unowned cats in urban areas.¹⁷³

The Australian Pet Welfare Foundation drew the Committee's attention to the City of Banyule in Melbourne, which has successfully implemented a similar approach to cat management.

¹⁷⁰ Australian Pet Welfare Foundation, *Submission 742*, pp. 10-11.

¹⁷¹ *Ibid.*, p. 24.

¹⁷² RSPCA Victoria, *Submission 735*, p. 8.

¹⁷³ Australian Pet Welfare Foundation, *Submission 742*, p. 14.

BOX 4.5: Cat management in the City of Banyule, Melbourne

In 2012–2013, the Banyule City Council commenced a program offering free de-sexing, microchipping and registration for all cats in target suburbs. Target suburbs were selected based on having the largest number of cats surrendered to the pound and the most cat-related complaints from residents.

Residents who enrolled a cat in the program completed paperwork registering the cat's microchip in their name with the Council. Of the cats enrolled, 70% were semi-owned and 30% fully owned by residents. Residents who enrolled in the program were surveyed to identify the reasons why their cat had not already been de-sexed. Approximately 90% of respondents said it was because the costs are prohibitive. Approximately 20-30% of households in the target suburbs were living on \$650 a week or less.

The program reduced cat impoundments from 1,004 cats in 2010-11 (or 8 cats per 1,000 residents) to 152 cats in 2019-2020 (or a single cat per 1,000 residents). The number of cats euthanised was also reduced from 578 cats per year (or five cats per 1,000 residents) to 24 cats per year (or 0.2 cats per 1,000 residents). Cat-related complaints also reduced.

The total cost to The Council from 2012–13 to 2019–20 was \$60,000 for de-sexing, and calculated savings from reduced cat impoundments alone was \$397,500.

Source: Australian Pet Welfare Foundation, *Submission 742*, pp. 12, 20.

The Australian Pet Welfare Foundation noted that semi-owned and unowned cats are 'principally a problem in low socio-economic areas where residents cannot afford the costs associated with de-sexing and containment'. It therefore recommended that:

- free de-sexing of cats be introduced into areas 'overrepresented by cat impoundments and cat-related complaints'
- mandatory cat confinement be replaced with education around how and why to contain domestic cats overnight
- free or affordable cat confinement systems be provided where threatened native species are at threat from cat predation.¹⁷⁴

RSPCA Victoria has also examined best practice approaches to domestic cat management. In its 2018 report, *Identifying Best Practice Domestic Cat Management in Australia*, 21 recommendations were made to help mitigate the impact of domestic cats on native wildlife, reduce high euthanasia rates and address poor welfare outcomes. Recommendations addressed similar areas of concern to those expressed by the Australian Pet Welfare Foundation:

Education programs are needed to increase the acceptance and uptake of 24-hour cat containment, with subsequent regulation in areas of high conservation value.

¹⁷⁴ Ibid., pp. 17, 21.

Cat management plans should aim to increase the number of cats who are identified through mandatory microchipping.

Increasing access to targeted low-cost desexing initiatives, especially areas of low socio-economic status or those overrepresented in shelter and pound intakes, should be considered a key strategy for domestic cat management.¹⁷⁵

RSPCA Victoria advocated for the establishment of a state-based advisory group to help guide a more coordinated approach to domestic cat management:

Given the challenges and complexities associated with cat management, many benefits can be gained through a state-based advisory group to help guide legislation, community engagement, research and development of resources. An important area to consider is the effect on domestic cat management legislation posed by changes in other legislation such as under the *Catchment and Land Protection Act 1994*. RSPCA Victoria believes it would be valuable for Victoria to establish an advisory group to provide guidance on cat management issues.¹⁷⁶

In addition, RSPCA Victoria felt that the definitions for feral and domestic cats across legislation, land managers and animal shelters or pounds should be refined to introduce more consistency. It submitted:

The lack of universally agreed cat definitions causes confusion and conflict, inconsistencies in legislation and difficulties in implementing cat management initiatives. The most important definitions are those for feral and for domestic cats as this has profound consequences for the treatment and fate of individual cats ... RSPCA Victoria would like to see a consistent definition of feral cat used - a feral cat is one that is unowned, unsocialised and has no relationship with humans and reproduces in the wild.¹⁷⁷

The Australian Pet Welfare Foundation also recommended that legislation and policy should recognise categories of cats beyond feral and domestic. It felt that the categorisation of cats into feral and domestic, as well as the three subcategories of semi-owned, owned and unowned, would enable a more nuanced approach to cat management.¹⁷⁸

The Committee considers the impact of feral cats on biodiversity values to be well established. It believes that Crown land managers should be able to balance control measures for feral cats with strategies for supporting endangered native species populations.

The Committee also recognises that domestic or urban cats have an impact on native wildlife in Victoria. As such, it would like to see a more coordinated approach to the management of urban or domestic owned, semi-owned and unowned cats pursued in Victoria.

¹⁷⁵ RSPCA, *Identifying Best Practice Domestic Cat Management in Australia*, May 2018, pp. 12-14.

¹⁷⁶ RSPCA Victoria, *Submission 735*, p. 9.

¹⁷⁷ *Ibid.*, p. 10.

¹⁷⁸ Australian Pet Welfare Foundation, *Submission 742*, p. 24.

FINDING 7: There are conflicting views on the impact of cats across a range of landscapes. However, significant concerns exist about the impact of cats on biodiversity. Humane approaches to the management of cats must be prioritised.

FINDING 8: De-sexing is an effective and humane method for controlling owned, semi-owned or unowned cat populations in urban landscapes.

RECOMMENDATION 9: That the Victorian Government consider implementation of the following measures:

- the standardisation of cat definitions across legislation, policy and stakeholder groups in line with the definitions utilised in the RSPCA's *Identifying Best Practice Domestic Cat Management in Australia* (2018)
- the establishment of a state-based advisory group to guide a more coordinated approach to domestic cat management
- the implementation of consistent and effective approaches to domestic cat management across local government areas, modelled on the Banyule City Council example, which also:
 - minimise the impact of domestic cats on Victoria's biodiversity values and wildlife by focusing on reproductive control measures as a priority and offering rehoming measures where this can be achieved
 - provide ongoing funding for programs that encourage responsible cat ownership, such as subsidised de-sexing and/or microchipping programs up to and including trap, control, neuter and release measures. These programs should involve local government authorities as key partners in the roll out of localised de-sexing programs
 - is adaptable and responsive to areas adjacent to significant biodiversity values or areas where unowned or semi-owned domestic cats are a particular issue
 - prioritises funding for humane reproductive control methods over programs which prioritise lethal control methods.

5 Climate change

5.1 Introduction

This Chapter:

- describes climate change and its impact on Victoria, including how it is driving ecosystem decline
- discusses the operation and effectiveness of Victorian climate change legislation and policy
- explores the relationship between climate change and bushfires, and describes the impact on Victorian biodiversity
- canvasses stakeholder suggestions for mitigating the impacts of climate change, including:
 - ecosystem conservation and restoration
 - the development of climate change refugia, climate future plots and biolinks
 - carbon sequestration.

5.2 What is climate change and how is it impacting Victoria?

Climate change is the long-term alteration of weather patterns and related changes in oceans, land surfaces and ice-sheets. Climate change can be caused by natural processes, such as changes in the sun's radiation.¹ However, the warming climate over the past 100–200 years is almost exclusively driven by human activities that produce greenhouse gas emissions. These activities include burning coal, oil and gas for energy, agriculture and changes to the earth's land and marine environments.

Human activities can alter the climate in different ways, such as by increasing concentrations of carbon dioxide and other greenhouse gases in the atmosphere. Additional greenhouse gases interact with other natural processes to trap heat in the Earth's atmosphere, which contributes to global warming.²

1 Australian Academy of Science, *What is climate change* <<https://www.science.org.au/learning/general-audience/science-climate-change/1-what-is-climate-change>> accessed 14 November 2021.

2 Ibid.

5.2.1 Intergovernmental Panel on Climate Change's Sixth Assessment Report

According to the Intergovernmental Panel on Climate Change (IPCC), it is 'unequivocal that human influence has warmed the atmosphere, ocean and land'. Indeed, the IPCC's sixth assessment report on climate change, *Climate Change 2021: The Physical Science Basis, Summary for Policy Makers*, which was released in August 2021, notes that 'human influence has warmed the climate at a rate that is unprecedented in at least the last 2,000 years':³

Australian land areas have warmed by around 1.4°C and New Zealand land areas by around 1.1°C between ~1910 and 2020 (very high confidence), and annual temperature changes have emerged above natural variability in all land regions (high confidence).⁴

The IPCC reports that 'climate change is already affecting every inhabited region across the globe with human influence contributing to many observed changes in weather and climate extremes'.⁵ It outlines impacts and projected impacts to the Australasian region, including:

- There have been increases in heat extremes and decreases in cold extremes with these trends projected to continue.
- Relative sea level rise has increased faster than the global average in recent decades. Sandy shorelines have retreated in many locations and relative sea level rise is projected to continue in the 21st century and beyond, increasing coastal flooding and shoreline retreat.
- Snow cover and depth have decreased and are projected to decrease further.
- There has been increased frequency of extreme fire weather days and the fire season becoming longer at many locations. The intensity, frequency and duration of fire weather is projected to increase throughout Australia.
- Heavy rainfall and river floods are projected to increase.
- Marine heatwaves and ocean acidity is observed and projected to continue.
- Sand storms and dust storms are projected to increase throughout Australia.

The IPCC projected possible future climate change in the Australasian region based on modelling different carbon emission scenarios. It found that extreme climatic events such as droughts, floods and heatwaves will be more widespread at 2°C warming

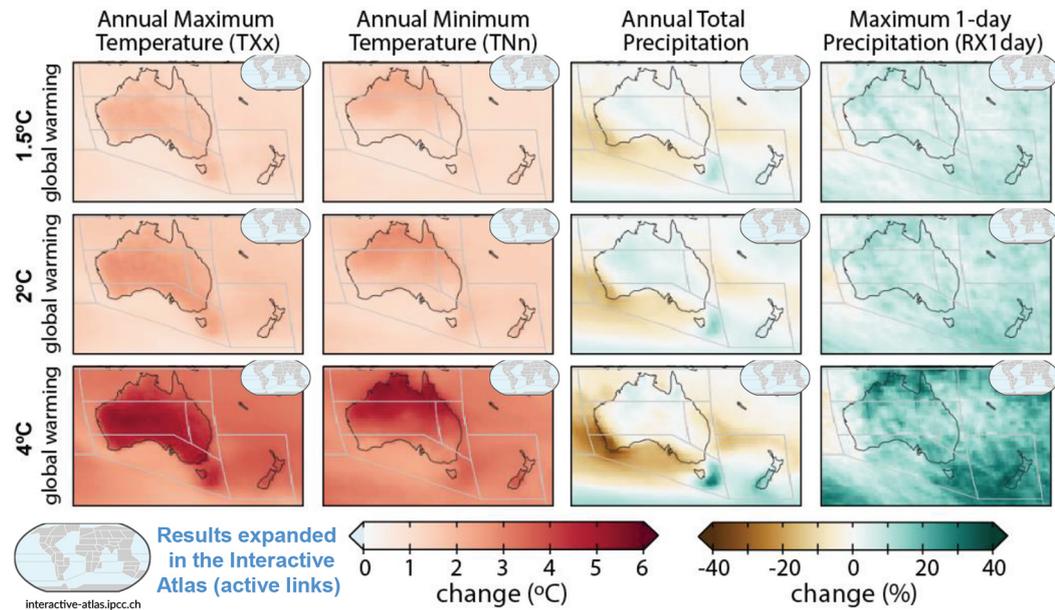
³ Intergovernmental Panel on Climate Change, *Climate Change 2021: The Physical Science Basis, Summary for policymakers: Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*, Cambridge University Press, 7 August 2021, pp. 7, 8.

⁴ Intergovernmental Panel on Climate Change, *Sixth Assessment Report Working Group I - The Physical Science Basis: Regional fact sheet - Australasia*, <https://www.ipcc.ch/report/ar6/wg1/downloads/factsheets/IPCC_AR6_WGI_Regional_Fact_Sheet_Australasia.pdf>.

⁵ Intergovernmental Panel on Climate Change, *Climate Change 2021: The Physical Science Basis, Summary for policymakers*, pp. 11, 12.

compared to the current average 1.5°C warming, and even more widespread and pronounced for higher levels of warming, such as 4°C.⁶

Figure 5.1 Projections for temperature and precipitation in the Australasian region at 1.5°C, 2°C and 4°C



Source: Intergovernmental Panel on Climate Change, *Sixth Assessment Report Working Group 1 - The Physical Science Basis: Regional fact sheet - Australasia*, <https://www.ipcc.ch/report/ar6/wg1/downloads/factsheets/IPCC_AR6_WGI_Regional_Fact_Sheet_Australasia.pdf> accessed 14 November 2021.

The IPCC reported that, under these different scenarios, discernible differences in global surface temperature trends would begin to emerge within around 20 years, and over longer time periods for other consequences of climate change.⁷

The IPCC asserted that limiting human-induced climate change requires the restriction of cumulative carbon dioxide and other greenhouse gas emissions, reaching at least net zero carbon emissions. It noted that successfully limiting greenhouse gas emissions could have a discernible impact on greenhouse gas concentrations in the atmosphere 'within years'.⁸

FINDING 9: Climate change is almost exclusively driven by burning fossil fuels for energy, as well as greenhouse gas emissions produced from agriculture and changes to the land and marine environment.

⁶ Intergovernmental Panel on Climate Change, *Climate Change 2021: The Physical Science Basis, Summary for policymakers*, p. 19.

⁷ Ibid., p. 30.

⁸ Ibid., pp. 27, 30.

5.2.2 State of the Environment 2018

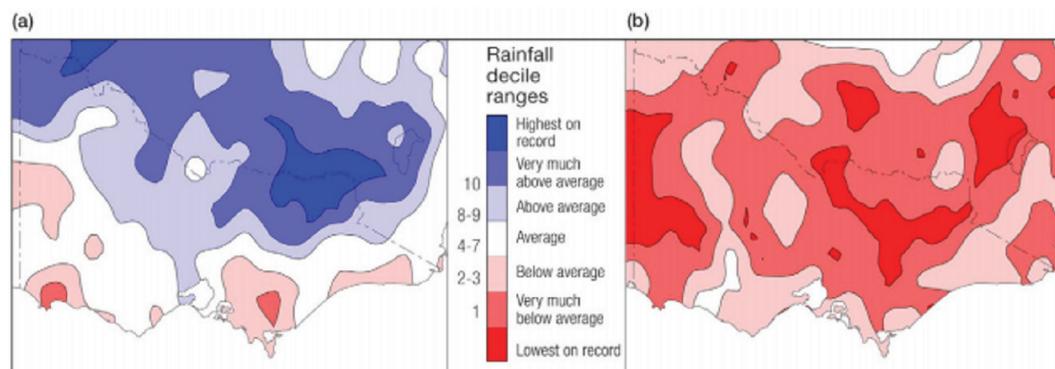
The Victorian Commissioner for Environmental Sustainability also reports on climate change impacts and management in its five-yearly State of the Environment reports. The *State of the Environment 2018* describes the health of the State’s environment by assessing land, water, air and biodiversity indicators. It assesses 17 indicators for the impact of climate change in Victoria. Its findings in relation to rainfall, temperature and sea level rises are outlined below.

Rainfall

Since the mid-1990s, Victoria’s climate has become drier. Only four of the last 20 years recorded above the 1961 to 1990 average annual rainfall. This drying mainly affects the cool season (April to October) with serious consequences for agriculture and water resources.⁹

The warm season (November to March) has seen generally above average rainfall in northern Victoria and below average rainfall in southern Victoria. Climate change is likely to drive a continuing decrease in rainfall in coming years. However, natural variability will mean that in the short- to medium-term, Victoria may be wetter or drier depending on whether it is experiencing a drought or wet weather event.¹⁰

Figure 5.2 Victorian rainfall deciles, 1986 to 2015



(a) The warm season (November to March)

(b) The cool season (April to October)

Source: Office of the Commissioner for Environmental Sustainability, *Victorian State of the Environment 2018 Summary Report: Climate Change Impacts (CC) Scientific Assessments Part III*, 2018, p. 8.

Temperature

Victoria’s climate has been warming since the 1950s, with every year since 2013 being among the warmest on record for the State. Both maximum daytime and minimum nighttime temperatures have increased across all parts of Victoria. The central and

9 Office of the Commissioner for Environmental Sustainability, *Victorian State of the Environment 2018 Summary Report: Climate Change Impacts (CC) Scientific Assessments Part III*, 2018, pp. 7-8.

10 Ibid., pp. 7-8, 17.

southern parts of the State have experienced the most warming. Temperatures are expected to increase by an average of 0.4 to 1.3°C across Victoria by 2030 (relative to the 1986 to 2005 baseline). Warming is projected to increase further by 2090, in proportion to the scale of greenhouse gas emissions from human activity.¹¹

Table 5.1 Projected temperatures across Victoria, relative to 1986–2005

Scenario	Victoria (°C)
2030 annually averaged warming relative to the climate of 1986–2005 for all emissions scenarios	0.4 to 1.3
2090 annually averaged warming relative to the climate of 1986–2005 for a low emissions scenario	0.4 to 1.5
2090 annually averaged warming relative to the climate of 1986–2005 for an intermediate emissions scenario	1.1 to 2.4
2090 annually averaged warming relative to the climate of 1986–2005 for a high emissions scenario	2.5 to 4.5

Source: Office of the Commissioner for Environmental Sustainability, *Victorian State of the Environment 2018 Summary Report: Climate Change Impacts (CC) Scientific Assessments Part III*, 2018, p. 16.

Sea level

Tide gauges indicate that the mean sea level has increased around the Victorian coastline. Average increases between 1.59 cm and 3.89 cm were recorded per decade between 1993 and 2016. Annual maximum sea levels along Melbourne’s shoreline have increased, on average, at a rate of 3.37 cm per decade between 1966 and 2016. This equates to a total of 17 cm over the period. Similar trends have been observed in Geelong.¹²

Thermal expansion of the water and melting glaciers and ice-caps are the main causes of rising sea levels and they are projected to continue to rise. Rising sea levels will threaten Victoria’s coastal areas with the more frequent inundation of low-lying areas:

- loss of coastal habitat
- cliff, beach and foreshore erosion
- altered saltmarsh and mangrove habitats.¹³

¹¹ Ibid., pp. 12–15.

¹² Ibid., pp. 21–22.

¹³ Ibid., p. 23.

Table 5.2 Projections of regional sea level rise (m) under all emissions scenarios, 2030 to 2090, relative to 1986–2005 levels

Locations	2030 (m)	2050 (m)	2070 (m)	2090 (m)
Geelong	0.06–0.17	0.12–0.33	0.18–0.54	0.22–0.82
Williamstown	0.06–0.17	0.12–0.32	0.17–0.54	0.22–0.81

Source: Commissioner for Environmental Sustainability Victoria, *Climate Change Impacts (CC): Scientific Assessment Part 3*, <https://www.ces.vic.gov.au/sites/default/files/SoE2018ScientificAssessment_CC.pdf>, 2018, accessed 14 November 2021.

Managing the impacts of climate change in Victoria

The *State of the Environment 2018* acknowledges that Victoria already has a legislative and policy framework in place to manage the impacts of climate change across the State.¹⁴ However, it also notes that more localised, detailed climate projections could help inform better management of the impacts of climate change:

Greater detail in climate projections can improve the proactive planning for many natural assets and sectors, including agriculture, with rainfall projections a particularly valuable tool for long term policy development ... Rainfall projections are currently associated with reasonably large uncertainties (relative to other climate variables such as temperature) and reducing these uncertainties would enhance environmental management, planning and outcomes.¹⁵

The report includes a recommendation that to improve localised climate projections:

DELWP [Department of Environment, Land, Water and Planning], in coordination with research partners, conduct further analysis to improve localised climate projections (particularly in agricultural regions). These projections would aim to reduce the uncertainties associated with rainfall projections as a minimum.¹⁶

The Victorian Government released its response to the *State of the Environment 2018* in December 2020. It stated its support for more detailed, localised climate change projections and outlined research projects and initiatives already completed to deliver this recommendation, including:

- The Victorian Climate Initiative (2013–2016), a collaboration between the Department of Environment, Land, Water and Planning (DELWP), Bureau of Meteorology (BoM) and Commonwealth Scientific and Industrial Research Organisation (CSIRO) which assessed the impact of climate change on water availability for use by water corporations across Victoria.
- The Victorian Water and Climate Initiative (2017–2020), a collaboration between DELWP, BoM, CSIRO and the University of Melbourne, which examined changes in catchment runoff across Victoria and developed a better understanding of how

¹⁴ Ibid., pp. 4–5.

¹⁵ Ibid., p. 43.

¹⁶ Office of the Commissioner for Environmental Sustainability, *Victorian State of the Environment 2018 Report: Summary Report*, 2018, p. 43.

changes in Victorian rainfall over recent decades fits with projections of future rainfall declines.

- The Victorian Climate Projections project (2019), a collaboration between DELWP and CSIRO that produced local-scale climate projections (including rainfall) for the entire state of Victoria for medium and high emissions pathways.

The Victorian Government asserted that these projects fulfil the recommendation for localised projections included in the *State of the Environment 2018*. It noted that any additional investment will be subject to stakeholder needs:

Any investment in additional research and product development will be subject to stakeholder needs, including through the application of the next round of Intergovernmental Panel on Climate Change global climate models.¹⁷

Nonetheless Dr Gillian Sparkes, Victoria's Commissioner for Environmental Sustainability, continued to advocate for more detailed localised climate change projections when she spoke to the Committee at a public hearing in Melbourne. Dr Sparkes said that the State has 'very strong' climate change legislation and carbon emission reduction targets.¹⁸ However, she explained that Victoria could better manage climate change impacts at the local level if actions were informed by localised climate change projections:

Climate change impacts go across the board in affecting our environment. We know that. That is well established. One of the key responses to adapt at a local level is to understand at a finer spatial resolution and more accurately what our localised climate and rainfall projections are, for example. So we are advocating strongly for more local and more detailed climate projections at a regional or catchment scale.¹⁹

Stakeholders to the Inquiry called for similar initiatives. For example, the Victorian National Parks Association recommended in a submission:

Develop a detailed understanding on the implications of climate change on ecosystems, and a detailed assessment at fine scale (e.g at least 5 kilometre blocks) should be undertaken to model the potential changes for key natural areas.²⁰

Local government authorities, such as Wyndham City Council, also called for investment 'in more comprehensive research in the impacts of climate change on specific ecosystems and the implementation of subsequent mitigation measures'.²¹

The Committee recognises that climate change projections undertaken by the IPCC and the Commissioner for Environmental Sustainability clearly indicate that the impacts of climate change are serious and vary from region to region. While some ecosystems

¹⁷ Victorian Government, *Victorian Government response to the State of the Environment 2018 report*, p. 9.

¹⁸ Dr Gillian Sparkes, Commissioner, Commissioner for Environmental Sustainability Victoria, Public hearing, Melbourne, 3 December 2020, *Transcript of evidence*, p. 4.

¹⁹ *Ibid.*, p. 3.

²⁰ Victorian National Parks Association, *Submission 102*, pp. 13, 109.

²¹ Wyndham City Council, *Submission 528*, p. 4.

face a warmer, drier climate which is more prone to bushfires, others are threatened by increased rainfall, a higher risk of flooding and erosion. Given this variation, the Committee agrees that localised climate change projections can underpin appropriate mitigation measures.

FINDING 10: Detailed, localised projections of climate change can inform appropriate planning and adaptation measures to increase the resilience of Victoria’s biodiversity values to the varied impacts of climate change.

FINDING 11: Climate change is a major driver of ecosystem decline.

The Committee acknowledges the valuable research that has already been undertaken and which contributes data important to the adaptation of local ecosystems to climate change, particularly in relation to water availability, runoff and rainfall.

However, the Committee also notes that the IPCC released its sixth assessment report on climate change in August this year. This assessment report provides a more detailed regional assessment of climate change, including information that can inform risk assessment, adaptation, and decision-making in relation to mitigating the impacts of climate change. It also outlines a ‘new framework that helps translate physical changes in the climate—heat, cold, rain, drought, snow, wind, coastal flooding and more—into what they mean for society and ecosystems’.²² Given the scale of the challenge presented in reversing ecosystem decline in Victoria, the Committee believes it is critical that planning and adaptation to increase the resilience of biodiversity values is informed by the most accurate, up to date and localised climate change projections.

RECOMMENDATION 10: That the Victorian Government, in coordination with research partners, conduct further research and analysis to improve localised climate projections for both Victoria’s agricultural and biodiversity values. As part of this research, the Government should:

- ensure projections are fulsome—identifying climate change impacts beyond predicting rainfall—and incorporate new modelling and findings made by the Intergovernmental Panel on Climate Change
- identify innovative opportunities to improve the ongoing monitoring, protection and leveraging of localised climate projections through the use of tools such as digital spatial capability, data analytics and predictive modelling, citizen science and environmental economic accounting
- seek opportunities to maximise investment opportunities with diverse stakeholders.

²² Intergovernmental Panel on Climate Change, *Climate change widespread, rapid, and intensifying - IPCC*, media release, 9 August 2021.

5.3 How is climate change driving ecosystem decline?

As highlighted, climate change has become a key driver of ecosystem change around the world,²³ including in Victoria.²⁴ The Committee received much evidence detailing how climate change is already impacting, and will continue to impact, Victoria's unique biodiversity values.

In a submission to the Inquiry, DELWP acknowledged the challenges and threats to Victorian ecosystems and native species presented by climate change:²⁵

Many native species are at an increasing risk of extinction from a range of pressures, including the impacts of climate change.²⁶

The Victorian National Parks Association provided written evidence describing how the changing climate is driving ecosystem decline across the State. It outlined a number of impacts, including:

- Warmer weather is driving species migration into cooler regions southwards or into mountainous areas. However, not all species will manage this transition because:
 - the speed of climate change will outpace some species' capability to migrate, leaving them stranded and heat stressed
 - plants and animals adapted to cooler alpine climates have nowhere cooler to migrate to
 - habitat fragmentation in Victoria makes migration difficult with plants and animals having to traverse built-up and agricultural areas.
- A warmer atmosphere is producing more turbulent weather, such as droughts, storms and floods. This weather will cause:
 - more frequent and severe bushfire weather, increasing the pressure on species ill-adapted to frequent bushfires
 - coastal erosion associated with storm surges which are destructive to Victoria's coastal habitats.
- Warmer weather may favour more adaptable invasive pest animals and noxious weeds, increasing competition with native species.²⁷

The impacts of climate change on native species will vary. For some species, the impacts can be devastating. For example, the grey-headed flying fox is particularly vulnerable to extreme fire weather which is projected to become more frequent as

²³ Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, *Models of drivers of biodiversity and ecosystem change*, <<https://ipbes.net/models-drivers-biodiversity-ecosystem-change>> accessed 13 October 2021.

²⁴ Department of Environment, Land, Water and Planning, *Submission 927*, pp. 10-12.

²⁵ *Ibid.*, p. 7.

²⁶ *Ibid.*, p. 4.

²⁷ Victorian National Parks Association, *Submission 102*, p. 108.

the climate warms. Box 5.1 describes the vulnerability of the grey-headed flying fox to climate change.

BOX 5.1: Grey-headed flying foxes

The grey-headed flying fox is Australia's only endemic flying fox and occupies habitat from Rockhampton, Queensland to Melbourne, Victoria. It eats fruits and the nectar of flowers from vegetation communities including rainforests, open forests, closed and open woodlands, Melaleuca swamps and banksia woodlands. The grey-headed flying fox has also been known to feed on commercial fruit crops and on introduced tree species in urban areas. Its primary food source is eucalyptus blossoms.

Grey-headed flying foxes roost in groups on exposed tree branches. Roost sites are typically located near water, such as lakes, rivers or the coast and include rainforest patches, stands of Melaleuca, mangroves and highly modified vegetation in urban areas. None of the vegetation communities frequented by the grey-headed flying fox produce continuous food resources throughout the year. As a result, the species migrate south/west each summer and north/east in winter.

The grey-headed flying fox is important to the health of many ecosystems in eastern Australia. The species performs pollination and seed dispersal for a wide range of native trees, including commercially important hardwood and rainforest species, such as native figs and palms. It contributes directly to the reproduction, regeneration and evolutionary processes of forest ecosystems.

The grey-headed flying fox is listed as vulnerable under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) and *Flora and Fauna Guarantee Act 1988* (Vic).

Impacts of climate change

The grey-headed flying fox is vulnerable to extremely warm weather. The species cools itself by roosting in the shade, licking its body and fanning its wings to create an evaporative cooling effect. Temperatures above 40°C can quickly result in heat stroke and death.

The increased frequency of heatwaves in Victoria due to climate change is killing thousands of adult and pup grey-headed flying foxes each year. For example, on Black Saturday (7 February 2009), about 5,000 flying foxes died at Yarra Bend Park in Melbourne due to heat stress.

Moreover, large bushfires, such as the 2019–2020 bushfires, have destroyed much of the grey-headed flying fox habitat and reduced food resources, making it more difficult for them to migrate without starving.

(Continued)

BOX 5.1: Continued

If populations of grey-headed flying foxes are reduced to small or localised groups, then rainforest seed dispersal and hardwood pollination processes will be severely curtailed in eastern Australia.

Sources: Commonwealth Government Department of Agriculture, Water and the Environment, *Species Profile and Threats Database: Pteropus poliocephalus — Grey-headed Flying-fox*, <http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=186> accessed 14 November 2021; Queensland Department of Environment and Science, *Guidelines: Interim Flying-fox heat stress guideline*, <https://environment.des.qld.gov.au/_data/assets/pdf_file/0019/223714/interim-flying-fox-heat-stress-guideline.pdf> accessed 12 September 2021; Friends of Bats and Bushcare, *Submission 44*; Australasian Bat Society, *Flying foxes in Melbourne*, <https://www.ausbats.org.au/uploads/4/4/9/0/44908845/abs_flying_foxes_in_melb_web.pdf> accessed 14 November 2021.

Other stakeholders also noted the varying impacts of climate change. In a submission to the Inquiry, Environment Victoria described how climate change is reducing water flows through river systems—making waterways more vulnerable to catastrophic events, such as mass fish deaths, when extreme weather hits.²⁸

The Australian Wildlife Protection Council and Anna Murphy, Director and Head of Flora Ecology at the Threatened Species Conservancy, both referred to the likelihood that climate change would result in the extinction of native species.²⁹ Anna Murphy told the Committee at a public hearing that the outlook for threatened native species ‘will only worsen as Australia heads further into climate breakdown’:³⁰

We are heading into catastrophic climate change. The scenarios are incredibly serious, and they will have massive ramifications on our native vegetation and also on our native wildlife, so we really need to be thinking about how we are going to manage our biodiversity into the future and our threatened species into the future. Because if we do not, we are going to see widespread extinction and we will have to live with that. That is something that we will pass to our future generations, that story.³¹

Box 5.2 describes the impact of a warming climate on Victoria’s delicate native orchid populations.

²⁸ Environment Victoria, *Submission 906*, p. 2.

²⁹ Australian Wildlife Protection Council, *Submission 73*, p. 4; Anna Murphy, Director and Head of Flora Ecology, Threatened Species Conservancy, Public hearing, Melbourne 23 February 2021, *Transcript of evidence*, p. 9.

³⁰ Anna Murphy, *Transcript of evidence*, p. 12.

³¹ Ibid.

BOX 5.2: Native Victorian orchids

Orchids are the largest family of flowering plant in the world with more than 30,000 identified species. Around 80% of Australia's 1,300 native orchid species are not found anywhere else internationally.

Orchids are monocots which means they have one cotyledon (the leaf attached to the embryo within the seed). The flowers of orchids are bilaterally symmetrical, they have simple leaves and they are pollinated by insects (although some species are known to self-pollinate). Orchid seeds are generally microscopic and their germination is associated with underground fungi.

In Victoria, most native orchids are terrestrial perennials, emerging and flowering annually from tubers before becoming dormant over the summer period and recommencing this cycle the following year. Orchids have adapted to dry climates. They may remain dormant in a dry year, or series of dry years, only re-emerging following decent rain. Orchids are also somewhat adapted to bushfires and respond favourably to the removal of biomass and additional nutrients following a fire.

Impacts of climate change

In a submission to the Inquiry, the Australasian Native Orchid Society Victorian Group highlighted the impacts of climate change on native Victorian orchids:

In our native orchids [climate change] is reflected in observed changes as a delay in plants emerging after their Summer dormancy, a reduced number of flowering plants, a shorter flowering period, reduced pollination activity and seed set and they enter their dormancy period earlier. The shorter growing season being experienced is also impacting on orchids being able to naturally recruit into their populations.

Lower rainfall, reduced number of rain days, higher temperatures, depleted soil moisture and more extreme weather events are all contributing to the adverse impacts being experienced by our terrestrial ecosystems.^a

Moreover, the ability of orchids to persist in the extended dry periods and extreme bushfires associated with climate change is limited. Extended dry periods have resulted in some populations becoming locally extinct. Many orchid species, like spider-orchids (*Caladenia species*), replace their tuber each year and with drier, shorter seasons these tubers become smaller to the extent where the plant simply cannot sustain itself and dies. Similarly, populations may be lost due to the intense heat of extreme bushfires, such as the 2019–20 fires. Intense fire heats the soil and kills orchid tubers. It destroys the soil that fungi orchids depend on for germination and kills insect pollinators needed for reproduction.

(Continued)

BOX 5.2: Continued

Furthermore, the minority of Victoria's native orchids are epiphytes, which grow on trees, usually in the wetter cool temperate rainforest where they take moisture from the air, and lithophytes, which grow on rocky outcrops. Bushfires have not historically been prevalent in rainforests and so have generally not impacted these species of orchids. However, the 2019–20 bushfires in eastern Victoria did affect rainforest and destroyed orchids poorly adapted to survive bushfires.

a. Australasian Native Orchid Society Victorian Group, *Submission 913*, p. 4.

Sources: CSIRO, *Protecting native orchids*, <<https://www.csiro.au/en/research/plants/native/protecting-native-orchids>> accessed 14 November 2021; Bush Heritage, *Rare Victorian Orchids*, <<https://www.bushheritage.org.au/species/orchids>> accessed 14 November 2021; Australasian Native Orchid Society Victorian Group, *Submission 913*.

The Gunditj Mirring Traditional Owners Aboriginal Corporation provided the Committee with a written contribution which highlighted the impact of climate change on Traditional Owners, whose wellbeing is intrinsically linked to the health of Country:

Climate change has and will continue to have devastating impacts on Mirring [Country]. As the sea level rises, our coastal hunting grounds will become inaccessible and important cultural heritage sites will be lost like shell middens, camping grounds, dreaming places and other important places that make up who we are, are now under real threat. Many of the coastal species are already feeling the effects and we fear the ongoing results will be catastrophic if action isn't taken now.³²

Moreover, DELWP noted that the environmental impacts of climate change have diverse and significant flow on effects for the health of the broader Victorian community and economy:

Marine-dependent industries such as fishing and tourism are affected by changing species distribution and habitats. Productivity of agricultural land will be diminished due to saltwater intrusion, flooding and erosion. Increased salinities and higher water temperatures in Port Phillip Bay are thought to have supported the proliferation of native urchins, which have subsequently decimated local reefs, and impacted the associated fish assemblages.

Changes in seasonal weather patterns impact community activities, which parallel environmental and ecological impacts. For example, reduced snowfall in alpine areas in winter impacts recreational skiing, which has flow on effects for regional economies. The increasing frequency and duration of blue-green algal blooms affect drinking, recreation and stock water. Tree decline, extreme weather events and prolonged severe droughts have significant impacts on the economy, environment and liveability of the state.³³

³² Gunditj Mirring Traditional Owners Aboriginal Corporation, *Submission 908*, p. 3.

³³ Department of Environment, Land, Water and Planning, *Submission 927*, pp. 11–12.

It is evident to the Committee, through the significant concerns raised by Inquiry stakeholders, that this issue is of great concern to Victorians, in terms of its environmental and broader social and economic impacts. Moreover, it is clear that climate change is already contributing to the decline of Victorian ecosystems with potentially devastating impacts for native species.

FINDING 12: Climate change is already driving ecosystem decline across Victoria with devastating impacts for native floral and faunal species.

5.4 Victorian climate change legislation and policy

The Victorian Government has introduced a suite of legislation and policies to address and mitigate the impacts of climate change on the environment, economy and society. The *Climate Change Act 2017* (Vic) (Climate Change Act) is central to this framework. It was developed in response to the findings of an independent review into the preceding *Climate Change Act 2010* (Vic).

The Climate Change Act establishes the legislative basis for key policies such as a statewide climate change strategy and system adaptation plans.³⁴ The Act and associated policies are outlined in the next Sections of this report.

5.4.1 *Climate Change Act 2017* (Vic)

The Climate Change Act provides a legislative framework for Victoria to manage climate change risks, transition to net-zero carbon dioxide emissions, and foster a climate resilient society and economy.³⁵ It does this by establishing:

- a requirement that climate change be factored into policy formulation and decision making
- emissions reduction targets
- a five yearly, statewide climate change strategy
- Climate Change Adaptation Plans.

Incorporating climate change into policy formulation and decision-making

The Climate Change Act introduces a set of policy objectives, guiding principles and mandatory considerations to embed climate change into government policy formulation and decision-making. It establishes that the Victorian Government will

³⁴ Department of Environment, Land, Water and Planning, *Climate Change Act 2017: Overview: Factsheet*, 2017.

³⁵ Ibid.

ensure that any decision it makes and any policy or program it implements ‘appropriately takes account of climate change if it is relevant’ by having regard to policy objectives and guiding principles set out in the Act.³⁶ Policy objectives specified in the Act include:

- reducing greenhouse gas emissions
- increasing the resilience of infrastructure, the built environment and communities
- supporting regional areas, industry and communities to adjust to a net-zero emissions economy
- promoting social justice and intergenerational equity.³⁷

Guiding principles established by the Climate Change Act include ensuring that decision-making is informed and integrates environmental, health, economic and social considerations relating to climate change. It also encompasses the principles of risk management, equity, community engagement and compatibility with the broader climate change legislation and policy framework.³⁸

In addition to establishing policy objectives and guiding principles, the Climate Change Act also compels some government decision-makers to factor climate change into their determinations.

Section 17 of the Act compels decision-makers ‘to take into account the potential impacts of climate change and the potential contribution to Victoria’s greenhouse gas emissions’ when making a decision or taking an action authorised by any Act listed in Schedule 1 of the Climate Change Act. This requirement also applies to regulations or subordinate instruments made under an Act listed in Schedule 1.³⁹ Schedule 1 of the Climate Change Act currently lists six items of legislation relating to the environment, water management and public health and wellbeing.⁴⁰

The Climate Change Act specifies that, when factoring climate change into decision-making, relevant considerations for decision-makers include potential:

- biophysical impacts⁴¹
- short- and long-term economic, environmental, health and other impacts
- social impacts
- beneficial and detrimental impacts

³⁶ *Climate Change Act 2017* (Vic) s 20.

³⁷ *Ibid.*, s 22.

³⁸ *Ibid.*, ss 25–28.

³⁹ Climate Change Bill 2016 (Vic), Explanatory Memorandum.

⁴⁰ *Climate Change Act 2017* (Vic), Schedule 1. This includes the *Catchment and Land Protection Act 1994* (Vic); *Marine and Coastal Act 2018* (Vic); *Environment Protection Act 2017* (Vic); *Flora and Fauna Guarantee Act 1988* (Vic); *Public Health and Wellbeing Act 2008* (Vic); and *Water Act 1989* (Vic).

⁴¹ Biophysical refers to living things (bio), such as plants and animals, and non-living things (physical), such as rocks, soils and water.

- direct and indirect impacts
- cumulative impacts.⁴²

The Climate Change Act specifies that, when factoring greenhouse gas emissions into decision-making, relevant considerations for decision-makers include potential:

- short- and long-term emissions
- direct and indirect emissions
- increases and decreases of emissions
- cumulative impacts of emissions.⁴³

In addition, s 18 of the Climate Change Act empowers the Minister to issue guidelines about the scope and application of the requirements for decision-makers.⁴⁴

Emissions reduction targets

The Climate Change Act commits Victoria to transition to net-zero greenhouse gas emissions by 2050. This objective is consistent with Australia's international obligations under the Paris Agreement⁴⁵ to keep global temperature rise below 2°C above pre-industrial levels. The Act places a duty on the Premier and the Minister for Energy, Environment and Climate Change to ensure this target is met and requires them to establish five-yearly interim targets for reducing emissions to facilitate progress. The following statewide emission reduction targets have been established:

- to reduce emissions by 15 to 20% below 2005 levels by the end of 2020
- to reduce emissions by 28 to 33% below 2005 levels by the end of 2025
- to reduce emissions by 45 to 50% below 2005 levels by the end of 2030.⁴⁶

Indicative data show that the 2020 emissions reduction target was exceeded. According to the Victorian Government, in 2019, Victoria's emissions fell to 24.8% below 2005 levels. However, official emissions data for 2020 will not be published until 2022.⁴⁷

An emissions reduction target for 2035 will be established in 2023, for 2040 in 2028, for 2045 in 2033 and for 2050 in 2038. The Act allows interim targets to be amended if, in the opinion of the Premier and the Minister, exceptional circumstances apply.⁴⁸

⁴² *Climate Change Act 2017* (Vic) s 17(13).

⁴³ *Ibid.*, s 17(14).

⁴⁴ *Climate Change Bill 2016* (Vic), Explanatory Memorandum.

⁴⁵ United Nations Framework Convention on Climate Change, Conference of the Parties, *Adoption of the Paris Agreement*, 12 December 2015, UN Doc. FCCC/CP/2015/L.9/Rev/1.

⁴⁶ Department of Environment, Land, Water and Planning, *Victoria's greenhouse gas emissions reduction targets: Ambitious targets guiding us to net-zero emissions by 2050*, 2021, <<https://www.climatechange.vic.gov.au/victorias-greenhouse-gas-emissions-reduction-targets>> accessed 14 November 2021.

⁴⁷ *Ibid.*

⁴⁸ Department of Environment, Land, Water and Planning, *Climate Change Act 2017: Emissions Reduction Targets Fact sheet*, 2017.

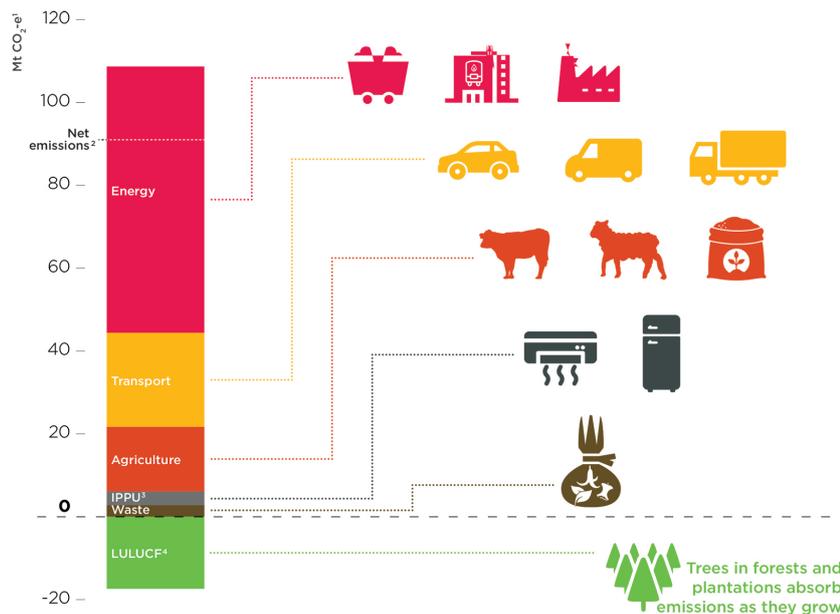
DELWP noted in a submission to the Inquiry that the Climate Change Act requires the Government to regularly assess and publicly release information about Victoria's progress towards emission reduction targets:

The Climate Change Act requires the Government to publish an annual greenhouse gas emissions inventory report for Victoria. This provides a transparent account of sources and trends of Victoria's greenhouse gas emissions across all sectors of the economy, including electricity generation, transport, and industrial processes sectors. This Act also requires the Government to publish a report at the end of each interim target period which states whether the interim emissions reduction targets have been achieved and assesses the implementation and effectiveness of the emissions reduction pledges.⁴⁹

Victoria's Climate Change Strategy

The Climate Change Act requires the Victorian Government to prepare a five-yearly, statewide climate change strategy. The first of these strategies, *Victoria's Climate Change Strategy*, was released in 2021. It describes how the Government will work with businesses and the community to achieve interim carbon emissions reduction targets and adapt to the impacts of climate change.⁵⁰

Figure 5.3 Victoria's greenhouse gas emissions by emissions sector, 2019



1. Million tonnes of carbon dioxide equivalent emissions
2. Victoria's net emissions are total emissions less the emissions absorbed in the LULUCF sector
3. Industrial processes and product use
4. Land use, land use change and forestry

Source: Department of Environment, Land, Water and Planning, *Victoria's Climate Change Strategy*, 2021, p. 10.

⁴⁹ Department of Environment, Land, Water and Planning, *Submission 927*, p. 10.
⁵⁰ Department of Environment, Land, Water and Planning, *Climate Change Act 2017: Overview*; Department of Environment, Land, Water and Planning, *Victoria's Climate Change Strategy: Our pathway for reducing emissions and building resilience to the impacts of climate change*, 2021, <<https://www.climatechange.vic.gov.au/victorias-climate-change-strategy>> accessed 14 November 2021.

The strategy outlines a series of ‘pledges’ made by the Victorian Government for the sectors with the largest contributions to greenhouse gas emissions to achieve interim carbon emissions reduction targets. This includes:

- 50% of Victoria’s electricity will come from renewable sources by 2030
- new technologies and practices will be tested for the Victorian context, and farmers will be supported to use information and tools that will help to realise emissions reduction opportunities on-farm
- 50% of all new light vehicles sales will comprise zero emissions vehicles by 2030
- commercial timber harvesting in Victorian state forests will cease by 2030
- the amount of organic waste going to landfill will halve by 2030 and emerging recycling industries will be supported
- the maintenance and management of refrigeration and air-conditioning equipment will be improved to reduce leakage of refrigerant gases
- all Victorian Government operations—such as schools, hospitals and metropolitan trains and trams—will be powered by 100% renewable electricity by 2025. The energy efficiency of government buildings will also be improved, and 400 zero emission vehicles will be incorporated into the Government fleet by 2023.⁵¹

The strategy also outlines a five-point plan aimed at reducing emissions and building resilience.

Table 5.3 Victoria’s five-point plan

Point	Initiatives, programs and other measures
<p>A clean energy economy: aims to transition Victoria’s electricity sector away from coal power and towards renewable energy sources</p>	<ul style="list-style-type: none"> • upgrading the State’s energy grid to increase its suitability to renewables • establishing and investing in renewable energy zones • building more energy efficient homes and buildings • supporting Victorians to reduce energy demand by 7% by 2025 and vulnerable Victorians to reduce their energy bills • improving government buildings to enhance their energy efficiency • investing in training programs to upskill and support workers to take on clean energy jobs
<p>Innovation for the future: aims to support the commercialisation of new technologies able to help address climate change</p>	<ul style="list-style-type: none"> • accelerating the development, commercialisation and implementation of projects and new technologies expected to play a critical role in the transition to clean energy • developing a Gas Substitution Roadmap to support businesses and households to switch from natural gas to lower emissions energy sources • driving the broader adoption of zero emissions vehicles

Point	Initiatives, programs and other measures
Resilient farms and forests: aims to increase the resilience of Victoria's agricultural sector and reduce associated greenhouse gas emissions	<ul style="list-style-type: none"> phasing out commercial native forest harvesting by 2030 supporting land managers to protect natural landscapes and undertake revegetation establishing the Victorian Agriculture and Climate Change Council to support the agriculture sector to prepare for climate change impacts, reduce emissions and maximise opportunities to contribute to net-zero emissions by 2050 supporting land managers, including Traditional Owners, to restore and protect ecosystems
Climate smart businesses and communities: aims to support businesses and the community to adopt more efficient practices and technologies to thrive in a net-zero emissions future	<ul style="list-style-type: none"> supporting high energy-using businesses to adopt energy solutions in preparation for a low emissions future investing to improve businesses' and households' recycling practices investing in the expansion and modernisation of Victoria's public transport system planning and building over 250 kilometres of cycling and walking paths accepting pledges from councils to transition to a net-zero emissions future supporting community groups, neighbourhoods and Traditional Owners to switch to renewable energy sources
A climate resilient Victoria: aims to strengthen Victoria's ability to withstand and recover from extreme weather events	<ul style="list-style-type: none"> improving emergency management and disaster preparedness of the following: <ul style="list-style-type: none"> the built environment and infrastructure industries and livelihood communities and regions biodiversity, ecosystems and natural resources

Source: Department of Environment, Land, Water and Planning, *Victoria's Climate Change Strategy*, 2021, pp. 18–43.

Climate Change Adaptation Plans

Adaptation is the process of adjusting to current or projected impacts of climate change. It is important because it enables society and the natural environment to manage impacts of climate change which cannot be avoided. It involves practical actions to increase resilience to a warming climate. The Climate Change Act requires the development of five-yearly Climate Change Adaptation Plans for 'systems' which are either vulnerable to the impacts of climate change, or essential to Victoria. These systems encompass the built environment, education and training, health and human services, the natural environment, primary production, transportation, and the water cycle. The Act devolves responsibility for preparing Climate Change Adaptation Plans to the relevant portfolio ministers.⁵²

Climate Change Adaptation Plans are being developed during 2020–21. At a minimum, they must encompass:

- a statement of the roles and responsibilities across the system
- a 'gap analysis' to determine how current policy for each system addresses the priorities contained in the most recent Climate Change Strategy
- a list of actions to address any shortcomings identified in the gap analysis.⁵³

⁵² Department of Environment, Land, Water and Planning, *Climate Change Act 2017: Adaptation Action Plans Fact sheet*, 2017.

⁵³ Ibid.

In its submission to the Inquiry, DELWP noted that these adaptation plans will be complemented by regional strategies:

These plans will be complemented by six regional climate change adaptation strategies that provide place-based, stakeholder-led analysis of climate change adaptation issues. Victoria's 10 Catchment Management Authorities (CMAs) have each developed regional Natural Resource Management Plans for Climate Change Adaptation and are incorporating resilience planning into the renewal of their Regional Catchment Strategies.⁵⁴

DELWP also noted that it is difficult to develop policy responses for climate change because of the complexity and uncertainty surrounding its impacts on biodiversity values:

The climate system is complex. Emission scenarios and climate models are the starting point when making decisions about adaptation. There is significant uncertainty surrounding the nature of the impacts that will result from projected climatic changes, their timing, and how human and natural systems will respond.

Prospects for reducing these large uncertainties remain limited. Policy capacity for dealing with the effects of climate change involves confronting the inherent uncertainty that results from the combination of complexity and time. Decisions made today affect our systems in the future, particularly their susceptibility to predicted climate impacts and their capacity to respond. Action in the present is needed to avert harm in the future, but it is counter-productive to plan for a single, predicted future. Decision-making must account for the possibility of many 'futures' as well as respond to unfolding processes of change in the interim. This includes responding to unpredictable events such as disease outbreaks as well as increasing severity and frequencies of bushfires across the state.⁵⁵

5.4.2 Stakeholder views on the *Climate Change Act 2017* (Vic)

Many witnesses reflected positively on Victoria's suite of climate change legislation but made suggestions as to how it could be strengthened further.

The Murrindindi Climate Network advocated for consideration of climate change and emissions reduction targets to be factored into the legislative frameworks for the approval of infrastructure projects, primary industries and the forestry sector:

The Victorian climate change targets (*Climate Change Act 2017*) and related interim emission reduction targets for 2025–2030 must be an integral part of the Environmental Effect Statement process for public and private infrastructure projects and projects under Public Private Partnerships. Also, the compatibility test with climate change targets needs to include resource extraction and primary industries, including the

⁵⁴ Department of Environment, Land, Water and Planning, *Submission 927*, p. 11.

⁵⁵ *Ibid.*

forestry sector. Projects that are not able to deliver their economic performance within the interim emissions reduction targets or in a carbon neutral way by 2050 should not be permitted.⁵⁶

Other Inquiry stakeholders highlighted the importance of ensuring that all legislation, particularly environmental legislation, is ‘climate ready’. For example, the Surf Coast Energy Group called for the Victorian Government to ‘make sure our nature protection laws are climate ready’:

The past summer’s devastating bushfires demonstrate the terrible impact that climate change can have on our wonderful natural places and wildlife. Climate change presents a massive challenge to Victorian ecosystems. Failing to address climate change stops our laws working effectively. Climate adaption must be a part of our legal frameworks.⁵⁷

Many stakeholders supported the Victorian Government’s objective of transitioning to net-zero greenhouse gas emissions.

In a written contribution to the Inquiry, the Australian Wildlife Protection Council recognised that the ‘Victorian Government understands the importance of reducing greenhouse gas emissions’. However, it recommended the acceleration of policies to meet emission reduction targets. It also suggested that in order to achieve this, policies should move beyond considering natural gas a transitional energy source. It also advocated for the introduction of an ‘active testing regime’ to ensure that new buildings are complying with environmental building standards and energy efficiency codes.⁵⁸

The Committee also heard from Traditional Owner corporations, which highlighted how ecosystems have declined since colonisation and called for climate change policy to empower Traditional Owners to help mitigate the impact of climate change on Country.

For example, Erin Rose, Budj Bim World Heritage Executive Officer at Gunditj Mirring Traditional Owners Aboriginal Corporation, addressed the Committee at a public hearing held via videoconference. She said Gunditjmarra Country has declined since colonisation and loss of connectivity between habitat is impeding species’ ability to adapt to climate change:

we have got land clearing, forestry practices, grazing, introduction of alien plants and animals, drainage, changes in land use, change in fire regimes and the developments have all contributed to a decline across Gunditjmarra Country. Gunditjmarra have not been able to continue their cultural practices, including burning, water management and harvest, which has also contributed to a decline. Connectivity across Gunditjmarra has been altered through the construction of fences and roads as well as clearing and changes in land use. Loss of connectivity and changes in land use mean species will have trouble adapting to climate change.⁵⁹

⁵⁶ Murrindindi Climate Network, *Submission 759*, p. 4.

⁵⁷ Surf Coast Energy Group, *Submission 197*, p. 2.

⁵⁸ Australian Wildlife Protection Council, *Submission 73*, pp. 2, 3.

⁵⁹ Erin Rose, Budj Bim World Heritage Executive Officer, Gunditj Mirring Traditional Owners Aboriginal Corporation, Public hearing, Via videoconference, 16 June 2021, *Transcript of evidence*, p. 2.

Dja Dja Wurrung Clans Aboriginal Corporation made a submission to the Inquiry. It noted that Traditional Owners have managed Country through historical climate shifts, but since colonisation Country has been ‘mixed up’:

These creations of Bunjil [the Eagle Hawk and creator], their Murrup [spirits] and Djaara [people] have lived through massive shifts in climate through millennia and successfully endured the recent ice age. This has been enabled through listening to Our Country and understanding our place on Country as a part of Country and respecting the knowledge and Murrup of all of Bunjil’s creations. If important species such as Gal Gal [dingo], Yung [quoll], Barramul [emu], Lawana [mallee fowl] and Gooye [paddy mellow] aren’t present in Country and present where they should be then how are we to enable positive changes as a result of climate change and enable the transitions that will continue to occur. Since colonisation and dispossession Our Country has been mixed up, land has been turned upside down, order and place of plants and animals has shifted, and new plants and animals have been brought in. This is directly a result of the governance and the process through which successive governments have failed to listen to Country and see their place in it. We need to return a balance to our Country, not just in the ecosystems but in the governance of these ecosystems.⁶⁰

The Dja Dja Wurrung Clans Aboriginal Corporation called for Traditional Owners to be empowered to help manage the land and mitigate the impacts of climate change:

To create a framework to allow djandak [Country] to Bunjil’s [the Eagle Hawk and creator] creations to heal, in the context of climate change we need to be empowered to be accountable for decisions through either a relaxing of permitting and approvals or through delegation of accountability to Djaara [people] to manage, move and support change in ecosystems will enable change at an appropriate time scale.⁶¹

The Committee acknowledges that stakeholders to the Inquiry broadly supported Victoria’s legislative and policy framework for climate change.

As stakeholders expressed, Victoria’s emissions reductions targets are more ambitious than some other jurisdictions.

The Committee is of the view that climate change policy can be refined to better empower Traditional Owners to manage climate change mitigation and adaptation activities on Country.

FINDING 13: Climate change is contributing to the decline of Country and impacting the health and wellbeing of Traditional Owners.

While *Victoria’s Climate Change Strategy* includes initiatives aimed at supporting Traditional Owners to increase the resilience of country, such as the Nature Restoration for Carbon Storage (BushBank) program, the Committee believes that further refinements can be made.

⁶⁰ Dja Dja Wurrung Clans Aboriginal Corporation, *Submission 635*, p. 6.

⁶¹ *Ibid.*, p. 9.

In relation to self-determination in undertaking mitigation and adaptation activities on Country, the Committee notes that the *Victorian Traditional Owner Cultural Landscapes Strategy* was released in August 2021. This strategy aims to ‘embed, at a statewide level, Traditional Owner management of Country’ in order to effect transformational change in land and water management.⁶² The Victorian Government stated in its submission that this strategy would provide direction to the Victorian Government about how self-determination should be enabled in land management. It also noted that DELWP and Parks Victoria will work in partnership to deliver the strategy.⁶³ The *Victorian Traditional Owner Cultural Landscapes Strategy* is discussed further in Chapter 8.

5.5 Ecosystem conservation, restoration and increased resilience

As already noted, climate change is expected to amplify existing pressures on ecosystems, such as in relation to invasive species and bushfires. Stakeholders warn that it has increased the challenges in reversing ecosystem decline and made it even more important to take action now to:

- conserve remaining biodiversity values
- restore damaged ecosystems
- increase the connectivity between natural areas.

The next Sections of the report explore these themes in more detail.

5.5.1 A healthy and representative national park and conservation reserve system

Throughout the Inquiry, multiple stakeholders stressed the importance of conserving Victoria’s remaining intact ecosystems and natural areas in the face of climate change. For example, the Goulburn Broken Local Government Biodiversity Reference Group argued in written evidence to the Committee that protecting healthy ecosystems is critical to adapting to climate change. It called for ‘a shift in paradigm where ecosystems are viewed as a critical component to human survival and an integral part of our climate change adaptation planning’.⁶⁴

Similarly, Save Our Strathbogrie Forests submitted that Victoria’s ability to mitigate the impacts of climate change will depend on how ‘healthy and intact’ ecosystems are. It advocated for improving the protection of natural areas across the State.⁶⁵

⁶² Victorian Traditional Owners, *Victorian Traditional Owner Cultural Landscapes Strategy*, Victorian Government, 2021, p. 8.

⁶³ Department of Environment, Land, Water and Planning, *Submission 927*, p. 30.

⁶⁴ Goulburn Broken Local Government Biodiversity Reference Group, *Submission 450*, p. 6.

⁶⁵ Save Our Strathbogrie Forest, *Submission 864*, p. 3.

In a submission to the Inquiry, the Victorian National Parks Association emphasised that the healthier our ecosystems are, the more resilient to climate change they will be:

Climate change is already upon us, and is affecting ecosystems and species in a number of ways. There may be some winners in this situation, but there will certainly be losers. Importantly, if we can maintain healthy ecosystems, we can maintain a healthy level of carbon absorption across the landscape, helping to reduce carbon emissions.⁶⁶

Some stakeholders felt that the best way to protect Victoria's ecosystems is to expand the State's national park and conservation reserve system. For example, in written evidence submitted to the Committee, Wombat Forestcare argued that a comprehensive, adequate and representative reserve system across public land is 'a key way to protect our biodiversity in general and from the potential impacts of climate change'. Wombat Forestcare said:

Options to build resilience include establishing a comprehensive, adequate and representative reserve system across all land tenures, restoring connectivity in the landscape, managing native vegetation as stores of carbon and establishing indigenous vegetation as carbon offsets.⁶⁷

Nonetheless, the Committee heard some suggestions that Victoria's national parks and reserves are not yet representative of all bioregions and ecological vegetation classes present in the State.

The expansion of Victoria's protected areas to more fully encompass the State's diverse ecosystems is discussed in more detail in Chapter 8.

5.5.2 Environmental restoration

In addition to conserving remaining ecosystems, many stakeholders highlighted the importance of environmental restoration to combat the impacts of climate change. For example, the Ecological Society of Australia argued in a written contribution to the Inquiry that 'a shift towards a more explicit landscape restoration ... based on good science, more resources and community capacity is necessary to buffer the effects of climate change on biodiversity, ward off further species extinctions and maintain productive, liveable landscapes in the future'. It advocated for 'the restoration of native vegetation and the building of connections between remaining patches of vegetation'.⁶⁸

Legislative and policy basis for environmental restoration

Environmental Justice Australia observed that 'with climate change already having a terrible impact on Victorian flora and fauna, the challenge [of restoring Victoria's ecosystems] is urgent'. It acknowledged that Victoria's environmental legislation

⁶⁶ Victorian National Parks Association, *Submission 102*, p. 108.

⁶⁷ Wombat Forestcare, *Submission 315*, p. 4.

⁶⁸ Ecological Society of Australia, *Submission 575*, p. 8.

and policy recognises the importance of restoring ecosystems in the face of climate change.⁶⁹

As noted in Chapter 2, *Protecting Victoria's Environment – Biodiversity 2037* (Biodiversity 2037) is the Victorian Government's plan to reverse ecosystem decline and facilitate a healthy natural environment. It recognises that active ecosystem restoration is necessary to achieve this goal:

This goal will be achieved by stopping the overall decline of threatened species, securing the greatest possible number of species in the wild, and improving the overall extent and condition of native habitats across land, waterways, coasts and seas. The intent is to see an overall improvement, where the majority of habitats and threatened species will be improved, and habitat gains will outweigh losses.⁷⁰

However, during a presentation to the Committee, Professor Lee Godden, Director of the Centre for Resources, Energy and Environmental Law at the University of Melbourne, observed that environmental legislation is oriented more towards conservation than restoration:

We are looking at legislation that was often put in place initially in the 1970s. It has obviously been updated, but much of the fundamental orientation is towards conservation and preservation, not the fact that we are going to be hands-on restoring where we can, given the immense loss that has occurred through bushfires and floods, extreme events and climate change.⁷¹

Environmental restoration as economic stimulus

Environmental Justice Australia proposed that environmental restoration efforts form part of a stimulus package to support Victoria's economic recovery from the COVID-19 pandemic.⁷² Similar propositions were put forward by other stakeholders, such as Environment Victoria, which described broad support for the idea:

On the issue of economic recovery from the pandemic, polling conducted in July for the National Landcare Network found that 81% of Victorians would support state and federal governments funding “tens of thousands of jobs undertaking practical conservation activities like tree-planting, removing weeds and restoring rivers”. The idea of using economic stimulus measures to address environment and climate challenges has been endorsed by myriad and diverse voices, including organisations that traditionally do not have an environmental focus, such as the World Economic Forum and International Energy Agency. Domestically, over 80 landcare, environmental, farming and conservation groups are backing the prioritisation of landscape restoration work in immediate stimulus measures.⁷³

⁶⁹ Environmental Justice Australia, *Submission 760*, p. 26.

⁷⁰ Department of Environment, Land, Water and Planning, *Protecting Victoria's Environment – Biodiversity 2037*, 2017, p. 14.

⁷¹ Professor Lee Godden, Director, Centre for Resources, Energy and Environmental Law, University of Melbourne, Public hearing, Melbourne, 20 April 2021, *Transcript of evidence*, pp. 24–25.

⁷² Environmental Justice Australia, *Submission 760*, pp. 31–32.

⁷³ Environment Victoria, *Submission 906*, p. 22.

Supporters of Environment Victoria also expressed support for environmental restoration as a form of economic stimulus, as outlined in responses to a survey conducted to inform the organisation's submission to the Inquiry. For example, a farmer who responded to the survey said:

As a farmer I have a willingness to plant a significant portion of my property to trees, but not the financial capacity to do so. The last time I was able to access assistance to plant trees was 18 years ago. Similar schemes would be well received, with the benefits well established.⁷⁴

Belfast Coastal Reserve Action Group submitted that the 'best way to protect against extinction of flora and fauna is preserving and extending habitat'. It outlined a vision for the future which included a tree planting workforce to restore habitats and create jobs:

67% of Victoria's trees, mangroves, shrubs, and other plants have been cleared since colonisation. Much of what's left is in poor health. We could create thousands of jobs in both the city and the country, replanting trees and vegetation in our parks, streets, rivers and creeks right across our state, especially in bushfire-affected areas. We could also help landowners plant native vegetation on their land.⁷⁵

Nillumbik Shire Council asserted in a submission to the Inquiry that 'greater opportunities for increasing and diversifying employment through environmental restoration are necessary'. It recommended that governments 'harness existing opportunities in environmental conservation and restoration works as valuable employment generating sectors—for example when seeking to stimulate the economy via government investment'.⁷⁶

Traditional Owner-led environmental restoration

As described in Chapter 3, the Victorian Government acknowledges that Traditional Owners have been historically excluded from decision-making on Country and in relation to water.⁷⁷ Biodiversity 2037 seeks to address this and increase Traditional Owner participation in biodiversity management. However, several stakeholders suggested that Traditional Owners should have the opportunity to lead environmental restoration should they wish to, in line with the principle of self-determination.

In a submission to the Inquiry, Dja Dja Wurrung Clans Aboriginal Corporation argued that the Victorian environment can be restored, but it will not be truly healed unless Traditional Owners are empowered to lead this work:

The opportunities to restore Victoria's environment are wide and diverse. There has been major disruption to the environment, ecosystems and cultural landscapes of Victoria as a result of colonisation. Restoring of these must sit within a program of healing these landscapes otherwise they will never truly be restored, never to be well

⁷⁴ Ibid., p. 24.

⁷⁵ Belfast Coastal Reserve Action Group, *Submission 871*, p. 10.

⁷⁶ Nillumbik Shire Council, *Submission 392*, pp. 24–25.

⁷⁷ Department of Environment, Land, Water and Planning, *Submission 927*, p. 12.

again. By Healing landscapes, we will restore them but to restore them without healing they will remain damaged like a wound left untreated. By empowering Dja Dja Wurrung to be accountable for healing these systems we explicitly allow an understanding of how we actively work to allow the environment to change rather than trying to stop change we embrace and work with it?⁷⁸

The Ecological Consultants Association of Victoria submitted that there are ‘many opportunities’ to engage Traditional Owners in the restoration of the environment. It suggested that Traditional Owners should have the opportunity to be on Country managing or co-managing reserves. It argued that support programs, such as education, should be in place to facilitate this.⁷⁹

The Association also noted environmental restoration can create direct employment opportunities for interested Traditional Owners:

Other direct employment opportunities, if they are also of interest to First Nations people, may involve revegetation of Government land such as cleared or degraded state forests and reserves. Establishment of dedicated and mentored indigenous plant nurseries whose sole purpose is non-commercial conservation-based plant production. Development of seed production areas for key/core and difficult to collect species.⁸⁰

Macedon Ranges Shire Council was also in favour of empowering Traditional Owners to undertake environmental restoration. However, it noted that the resources of Traditional Owner organisations are often limited and advocated for additional funding and capacity-building to support them to undertake environmental restoration.⁸¹

In the Committee’s view, environmental restoration is at the crux of reversing ecosystem decline but it must include and empower Traditional Owners. This is particularly the case as a changing climate places biodiversity values at increased risk and heightens the natural environment’s importance as a mitigating influence.

The Committee considers it vital that Victoria’s legislative and policy framework for environmental management actively drives the restoration of biodiversity values.

⁷⁸ Dja Dja Wurrung Clans Aboriginal Corporation, *Submission 635*, p. 9.

⁷⁹ Ecological Consultants Association of Victoria, *Submission 499*, pp. 31–32.

⁸⁰ *Ibid.*, p. 32.

⁸¹ Macedon Ranges Shire Council, *Submission 412*, p. 12.

RECOMMENDATION 11: That the Victorian Government review environmental legislation with a view to ensuring that it:

- articulates clear standards for environmental restoration
- imposes a general duty on public and private land managers to restore or enhance biodiversity in partnership with Traditional Owners
- is underpinned by ministerial guidelines describing how environmental restoration and enhancement should be undertaken by public land managers and emphasising that this duty goes further than simply avoiding harm to biodiversity. These guidelines should highlight the importance of empowering Traditional Owners to drive environmental restoration on Country.

The Committee appreciates that these changes may increase the responsibilities of public land managers and impose additional duties on private land managers. It also acknowledges the importance of enabling Traditional Owners to drive this work on Country.

RECOMMENDATION 12: That the Victorian Government review funding and other support available to land managers, including Traditional Owners, to ensure they are properly supported and resourced to undertake environmental conservation and restoration. This should include:

- funding and support which secures co-benefits (such as economic stimulus, employment and training opportunities) alongside environment restoration, and which focuses on facilitating positive outcomes for young Victorians, Traditional Owners and Victorians who have lost work due to the COVID-19 pandemic
- development and delivery of a program enabling private land managers and Traditional Owner organisations to access ecological expertise and education to support environmental restoration. This program should also seek to facilitate partnerships between private land managers and Traditional Owners in undertaking restoration activities.

The Committee recognises that some stakeholders have also recommended the establishment of an independent commission or agency to advance environmental restoration. The Committee notes that this responsibility can be incorporated into the new public environmental agency recommended in Chapter 9. Chapter 9 also explores environmental governance, including administration and enforcement, in more detail.

5.5.3 Improving resilience to climate change

In addition to ensuring that Victoria's ecosystems are preserved and restored, many stakeholders advocated for the establishment of specific climate change 'refugia', 'climate future plots' and 'biolinks' to increase biodiversity resilience to climate change.

Goulburn Broken Local Government Biodiversity Reference Group asserted that ‘climate change will undoubtedly lead to widespread ecosystem collapse and the loss of many species’. It noted that it may not be possible to conserve biodiversity values in situ and argued for the establishment of refugia and protected areas throughout the landscape:

It is essential that we adapt how we manage, value and plan to retain biodiversity now. We must conserve what we have and change our management techniques with the idea that future land management will need to be adaptive and innovative because the natural environment is changing. Simply preserving what we have - where we have it now - will not be possible and species will need to disperse through the landscape as the climate and conditions change. We must facilitate this adaptive movement and create healthy ecological networks through the landscape. It is critical that we preserve native vegetation, increase protected areas and refugia, create healthy vegetation corridors and increase the protection of vital habitat on private land. The focus is not on just on protection and maintenance, we need to restore and rebuild.⁸²

Similarly, the South Gippsland Conservation Society suggested that Victoria should introduce ‘a new classification for Ecosystems of State Importance that are essential for people and nature, such as critical water catchments, key biodiversity areas and climate refugia habitat’.⁸³

Macedon Ranges Shire Council noted in its submission that the Macedon Ranges will play a significant role in mitigating climate change. This is because its cooler and wetter climate offers species refugia as the climate becomes warmer and drier more generally.⁸⁴

Climate Future Plots

The Victorian National Parks Association advocated specifically for the expansion of the Climate Future Plots program to mitigate the impacts of climate change.

Greening Australia, an environmental enterprise, and DELWP worked with a range of organisations to develop the Climate Future Plots Program. The program’s guidelines, published in 2020, describe how Climate Future Plots can foster genetic diversity in plants to increase their adaptability and resilience to climate change:

Climate Future Plots ... are areas of revegetated and restored land which incorporate genetic and/or species diversity to enhance habitat resilience to the uncertain and unpredictable effects of climate change. Through the use of carefully selected species and provenances, genetic diversity is maximised and the adaptive potential of species and vegetation can be maintained. By including a mixture of local and climate pre-adapted plant genotypes (such as seed from hotter and drier climates) the plots can enhance the resilience of natural landscapes. As the climate changes, these plantings

⁸² Goulburn Broken Local Government Biodiversity Reference Group, *Submission 450*, p. 6.

⁸³ South Gippsland Conservation Society, *Submission 646*, p. 14.

⁸⁴ Macedon Ranges Shire Council, *Submission 412*, p. 6.

have a greater potential to change with it. Climate Future Plots are active learning tools which can help address uncertainties for future restoration and management activities.⁸⁵

The program guidelines describe a seven-step process for organisations and community groups to plan, establish and monitor Climate Future Plots.⁸⁶

The Victorian National Parks Association noted that a ‘considerable amount of work has been done in Victoria, elsewhere in Australia and around the world in the development of experimental plantations of mixed genotypes for a range of native species’. It argued that building on these Climate Future Plots will better equip land managers to rescue plant species that come under pressure as the climate changes:

If a species crashes because of drought (this has already happened with Manna Gums, *Eucalyptus viminalis*, on the Monaro Tableland in southern NSW for example), it will be useful to be able to reseed from a genotype known to be more resilient to drought ...

If we systematically establish a series of these Climate Future Plots across Victoria, future land managers are more likely to have the information and the resources they need to rescue failing species and ecosystems.⁸⁷

The Victorian National Parks Association called for government funding to ‘scale up’ the Climate Future Plots program.⁸⁸ It recommended:

A series of Climate Future Plots should be set up across Victoria, particularly for plant species predicted to be most sensitive to climatic change, giving us the knowledge and capacity to introduce stronger genetic variants of species that might fail under a changed climate.⁸⁹

DELWP’s submission to the Inquiry did not discuss the creation of climate refugia or Climate Future Plots specifically. However, it did acknowledge that initiatives aimed at increasing the genetic resilience of native species populations as a ‘policy gap’ and suggested opportunities to address this gap:

- b. Reinforcing existing populations by increasing the amount of genetic diversity in a population and giving it greater ability to adapt, or enhance its ‘climate resilience’ through the introduction of new genetic material, such as translocation of individuals between fragmented populations, to increase fitness, fertility and reproduction.
- c. Translocating species to previously unoccupied habitat more suited to climate change.

...

⁸⁵ Greening Australia and the Department of Environment, Land, Water and Planning, *Establishing Victoria’s Ecological Infrastructure: A Guide to Creating Climate Future Plots*, 2020, p. 7.

⁸⁶ *Ibid.*, pp. 11–30.

⁸⁷ Victorian National Parks Association, *Submission 102*, p. 109.

⁸⁸ *Ibid.*

⁸⁹ *Ibid.*, p. 110.

- e. Introducing genetic variants or new species from other suitable areas that can continue to play important ecological roles under climate change.⁹⁰

Biolinks

In Victoria, much of the connectivity between ecosystems has been lost through land clearing and changed land uses. Around 80% of all native vegetation has been cleared. Most remaining examples of native forests, woodlands and grasslands occur in parks and reserves, or privately-owned farmland and urban environments, not under management of the Victorian Government.

Stakeholders asserted throughout the Inquiry that loss of connectivity between ecosystems challenges species' ability to migrate to new, more suitable habitat as climate change makes their traditional range less suitable. For example, Erin Rose from Gunditj Mirring Traditional Owners Aboriginal Corporation informed the Committee that the 'construction of fences and roads as well as clearing and changes in land use' have altered connectivity across Gunditjmara Country. She said the loss of connectivity will make it difficult for many species to adapt to climate change.⁹¹

At a public hearing in Melbourne, Professor David Cantrill, Executive Director of Science at the Royal Botanic Gardens Victoria, noted loss of connectivity arising from the 2019–20 bushfires is hampering species' ability to adapt to climate change:

I was up in the north-east recently through where the fires have been, and those patches of vegetation [in agricultural areas] are really critical for enabling organisms to move across the landscape. One thing I did notice was because the fires have gone across the arable land they have taken out all those paddock trees; there are big piles of windrowed paddock trees now in those areas. So all of a sudden that landscape as a result of that event has lost a whole lot of connectivity. Really that is the challenge, because as the climate warms things will want to change their distribution—we already are seeing those shifts in distribution—and we cannot necessarily assist organisms to do that. So having something there that enables them to move through the landscape is important unless we want to spend a whole lot of money moving them ourselves.⁹²

The Australasian Native Orchid Society Victorian Group submitted that native vegetation relies on connectivity between landscapes to migrate—albeit more slowly—to more suitable habitat as climate change alters traditional habitats:

The future of Victoria is to get hotter as our climate changes. This will cause animals to seek to migrate to more suitable habitat. The same applies to our vegetation, but at a slower rate. Although large animals and birds are able to move relatively freely, smaller animals, birds, insects, fungi and plants are unable to migrate unless there is a path of suitable habitat to follow.

⁹⁰ Department of Environment, Land, Water and Planning, *Submission 927*, p. 34.

⁹¹ Erin Rose, *Transcript of evidence*, p. 2.

⁹² Professor David Cantrill, Executive Director, Science, Royal Botanic Gardens Victoria, Public hearing, Melbourne, 21 April 2021, *Transcript of evidence*, p. 6.

Australian orchids are deceptive plants. They attract insect pollinators by mimicking the appearance of other flowers or by producing pheromones to attract male insects to them and even trick the insects into thinking they offer a food reward. Our orchids produce virtually no reward for their pollinators which have to find other plants to feed from. If their food plants die, the insects also die and so do our orchids. Our orchids also rely on a symbiotic relationship with soil mycorrhizal fungi and some other plants. If the fungi is not present in the soil orchid seed will not germinate.

Unless there is suitable connecting habitat to allow seed to migrate into and germinate, as well as protective cover to allow insects, small mammals, birds and fungi to move through, then isolated populations could die out over time or through a one-off catastrophic event.⁹³

The Society advocated for the development of biolinks to re-establish connectivity between Victorian ecosystems and increase their resilience to climate change:

Bio-links are essential to our environment to allow passage of all vital life forms to colonise more suitable habitat. Bio-links also aid our wildlife when wildfire impacts, as it gives them somewhere to move to without being confined by fences and the built environments.

A comprehensively connected Bio-link network needs to be established right across Victoria with the aim of connecting all our vulnerable isolated ecosystems.⁹⁴

Biolinks are revegetated corridors of land that connect areas of remnant native vegetation. They allow native plants and animals to move between these areas, enabling them to migrate to avoid climate change impacts and to increase genetic diversity in breeding populations.⁹⁵

The Victorian National Parks Association also called for biolinks to be established to 'link fragmented natural habitats and restore natural gene flow between fragmented and isolated populations of flora and fauna'.⁹⁶ It specifically recommended 'increased funding and support' for the establishment of biolinks and called on the Victorian Government to:

- undertake on-going well-funded, strategic revegetation and Landcare programs to increase the size of fragmented areas and to provide biolinks between wetlands, waterways, existing protected lands and fragments of vegetation on private and public lands across Victoria
- increase financial support for both large and small scale biolink projects particularly in highly cleared and fragmented landscapes

⁹³ Australasian Native Orchid Society Victorian Group, *Submission 913*, p. 5.

⁹⁴ Ibid.

⁹⁵ Bass Coast Council, *Biolinks: What is a Biolink*, <<https://www.basscoast.vic.gov.au/services/environment/biolinks>> accessed 15 November 2021.

⁹⁶ Victorian National Parks Association, *Submission 102*, p. 109.

- protect biolinks through planning or other legally-binding controls against loss of ecological integrity, particularly if public monies have been used to create the biolinks.⁹⁷

Wyndham City Council made a similar recommendation in its written contribution to the Inquiry. It called for the Victorian Government to ‘work with public and private landholders to create a series of biodiversity corridors to reconnect fragmented habitats in rural and urban areas, allowing native vegetation and wildlife to migrate in the face of climate change’.⁹⁸

The Committee heard from local government authorities and community groups already involved in establishing or maintaining biolinks. At a public hearing in Melbourne, Dr John Morgan, Co-chair of the Policy Working Group at the Ecological Society of Australia, spoke positively about the role biolinks can play in improving ecosystem resilience to climate change. He drew the Committee’s attention to an ambitious biolink project already underway, called Habitat 141°:

[biolinks have] lots of merit as a means of identifying important habitats that are refuges from climate change as well as improving ecological connectivity to allow species to move through that landscape in response to climate change. It underpins some fantastic initiatives, like what is called Habitat 141°, which is trying to link up habitat from basically the Murray River all the way down to the coast in what is largely an agricultural landscape. It seems to me we need to support these visionary ideas.⁹⁹

Habitat 141° is restoring connectivity over 18 million hectares of landscape in Victoria and South Australia, which incorporates 14 national parks containing more than 200 threatened flora and fauna species. It is using revegetation to rebuild connectivity between:

- the Billiat Conservation Park and the Murray Sunset National Park
- the Murray Sunset and Wyperfeld National Parks
- the Little National Park with Mt Arapiles, Dergholm and the Grampians National Park
- the Glenelg woodlands and wetlands.¹⁰⁰

The Research Centre for Future Landscapes and the Ecological Society of Australia also highlighted the work of Habitat 141°. The Research Centre for Future Landscapes stressed that ‘large-scale connectivity and wildlife corridor projects (e.g. Habitat 141) provide significant benefits for species conservation and maintenance or restoration of ecological processes’. It asserted that these types of revegetation projects are essential, ‘especially in the context of climate change where species ranges are likely to shift’. It called for the Victorian Government to lead and promote biolink projects:

⁹⁷ Ibid., p. 5.

⁹⁸ Wyndham City Council, *Submission 528*, p. 4.

⁹⁹ Dr John Morgan, Co-chair, Policy Working Group, Ecological Society of Australia, Public hearing, Melbourne, 21 April 2021, *Transcript of evidence*, pp. 65–66.

¹⁰⁰ Habitat 141°, *Habitat 141° ocean to outback: Brochure*.

Many of these large-scale initiatives are championed and funded by community and non-government organisations, with some support from state and local governments. The State should be leading and promoting more of these projects. This includes planning ahead for where conservation corridors are most strategically required to maintain or re-establish connectivity for species and ecosystems in a changing climate; and negotiating agreement for the management of land to achieve this purpose.¹⁰¹

The Ecological Society of Australia made similar points in its submission. It characterised the work of Habitat 141° as ‘visionary’ and suggested that the Victorian Government support the development of biolinks ‘to address the considerable challenge posed for native species in cleared and fragmented landscapes to respond to climate change, and sudden perturbations like mega-fires’.¹⁰²

Nillumbik Shire Council explained in a submission to the Inquiry that its efforts to increase the resilience of local ecosystems in the face of climate change have encompassed restoring habitat connectivity:

Nillumbik Council is already actively undertaking biodiversity adaptation actions such as managing and restoring habitat connectivity through projects such as Rivers to Ranges; managing ecosystem processes such as facilitating the dispersal of the Charming Spider Orchid and encouraging positive land use changes for biodiversity through providing an advisory service for residents together with the Council’s Land Management Incentive Program grants.¹⁰³

BEAM Mitchell Environment Group described the establishment of biolinks through agricultural areas in the Mitchell Shire and surrounds, to connect forested areas:

many properties are also planting native vegetation on their farms as part of Landcare activities. Locally, Nulla Vale Pyalong West Landcare Group have created the “Forest Link” between the Tooborac Forests and Cobaw Forest across the heavily cleared granite hills west of Pyalong. Glenaroua Land Management Group, the South West Goulburn Landcare Network and Manningham Rotary Club have completed many sections of Mount Piper to Monument Hill link along Dry Creek near Broadford.

These plantings – and many more in the area – are generally a minimum of 40 metres wide and up to 30 years old. As a result of this community work, some parts of the Shire have seen a net increase in bushland.¹⁰⁴

The group provided photographs depicting work on the biolink at Mount Piper and the completed revegetation corridor.

¹⁰¹ La Trobe University Research Centre for Future Landscapes, *Submission 682*, p. 7.

¹⁰² Ecological Society of Australia, *Submission 575*, p. 8.

¹⁰³ Nillumbik Shire Council, *Submission 392*, p. 8.

¹⁰⁴ BEAM Mitchell Environment Group, *Submission 690*, p. 4.

Figure 5.4 Work to establish the Mount Piper biolink in 2007 and the completed project in 2013



Source: BEAM Mitchell Environment Group, *Submission 690*, p. 4.

While not referring specifically to biolinks in its submission, DELWP did acknowledge the importance of ‘increasing habitat quality and extent, creating additional habitat areas and connections’ to support native species to adapt as the climate changes.¹⁰⁵

The potential of revegetated biolinks to increase the resilience of Victorian ecosystems to climate change was clearly demonstrated to the Committee throughout the Inquiry. Increasing connectivity between the State’s fragmented natural areas will enable native species to migrate to more suitable habitat as their traditional ranges are altered by climate change. It will also increase genetic diversity in populations, improving their ability to adapt as the climate changes. Revegetating large areas of cleared landscape to establish these links also has the potential to increase carbon sequestration. The impact of carbon sequestration on carbon emissions, and its mitigating influence on climate change more broadly, is discussed in the next Section of the report.

RECOMMENDATION 13: That the Victorian Government, in collaboration with Traditional Owner corporations, provide funding and other resources to support the development of revegetated biolinks to increase connectivity between ecosystems. Opportunities for corporate and philanthropic collaboration on such projects should be explored.

5.5.4 Carbon sequestration

The Committee heard that protecting existing Victorian forests and revegetating cleared landscapes can help mitigate the impacts of climate change by increasing carbon sequestration.

Carbon sequestration is the removal and storage of carbon dioxide from the atmosphere in carbon sinks, such as forests, woody plants, wetlands, mangroves or soils. Forests remove carbon from the air via photosynthesis and store it in tree

¹⁰⁵ Department of Environment, Land, Water and Planning, *Submission 927*, p. 34.

trunks, branches, foliage, roots and in dead organic matter in forest debris. They are an important part of the global carbon cycle because they can sequester a large quantity of carbon over long periods of time. Well-managed forests (which avoid disturbances such as soil erosion, large-scale bushfires and vegetation disease) and revegetation programs can maintain stored carbon and increase carbon sequestration in the future.¹⁰⁶

In written evidence to the Inquiry, DELWP estimated the volume of carbon sequestered by Victoria's national parks and conservation reserves. It suggested that 'Victoria's terrestrial parks store at least 270 million tonnes of carbon' and its 'Trust for Nature reserves and covenants are estimated to store a further 12 million tonnes of carbon'.¹⁰⁷

In a submission, Goongerah Environment Centre noted that Victoria's forests are particularly effective at carbon sequestration. It claimed that the mountain ash forests of the central highlands 'store the most carbon of any forest ecosystem in the world'.¹⁰⁸

Kinglake Friends of the Forest made a similar assertion in its submission:

Mountain Ash (*Eucalyptus regnans*) is the world's tallest flowering plant, with mature trees being recorded at over 100m tall. They contain the world's highest biomass carbon density, or stored carbon, containing up to 1,900 tonnes per hectare, playing an important role in mitigating climate change.¹⁰⁹

These arguments were echoed by Warburton Environment, which called for the mountain ash forests of the Central Highlands to be protected to increase their carbon sequestration:

The forests of the Central Highlands can be part of the solution. They are the most carbon dense forests in the world and store more carbon per hectare than any other forest studied in the world according to Environmental scientist, Professor Brendan Mackey of the Australian National University. They sequester carbon, modulate the climate and can act as giant storage banks to absorb excess carbon if they are not logged ... This forest is the most carbon-dense in the world and protecting it would double its carbon storage, potentially delivering about 8% of Australia's overall emissions reduction target for 2020.¹¹⁰

In 2019, the Victorian Government announced the Victorian Forestry Plan to support the native timber industry to transition away from harvesting state forests and towards a solely plantation-based supply. It included the immediate cessation of old growth logging and the phase-out of all forms of native timber harvesting in state forests by 2030. DELWP estimated that the implementation of the plan will substantially increase carbon sequestration:

¹⁰⁶ Department of Environment, Land, Water and Planning, *Fact sheet 8: Valuing forest carbon: Assessing the current and future value of forests in storing carbon*, 2019, pp. 1–2.

¹⁰⁷ Department of Environment, Land, Water and Planning, *Submission 927*, p. 8.

¹⁰⁸ Goongerah Environment Centre, *Submission 266*, pp. 2–3.

¹⁰⁹ Kinglake Friends of the Forests, *Submission 520*, p. 1.

¹¹⁰ Warburton Environment, *Submission 554*, p. 6.

This is estimated to reduce the amount of carbon in the atmosphere by 1.71 million tonnes of carbon-dioxide-equivalent each year for 25 years.¹¹¹

Native timber harvesting is discussed in more detail in Chapter 6.

The Wilderness Society submitted that, if adequately protected, Victoria's mountain ash forests could also generate revenue through participation in carbon credit markets:

Victoria's Ash forests are particularly carbon-rich, storing more carbon per hectare than any other forest in the world and act as giant storage banks for carbon if they are not logged. The financial opportunity in carbon credits is significant, including to the State following establishment of a Federal system, or through voluntary markets.¹¹²

It recommended that the Victorian Government 'support development of carbon accounting and policies that include forests' so that the value of forests can be recognised beyond native timber harvesting.¹¹³ Warburton Environment also suggested that the financial opportunity presented by establishing carbon credits for these forests 'is significant'.¹¹⁴

DELWP is also interested in the carbon sequestration value of Victorian forests. It notes on its website that, as part of work to modernise Regional Forest Agreements, it commenced an assessment to more accurately determine the value of carbon sequestration provided by Victorian forests:

The project will use an environmental-economic accounting framework to identify and describe ecosystem services produced by Victorian forests, and value the benefits they provide to people. This will include determining the quantity of carbon stored in Victorian forests and how this has changed over time. Researchers will model and map this across Victoria by RFA region, and apply economic valuation techniques to calculate the monetary value of the benefits carbon storage provides people in Victoria and globally.

The results will provide better information about the contribution forests make to the Victorian economy and community.¹¹⁵

DELWP suggested that the outcome of the valuation will support the modernisation of Victoria's forest management system.¹¹⁶ The modernisation process of the Regional Forest Agreements concluded in 2020. However, it was unclear at the time of writing this report whether work to determine the carbon sequestration value of Victorian forests had been completed.

¹¹¹ Department of Environment, Land, Water and Planning, *Submission 927*, p. 26.

¹¹² The Wilderness Society, *Submission 899*, p. 11.

¹¹³ Ibid.

¹¹⁴ Warburton Environment, *Submission 554*, p. 6.

¹¹⁵ Department of Environment, Land, Water and Planning, *Fact sheet 8: Valuing forest carbon*, p. 1.

¹¹⁶ Ibid.

Stakeholders to the Inquiry advocated for large scale revegetation of cleared landscapes to increase carbon sequestration via natural processes in Victoria. For example, the Murrindindi Climate Network argued in a written contribution that riparian zones, roadsides and parks could all be utilised to sequester carbon:

Given that more than half of Victoria's area has been cleared, there is a massive potential for carbon sequestration via revegetation both on Crown land along riparian zones, road verges, parks and on private land as revegetation integrated in whole farm plans and farm forestry.¹¹⁷

The Belfast Coastal Reserve Action Group submitted:

Revegetation is still the most cost-effective mode of carbon capture. It is a win/win. Carbon emissions are captured by growing revegetation and by expanding native bushland, endangered species are given increased chances of recovery and survival.¹¹⁸

At a public hearing in Melbourne, Professor Brendan Wintle, Professor of Conservation Ecology at the University of Melbourne, suggested natural systems are the only currently viable means of sequestering carbon which makes revegetation very important to climate change mitigation:

Natural systems are the only current viable sink, so if we are going to sequester enough carbon to bend the curve on climate change, it is going to have to be through natural systems, through the restoration and growth of biomass and woody vegetation.¹¹⁹

In a submission to the Inquiry, Landcare Victoria pointed out that landowners can be paid to undertake revegetation through the Commonwealth Government's Emissions Reductions Fund if revegetation projects are appropriately scaled.¹²⁰

The Emissions Reduction Fund is a national voluntary scheme that aims to incentivise organisations and individuals to adopt new practices and technologies to reduce their carbon emissions. It is enacted through the *Carbon Credits (Carbon Farming Initiative) Act 2011* (Cth), *Carbon Credits (Carbon Farming Initiative) Regulations 2011* (Cth) and *Carbon Credits (Carbon Farming Initiative) Rule 2015* (Cth).¹²¹ A range of different activities—such as revegetation, avoided deforestation and sustainable soil management—are eligible under the scheme and earn Australian carbon credit units (ACCUs) for their contribution to reducing emissions. One ACCU is earned for each tonne of carbon dioxide stored or avoided by a project. ACCUs can be sold to generate income, either to the Commonwealth Government through a carbon abatement contract or in the secondary market to a company seeking to offset their carbon emissions.¹²²

¹¹⁷ Murrindindi Climate Network, *Submission 759*, p. 5.

¹¹⁸ Belfast Coastal Reserve Action Group, *Submission 871*, p. 11.

¹¹⁹ Professor Brendan Wintle, Professor of Conservation Ecology, University of Melbourne, Public hearing, Melbourne, 23 February 2021, *Transcript of evidence*, p. 50.

¹²⁰ Landcare Victoria, *Submission 622*, p. 14.

¹²¹ Commonwealth Government, *About the Emissions Reduction Fund*, 2021, <<http://www.cleanenergyregulator.gov.au/ERF/About-the-Emissions-Reduction-Fund>> accessed 15 November 2021.

¹²² *Ibid.*

Landcare Victoria submitted that while carbon farming under the Emissions Reduction Fund is, in theory, a good opportunity for land managers to contribute to emissions reductions, the complex requirements of the scheme and substantial costs involved inhibit smaller-scale participation:

Carbon farming, at least in theory, is an opportunity for Landcarers to contribute to emissions reduction and be paid for doing so. However, the carbon farming methodologies established under the Australian Government Emissions Reduction Fund create challenges for individual land managers. ERF methodologies and contractual arrangements are complex. Monitoring and auditing overhead costs are high in relation to the scale of projects that might be feasibly integrated on a Victorian farm. Australian Carbon Credit Unit prices are presently low and may not be sufficient to cover the management and opportunity costs of a project, and the contracts extend over a long period. As a consequence, the uptake of carbon farming in Victoria is low, with only a small number of projects actively generating ACCUs.¹²³

Landcare Victoria proposed that Landcare groups work with commercial carbon farming project developers to engage individual landowners in joint carbon farming projects that are large enough to offset establishment costs and complexities:

Projects that aggregate on-farm activities across several properties may achieve the economies of scale that reduce project overhead costs to a tolerable level and may mitigate some of the risks otherwise borne by individual land managers. Carbon farming projects are often developed and supported by commercial carbon project developers, but these companies rarely have the capacity to efficiently engage with enough land managers to establish an aggregated project. Landcare groups and networks potentially provide a partnership opportunity for this engagement process, but the cost and value of that contribution would need to be recognised in the commercial arrangements of the project. There is also a need to develop expertise and capacity in the Landcare sector if it is to play a role.¹²⁴

However, Landcare Victoria suggested that ‘investment in capacity development would be necessary’ to facilitate their support of project aggregations that may improve the viability of carbon projects. In addition, it noted that carbon farming also has broader ecological benefits:

Carbon farming activities such as revegetation, soil carbon, avoided deforestation can create valuable co-benefits relevant to ecosystem restoration. For example, a revegetation project aimed at generating carbon credits may also restore habitat for native flora and fauna and mitigate erosion risk. These co-benefits have value on top of the value of carbon captured by the project.¹²⁵

Landcare Victoria called on the Victorian Government to ‘develop policies that link carbon farming with the generation of environmental, social and economic

¹²³ Landcare Victoria, *Submission 622*, p. 14.

¹²⁴ *Ibid.*

¹²⁵ *Ibid.*

co-benefits' in order to accelerate the uptake of carbon farming projects and ecosystem restoration.¹²⁶

The Committee also heard that the restoration of wetland ecosystems could make a substantial contribution to carbon sequestration. In a submission, Shane Howard, Treasurer of the Belfast Coastal Reserve Action Group, referred to research by Deakin University which indicates that wetlands are also significant carbon sinks. He called for a scheme to compensate landowners who restore wetlands on their property:

Wetlands capture carbon 30 to 50 times faster than forests, which they lock away in the ground for millennial timescales. They trap CO₂, act as a natural carbon sink, and they help offset our emissions, contributing to fight climate change. Unfortunately we have lost 50 to 60 per cent of our wetlands already, and this figure is even higher in south-west Victoria. Yet wetlands are easy to recover if we are prepared to do it. It is almost as simple as damming the drains that we excavated in the first place to drain them, and the recovery begins to show results within one year. This is already happening and the results are quantifiable. We need to compensate landowners and farmers who revegetate or restore wetlands. We need to reward environmental stewardship.¹²⁷

DELWP estimated that Victorian marine parks already store 'at least 850,000 tonnes' of carbon dioxide.¹²⁸

In the Committee's view, carbon sequestration has an important role to play in reducing the impact of carbon emissions and mitigating the consequences of climate change.

FINDING 14: Ecosystems, such as forests and wetlands, are an important part of the global carbon cycle and, if well managed, can sequester a large quantity of carbon over long periods of time.

If enacted, the Committee's recommendations around driving environmental restoration and increasing support for revegetation through biolinks will enhance carbon sequestration across the State.

Moreover, the Committee notes that *Victoria's Climate Change Strategy* includes several initiatives aimed at assisting farmers to reduce carbon emissions and enhancing carbon sequestration. For example, the Victorian Agriculture Climate Change Council was established in 2020 to support the agricultural sector to prepare for climate change impacts, including by reducing emissions and maximising opportunities to contribute to net-zero emissions by 2050. Likewise, the Victorian Government has initiated the Victorian Carbon Farming Program to encourage landholders to plant trees to sequester carbon, conduct agroforestry or realise other on-farm benefits such as protecting crops and animals against extreme weather.¹²⁹ The Committee believes that these initiatives

¹²⁶ Ibid., p. 15.

¹²⁷ Shane Howard, Treasurer, Belfast Coastal Reserve Action Group, Public hearing, Melbourne, 16 June 2021, *Transcript of evidence*, p. 27.

¹²⁸ Department of Environment, Land, Water and Planning, *Submission 927*, p. 8.

¹²⁹ Department of Environment, Land, Water and Planning, *Victoria's Climate Change Strategy* p. 32.

will also facilitate greater carbon sequestration through changes in agricultural practices.

5.6 Climate change, bushfires and biodiversity

Many Inquiry stakeholders highlighted the link between climate change and more frequent and severe bushfires, and expressed concern for the impact this will have on Victoria's biodiversity.¹³⁰

In a written contribution to the Inquiry, the Ecological Society of Australia claimed that the severe 2019–20 bushfires were made 'at least 30 per cent more likely' by climate change. It warned that more frequent and intense fires 'will imperil many native species – perhaps 3 billion animals were killed in Australia's 2019–2020 fires'.¹³¹

Professor David Lindenmayer, from the Fenner School of Environment and Society at the Australian National University, noted in a submission that climate change has increased the prevalence of extreme fire weather Victoria experiences:

And the big problem in the background here is climate change. We have seen a tenfold increase in the number of extreme forest fire danger index days since the 1960s. It is a big problem ...¹³²

Climate projections show that weather conditions that underpin bushfires (a function of temperature, humidity and wind) are likely to occur more frequently throughout Australia in the future due to a warming climate. The Royal Commission into National Natural Disaster Arrangements reported that there has been a long-term increase in dangerous fire weather and the length of the fire season across Australia, and catastrophic bushfire events are becoming more common. The fire weather season now arrives more than three months earlier than in the mid-twentieth century in some parts of Australia, and this is likely to get worse.¹³³

Frequent and intense bushfires are now recognised as a key driver of ecosystem decline across Australia.¹³⁴ In its submission to the Inquiry, DELWP noted the significant impact more frequent fires are having on Victoria's biodiversity:

Multiple large-scale fires across Victoria have resulted in an increasing proportion of habitat that has been burnt multiple times since 2000. The 2019/20 bushfires in Victoria, were the third time within 20 years that bushfires had burned more than 1 million

¹³⁰ See, for example: Victorian National Parks Association, *Submission 102*, pp. 50–51; Invasive Species Council, *Submission 943*, p. 5; Gariwerd Animal Protection (GAP) Alliance (Dunkeld, *Submission 914*, p. 2; Australian Wildlife Protection Council, *Submission 73*, p. 1.

¹³¹ Ecological Society of Australia, *Submission 575*, p. 4.

¹³² Professor David Lindenmayer AO, Fenner School of Environment and Society, Australian National University, Public hearing, Melbourne, 10 March 2021, *Transcript of evidence*, pp. 45–46.

¹³³ Royal Commission into National Natural Disaster Arrangements, *Royal Commission into National Natural Disaster Arrangements Report*, 2020, pp. 63–64.

¹³⁴ Darren Evans, Reader in Ecology and Conservation, Newcastle University, 'Bushfires: can ecosystems recover from such dramatic losses of biodiversity?', *The Conversation*, 16 January 2020, <<https://theconversation.com/bushfires-can-ecosystems-recover-from-such-dramatic-losses-of-biodiversity-129836>> accessed 15 November 2021.

hectares across Victoria in a single season ... and many areas have been burnt two, three and four times since 2000. This has a significant impact on species' habitat and can result in regeneration failure for key obligate seeder species, such as Alpine Ash, that need long times (i.e. many decades to hundreds of years) between canopy fires to regenerate.¹³⁵

5.6.1 Impacts of larger, more intense bushfires on biodiversity values

The devastating consequences of larger, more intense bushfires for Victoria's biodiversity values are demonstrated by damage to flora and fauna caused by the 2019–20 Black Summer bushfires. These devastating fires burnt approximately 1.5 million hectares across the State, impacting threatened species and their habitats, including over 70% of the remaining warm temperate rainforest in Victoria.¹³⁶

In April 2020, DELWP's Biodiversity Division, in collaboration with other DELWP staff, agency partners, stakeholders, land managers and biodiversity experts, undertook a desktop assessment and data analysis to understand the impacts of the 2019–20 fires. It found:

- The Victorian fires have burnt mostly in areas that have high biodiversity value.
- There are 244 species with more than 50 per cent of their modelled habitat within the burnt area, including 215 Victorian rare or threatened species. This includes four species listed under the *Commonwealth Environment Protection and Biodiversity Conservation Act 1999*.
- The fire extent impacted at least 60 per cent of over 75 National parks and nature conservation reserves in Victoria.
- 78 per cent of the Warm Temperate Rainforest [was] within the fire extent.
- The majority of the distribution of seven vegetation communities listed under the *Flora and Fauna Guarantee Act 1988* (FFG Act) are also within the burnt area.
- A significant area of habitat across Victoria has now burnt multiple times since 2000. This can result in regeneration failure for Alpine Ash.
- Species and vegetation communities of most immediate concern include the Long-footed Potoroo, Ground Parrot, Glossy Black-cockatoo, Large Brown Tree Frog, Diamond Python, Freshwater Galaxiids, Colquhoun Grevillea, Betka Bottlebrush and Warm Temperate Rainforest.
- Some species, such as the Brush-tailed Rock-wallaby and the Guthega Skink, were not as impacted as first predicted, as the fire did not reach key populations. Other species appear to be showing some resilience to the fires, such as [the] Yellow-bellied Water Skink.¹³⁷

¹³⁵ Department of Environment, Land, Water and Planning, *Submission 927*, p. 9.

¹³⁶ *Ibid.*, p. 12.

¹³⁷ Department of Environment, Land, Water and Planning, *Victoria's bushfire emergency: Biodiversity response and recovery version 2: Report summary*, 2020, p. 3.

The World Wildlife Fund commissioned a national assessment of the impacts of the 2019–20 bushfires on Australian flora and fauna. Scientists from the University of Sydney, Charles Sturt University, the University of Newcastle, and the University of New South Wales contributed to the assessment. They found that across Australia, almost 3 billion native vertebrates were living in the areas impacted by bushfires and may not have survived, including:

- 143 million mammals
- 2.46 billion reptiles
- 180 million birds
- 51 million frogs.¹³⁸

Submitters to the Inquiry also outlined the impacts of these fires on different Victorian ecosystems, including where ecosystems are unable to recover in the time between extreme fire events.

Professor David Lindenmayer, the Victorian National Parks Association, Institute of Foresters of Australia and Australian Forest Growers, and Ecological Society of Australia suggested that more frequent fire events have called into question the ability of some forests, such as alpine and mountain ash forests, to survive long-term.¹³⁹ The Ecological Society of Australia asserted that mountain and alpine ash forest ecosystems are vulnerable to collapse after several bushfires:

Bowman et al. (2014) found that since 2002, 85% of the bioregion that supports Alpine Ash has been burnt by several very large fires, tracking the regional trend of more frequent extreme fire weather. Single high severity fires caused adult tree death and triggered mass regeneration by seed, but a second fire in quick succession killed 97% of the regenerating alpine ash ... This has virtually eliminated this species from these areas. Some areas have now been burnt again in the 2020 Black Summer bushfires but the impacts on biodiversity are yet to be quantified.¹⁴⁰

The Institute of Foresters of Australia and Australian Forest Growers also submitted that it 'is highly concerned' about the future of young mountain ash and alpine ash forests. It noted that ash forests under 20 years of age are generally too young to produce sufficient seed for national regeneration and asserted that 'artificial regeneration will be essential' to the recovery of these ecosystems.¹⁴¹

The impact of climate change, and the decline of mountain ash forests more generally, is described in Box 5.3.

¹³⁸ World Wildlife Fund Australia, *Australia's 2019–2020 Bushfires: The Wildlife Toll: Interim Report*, 2020, p. 2.

¹³⁹ Professor David Lindenmayer AO, *Submission 353*, p. 2; Institute of Foresters of Australia and Australian Forest Growers, *Submission 660*, p. 15; Victorian National Parks Association, *Submission 102*, p. 44.

¹⁴⁰ Ecological Society of Australia, *Submission 575*, p. 13.

¹⁴¹ Institute of Foresters of Australia and Australian Forest Growers, *Submission 660*, pp. 15–17.

BOX 5.3: Mountain ash forests of the Victorian Central Highlands

Victoria's mountain ash trees (*Eucalyptus regnans*) are the tallest flowering plants on the earth with trees more than 100 metres tall and 34 metres in girth having been recorded. Mountain ash forests are wet forests which may feature a variety of eucalyptus trees, but which are characterised by an overstorey dominated by mountain ash.

Range

Mountain ash forests typically occur in fertile, well drained loamy soils in protected gullies and inclines with high rainfall and cloud cover, at altitudes of between approximately 85 and 1,380 metres above sea level. In Victoria, mountain ash forests occur in regions such as the Central Highlands, East Gippsland, the Strzelecki Ranges, Otway Ranges and the Victorian Alps. However, the extent of forests in these regions is highly variable. The majority of mountain ash forest occurs in the Central Highlands, which contains approximately 157,000 hectares of ash forest.

Social and ecological values of mountain ash forest

The forests of Victoria's Central Highlands provide important habitat for a range of threatened species. Some of these species include Leadbeater's possum (Victoria's critically endangered faunal emblem), sooty owl, powerful owl, masked owl, mountain brushtail possum, greater glider, sugar glider, Baw Baw frog and barred galaxias.

Mountain ash forests also make an important contribution to the City of Melbourne's drinking water supply. Water catchments are dominated by mountain ash forests and other ash-type eucalypts. Moreover, catchments dominated by old growth forests produce significantly more water than those catchments inhabited primarily by younger forest.

Decline of mountain ash forests

Natural and human factors are driving a collapse of large old trees in mountain ash forests.

Native timber forestry over many years has altered the composition of mountain ash forests by removing older trees and restocking with younger trees. Older trees provide critical habitat for a range of species and younger trees can make a forest more prone to higher intensity bushfires.

(Continued)

BOX 5.3: Continued

Climate change is a significant threat to old growth mountain ash trees. A research paper published by Professor David Lindenmayer in a CSIRO journal described how altered temperature and rainfall can result in tree deaths:

Climate change is a significant threat to the occurrence and abundance of large old trees in Mountain Ash forests. Previous modelling has indicated that altered rainfall and temperatures associated with climate change will reduce the area supporting suitable environments where the species can grow (Lindenmayer 1989; Mackey et al. 2002), especially given the relative narrow bioclimatic domain in which the species occurs ... Indeed, during the period 2004–2011, almost 25% of large old living trees on long-term monitoring died on sites that remained unburned by the 2009 wildfires (Lindenmayer et al. 2012). Much of this period spanned the Millennium Drought, characterised by extreme temperatures and limited rainfall, and such widespread patterns of large old tree mortality were ten times the expected background rates for these cohorts of trees.^a

Climate change is also driving more frequent and intense fires in mountain ash forests. In the last 20 years, bushfires have damaged mountain ash and alpine ash forests in 2003, 2006–07, 2009, and 2019–20. The impact of bushfires on young mountain ash forests is particularly serious. Trees under 20 years of age are generally too young to produce sufficient seeds for natural regeneration.

Following the 2019–20 bushfires, DELWP implemented an aerial artificial re-seeding program in 11,000 hectares of Victorian ash-type forests. However, Inquiry stakeholders, including the Institute of Foresters of Australia and Australian Forests Growers, have called for a seedbank to be established for Victorian ash-type tree species to support future artificial re-seeding following bushfires.

- a. Professor David Lindenmayer AO, 'The importance of managing and conserving large old trees: A case study from Victorian Mountain Ash forests', CSIRO Publishing, *The Royal Society of Victoria*, 128, 64–70, 2016, p. 67.

Sources: Victorian National Parks Association, *Submission 102*, p. 97; Institute of Foresters of Australia and Australian Forests Growers, *Submission 660*; Department of Environment, Land, Water and Planning, *Victoria's Bushfire Biodiversity Response and Recovery: Progress Update*, March 2021, <https://www.wildlife.vic.gov.au/_data/assets/image/0019/504262/BBRRInfographicMar21Update.jpg> accessed 15 November 2021; Flora and Fauna Guarantee Scientific Advisory Council, *Preliminary recommendation on a nomination for listing: Mountain Ash Forest Community*, 21 November 2016, <https://www.environment.vic.gov.au/_data/assets/pdf_file/0025/92275/Mountain-Ash-Preliminary-Rec.pdf> accessed 15 November 2021; Professor David Lindenmayer AO, 'The importance of managing and conserving large old trees: A case study from Victorian Mountain Ash forests', CSIRO Publishing, *The Royal Society of Victoria*, 128, 64–70, 2016; Professor David Lindenmayer AO, Supplementary submission 353.

Concerns around flora regeneration periods were also voiced in relation to other ecosystems, such as rainforest. The Victorian National Parks Association stated that the loss of rainforest ecosystems in the 2019–20 fires is of ‘pressing concern as they can take many decades, even hundreds of years, without fire to re-develop after a major fire event’.¹⁴²

At a public hearing in Melbourne, Dr Holly Sitters, an ecologist at the University of Melbourne, explained that some of Victoria’s ‘most magnificent tree species’ do not re-sprout after fire, and can struggle to recover from too frequent fire events:

A lot of our most magnificent tree species are obligate seeders,¹⁴³ which means that mature trees produce seed and that they are killed by severe fire. So more frequent, high-severity fire can stop young plants from reaching maturity and producing seed, and this can lead to broad-scale decline of these obligate seeder forests. This transformation may be irreversible because forests that are dominated by dead mature trees and vigorously regenerating young vegetation are highly flammable, and this can increase the likelihood of more fire.¹⁴⁴

Moreover, Dr Sitters noted that structural changes to forest ecosystems combined with more frequent and intense bushfires are increasing the vulnerability of many of Victoria’s threatened native faunal species:

Fundamental changes in ecosystem structure like this can have consequences for many other species. I am currently supervising a PhD student ... and she has been reviewing the documented threats to the 99 Australian mammal species that are currently listed as vulnerable, endangered or critically endangered under the *Environment Protection and Biodiversity Conservation Act*. She has found that inappropriate fire regimes are considered a threat to 90 per cent of these species ...

For example, swamp antechinus and greater glider are threatened by fires that are too large and severe and reduce the amount of available habitat and also make it really difficult for animals to move between remaining patches of habitat. So the surviving animals become isolated in small pockets, and this further increases their vulnerability to future fires. The koala is also threatened by fires that are too large and severe because flames, heat and smoke can kill many animals that are unable to move out of the way in time.¹⁴⁵

Emergency response for threatened species in the wake of major events such as bushfires is also discussed in Chapter 7.

It is apparent to the Committee that more frequent and severe bushfires, driven by climate change, are accelerating ecosystem decline in Victoria with devastating consequences for native flora and fauna.

¹⁴² Victorian National Parks Association, *Submission 102*, p. 50.

¹⁴³ Obligate seeders are plants which do not re-sprout after a bushfire. They rely on seeding to regenerate their population.

¹⁴⁴ Dr Holly Sitters, University of Melbourne, Public hearing, Melbourne, 11 March 2021, *Transcript of evidence*, pp. 1–2.

¹⁴⁵ *Ibid.*, p. 2.

FINDING 15: Climate change is driving more frequent and severe bushfires in Victoria. More frequent and severe fires are devastating native faunal populations and threatening the viability of the State's ash forests, rainforests and other sensitive flora populations.

5.6.2 Restoring and protecting Victorian biodiversity after the 2019–20 bushfires

In January 2020, while the 2019–20 bushfires were still burning, the Victorian Government announced funding under the Bushfire Biodiversity Response and Recovery program to support the recovery of threatened species and their habitats.

Bushfire Biodiversity Response and Recovery program

The Bushfire Biodiversity Response and Recovery program is funded by different levels of government, including \$17.5 million from the Victorian Government, and investment from other sources, such as public donations. Under the program, DELWP is working with partner agencies and Traditional Owners to deliver actions to support and protect Victoria's plants and animals following the 2019–20 bushfires.

Actions in the program are arranged into four phases of work addressing seven themes. The four phases of bushfire response comprise:

Emergency response actions, such as extracting threatened species from habitat at risk of burning; provision of food, water and artificial habitat; and wildlife welfare coordination for injured animals recovered from fire zones.

Phase 1: Immediate and short-term actions (up to 1 year), such as: assessment of the status of critical species; provision of food, water and artificial habitat; extraction and temporary housing of threatened species; and surveillance and management of weeds.

Phase 2: Medium-term action (1–3 years), such as: genetic management of species; wild to wild translocations to establish new populations; and the creation of safer habitat.

Phase 3: Longer-term actions (beyond 3 years), such as: restoring animals into previously burnt areas and mitigating bushfire risk in significant habitats.¹⁴⁶

The seven themes of the program are described in Table 5.4 below.

¹⁴⁶ Department of Environment, Land, Water and Planning, *Victoria's bushfire emergency: biodiversity response and recovery: Version 2*, 2020, pp. 56–58.

Table 5.4 Bushfire response themes

Theme	Actions encompassed
Immediate reconnaissance	Assessing critical fauna, flora and habitat immediately after the bushfires to inform future actions and immediate targeted actions.
Wildlife welfare	Developing training programs for veterinarians on bushfire triage and burns treatment, undertaking a post-rehabilitation study to monitor and release koalas taken into care following the fires, and the development of an electronic records system for the collection of wildlife assessment and triage data.
Emergency extraction to prevent extinction and limit species decline	Short-term holding of insurance populations for re-release once habitat has recovered.
Intensified and sustained management of threats	Aerial shooting of introduced pest animals on public land, targeted ground control of pest animals, and weed control to reduce the heightened risks in burnt and adjacent areas.
Maximising long-term resistance of biodiversity across the landscape, including actions to heal Country using traditional knowledge	Enabling Traditional Owners to apply their ecological knowledge to restore culturally significant species and sites, supplementing natural breeding regimes including through in situ and ex situ management, and the possible creation of a network of ecological refuges across the State.
Knowledge, data and preparedness	Improving the systems for biodiversity data flow between DELWP and its stakeholders, and monitoring the biodiversity response to post-fire management actions.
Community-led nature recovery	Providing grants to community-led or place-based biodiversity recovery projects, supporting citizen science and volunteering projects, and sharing stories of recovery.

Sources: Department of Environment, Land, Water and Planning, *Victoria's bushfire emergency: Biodiversity response and recovery: Preliminary report - Version 2*, August 2020, pp. 56–8; Department of Environment, Land, Water and Planning, *Submission 927*, p. 22.

The Bushfire Biodiversity Response and Recovery program was expanded in June 2020 when the Victorian Government announced an additional \$900,000 in funding for biodiversity bushfire recovery grants to support fire-affected private landholders and local communities to restore habitat in their local areas. This included \$10,000 for individuals engaged in on-ground works, community education and capacity-building projects; \$30,000 for environmental volunteer groups and \$50,000 for volunteer-based environmental networks.¹⁴⁷

In August 2020, a further \$5 million was announced by the Victorian Government to continue actions to protect fire-impacted threatened species and their habitats from weeds and pest animals. The Commonwealth Government also allocated approximately \$3.5 million to assist with biodiversity recovery in Victoria following the 2019–20 bushfires.¹⁴⁸

DELWP last reported on the progress of its implementation of the Bushfire Biodiversity Response and Recovery Program in September 2021. It explained that it was working

¹⁴⁷ Department of Environment, Land, Water and Planning, *Submission 927*, p. 12; Victorian Government, *Environment and biodiversity - bushfire recovery*, 2020, <<https://www.vic.gov.au/environment-and-biodiversity-bushfire-recovery>> accessed 15 November 2021.

¹⁴⁸ Department of Environment, Land, Water and Planning, *Submission 927*, pp. 11–12.

with 19 organisations to deliver 145 activities. DELWP highlighted the following implementation milestones:

- 14 at-risk species have been extracted from fire impacted areas, cared for and returned
- 30 species of concern have been assessed in the field to inform more targeted actions
- 10 Traditional Owner groups are participating in Reading and Healing Country projects
- More than 300,000 new invertebrate records have been added to the State's database for biodiversity records (Victorian Biodiversity Atlas)
- More than 470,000 hectares of pest herbivore controls have been administered to support the recovery of native species
- More than 130,000 hectares of pest predator controls have been administered to support the recovery of native species
- More than 11,000 hectares of ash forest have been reseeded by air (this was funded separately, by the Reducing Bushfire Risk Program, Bushfire Recovery Victoria Fund and other recovery funds).¹⁴⁹

DELWP also noted that it has convened a round table of 14 wildlife organisations to discuss how it can improve its emergency responses to protect and restore wildlife during and following bushfires.¹⁵⁰

Inquiry stakeholders broadly welcomed the Victorian Government's initiatives and funding to support biodiversity recovery following the 2019–20 bushfires but suggested that these efforts could be refined.

The Ecological Society of Australia applauded the speed in which the Victorian Government responded to support biodiversity recovery after the bushfires. However, it felt that the funding provided was 'ad hoc' and the program 'lacks strategic insight'. The Society suggested that the program could be improved through environmental monitoring to 'ensure post-fire recovery actions are efficient and effective at restoring impacted species and ecosystems'.¹⁵¹

The Institute of Foresters of Australia and Australian Forest Growers acknowledged the completion of an aerial reseedling program for ash forests but called on the Victorian Government to do more to restore and protect these ecosystems. It advocated for the establishment of strategic seedbanks, nurseries and reseedling programs for vulnerable tree species.¹⁵²

¹⁴⁹ Department of Environment, Land, Water and Planning, *Victoria's Bushfire Biodiversity Response and Recovery: Progress Update September 2021*, <<https://www.wildlife.vic.gov.au/home/biodiversity-bushfire-response-and-recovery>> September 2021.

¹⁵⁰ Ibid.

¹⁵¹ Ecological Society of Australia, *Submission 575*, pp. 7–8.

¹⁵² Institute of Foresters of Australia and Australian Forest Growers, *Submission 660*, pp. 16–17.

The Invasive Species Council recognised that the program has already included the aerial shooting of invasive herbivores, and predator baiting programs targeting cats and foxes in fire-affected areas. However, it recommended that efforts to eradicate feral horses in alpine and sub-alpine areas be prioritised as these areas are serving as a refuge to native species with fire-impacted habitats.¹⁵³

The Wilderness Society argued that efforts to support the recovery of biodiversity after the 2019–20 bushfires should include the suspension of logging in East Gippsland where forest ecosystems and the species which inhabit them have been left ‘vulnerable’ after the fires:

In light of the extensive impact of the 2019–20 bushfires on the forests and wildlife of the East Gippsland region, and uncertainty over the status and recovery of threatened species populations - logging operations should remain suspended across the region.¹⁵⁴

The Wilderness Society recommended legislative reform to underpin a more effective response to support the recovery of wildlife after bushfire. It argued that effective legislation should include:

- A. Proactive responsibilities to ensure hazard (such as bushfires) mapping and modelling as an essential component of planning and assessment for environmental values, including identifying priority actions to mitigate risk as a result;
- B. Provisions to ensure decision-makers in disaster response have appropriate access to information (including mapping) of fire sensitive values
- C. Major disaster provisions that trigger full ecological audit/s of impacts on environmental, sites and values including restoration requirements
- D. Provisions to suspend existing activities and approvals that might affect bushfire-impacted environmental sites and values
- E. Clarification of disaster response arrangements involving the suspension of categories of environmental approval, and requirements for clear and transparent public reporting, including timeframes.¹⁵⁵

In addition, the Wilderness Society recommended that this legislative reform be accompanied by the establishment of a standing fund that could make rapid post-disaster funding allocations for environmental recovery as needed.¹⁵⁶

DELWP pointed out that Victoria’s Regional Forest Agreements with the Commonwealth (which provide for the sustainable management and use of Victoria’s forests) were modernised and extended in March 2020. These agreements now provide for Major Event Reviews which assess the impacts of a major event, such as a bushfire, and enable remedial actions to be undertaken.¹⁵⁷

¹⁵³ Invasive Species Council, *Submission 943*, pp. 5, 12, 15, 18.

¹⁵⁴ The Wilderness Society, *Submission 899*, p. 8.

¹⁵⁵ *Ibid.*, p. 12.

¹⁵⁶ *Ibid.*, p. 13.

¹⁵⁷ Department of Environment, Land, Water and Planning, *Submission 927*, pp. 19–20.

DELWP submitted that Major Event Reviews are informed by science, Traditional Owner knowledge and public consultation, and are overseen by an independent panel.¹⁵⁸ However, they do not enable a Regional Forest Agreement to be renegotiated and do not impact the implementation of the Victorian Forestry Plan.¹⁵⁹

The first ever Major Event Review is currently underway to assess the impacts of the 2019–20 bushfires and identify what, if any, future remedial actions need to be taken.¹⁶⁰ It is examining:

- the operation of the Regional Forest Agreements in place in bushfire-affected regions
- ecologically sustainable forest management
- the comprehensiveness, adequacy and representativeness of Victoria's parks and reserve system
- the effective management and protection of matters of national environmental significance
- native timber harvest levels and the long-term stability of forests and forest industries.¹⁶¹

A summary report containing information and data for public consultation was published in May 2021. The summary report described the impacts of the bushfire on the East Gippsland, Gippsland and North East Regional Forest Agreement regions and included relevant information on the Central Highlands and West Victoria Regional Forest Agreement regions. It was provided for public comment between 11 June and 31 August 2021. At the time of writing this report, the independent panel was finalising the Major Event Review's findings.¹⁶²

Other organisations supporting the recovery of bushfire-impacted biodiversity

Other organisations supporting the recovery of Victoria's biodiversity from the impacts of the 2019–20 bushfires include:

- Zoos Victoria, which is providing specialist veterinarians and veterinary clinics offering wildlife health services to support the conservation of impacted threatened species.
- World Wildlife Fund, which is working with partners in the field to restore ecosystems damaged by the fires and mitigate climate change risks.

¹⁵⁸ Ibid.

¹⁵⁹ Department of Environment, Land, Water and Planning, *The Major Event Review of Regional Forest Agreements*, 2021, <<https://www.delwp.vic.gov.au/futureforests/what-were-doing/the-major-event-review-of-regional-forest-agreements>> accessed 15 November 2021.

¹⁶⁰ Ibid.

¹⁶¹ Department of Environment, Land, Water and Planning, *Victoria's Regional Forest Agreements Major Event Review of the 2019–20 bushfires: Summary report: Information and data to inform public consultation*, 2021.

¹⁶² Department of Environment, Land, Water and Planning, *The Major Event Review of Regional Forest Agreements*.

- Royal Botanic Gardens Victoria, which is working to conserve rare and threatened floral species through seed banking, reintroduction and the maintenance of living collections. It is also working with community groups to conserve species in their natural setting.
- Conservation Volunteers, which is harnessing the outpouring of community concern for wildlife and ecosystems following the fires by referring individuals to groups in need of volunteer support.
- Bush Heritage, which is sharing its expertise in the recovery of bushfire-affected properties to support Victorian landowners to rebuild resilient landscapes.
- BirdLife Victoria, which is collaborating with governments, experts, and community groups to assess the status of birds impacted by the fires and to implement recovery actions. It has specifically been examining and supporting wet forest birds including the superb lyrebird, glossy black-cockatoo, eastern bristlebird and mainland ground parrot.¹⁶³

Future responses

The Committee is pleased to hear that stakeholders to the Inquiry generally approved of the Victorian Government's rapid response to the 2019–20 Black Summer bushfires. Fire events at such a large scale accelerate ecosystem decline and increase the challenge of restoring biodiversity values. In the Committee's view, it is critical that the State is able to act quickly to extract wildlife from bushfire-impacted areas and to mitigate the impacts on native flora and fauna as much as possible.

Sustained support for mid- to long-term ecosystem recovery is also important. Like submitters, the Committee approves of ongoing programs to control pest species in bushfire-impacted ecosystems and efforts to reseed vulnerable obligate forests. These initiatives will give our native species the best opportunity to recover from the negative impacts of the bushfires.

The Committee acknowledges the Victorian Government's support for Traditional Owner organisations undertaking Reading and Healing Country projects. As noted in Chapter 3 and Chapter 11 of this report, Reading Country programs facilitate the collection and analysis of environmental data related to the health of Country. It is apparent to the Committee that this data collection is critical when assessing the impact of bushfires on ecosystems and planning appropriate restoration measures. The Committee believes that Reading Country programs are an important component of reconciliation and self-determination and has recommended in Chapter 11 that the Victorian Government provides ongoing support for these programs.

Lastly, the Committee is pleased to see the utilisation of a Major Event Review for the 2019–20 bushfires under the modernised Regional Forest Agreements and awaits its findings with interest.

¹⁶³ Victorian Government, *Environment and biodiversity - bushfire recovery*.

6 Habitat loss and fragmentation

This Chapter explores habitat loss and fragmentation across Victoria. It:

- outlines historical and ongoing causes of land clearance and how this is contributing to ecosystem decline
- examines how environmental considerations, including habitat loss, inform development processes, including:
 - the role of ecological information in informing environmental impact assessments
 - the operation and efficacy of the *Guidelines for the removal, destruction or lopping of native vegetation*
 - environmental impact offsetting provisions under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act).
- discusses the conservation and management of Victorian forest habitat, in the context of the native timber forestry industry.

6.1 What is habitat loss and how is it driving ecosystem decline?

Victoria boasts some of the world's most unique and diverse natural areas which provide habitat for a range of important native flora and fauna. However, the State's natural areas have declined substantially in quality and extent since European settlement. Victoria is now the most intensely settled and cleared state in Australia. Over 50% of native vegetation has been removed during the two centuries since Europeans arrived.¹

The causes of historic and ongoing habitat loss are many and varied, including:

- animal agricultural uses, such as grazing stock
- arable agriculture such as cropping, for animal feed and human consumption
- development and urban expansion, for example the construction of houses, roads and other major infrastructure
- native timber harvesting
- resource extraction, for example, mining for gold and other minerals
- degradation related to introduced non-native species, such as rabbits

¹ Department of Environment, Land, Water and Planning, *Protecting Victoria's Environment – Biodiversity 2037*, 2017, p. 4.

- erosion
- climate change
- bushfires.²

Habitat loss across the State has not been uniform. Figure 6.1 shows that the proportion of remaining habitat in different bioregions varies from less than 16% of the Victorian Volcanic Plain, to 94% in the far eastern highlands.³

Figure 6.1 Proportion of native vegetation in fragmented landscapes in Victorian bioregions, 2010



Source: Victorian Environmental Assessment Council, *Remnant Native Vegetation Investigation Discussion Paper*, 2010, p. 46.

A 2010 investigation into remnant vegetation conducted by the Victorian Environmental Assessment Council (VEAC) identified that across fragmented Victorian landscapes, remaining native vegetation is divided almost equally between public and private land. Habitat loss has been greatest in regions with relatively flat terrain, low elevation and fertile soils which are well suited to agriculture:

Certain landscapes have been disproportionately cleared or heavily modified for agriculture. The especially high loss of native vegetation from the most productive land is apparent at all scales – from bioregions to vegetation types – and has led to a correspondingly high loss of biodiversity and a high proportion of threatened species in these areas. In the most cleared landscapes within bioregions, the vegetation associated

² Victorian Environmental Assessment Council, *Remnant Vegetation Investigation Discussion Paper: For Public Comment*, 2010, p. 120; Ecological Society of Australia, *Submission 575*, p. 2; Professor David Lindenmayer AO, *Submission 353*, p. 3; BEAM Mitchell Environment Group, *Submission 690*, p. 2; Ecological Consultants Association of Victoria, *Submission 499*, p. 11; South Gippsland Conservation Society, *Submission 646*, pp. 3, 5, 7-10; Victorian National Parks Association, *Submission 102*, pp. 19, 20, 23; Green Wedge Protection Group, *Submission 761*; Goulburn Valley Environment Group, *Submission 789*.

³ Victorian Environmental Assessment Council, *Remnant Vegetation Investigation Discussion Paper*, p. 6.

with riparian areas and wetland margins is frequently almost the only remaining local vegetation.⁴

In a submission to the Inquiry, the Department of Environment, Land, Water and Planning (DELWP) reported that habitat loss is continuing today at a rate of approximately 4,000 hectares per year:

recently released Land Cover time series data that provides valuable insights into land cover changes across the state over time, including impacts on native vegetation from changing land use, shows that endangered native grasslands continue to be lost—largely through conversion to cropping and urbanisation. Native vegetation across Victoria also continues to decline at a rate of 4000 habitat hectares per year. This is largely due to the ongoing loss of quality of native vegetation on private land from entitled uses such as grazing, and unmanaged threats such as the spread of environmental weeds.⁵

VEAC asserted that ‘continued degradation of remaining native vegetation is currently the major threat to Victoria’s biodiversity’.⁶ DELWP similarly acknowledged the serious biodiversity implications of habitat loss:

This decline in extent and quality of habitat has had major implications for Victoria’s plants and animals. Since European settlement, Victoria has lost 18 species of mammal, 2 birds, 1 snake, 3 freshwater fish, 6 invertebrates and 51 plants have become extinct. Today, between one quarter and one third of all of Victoria’s terrestrial plants, birds, reptiles, amphibians and mammals, along with numerous invertebrates and ecological communities, are considered threatened with extinction.⁷

Inquiry stakeholders also highlighted the impact of habitat loss on Victoria’s biodiversity values. For example, the Victorian National Parks Association warned that ongoing native vegetation clearance is escalating pressures on native species, increasing their vulnerability to other threats.⁸ BirdLife Australia noted that since European settlement, two bird species have become regionally extinct and over 100 more are threatened.⁹

Similarly, the Ecological Society of Australia asserted that historical and ongoing habitat loss is driving Victorian ecosystems and species towards collapse:

In some places, the legacy of land-use is so profound that entire ecosystems are on the verge of global extinction. The Temperate Native Grasslands of Victoria have <5% of the original ecosystem remaining even though they once spanned ~30% of the State. As a result, one of the world’s most unique birds (Plains Wanderer), a species dependent on the native grasslands of Victoria for its foraging and nesting, is now critically endangered. While broad-scale vegetation clearing was banned from Victoria in 1989

⁴ Ibid., pp. 7, 120.

⁵ Department of Environment, Land, Water and Planning, *Submission 927*, p. 5.

⁶ Victorian Environmental Assessment Council, *Remnant Vegetation Investigation Discussion Paper*, p. 7.

⁷ Department of Environment, Land, Water and Planning, *Threatened species overview*, 2021, <<https://www.environment.vic.gov.au/conserving-threatened-species/threatened-species-overview>> accessed 4 October 2021.

⁸ Department of Environment, Land, Water and Planning, *Protecting Victoria’s Environment – Biodiversity 2037*, p. 10.

⁹ BirdLife Australia, *Submission 886*, p. 3.

and the first Native Vegetation Management Framework was adopted in 1992, clearing of native habitat continues (at ~ 4,000 habitat hectares per year; SoER 2018), much of it in the ecosystems that can least afford ongoing declines (e.g. native grasslands...)¹⁰

Kingston City Council made the same point in its submission to the Inquiry and detailed the specific impact of habitat loss and degradation on species within its municipality:

There is significant evidence of extinction within Kingston including the extinction of 9 [ecological vegetation classes] including Riparian Scrub, Damp Heathland and Brackish Grassland. Faunal local extinctions include Swamp Wallaby, Wombat, Dingo, Southern Brown Bandicoot, Spot tailed Quoll, Australian Bustard and Lace Monitor. Some of these extinctions have occurred as recently as within the last 20 years. Many other species are listed as locally endangered and critically endangered and their current trajectory suggests they will be lost without significant efforts to improve, protect and expand their habitats.¹¹

South Gippsland Conservation Society submitted that in addition to increasing the vulnerability of native species, habitat loss 'also has a major impact on the health of soil and water'.¹²

The Committee acknowledges that historical and ongoing land clearance has driven the regional extinction of native flora and fauna across the State, and pushed many other species to the brink.

FINDING 16: The ongoing removal and degradation of native vegetation is a key driver of ecosystem decline and is threatening Victorian biodiversity.

6.1.1 *Protecting Victoria's Environment – Biodiversity 2037*

The Victoria Government's plan for reversing ecosystem decline, *Protecting Victoria's Environment – Biodiversity 2037* (Biodiversity 2037), acknowledges past and continuing habitat loss around the State:

Victoria is the most intensively settled and cleared state in Australia. This has enabled Victoria to become a powerhouse of agricultural production, with huge benefits to the state economy. But it has also left a legacy of loss, degradation and fragmentation of habitats that is evident across the state. The effects of this legacy will continue, creating more pressure on species and increasing their vulnerability to other threats. Although the rate of land clearing has slowed since the introduction of Victoria's native vegetation regulations in 1989, the quality and extent of native vegetation continues to shrink by about 4,000 habitat hectares each year. This trajectory is largely the result of activities and entitled uses that are outside the regulatory framework (resulting in loss of extent

¹⁰ Ecological Society of Australia, *Submission 575*, p. 2.

¹¹ Kingston City Council, *Submission 755*, p. 1.

¹² South Gippsland Conservation Society Inc, *Submission 646*, p. 10.

of native vegetation), together with insufficient management of threats (resulting in loss of quality).¹³

A stated goal of Biodiversity 2037 is that ‘Victoria’s natural environment is healthy’. The Victorian Government aims to achieve this goal by stopping the decline of threatened species and improving the extent and condition of native habitat around the State. It commits to realising ‘an overall net gain, expressed as an improvement in the overall extent and condition of native habitats across terrestrial, waterway and marine environments’. Biodiversity 2037 notes that ‘not all habitats or vegetation types will need to be improved or increased in order to achieve this goal, but overall gains will need to outweigh losses’.¹⁴

Biodiversity 2037’s commitment to an overall net gain in the extent of habitat in terrestrial settings is underpinned by factors such as:

- how environmental considerations are factored into development
- the operations and management of native timber forestry.

6.2 Environmental considerations in development

This Section examines how environmental considerations, including habitat loss, inform development processes. This includes in relation to the role of ecological information in informing environmental impact assessments, as well as the operation and efficacy of the *Guidelines for the removal, destruction or lopping of native vegetation*. It also considers the environmental impact offsetting provisions under the EPBC Act.

The reflection of environmental considerations in the Victorian planning framework more broadly form part of the terms of reference of this Committee’s *Inquiry into the protections within the Victorian planning framework*. The Inquiry may consider issues relating to biodiversity that were raised in the current Inquiry, which include, but are not limited to:

- planning provisions to encourage environmentally sustainable building and precinct design
- the incorporation of ‘green infrastructure’ such as trees in urban areas to combat adverse environmental phenomenon including the heat island effect
- the importance and protection of green wedges in the City of Melbourne
- strategic planning for regional centres to safeguard biodiversity values and streamline development
- regional rail and road infrastructure that incorporates wildlife bridges and tunnels to help repair the fragmentation of habitat.

¹³ Department of Environment, Land, Water and Planning, *Protecting Victoria’s Environment – Biodiversity 2037*, p. 10.

¹⁴ *Ibid.*, p. 14.

For this reason, this Report will not consider broad issues relating to planning schemes and environmental protection.

Information about the Committee's *Inquiry into the protections within the Victorian planning framework*, including the full terms of reference, is available on the Parliament of Victoria's website.

6.2.1 Environmental impact assessments

In Victoria, environmental impact assessments in relation to development are typically conducted under the *Planning and Environment Act 1987* (Vic) (Planning and Environment Act). The Planning and Environment Act establishes the Victorian Planning Provisions which compel local government authorities to consider the possible environmental impacts of a development before approving planning applications or planning scheme amendments.¹⁵

This common process is complemented by a more comprehensive environmental impact assessment process provided for by the *Environment Effects Act 1978* (Vic) (the EE Act).

Environment Effects Act 1978 (Vic)

Under the EE Act, the Minister for Planning may require any development (whether public or private) which is likely to have a significant impact on the environment to undergo an Environment Effects Statement (EES) process to assess potential environmental impacts. This process is summarised in Table 6.1.

Table 6.1 Environment Effects Statement process

Step	Description
Project referred to the Minister for Planning	A project is referred in accordance with specified referral criteria, by a developer or decision-maker (for example, any Minister or statutory body responsible for public works, a government agency, or local government authority).
Minister for Planning determines the need for an EES	The Minister can decide: <ul style="list-style-type: none"> that an EES process must be completed before a project can be approved by decision-makers that an EES process is not required and decision-makers can determine whether to approve the project that an EES process is not required, but conditions (such as environmental impact mitigation measures) must be met for a project to be approved by decision-makers.
Minister for Planning sets scoping requirements	The Minister develops scoping requirements that establish what the EES must consider. This depends on the level of environmental risk presented by a project.

¹⁵ Victoria Planning Provisions, Clause 65.01.

Step	Description
Developer prepares the EES and submits it to the Minister for Planning	The developer must prepare an EES which meets the scoping requirements and undertake consultation with relevant stakeholders. Ecologists and other professionals with environmental expertise typically contribute assessments and other evidence to this process. DELWP may also have input.
The EES is publicly exhibited and submissions are accepted from the community	When the EES is complete, the Minister for Planning releases it for public comment. They may also establish an inquiry to consider the effects of a project (ranging from a desktop review to a full inquiry process with submissions and public hearings).
Minister for Planning makes an assessment of the environmental effects of the development	The Minister for Planning considers all the evidence collected throughout the EES process and assesses the environmental impact of a project. The assessment may conclude that the project: <ul style="list-style-type: none"> • will have an acceptable level of environmental effects • will have an unacceptable level of environmental effects • requires major modifications or further investigation before acceptable outcomes can be achieved.
Decision-makers consider the Minister's assessment	Government and statutory decision-makers must consider the Minister's assessment and approve or reject the project. While the Minister's assessment provides recommendations and is authoritative advice, it is not binding on decision-makers.

Source: Department of Environment, Land, Water and Planning, *How does the EES process work?*, 2016, p. 1.

The Minister typically requires an EES process when:

- a development may result in a regionally or state significant environmental impact
- there is a need for an integrated assessment of potential environmental impacts of a development and relevant alternatives
- when normal statutory processes would not provide a sufficiently comprehensive and transparent assessment.¹⁶

Environment is defined broadly in this process. It includes 'the physical, biological, heritage, cultural, social, health, safety and economic aspects of human surroundings, including the wider ecological and physical systems within which humans live'.¹⁷

The significance of the potential environmental impact is defined using three factors. Firstly, the significance of the environmental values likely to be impacted in relation to their character, where they occur geographically and the importance of their environmental assets (according to expert knowledge, policy or evidence). Secondly, the potential magnitude, extent and duration of the adverse impacts on environmental assets as a result of the development. Lastly, the potential for more extended adverse impacts across the region or throughout time as a result of interactions between the environmental impacts and environmental processes.¹⁸

The EE Act also interacts with the national environmental legislative framework, primarily through the EPBC Act.

¹⁶ Department of Sustainability and Environment, *Ministerial guidelines for assessment of environmental effects under the Environment Effects Act 1978: Seventh edition*, 2006, p. 2.

¹⁷ Ibid.

¹⁸ Ibid., p. 6.

Environment Protection and Biodiversity Conservation Act 1999 (Cth)

The EPBC Act is the Commonwealth Government's principal environmental legislation. It aims to protect national environmental assets and includes provisions for environmental offsets. Proposed developments or other actions likely to have a significant impact upon a matter protected under the EPBC Act, must be referred for an environmental impact assessment under the Act.¹⁹

BOX 6.1: Matters protected under the EPBC Act

Matters which are protected under the EPBC Act, also known as matters of national environmental significance, include:

- world heritage properties
- national heritage places
- wetlands of international importance (listed under the *Ramsar Convention on Wetlands*)
- listed threatened species and ecological communities
- migratory species protected under international agreements
- Commonwealth marine areas
- the Great Barrier Reef Marine Park
- the environment, where nuclear actions are involved
- the environment, where actions proposed are on, or will affect, Commonwealth land and the environment
- the environment, where Commonwealth agencies are proposing to take an action.

Source: Department of Sustainability, Environment, Water Population and Communities, *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy*, October 2012, p. 5.

In 2014, the Victorian Government struck a bilateral agreement with the Commonwealth Government. This agreement enabled projects likely to have a significant impact on a matter protected under the EPBC Act to be assessed under the EE Act, through the EES process. These developments can undergo the EES process in the same manner as any other Victorian development, with the resulting assessment of environmental effects provided to the Commonwealth Government for the final decision to approve or reject the project.²⁰

¹⁹ Department of Sustainability, Environment, Water, Population and Communities, *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy*, October 2012.

²⁰ Department of Environment, Land, Water and Planning, *Environment assessment*, 2021, <<https://www.planning.vic.gov.au/environment-assessment/environmental-assessment-bilateral-agreement>> accessed 3 October 2021.

Previous inquiries and reviews

There have been a number of reviews of Victorian environmental impact assessment processes in the past, which together recommended substantial reforms to improve their efficacy and efficiency. In 2002, the Minister for Planning appointed an Advisory Committee under the Planning and Environment Act to ‘review procedures under the EE Act’. It recommended the introduction of ‘three levels of assessment matched to the environmental risk posed by a project’ and enhanced technical assistance throughout assessments.²¹

In 2009, the Treasurer directed the Victorian Competition and Efficiency Commission ‘to conduct an inquiry into environmental regulation in Victoria’. The inquiry published preliminary findings which included draft recommendations to streamline the environment assessment process.²² Finally, in 2011, the Victorian Parliament’s Environment and Natural Resources Committee conducted an *Inquiry into the Environment Effects Statement Process in Victoria*. The Committee made 50 recommendations aimed at improving the ‘transparency and rigour’ of environmental impact assessment processes.²³

Few recommendations from these reviews have been implemented.

Stakeholder feedback on environmental impact assessment processes

Various stakeholders submitted evidence in relation to Victoria’s environmental impact assessment processes.

Environmental Justice Australia suggested that Victoria’s laws are inadequate to protect natural places from the impacts of development. It noted past reviews of environmental impact assessment processes and asserted that despite numerous recommendations for reform, ‘the EE Act remains in essentially the same form today’ as when it was first introduced in the 1970s. It called for planning legislation to be updated:

As previous Committee reviews have recognised, Victoria’s environmental impact assessment system is out of date and incapable of meeting its objectives. It needs to be reformed to ensure that the impact of development proposals on Victorian ecosystems is undertaken and a modern and transparent framework that includes consideration of climate change impacts of the development and on the ecosystems and biodiversity impacted by the proposal.²⁴

21 Australasian Legal Information Institute, *Planning Panels Victoria: Environment Assessment Review (AC) [2002] PPV 105 (2 December 2002)*, 2002, <<http://www.austlii.edu.au/cgi-bin/viewdoc/au/cases/vic/PPV/2002/105.html>> accessed 3 October 2021.

22 Victorian Competition and Efficiency Commission, *A Sustainable Future for Victoria: Getting Environmental Regulation Right*, March 2009.

23 Parliament of Victoria, Environment and Natural Resources Committee, *Inquiry into the Environment Effects Statement Process in Victoria*, September 2011, p. xi.

24 Environmental Justice Australia, *Submission 760*, p. 23.

Speaking to the Committee at a public hearing, Professor Lee Godden, Director of the Centre for Resources, Energy and Environmental Law at the University of Melbourne, noted that the environmental impacts of development are currently assessed on a project-by-project basis. She argued that this excludes consideration of the cumulative impacts of habitat loss resulting from other projects, climate change and bushfires when considering whether to approve a development.²⁵

In 2019–20, an independent review was undertaken of the EPBC Act, known as the Samuel’s Review. It examined the operation of the Act, as well as the extent to which its objectives have been met. It also pointed out that individual environmental impact assessment processes for each development project fail to incorporate considerations of cumulative habitat loss:

Most decisions of the Commonwealth that determine environmental outcomes are made on a project-by-project basis only when impacts exceed a certain size, and only for those parts of the environment protected under the EPBC Act. This means that cumulative impacts on the environment are not systematically considered. Rather than an integrated system of environmental management that ensure cumulative impacts are well managed, pressure to manage impacts is placed on individual projects.²⁶

The Ecological Consultants Association of Victoria similarly argued that environmental impact assessments should encompass broader consideration of the impacts of development on ‘ecosystem level services’ as opposed to focusing on environmental values listed for protection under state or national legislation.²⁷

Moreover, the Association was joined by the Ecological Society of Australia and the Local Government Professionals Biodiversity Planning Network in calling for the development of safeguards to ensure the integrity and scientific rigour of environmental impact assessments.

The Biodiversity Planning Network explained to the Committee in written evidence that there may be issues with the validity and integrity of environmental impact assessments regardless of the process through which they are being considered. It noted that at the local government level, environmental impacts being considered under the Planning and Environment Act may have been prepared by an ‘applicant or associated parties with little or no relevant skills, education or expertise’. More broadly, environmental impact assessments at any level may include evidence prepared by an environmental consultancy working on behalf of the developer:

The private environmental consultancy industry has expanded exponentially since the early 2000s and is now firmly established within the environmental planning and assessment process (Godden and Peel 2007). The role of environmental consultancies acting detrimentally to the objectives of the Act itself is recognised by Godden and

25 Professor Lee Godden, Director, Centre for Resources, Energy and Environmental Law, University of Melbourne, Public hearing, Melbourne, 20 April 2021, *Transcript of evidence*, p. 24.

26 Professor Graeme Samuel AC, *Independent Review of the EPBC Act – Final Report*, report for Commonwealth Department of Agriculture, Water and the Environment, Commonwealth of Australia, Canberra, October 2020.

27 Ecological Consultants Association of Victoria, *Submission 499*, pp. 28–29.

Peel (2007), who outline the questionable role of private industry in circumventing restrictive outcomes under the Act. The pseudo-independent nature of environmental consultancies, as recipients of payment made by proponents of the activity, is a substantial blow to the objectivity of reporting and ground-truthing inherent within the assessment process, the accuracy of which is never scrutinised.

This conflict is evident in reports that have been submitted to Councils represented within the BPN [Biodiversity Planning Network], as part of the Act assessment process. Although many consultancies work to undertake assessments in accordance with assessment criteria, the temptation to mislead, misrepresent, omit information or overreach their expertise to facilitate the proponent's favourable outcome can occur where financial incentive is present for a successful clearance outcome.²⁸

The Network pointed out that the environmental assessments prepared by consultants are not scrutinised or subjected to 'ground truthing' for accuracy, nor are there consequences for misrepresenting ecological data. The Network argued that this does not encourage environmental consultants to be accountable and called for environmental assessment processes to be 'overhauled' to facilitate greater accountability and to ensure ecological data included in these processes is accurate.²⁹

The Ecological Consultants Association of Victoria also cautioned that there is potential for the evidence contributed by ecological consultants to be influenced by the developers paying for their input in environmental impact assessment processes. The Association noted that this concern informed its formation and has led to the development of a members' code of conduct, 'which details a number of ethical and professional requirements in this space'. It suggested that better industry oversight would also help address this risk:

Our aim is to ... [encourage] more ecological consultants to sign our Code of Conduct, and hence reduce the prevalence of actual, potential or perceived corruption and conflicts of interest occurring in the ecological consultant industry. Better government oversight of the industry with support, training, professional standards and certification requirements would further help address this issue.³⁰

The Biodiversity Planning Network expressed support for the Ecological Consultants Association of Victoria's code of conduct and recommended that a similar code be developed as part of an independent accreditation process for ecological consultants:

This [issue] could be solved via an independent accreditation process that both ecological consultants and approval assessors must undertake in order to be qualified to undertake and assess these reports ...

The BPN recommend that a similar code of conduct [to that developed by the Ecological Consultants Association of Victoria] should become mandatory for any consultant who submits data, reports or recommendations to decisions makers under the Act ...

²⁸ Biodiversity Planning Network, *Submission 523*, pp. 17–18.

²⁹ Ibid.

³⁰ Ecological Consultants Association of Victoria, *Submission 499*, pp. 35–36.

The BPN notes far more stringent accreditation requirements for the environmental consultancy industry have already been applied to other states. This should also extend to any environmental impact assessments presented as evidence in legal proceedings for contraventions of environmental law.³¹

The Network also noted the importance of ensuring that planning and development decision-makers have the expertise and knowledge to critically review ecological information submitted as part of environmental impact assessments. It noted that local government authorities within its network have a strong understanding of their surrounding environments and called on state and national government agencies to ensure they heed their advice in relation to the environmental impacts of potential developments.³²

The Ecological Society of Australia echoed warnings about the accuracy and independence of ecological information considered as part of environmental impact assessments:

The proponent of developments directly employ consultants to make environmental assessments, which risks a potential (but major) conflict of interest that can mean environmental impacts are not adequately reported or addressed. These conflicts of interest lead directly to corruption, as reported in the Australian mining industry (TIA 2017), and in water management (Grafton & Williams 2020).³³

However, the Society recommended the appointment of an independent environmental regulator to enforce environmental law, oversight environmental impact assessments and mitigate this risk.³⁴ The compliance and enforcement of environmental law and the role of the Office of the Conservation Regulator (OCR) is discussed further in Chapter 10.

The Committee acknowledges that legislation relating to development processes, such as the EE Act, remains largely in its original format, despite several reviews recommending refinement. However, this Inquiry has focused on ecosystem decline and as such, the Committee did not receive detailed evidence on the broader operation of these laws. It is therefore not equipped to comment on their general operation or recommend improvements.

Stakeholder evidence to the Inquiry that related to planning and development legislation focussed mainly on the role of ecological consultants in environmental impact assessments. The Committee heard concerns regarding the potential for the information contributed by consultants to be influenced by developers. It also received evidence suggesting that ecological information may be submitted to these processes by individuals lacking the knowledge or qualifications to do so.

³¹ Biodiversity Planning Network, *Submission 523*, pp. 17–18.

³² *Ibid.*

³³ Ecological Society of Australia, *Submission 575*, p. 8.

³⁴ *Ibid.*

It is the Committee's view that environmental impact assessments are only as good as the information informing them. Adverse environmental impacts, such as habitat loss, can only be avoided or minimised in development if accurate ecological information informs mitigation planning and decision-making.

The Committee acknowledges initiatives such as the Ecological Consultants Association of Victoria's *Code of Professional Conduct*, which are aimed at facilitating high professional standards and the accountability of ecologists. However, it feels a statewide accreditation process is needed to formalise accountability and safeguard the integrity of environmental impact assessments in Victoria.

RECOMMENDATION 14: That the Victorian Government consider the introduction of a statewide accreditation process for ecologists and other environmental professionals contributing to environmental impact assessment processes. This accreditation process should encompass a professional code of conduct and standards for data and other information submitted as part of environmental impact assessments.

The Committee also acknowledges the importance of ensuring that decision-makers are informed and have access to ecological expertise in the formation of an EES or in determining whether to approve a development.

6.2.2 ***Guidelines for the removal, destruction or lopping of native vegetation***

In addition to the Victoria Planning Provisions and the EE Act's specific requirement for environmental considerations, such as habitat loss, to be factored into potential development, all Victorian planning schemes seek to limit the destruction of native vegetation through land manager actions. This is accomplished through the *Guidelines for the removal, destruction or lopping of native vegetation* which are an incorporated document in all Victorian planning schemes.

Native vegetation encompasses the trees, shrubs, herbs and grasses that are indigenous to Victoria. The *Guidelines for the removal, destruction or lopping of native vegetation* highlight the importance of healthy vegetation to provide habitat for animals and deliver a range of ecosystem services that make land more productive and contribute to human well-being. They require land managers to apply for a permit before removing or cutting back native vegetation and outline a three-step approach to be adhered to when considering clearing native vegetation. This approach encompasses:

- avoiding the removal, destruction or lopping of native vegetation
- minimising impacts from the removal, destruction or lopping of native vegetation that cannot be avoided
- providing an offset to compensate for the biodiversity impact from the removal, destruction or lopping of native vegetation.³⁵

³⁵ Victoria Planning Provisions, 12.01-25.

The guidelines outline a process for assessing the impact of removing native vegetation on biodiversity and how offsets to compensate for the loss of biodiversity values should be calculated if a permit to remove vegetation is granted. They also outline how local government authorities should consider and make determinations in relation to applications to remove native vegetation.³⁶

DELWP noted in its submission to the Inquiry that the native vegetation clearing regulations were reviewed in 2017. Changes adopted through the review process sought to increase the protection of sensitive native vegetation, enhance the operation of the guidelines, and increase transparency by:

- better accounting for the environmental value of large scattered trees, endangered vegetation types and sensitive wetlands and coastal areas in decision making
- making the system fairer, by allowing some site-based information to supplement mapped information, and ensuring the information used in the regulations better reflects the vegetation on the ground
- improving monitoring and reporting on the implementation of native vegetation removal and offsets.³⁷

Despite these changes, DELWP noted that its environmental data indicates that native vegetation coverage across Victoria has continued to decline.³⁸

Several environmental groups that made submissions to the Inquiry also raised concerns regarding the ongoing loss of native vegetation.³⁹ Four key opportunities for improving the native vegetation clearing regulations were identified by submitters throughout the Inquiry:

- strengthening the requirement to avoid or minimise native vegetation removal or disturbance wherever possible
- clarifying and tracking exemptions to the guidelines
- refining processes for offsetting the removal of native vegetation when permits are granted
- improving the implementation and enforcement of the regulations.

Discussion of the native vegetation clearing regulations in this Chapter is confined to strengthening the avoid and minimisation approaches, clarifying and tracking exemptions, and refining offsetting processes. Implementation and compliance issues are canvassed in Chapter 10.

³⁶ Department of Environment, Land, Water and Planning, *Guidelines for the removal, destruction or lopping of native vegetation*, pp. 3, 24.

³⁷ Department of Environment, Land, Water and Planning, *Review of the native vegetation clearing regulations*, 2019, <<https://www.environment.vic.gov.au/native-vegetation/review-of-native-vegetation-clearing-regulations>> accessed 29 September 2021.

³⁸ Department of Environment, Land, Water and Planning, *Submission 927*, p. 5.

³⁹ Ecological Consultants Association of Victoria, *Submission 499*, pp. 25–26; Green Wedge Protection Group, *Submission 761*, pp. 4–5; Goulburn Valley Environment Group, *Submission 789*, p. 6; Brimbank City Council, *Submission 926*, p. 10.

Calls to strengthen avoid and minimisation approaches

Brimbank City Council, the Ecological Consultants Association of Victoria, Green Wedge Protection Group and Goulburn Valley Environment Group all recommended strengthening the requirement to seek to avoid or minimise the destruction of native vegetation before offsetting loss is considered as an option.⁴⁰

Brimbank City Council informed the Committee that applications for permits to remove native vegetation often cite economic factors to justify why vegetation should be removed and offset, as opposed to maintained with minimal disruption:

The avoidance and minimisation approach correctly identifies the hierarchy of protection, but lacks strength and weight in assessing applications to remove native vegetation. Economic drivers are often the sole reason within avoid and minimise statements to justify removal.⁴¹

It called for the native vegetation clearing regulations to provide greater direction to decision-makers (usually local government authorities) on how to balance economic, environmental and social consideration in applications for permits to remove native vegetation.⁴²

Goulburn Valley Environment Group similarly recommended reforming the regulations to incorporate ‘much higher thresholds for retention of existing native vegetation before the next steps of minimise or offset’ are considered.⁴³

In contrast, the Victorian Farmers Federation asserted that the current limits on native vegetation removal are counterproductive and argued against tightening regulations. It provided an example which it felt illustrated that the regulations are contributing to ecosystem decline.

In 2019, the Victorian Civil and Administrative Tribunal (VCAT) overturned a decision by the West Wimmera Shire Council to issue a permit to remove 23 large grey box trees scattered across a 257-hectare agricultural property. The Victorian Farmers Federation argued that this finding failed to recognise broader environmental considerations as the removal of the trees was ‘needed to allow the use of climate friendly technology – GPS enabled tractors – that improve soil carbon, reduces the level of chemicals applied to crops, reduces fossil fuel use and minimised dust’. However, in reaching this finding, VCAT noted evidence that:

- grey box trees are an endangered ecological vegetation class
- the farmer involved noted during questioning that the agricultural area impeded by the trees is ‘not a significant area in terms of economic value and not an area that he would rely upon as critical for the financial sustainability of farming’

⁴⁰ Ecological Consultants Association of Victoria, *Submission 499*, pp. 25–26; Green Wedge Protection Group, *Submission 761*, pp. 4–5; Goulburn Valley Environment Group, *Submission 789*, p. 6; Brimbank City Council, *Submission 926*, p. 10.

⁴¹ Brimbank City Council, *Submission 926*, p. 10.

⁴² Ibid.

⁴³ Goulburn Valley Environment Group, *Submission 789*, p. 6.

- the geographical position of the trees means they have the potential to enhance habitat connectivity in the landscape
- the loss of such large grey box trees is effectively irreversible and will not provide a strong community benefit.

The Victorian Farmers Federation felt that this example demonstrates that the native vegetation clearing regulations and the planning system more broadly failed 'to take into account the total social, economic and environmental outcome of the proposal, as is expected to be the basis of the planning system'.⁴⁴

Clarification and tracking of exemptions

Clause 52.17-7 of the Victoria Planning Provisions establishes a range of exemptions to the requirement to seek a permit to lop or remove native vegetation and offset any biodiversity impact. An exemption does not circumvent the requirement to avoid or minimise the removal or lopping of native vegetation wherever possible.

Exemptions are extensive and diverse. For example, they include removing, destroying or lopping native vegetation to the minimum extent necessary to:

- enable the carrying out of conservation work
- enable the use or maintenance of an existing building or works used for agricultural production, including a dam, utility service, bore, horticultural trellising or an accessway in a Farming Zone or Rural Activity Zone
- carry out any of the following fire protection activities:
 - fire fighting
 - planned burning
 - making or maintenance of a fuelbreak or firefighting access track (or any combination thereof) that does not exceed a combined width of six metres
 - making a strategic fuelbreak up to 40 metres wide by, or on behalf of, a public authority in accordance with a strategic fuelbreak plan approved by the Secretary of DELWP (as constituted under Part 2 of the *Conservation, Forests and Land Act 1987* (Vic) (the CFL Act))
- obtain reasonable amounts of wood for personal use by the owner or lawful occupier of the land.⁴⁵

Inquiry stakeholders were apprehensive that exemptions to the native vegetation clearing regulations are being applied without effective oversight.

⁴⁴ Victorian Farmers Federation, *Submission 882*, p. 8; *Frances Mary McDonald and Martin Van Kempen William Ross McDonald v Jonathan Dyer*, VCAT REFERENCE NO. P1133/2018.

⁴⁵ Victoria Planning Provisions, Clause 52.17-7.

Speaking to the Committee at a public hearing in Shepparton, Sharon Terry, Manager of Environment at Greater Shepparton City Council, expressed concern that land managers self-assess whether an exemption applies and undertake native vegetation removal without guidance or oversight from local government authorities:

The application or exemption can be done by anybody. So they may or may not jump onto the DELWP website or have a look at the guidelines around exemptions. But the application of that exemption, there is no requirement for them to come to the responsible authority and seek advice on whether that exemption applies. For that exemption to apply, it must have the avoid minimise principles considered.⁴⁶

Sharon Terry said this prevents local government authorities from tracking how much land clearance is occurring in municipalities under exemptions.⁴⁷

Brimbank City Council and the Goulburn Broken Local Government Biodiversity Reference Group similarly discussed the need for oversight of all native vegetation removal, whether legal or illegal, to inform decisions under the guidelines.⁴⁸ The importance of monitoring and mapping native vegetation removal is discussed further in Chapter 10.

The Committee also heard that some exemptions may be inappropriate and are enabling the loss of habitat in Victoria.

Sharon Terry drew the Committee's attention to an exemption enabling the removal of native vegetation without a permit or offsets on urban land 4,000m² or less that is being divided for development:

Another exemption of concern for us is the 4,000 metre square exemption for native vegetation removal. So on a development - urban residential development space - if you are dividing up land of 4,000 metres square or less, you do not require an exemption to - you do not require a permit to remove native vegetation. So there is an exemption that applies there. This is a really significant area of land, it is around an acre. It is a big bit of land to put a house and a shed and a driveway and design can allow for those trees to remain but because that exemption applies, we are losing significantly large trees. And these trees are our habitat trees, which are crucial for biodiversity in our area.⁴⁹

Other submitters highlighted exemptions for the purpose of mitigating bushfire risk to buildings and fences. For example, the Local Government Professionals Biodiversity Planning Network said that exemptions which enable land managers to prepare their properties for bushfire by clearing native vegetation around buildings and fences without offsetting the impact is 'leading to a loss of biodiversity'.⁵⁰

⁴⁶ Sharon Terry, Manager Environment, Greater Shepparton City Council Public hearing, Shepparton, 28 April 2021, *Transcript of evidence*, p. 24.

⁴⁷ Ibid.

⁴⁸ Brimbank City Council, *Submission 926*, p. 5. Goulburn Broken Local Government Biodiversity Reference Group, *Submission 450*, p. 4.

⁴⁹ Sharon Terry, *Transcript of evidence*, p. 24.

⁵⁰ Local Government Professionals Biodiversity Planning Network, *Submission 523*, p. 10.

Similarly, the Green Wedge Protection Group acknowledged ‘the sanctity of human life’ but asserted that if Victoria is serious about reversing ecosystem decline it should prevent further residential construction in bushfire areas to avoid the need to remove native vegetation under this exemption.⁵¹

The Committee heard that better outcomes for habitat protection and land managers are achieved under the native vegetation clearing regulations when applicants work with local government officers to develop their proposal. At a public hearing, Michelle Wyatt, Environment Coordinator at the Macedon Ranges Shire Council, stated that by assisting applicants to develop their proposals, local government authorities can ensure that the avoid and minimisation approaches are properly considered.⁵²

The Committee believes that the best outcomes for the environment, local government authorities and land managers can be achieved if local government officers work with land managers to apply the native vegetation clearing regulations. Local government officers can educate land owners regarding the requirements of the regulations and the importance of avoiding habitat loss. They can assist applicants to apply the avoid and minimise approach and help them to determine whether an exemption is appropriate. This cooperative approach will underpin stronger protection of native vegetation and increase the visibility of any land cleared under the guidelines.

RECOMMENDATION 15: That the Victorian Government ensure local government authorities have adequate staff, with appropriate training available, to work collaboratively with applicants in applying the *Guidelines for the removal, destruction or lopping of native vegetation*. Caution should be taken not to further erode and fragment ecosystems by applying a piecemeal approach. A whole-of-ecosystem approach must be applied when making decisions.

The importance of communication and engagement with landowners in order to prevent unauthorised conduct is discussed further in Chapter 10.

Refining offsetting processes for native vegetation loss

The *Guidelines for the removal, destruction or lopping of native vegetation* stipulate that if a permit is granted to destroy or lop native vegetation, biodiversity impacts from the removal of native vegetation must be offset, to compensate for the biodiversity impact of the removal.⁵³

The biodiversity value of the native vegetation to be removed is calculated as part of the permit application process using a combination of site-based and landscape-scale information provided by Native Vegetation Information Management, an online

⁵¹ Green Wedge Protection Group, *Submission 761*, p. 3.

⁵² Michelle Wyatt, Environment Coordinator, Macedon Ranges Shire Council, Public hearing, Melbourne, 12 May 2021, *Transcript of evidence*, pp. 13–14.

⁵³ Department of Environment, Land, Water and Planning, *Guidelines for the removal, destruction or lopping of native vegetation*.

map of native vegetation across Victoria. A score is attributed to the ‘condition and extent’ of the native vegetation to be removed as well as its ‘condition’. A site-based measurement of biodiversity value is generated and informs offsetting requirements. The offset amount is the amount of gain required to compensate for the removal of native vegetation.⁵⁴

Permits granted for the removal, destruction or lopping of native vegetation specify the offset amount required and set a deadline by which to secure the offset. Evidence that the required offset has been secured must be provided to the satisfaction of the Secretary of DELWP.⁵⁵

There are two types of offsets provided for by the native vegetation clearing regulations:

- A species offset is required when the removal of native vegetation has a significant impact on habitat for a rare or threatened species. Species offsets must compensate for the removal of that particular species’ habitat. As such, they must be located within an area known to be habitat for the affected species.
- A general offset is required when the removal of native vegetation does not have a significant impact on any habitat for rare or threatened species. It can be located within the municipality or catchment management authority region of the removed vegetation.⁵⁶

Both types of offsets are required to include at least one large tree for every tree removed, to protect large trees across the landscape.

An offset is delivered through the ongoing protection and management of native vegetation in an offset site, either on the property where native vegetation was removed, or on a third party’s property. Arrangements must be made to safeguard the long-term security of native vegetation in the offset site and to achieve ‘biodiversity gains’ through management actions to maintain or improve its condition.⁵⁷ Gains can only be generated by management actions and commitments that are in addition to existing obligations under legislation, existing agreements or contracts.⁵⁸

⁵⁴ Ibid., pp. 13–16; Department of Environment, Land, Water and Planning, *Annual Report 2019-2020: A report on the operations of the native vegetation removal regulations*, Victorian Government, December 2020, p. 12; Department of Environment, Land, Water and Planning, *Applicant’s guide: Applications to remove, destroy or lop native vegetation*, 2018.

⁵⁵ Department of Environment, Land, Water and Planning, *Guidelines for the removal, destruction or lopping of native vegetation*.

⁵⁶ Ibid., pp. 13–17.

⁵⁷ Department of Environment, Land, Water and Planning, *Guidelines for the removal, destruction or lopping of native vegetation*, p. 27.

⁵⁸ Department of Environment, Land, Water and Planning, *Offsets for the removal of native vegetation*, <<https://www.environment.vic.gov.au/native-vegetation/native-vegetation/offsets-for-the-removal-of-native-vegetation>> accessed 30 September 2021.

Table 6.2 Methods for achieving biodiversity gains on offset sites

Type of gain	Management action or commitment
Prior management gain	This acknowledges past management undertaken by a landowner on a freehold site, before establishing the offset site. Prior management gain only applies to existing native vegetation.
Security gain	This is generated when a landowner increases the protection of native vegetation on their land.
Maintenance gain	This is achieved by giving up currently allowed land uses and controlling threats that affect native vegetation condition to avoid the expected decline in native vegetation condition predicted to occur over a 10-year period.
Improvement gain	This is achieved from management commitments that are predicted to improve the current vegetation condition over a 10-year period.

Source: Department of Environment, Land, Water and Planning, *Offsets for the removal of native vegetation*, <<https://www.environment.vic.gov.au/native-vegetation/native-vegetation/offsets-for-the-removal-of-native-vegetation>> accessed 16 November 2021.

Native vegetation is only eligible to be used as an offset site if it is not already serving this purpose, being used to generate carbon credits, already subject to a biodiversity-related incentive or grant, or the land manager cannot control significant threats to its condition. Areas of revegetation can only be used as a general offset, not a species offset.⁵⁹

Native vegetation credit market

Third party offsets for the removal of native vegetation may be purchased by land managers through the native vegetation credit market where they are traded as ‘native vegetation credits’.⁶⁰ Accredited brokers, listed on DELWP’s website, assist with these transactions.⁶¹

Information on existing and potential third-party offsets is available on the Native Vegetation Offset Register. Existing offsets are sites already established and being managed according to the native vegetation clearing regulations. Potential offsets are sites which are proposed to be conserved and managed under the regulations, should a land manager who requires an offset agree to purchase it.⁶²

All third party offset sites must be recorded on the Native Vegetation Credit Register. The register is administered by DELWP and records the creation, trade and allocation of credits to meet offset requirements.⁶³

Biodiversity 2037 outlines scope for further developing the native vegetation credit market to enable greater habitat conservation and active management on private land:

⁵⁹ Department of Environment, Land, Water and Planning, *Guidelines for the removal, destruction or lopping of native vegetation*, p. 27.

⁶⁰ *Ibid.*, p. 29.

⁶¹ Department of Environment, Land, Water and Planning, *Applicant’s guide*.

⁶² *Ibid.*

⁶³ Department of Environment, Land, Water and Planning, *Guidelines for the removal, destruction or lopping of native vegetation*, p. 36.

Further credit market development will contribute to greater biodiversity protection, particularly on private land, and provide landowners with alternative income options for managing their land. A biodiversity conservation credit market has the potential to promote future interactions with markets for water, carbon and other public benefits that could be traded between producers and beneficiaries.⁶⁴

DELWP notified the Committee in its submission to the Inquiry that it ‘continues to support the effective and consistent application of the native vegetation removal regulations’. It has developed an online Native Vegetation Credit Register search tool that assists land managers seeking to remove native vegetation to identify an offset that meets their requirements:

The new online Native Vegetation Credit Register search tool that can help permit holders and others to search for their offset requirements was used by 778 people during this first year of operation. Twenty-nine new offset sites were established, and 876 allocated credit extracts were issued as evidence of a secured offset for native vegetation removal.⁶⁵

Stakeholder recommendations to improve native vegetation offset processes

Evidence collected throughout the Inquiry highlighted several aspects of the native vegetation removal offsetting process which could be improved.

Stakeholders, such as Brimbank City Council, felt that there is an overreliance on offsets and that offsetting arrangements often do not adequately compensate for loss of biodiversity values:

There is too heavy a reliance on offsets to provide ecosystem protections. The system does not support the hierarchy of the three step approach, nor acknowledge the environmental and economic value of retaining systems in situ ... audit and compliance systems are not strong enough to ensure offset obligation are being met, land is being secured and financial contributions are being spent to improve the condition.⁶⁶

Fiona Sutton, President of the Ecological Consultants Association of Victoria, stated at a public hearing that ‘offsetting is seen as this accepted next step in the process rather than a last resort’.⁶⁷

BEAM Mitchell Environment Group observed in its submission that securing offsets to enable the removal of vegetation has become an easier option for developers than working around it. In addition, it suggested that the value of remnant native vegetation is not being properly assessed when offsetting arrangements are formulated, resulting in compensation for biodiversity loss which is not like for like:

⁶⁴ Department of Environment, Land, Water and Planning, *Protecting Victoria’s Environment – Biodiversity 2037*, 2017, p. 37

⁶⁵ Department of Environment, Land, Water and Planning, *Annual Report, 2020*, p. 38.

⁶⁶ Brimbank City Council, *Submission 926*, p. 10.

⁶⁷ Fiona Sutton, President, Ecological Consultants Association of Victoria, Public hearing, Melbourne, 24 February 2021, *Transcript of evidence*, p. 27.

Despite the belief inherent in the concept of “offsetting” we cannot replace all the structures and biodiversity in one place with a revegetation project somewhere else. We have argued that all vegetation to be removed should be adequately valued (as mentioned above) and offsets at least covering that value. That may help persuade developers against offsetting as the default strategy.⁶⁸

BEAM Mitchell Environment Group suggested that offsetting arrangements are driving localised biodiversity decline in areas where development is occurring:

We are also concerned that offset sites do not need to be anywhere near the development sites. At present, local places suffer complete loss whereas local offsetting would at least minimise the net loss to the local environment. At present, many developments in Mitchell Shire are offset around Bendigo.⁶⁹

Brimbank City Council and the Ecological Consultants Association of Victoria echoed these criticisms of the native vegetation clearing regulations. Brimbank City Council explained that the lack of a ‘like for like’ principle in offsetting arrangements ‘has seen critically endangered grassland extent decline further’ in its municipality. It said that the regulations enable native vegetation to be removed and the impacts offset anywhere within the Port Phillip Catchment region, ‘leading to significant local loss’ of biodiversity values.⁷⁰

The Ecological Consultants Association of Victoria asserted that, despite the requirement in the regulations for offset sites to protect previously unprotected areas of vegetation, already protected areas of native vegetation are being used as offsets. It argued that as a result, offsetting arrangements are driving biodiversity decline and failing in their objective of no net loss:

The system pushes offset requirements to be satisfied away from the area of clearance, with existing registered remnants that were already being protected - few new areas are protected in such situations, little revegetation is undertaken meaning there is little habitat expansion, and almost no protection or revegetation near the site of the vegetated clearance is promoted. This model is not ‘offsetting’ losses, it is driving ecosystem decline.⁷¹

Goulburn Broken Local Government Biodiversity Reference Group also submitted that ‘offset sites are often not true net gain, as they already exist in the landscape’ (for example, the protection of existing sites and not revegetation).⁷²

The Ecological Consultants Association of Victoria argued that there is an urgent need to reform the native vegetation offsetting provisions.⁷³

68 BEAM Mitchell Environment Group, *Submission 690*, p. 23.

69 Ibid.

70 Brimbank City Council, *Submission 926*, p. 10.

71 Ecological Consultants Association of Victoria, *Submission 499*, pp. 25–26.

72 Goulburn Broken Local Government Biodiversity Reference Group, *Submission 450*, p. 4.

73 Ecological Consultants Association of Victoria, *Submission 499*, pp. 25–26.

The Green Wedge Protection Group recommended amending the native vegetation clearing regulations to clarify what constitutes an appropriate offset and making this a firm requirement.⁷⁴

The Committee shares stakeholder concern that there is an overreliance on offsetting the removal of native vegetation at the expense of avoidance and minimisation approaches.

An overall net gain in the extent and condition of native habitat, as committed to in Biodiversity 2037, will not be achieved unless the native vegetation clearing regulations are applied in a manner consistent with their intent. That is, that they should seek to avoid and minimise land clearing wherever possible, and where it is not possible, the removal of native vegetation should be compensated for through the protection and improvement of like habitat via offsetting arrangements.

The Committee believes that recommendation 15, if implemented, will support the improved application of the native vegetation clearing regulations by ensuring that local government authorities work collaboratively with land managers to appropriately develop applications to remove native vegetation.

The Committee also received evidence indicating that the native vegetation offsetting arrangements are contributing to habitat loss as offset sites are not commensurate to the vegetation being cleared and may already be protected under another arrangement. In the Committee's view this is unacceptable and must be urgently addressed.

RECOMMENDATION 16: That the Victorian Government amend the *Guidelines for the removal, destruction or lopping of native vegetation* to ensure they:

- incorporate the 'like for like' principle in offsetting arrangements, whereby habitat loss is compensated for through the protection and enhanced management of another site capable of serving similar ecological functions
- includes strong specification that potential offset sites must not be:
 - already subject to environmental protections
 - already being managed to improve habitat and biodiversity values
 - previously used in an offsetting capacity
- only permit offsets to be used as a last resort.

The Committee believes that further development of the Native Vegetation Credit Market will better facilitate the identification of appropriate offset sites and support Biodiversity 2037's objective of achieving an overall net gain in the extent and condition of native habitat. It encourages DELWP to continue to pursue this work in close collaboration with Traditional Owners.

⁷⁴ Green Wedge Protection Group, *Submission 761*, pp. 5–6.

6.2.3 Environmental offsets under the *Environment Protection and Biodiversity Conservation Act 1999 (Cth)*

Habitat loss can also be offset in Victoria under national legislation. As previously acknowledged, the Commonwealth EPBC Act aims to protect national environmental assets and includes provisions for environmental offsets (see Box 6.1 for matters protected under the Act).⁷⁵

Proposed development or other action likely to have a significant impact upon a matter protected under the EPBC Act, must be referred for an environmental impact assessment. In Victoria, this can occur under the EE Act as per the bilateral agreement discussed in Section 6.2.1.⁷⁶ As part of environmental impact assessment processes, mitigation measures are planned to avoid and minimise the environmental impacts of development as much as possible. Environmental impacts which remain likely after the application of avoidance and minimisation measures are known as residual impacts. The EPBC Act only requires environmental offsets to be pursued for developments assessed under the Act if the residual impacts to protected matters are likely to be significant. In these cases, developers must submit an offset proposal outlining how a project will compensate for residual impacts as part of an environmental impact assessment.⁷⁷

There are three types of offsets available to compensate for significant residual impact on matters protected under the EPBC Act. Adverted loss offsets are those provided by protecting and improving an alternative at-risk habitat with the same biodiversity values as that being damaged or destroyed by the proposed development. Although adverted loss offsets protect habitat, when considered in conjunction with the habitat destroyed by development, they still result in a net reduction of habitat as habitat is not expanded. In contrast, restoration offsets are delivered by creating new, or recovering degraded, habitat, resulting in a net gain of habitat. Lastly, offsets delivered in advance of a development project (whether they are adverted loss offsets or restoration offsets) are termed advanced offsets.⁷⁸

The *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy* (EPBC Act Environmental Offsets Policy) outlines principles which must be met for an offset to be deemed 'suitable' under an environmental impact assessment. This includes that they must:

1. deliver an overall conservation outcome that improves or maintains the viability of the aspect of the environment that is protected under the Act and likely to be significantly affected by development
2. be focused on directly offsetting environmental impacts but may include other compensatory measures

⁷⁵ Department of Sustainability, Environment, Water Population and Communities, *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy*.

⁷⁶ Ibid.

⁷⁷ Ibid., pp. 7, 12.

⁷⁸ Professor Graeme Samuel AC, *Independent Review of the EPBC Act - Final Report*, October 2020, p. 138.

3. be in proportion to the level of statutory protection that applies to the protected matter
4. be of a size and scale proportionate to the residual impacts on the protected matter
5. effectively account for and manage the risks of the offset not succeeding
6. be additional to what is already required by law or planning regulations or agreed to under other schemes or programs
7. be efficient, effective, timely, transparent, scientifically robust and reasonable
8. have transparent governance arrangements including being able to be readily measured, monitored, audited and enforced.⁷⁹

The EPBC Act Environmental Offsets Policy provides an example of a suitable offset:

For example, if the impact is the removal of foraging habitat for a listed threatened bird species, then an appropriate offset would be creating new similar habitat through re-vegetation works, improving the quality of existing foraging habitat for the species, and/or protecting existing foraging habitat through putting a conservation covenant on the title of the land.⁸⁰

The Samuel's Review made several important findings in relation to the operation of offsets under the EPBC Act, including that while 'offsets have the potential to aid environmental restoration', they are currently contributing to 'environmental decline rather than active restoration'. The Samuel's Review found:

- that the avoid, minimise, offset approach is not being applied, developers see offsets as the default option and an expected condition of approval rather than an exception
- the decision to develop a particular site is made before a project is referred for an environmental impact assessment under the EPBC Act, leaving little scope for the avoid or minimise approaches
- there is no register of offsets, reducing their transparency and creating a context in which offset sites may be used more than once
- that monitoring and compliance of offsets is weak.⁸¹

The Samuel's Review recommended comprehensive changes to the EPBC Act Environmental Offsets Policy to ensure offsets are facilitating genuine habitat protection and restoration (see Box 6.2 below). It also found that that 'the foundations for offsets should be enshrined in legislation – either in the EPBC Act or a specific standalone Act'.⁸²

⁷⁹ Department of Sustainability, Environment, Water Population and Communities, *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy*, p. 6.

⁸⁰ *Ibid.*, p. 17.

⁸¹ Professor Graeme Samuel AC, *Independent Review of the EPBC Act - Final Report*, p. 138.

⁸² *Ibid.*, pp. 140-141.

BOX 6.2: Recommended changes to the EPBC Act Environmental Offsets Policy by the Samuel's Review

The environmental offsets policy and its implementation should be immediately improved to ensure:

- consistency with the National Environmental Standards
 - offsets are ecologically feasible and deliver genuine protection and restoration in areas of highest priority. In the first instance, these improvements should be delivered immediately by making the following amendments to the policy.
1. Biodiversity offsets can only be considered after all possible measures to avoid and mitigate the impacts of an action have demonstrably been taken. Avoidance and mitigation measures must include, but not be limited to, consideration of:
 - the appropriateness of project scoping, footprint relocation and/or reduction
 - changed timing of project activity
 - design-based avoidance and minimisation.
 2. Offset activities must be
 - done in accordance with the suite of National Environmental Standards
 - ecologically feasible and achievable.
 3. Offset plans must
 - be supported by relevant robust scientific evidence that considers the appropriateness and feasibility of the offset
 - clearly define offset activities. Averted loss offsets should only be used where there is an imminent and demonstrable risk of loss and where the land is not otherwise protected by the EPBC Act and the National Environmental Standards for MNES (for example, if it is part of a project that has previously been approved under the Act)
 - include time-bound milestones that clearly identify the required absolute increases of approved indicators – for rehabilitation and restoration offsets milestones, this must be in accordance with the International Principles and Standards for the Practice of Ecological Restoration (Gann et al. 2019)
 - outline corrective courses of action that will be taken where increases in the indicators or milestones have not been achieved
 - define who will fund, manage, monitor and report on the ongoing outcomes of the offset area, including indicators and milestones.

(Continued)

BOX 6.2: Continued

4. Offset sites must:
 - conform with offset components in relevant regional plans and strategic assessments
 - be identified and legally secured prior to commencement of the approved impact – delays between impact and full achievement of required offsets gains must be minimised and appropriate discount factors applied
 - not be used more than once, noting that the one site may provide offsets for impacts on multiple MNES – offsets must be additional to existing actions and regulatory obligations
 - clearly demonstrate management of activities that ensure attainment and maintenance of the required improvement of indicator(s) for the duration that the migratory species, threatened species or threatened ecological community is affected by the impact.
5. The policy must be reviewed at least every three years to ensure that it is achieving its objectives.

Source: Professor Graeme Samuel AC, *Independent Review of the EPBC Act – Final Report*, report for Commonwealth Department of Agriculture, Water and the Environment, Commonwealth of Australia, Canberra, October 2020, p. 140.

Stakeholder critique of offsetting provisions

Throughout the Inquiry, the Committee received evidence critical of offsetting processes. At a public hearing in Shepparton, Stuart Fraser, a member of the Bendigo and District Environment Council, suggested that it is impossible to offset habitat loss and the current policies are contributing to ecosystem decline. Stuart Fraser argued that, although the structure (for example, vegetation) of a potential development site may be able to be recreated at an alternative site, it doesn't necessarily follow that the functions served by the original site can also be replicated:

All offsets fail, because the environment is made up of function and structure. Remove the structure, you lose the function. A single tree and a paddock. It has a function. It perhaps retains the original fungi of the area. There are bats there. It is a link [with other habitats]. So, what the offsets say, is, well ... we will put the structure [tree] over here and we will have this. But, the structure to reach maturity is probably 50 to 100 years. Do they expect the function to hang around? So, in a sense, all offsets fail ... It all sounds great. 'Look, we are putting it over there.' But they are not putting over there the function.⁸³

In Stuart Fraser's view, environmental offsets are aimed at achieving compromise between economic and environmental values, rather than preventing ecosystem

⁸³ Stuart Fraser, Member, District Environment Council, Public hearing, Melbourne, 28 April 2021, *Transcript of evidence*, p. 7.

decline. He said that every compromise results in a degree of environmental damage which cumulatively drives decline:

We want both things. The problem with that is that ... when the natural world compromises, it basically dies. So a little bit more goes. And that does not really matter because it is only a little bit. But, over here, the same thing happens.⁸⁴

Matt Ruchel, Executive Director of the Victorian National Parks Association, echoed this criticism, suggesting that offsetting arrangements are an economist's solution to an environmental problem. He asserted that offsetting policy provides 'the development industry [with] certainty whereas the environment wears the risk'.⁸⁵

The Ecological Consultants Association of Victoria made similar observations. It submitted that offsets are not preventing ecosystem decline.⁸⁶ Dr Melanie Birtchnell, a member of the Ecological Consultants Association of Victoria, spoke to the Committee at a public hearing via videoconference. She said offsets are reducing habitat and impacting species' prospects for survival:

The issue really comes down to the fact that each time we say yes to habitat being lost we are contracting the potential for that species to survive. That is really the nuts and bolts of it. And in terms of the like for like, you could remove habitat for one species and offset it with the habitat of a completely different species; that actually does not improve the outcome for the species which has just had its habitat removed.⁸⁷

The Association surveyed its members (whom are predominately ecologists) and asked them to reflect on offsetting arrangements they had been involved with. Respondents said that the total environmental impact of a development is often greater than initially assessed and offset for:

In general, respondents noted proponents such as private companies regularly do 'bare minimum or less' to mitigate their projects' impacts or manage ecological assets for compliance. In addition, construction management plans (including designation of No-Go Zones) often are not implemented or adhered to on-ground. Consequently, impacts often are greater than those assessed or approved, and are not commensurate with calculated offsets. Further, respondents stated there often is minimal auditing and compliance of on-ground activities so impacts increase unabated, further contributing to ecosystem declines.⁸⁸

Despite these criticisms, the Association noted that the EPBC Act is the main legislative trigger prompting developers to work with ecologists to mitigate the environmental impact of their projects.⁸⁹

⁸⁴ Ibid.

⁸⁵ Matt Ruchel, Executive Director, Victorian National Parks Association, Public hearing, Melbourne, 11 May 2021, *Transcript of evidence*, p. 26.

⁸⁶ Ecological Consultants Association of Victoria, *Submission 499*, pp. 5–6.

⁸⁷ Dr Melanie Birtchnell, Member, Ecological Consultants Association of Victoria, Public hearing, Melbourne 24 February 2021, *Transcript of evidence*, p. 32.

⁸⁸ Ecological Consultants Association of Victoria, *Submission 499*, pp. 5–6.

⁸⁹ Ibid., pp. 13–14.

Patrick Medway AM, Secretary of the Australian Wildlife Society, reflected that environmental legislation is easily sidelined when major developments are being considered:

While there is a valiant attempt, I suppose, to try and save some habitat, in reality the priority is to make an airport or to clear land for development.⁹⁰

Speaking at a public hearing, Dr Jim Radford, Principal Research Fellow at the Research Centre for Future Landscapes at La Trobe University, asserted that offsets do not work. He suggested that offsets are poorly implemented as development often proceeds before environmental gains in an offset site are realised. Dr Radford claimed that as a result, offsets are not completely implemented, 'because it is not regulated and there is no compliance mechanisms and it is not enforced, or it may just be a factor of time'. He was critical of what he saw as an overreliance on offsets to reverse habitat loss.⁹¹

Dr Bruce Lindsay, Senior Lawyer at Environmental Justice Australia, characterised environmental offsetting arrangements under the EPBC Act as a 'manifest failure' that 'largely enable[s] decline'. He referred to the Samuel's Review finding that offsets are now expected by developers who do not prioritise avoidance and minimisation approaches. Dr Lindsay conceded that, 'compensatory approaches to ecosystem harm may be inevitable, but we need new tools in this space'.⁹² Professor Brendan Wintle, Professor of Conservation Ecology at the University of Melbourne, also referred to the Samuel's Review and called for its recommendations to be implemented to reduce the emphasis on offsets.⁹³

The Committee acknowledges the findings of the Samuel's Review and stakeholder evidence that offsetting arrangements provided by the EPBC Act are contributing to ecosystem decline.

FINDING 17: Offsetting arrangements provided for by the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) are contributing to ecosystem decline.

FINDING 18: The full implementation of recommendations made as part of the independent review of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) will help to ensure that the environmental impacts of developments under this legislation are adequately compensated through offsetting arrangements.

⁹⁰ Patrick Medway AM, Honorary Secretary, Chief Executive Officer and Treasurer, Australian Wildlife Society, Public hearing, Melbourne, 23 February 2021, *Transcript of evidence*, p. 18.

⁹¹ Dr Jim Radford, Principal Research Fellow, Research Centre for Future Landscapes, La Trobe University, Public hearing, Melbourne, 21 April 2021, *Transcript of evidence*, pp. 60–61.

⁹² Dr Bruce Lindsay, Senior Lawyer, Environmental Justice Australia, Public hearing, Melbourne, 11 March 2021, *Transcript of evidence*, p. 22.

⁹³ Professor Brendan Wintle, Professor of Conservation Ecology, University of Melbourne, Public hearing, Melbourne, 23 February 2021, *Transcript of evidence*, p. 54.

RECOMMENDATION 17: That the Victorian Government review how the environmental impacts of developments are offset in Victorian environmental impact assessment processes to ensure they reflect the findings and recommendations of the independent review of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth).

Case study—Offsetting arrangements under the Melbourne Strategic Assessment

The Melbourne Strategic Assessment program (MSA) was established under the EPBC Act in 2010. It enabled Melbourne’s urban growth boundary to be extended and for development approvals within the new boundaries to be streamlined at the expense of critically endangered native grasslands. It also outlined a plan to establish two large native grassland reserves outside of the expanded urban growth boundary to offset habitat loss.

Box 6.3 outlines the establishment of the MSA and its offsetting arrangements. It is accompanied by an overview of a Victorian Auditor-General’s Office (VAGO) audit examining the scheme, and stakeholders’ concerns regarding the establishment of the MSA and the operation of its offsetting provisions.

BOX 6.3: Case study—MSA provisions for offsetting the removal of native grasslands

Temperate grasslands and grassy woodlands are ecosystems dominated by native grasses and herbs, but which also feature wildflowers in spring and sparse tree coverage in some areas. They are amongst Australia’s most cleared vegetation classes with less than 5% of their original extent estimated to be remaining. Historical and ongoing loss of grasslands is mostly attributable to urban development and agriculture. Despite this, they remain under-represented in Australia’s parks and reserve network.

Some of the best remnant examples of natural temperate grasslands and grassy eucalypt woodlands occur in the Victorian Volcanic Plains west of Melbourne. Patches are found on both private land and public sites such as roadsides, rail reserves and cemeteries. This was recognised by the Commonwealth Government when it listed the Victorian Volcanic Plains natural temperate grasslands and grassy eucalypt woodlands as threatened under the EPBC Act in June 2008 and June 2009 respectively.

The listing of these threatened ecological communities under the EPBC Act meant that any major development likely to have a significant impact on the native grasslands required approval from the Commonwealth Government. In 2010, the Victorian Government sought and obtained the Commonwealth Government’s approval for the MSA, a plan to extend Melbourne’s urban growth boundaries to accommodate projected population increases.

(Continued)

BOX 6.3: Continued

The MSA streamlined development approval processes for land within expanded urban growth boundaries and outlined a plan to offset the resulting destruction of native grasslands in these areas through the establishment of:

- a 15,000-hectare Western Grassland Reserve and a 1,200-hectare Grassy Eucalypt Woodlands Reserve outside of Melbourne's expanded urban growth boundary by 2020
- 36 conservation areas within the expanded urban growth boundary, to protect those areas with the highest identified biodiversity values.

The MSA also sought to provide a mechanism to fund the purchase and conservation of these reserves by imposing a levy on developers to offset any impacts on biodiversity.⁹⁴ This mechanism has enabled DELWP to collect \$117 million from developers (up to 30 June 2019) to administer the MSA. However, this remains insufficient to complete the delivery of the program as the levy has not been increased since it was introduced despite significant growth in land value. This has contributed to difficulties in acquiring private land earmarked for environmental offsetting.

In 2020 the Victorian Government sought to remedy this situation by introducing the *Melbourne Strategic Assessment (Environment Protection Mitigation Levy) Act 2020* (Vic), which enables the levy imposed on developers to pay for environmental offsets in the MSA to be indexed and increased. DELWP has committed to reviewing the cost base for the MSA Act every five years to determine if it is appropriate to achieve conservation outcomes.

Sources: Department of Sustainability, Environment, Water Population and Communities, *Nationally Threatened Ecological Communities of the Victorian Volcanic Plain: Natural Temperate Grassland & Grassy Eucalypt Woodland*, 2011, pp. 6–9; Victorian Auditor-General's Office, *Protecting Critically Endangered Grasslands: Independent assurance report to Parliament*, June 2020, pp. 7, 23; Department of Environment, Land, Water and Planning, *About the Melbourne Strategic Assessment program*, 2021, <<https://www.msa.vic.gov.au/about>> accessed 2 October 2021; Victorian Auditor-General's Office, *Protecting Critically Endangered Grasslands*, pp. 10–11.

Melbourne Strategic Assessment program performance audit

In 2020, VAGO audited DELWP's implementation of the MSA, focusing on offsetting arrangements to establish the two native grassland reserves. It found that DELWP had failed to deliver on its commitment to establish the offset reserves by 2020.⁹⁵ It noted that DELWP acknowledged this failure, but that the department felt that the timeframe to 2020 was never realistic for the establishment of the two proposed grassland reserves:

⁹⁴ Department of Environment, Land, Water and Planning, *About the Melbourne Strategic Assessment program*, 2021, <<https://www.msa.vic.gov.au/about>> accessed 2 October 2021.

⁹⁵ Victorian Auditor-General's Office, *Protecting Critically Endangered Grasslands: Independent assurance report to Parliament*, June 2020, p. 8.

DELWP acknowledges that planning for the MSA program was rushed and not carefully thought through. It believes that 2020 was never realistic as an establishment date for the two grassland reserves. However, the Australian Government endorsed and approved the MSA program based on this commitment.⁹⁶

As of December 2019, DELWP had acquired approximately 10% of land earmarked for the Western Grassland Reserve (approximately 1,569 hectares). Of this, almost 64% came from a single purchase of 1,000 hectares in 2012. It has not yet acquired any land for the Grassy Eucalypt Woodlands Reserve. Indeed, DELWP has not progressed beyond designating potential sites for the Grassy Eucalypt Woodlands Reserve for investigation.⁹⁷

Factors identified by VAGO as contributing to the low acquisition rates of native grasslands earmarked for conservation include:

- DELWP waiting for landowners to decide to sell, rather than compulsorily acquiring land
- DELWP's limited funds to make purchase offers and landowners' willingness to accept offers made
- a lack of reliable, accurate and comprehensive ecological data on the extent and conditions of native grasslands.⁹⁸

VAGO found that, to date, DELWP is keeping pace with development by acquiring and protecting an additional two hectares of reserve for every hectare developed. However, it noted that DELWP is unable to demonstrate that the quality of the land being purchased for the grassland reserves is commensurate to the habitat cleared within the urban growth boundary. For example, of the land acquired for the Western Grassland Reserve to date, over 900 hectares has been classified by DELWP as 'nutrient enriched grasslands' which have a low conservation value due to their degraded state and require intensive management to restore.⁹⁹

Lastly, it pointed out that DELWP is finding it challenging to maintain the quality of the native grasslands on private land prior to it being purchased and protected, as some landowners have refused to permit access to their properties.¹⁰⁰ Ongoing use of land for agriculture is particularly damaging to native grasslands as it often involves the removal of basalt rocks and the application of fertilisers. Rocks provide important habitat and higher nutrient levels can lead to the invasion of noxious weeds which can quickly dominate native grassland areas. Nutrient-enriched grasslands have the lowest conservation values.¹⁰¹

⁹⁶ Ibid., p. 45.

⁹⁷ Ibid., pp. 9, 35–36.

⁹⁸ Ibid., pp. 36–37.

⁹⁹ Ibid., p. 40.

¹⁰⁰ Ibid., pp. 9, 12.

¹⁰¹ Ibid., p. 39.

DELWP has focused its conservation efforts on properties where landowners are willing to participate in weed control programs.¹⁰²

Table 6.3 DEWLP weed control programs in the Western Grassland Reserve

Program	Year	Purpose/actions	Hectares treated
Serrated Tussock Working Party	2011	DELWP provided \$260,000 to map serrated tussock infestations, produce an implementation plan and undertake on-ground weed treatment. Landowners of 13 sites expressed interest in weed treatment. However, limited funding allowed for only six properties to be treated.	652
Weed control services	2012	DELWP established a panel of seven weed control service providers for works. Documents provided by DELWP do not identify the number of hectares treated.	Not identified
BushTender	2012–17	Landowners submitted a tender to improve the quality or extent of native vegetation on their land. Successful tenders were assessed based on the best environmental value for money. Landowners received funding over five years for weed management activities under agreement with DELWP.	88
DELWP weed control grants program	2016–19	DELWP fully or partially funded weed control actions carried out directly by landowners, or by licensed/accredited contractors.	177
Wyndham City Council land protection grant program	2016–18	Wyndham City Council provided land management support services to landowners under its land protection grant program. Around 10,000 hectares of the Western Grassland Reserve falls within the Council's jurisdiction.	1,144
Land Protection Grant Scheme (collaboration with Wyndham City Council)	2018	DELWP and Wyndham City Council signed a one-year joint funding agreement for \$80,000 to support eligible landowners to control noxious weeds.	331

Note: Hectares treated may overlap across the activities listed in this table.

Source: Victorian Auditor-General's Office, *Protecting Critically Endangered Grasslands: Independent assurance report to Parliament*, June 2020, p. 49.

In addition to weed control programs initiated by DELWP, landowners have responsibilities to manage declared noxious weeds on their properties under the *Catchment and Land Protection Act 1994* (Vic) (CaLP Act). They must take reasonable steps to eradicate regionally prohibited weeds and stop the spread of regionally controlled weeds on their land. Agriculture Victoria may issue a Directions Notice or Land Management Notice to landowners specifying a weed control action which must be taken and a timeframe for its completion (see Chapter 4 for further explanation of these obligations). However, DELWP advised VAGO that its approach is focused on educating and informing landowners of their obligations rather than seeking enforcement of these obligations under the CaLP Act.¹⁰³

¹⁰² Ibid., p. 48.

¹⁰³ Ibid., pp. 50–51.

VAGO noted that in total, DELWP spent \$695,695 on pre-acquisition land management from 2012–13 to the time its audit report was written. VAGO stated that this represents:

- less than 1 per cent of total MSA program expenditure
- around 2 per cent of operating expenditure
- 9 per cent of total on-ground management expenditure.¹⁰⁴

VAGO made seven recommendations to improve DELWP's implementation of the MSA and its offsetting arrangements. Two recommendations were aimed at improving the management of privately-held land, two related to the establishment of the native grassland reserves and the condition of private land earmarked for protection, and three sought to strengthen oversight, performance reporting and communications, in relation to the implementation of the MSA.¹⁰⁵

Stakeholder comments on the MSA and its offsetting operations

The Committee received evidence highlighting the benefits of planning for the conservation of native grasslands at the landscape scale, as opposed to assessing and protecting habitat on a development by development basis. During a presentation to the Committee, Stuart Moseley, Chief Executive Officer of the Victorian Planning Authority, contrasted the MSA program and its offsetting arrangements with the ad hoc conservation of biodiversity values which preceded it:

I cannot stress strongly enough that in the early expansion of Melbourne's outer suburbs land of biodiversity value was protected in an ad hoc way, and as a result of that you do see little islands of fenced grasslands which are not well maintained, not well used, sometimes pose a fire hazard and are not connected to anything else. In our view that does not get you the outcomes you need and an integrated model has much more potential because you can protect the areas of value by size and connectivity and other things that need to be protected, and where you can get better outcomes through an offset, everybody contributes to that and everybody gets certainty. I acknowledge it relies upon land of appropriate biodiversity value being secured in a timely way to provide those values.¹⁰⁶

In a submission to the Inquiry, the Grassy Plains Network also acknowledged that there has been some successful conservation and even restoration of native grasslands in and around Melbourne:

There have been some great achievements. New grassland conservation areas, large and small, have been created across Melbourne's west and north. Some degraded remnants have been relieved of the burden of high threat weeds and pest animals; and in a few cases there has even been restoration of some elements of the indigenous biota. A

¹⁰⁴ Ibid., p. 51.

¹⁰⁵ Ibid., p. 16.

¹⁰⁶ Stuart Moseley, Chief Executive Officer, Victorian Planning Authority, Public hearing, Melbourne, 11 May 2021, *Transcript of evidence*, p. 16.

multitude of scientific, technical and community-based networks that focus on the grassland story have been established and then disbanded.¹⁰⁷

However, the Network noted that ‘grassland ecosystems are undoubtedly one of the most difficult ecosystems to protect and restore’. It pointed out that the good ecological management of grasslands requires a very specific knowledge base and skillset and asserted that, despite some progress, the destruction of remnant grasslands is continuing around Melbourne.¹⁰⁸

The Green Wedges Coalition echoed these observations in its submission to the Inquiry. It suggested that ‘over the last three decades urban expansion and development, and weed invasions, have reduced Melbourne’s grasslands to scattered fragments of their previous extent’. It inferred that the ongoing destruction of grasslands risks jeopardising important environmental, social and cultural values provided by this ecosystem:

Melbourne’s grasslands are important not only for biodiversity, but also for providing natural open space and a connection to nature for rapidly expanding urban communities and many different migrant groups. Without the grasslands, and connecting waterway corridors, Melbourne’s west risks becoming a vast, alienating urban sprawl, with little access to natural open space and more prone to social problems as a result.

The cultural significance of Melbourne’s grasslands is immense, as there is evidence they have in part resulted from well developed farming practices of aborigines over thousands of years. The ancient astronomical stone circle in the grasslands at Wurdi Youang near the You Yangs is testament to this culture. With the loss of the grasslands, the connection to ancient aboriginal culture and way of life is also diminished.¹⁰⁹

The Grassy Plains Network also acknowledged the findings of VAGO’s report and registered its concerns in relation to the operation of offsetting provisions within the MSA. Dr Adrian Marshall, Facilitator of the Grassy Plains Network, presented to the Committee at a public hearing in Melbourne. He described the MSA as ‘deeply flawed’. He claimed that:

- the destruction of high-quality native grassland within Melbourne’s expanded urban growth boundary is being offset through the preservation of lower-quality native grasslands outside of the boundary which do not represent like for like habitat
- most of the 36 conservation areas to be protected within the expanded urban growth boundary have not yet been conserved, leaving them vulnerable to ongoing degradation through poor management
- DELWP is not prioritising the acquisition of private properties with the highest quality native grassland in the conservation areas or offset sites, nor is it adequately managing the quality of remnant grasslands prior to acquisition.¹¹⁰

¹⁰⁷ Grassy Plains Network, *Submission 580*, p. 2.

¹⁰⁸ Ibid.; Jordan Crook, Member, Grassy Plains Network, Public hearing, Melbourne, 12 May 2021, *Transcript of evidence*, p. 25.

¹⁰⁹ Green Wedges Coalition, *Submission 748*, p. 5.

¹¹⁰ Dr Adrian Marshall, Facilitator, Grassy Plains Network, Public hearing, Melbourne, 12 May 2021, *Transcript of evidence*, pp. 20–22.

Jordan Crook and Bonnie Gelman, members of the Grassy Plains Network, explained to the Committee that the longer native grassland is left unprotected, the harder it is to restore biodiversity values. Bonnie Gelman stated that every year, weeds drop more seeds which can remain inactive in soil for a decade, increasing the challenge of eradication.¹¹¹ Dr Marshall said that serrated tussock and Chilean needle grass make it particularly difficult to restore degraded native grasslands because they displace native grasses. He said:

There are blocks that in the 2009 surveys are shown as being high quality grassland. Our members have walked a kilometre into those blocks and seen nothing but serrated tussock and artichoke thistle, so conditions have changed. In some cases they have changed quite drastically.¹¹²

The Grassy Plains Network and the Green Wedges Coalition were also critical of MSA provisions for funding the acquisition of offset areas. Both organisations pointed out that relying on a levy imposed on developers to pay for environmental offsets means the pace at which offset areas are acquired is linked to the pace of development. They noted that the current pace of development means that remnant grasslands will continue to be inadequately protected for some time, increasing risk that ecological values will degrade beyond recovery.¹¹³

In a submission to the Inquiry, grasslands ecologist, Dr Megan O'Shea, noted VAGO's findings in relation to the MSA and its offsetting program and suggested that it has not been 'a successful model'. She called for no further removal of native grasslands in light of these findings:

In keeping with the above point that no further clearance of native grassland should be permitted, all remnant grasslands should be clearly identified and permanently protected. A limited and clearly pre-defined list of exceptional circumstances may be required.¹¹⁴

The Ecological Consultants Association of Victoria surveyed its membership in relation to the MSA and its offsetting arrangements. Respondents regarded the program as a 'catastrophic failure' that 'lacked transparency and rigour, and has not been effective at preventing significant ecosystem decline'.¹¹⁵

The Grassy Plains Network outlined measures to improve MSA offsetting arrangements and conserve native grassland around Melbourne. It called for land in the Western Grassland Reserve and planned conservation areas within the urban growth boundary to be re-surveyed to identify remaining high-quality grassland. It argued that the acquisition and protection of the best remaining examples of grasslands in these areas should be prioritised and called for increased government funding to fast track

¹¹¹ Jordan Crook, *Transcript of evidence*, p. 21; Bonnie Gelman, Member, Grassy Plains Network, Public hearing, Melbourne, 12 May 2021, *Transcript of evidence*, p. 21.

¹¹² Dr Adrian Marshall, *Transcript of evidence*, p. 22.

¹¹³ Grassy Plains Network, *Submission 580*, p. 3; Green Wedges Coalition, *Submission 748*, pp. 15-16.

¹¹⁴ Dr Megan O'Shea, *Submission 873*, p. 3.

¹¹⁵ Ecological Consultants Association of Victoria, *Submission 499*, p. 20.

this work.¹¹⁶ The Network stated that it is not necessary to purchase all land for the grassland reserves immediately, just the highest quality examples of this ecological vegetation class:

it could still be possible to preserve many ecological values without purchasing all remnant grasslands immediately, if and only if the necessary minimum of conservation management is in place in the period from now until public acquisition. Much of the WGR [Western Grassland Reserve] area is not native grassland, but rather former cropland or improved pasture. As such, the failure to acquire all of it by the promised date need not result in an ecological disaster if the good grassland remnants are identified and preserved.¹¹⁷

The Ecological Society of Australia submitted a similar recommendation:

The [Society] recommends that the highest conservation value native grasslands are prioritised for purchase and management, and ecological restoration expertise (e.g. weed control, seed production, fire management) be supported via investment and training opportunities.¹¹⁸

The Grassy Plains Network also called for ‘conservation management (weed control in particular) of all ecologically valuable remnants immediately, including prior to and after public acquisition’.¹¹⁹ Jordan Crook added that an important component of restoring native grasslands is the greater involvement of Traditional Owners and adoption of cultural practices, such as cultural fire.¹²⁰

Dr Marshall of the Grassy Plains Network emphasised the importance of educating the community about the biodiversity values of native grasslands and engaging them in conservation and restoration efforts.¹²¹ Dr O’Shea argued that MSA offsetting arrangements inhibit community understanding and appreciation of native grasslands by removing them from urban areas:

The offsetting process is ecosystem/taxa focussed and does not take into account human interactions. Offsetting to distant locations does not provide tangible benefits to the communities where the loss occurs – it removes the opportunity for local residents to interact with, learn about and care for their local natural environment. How can Australians be expected to care for the environment when there is very little left in their urban environments to care for?¹²²

The Committee recognises that temperate grasslands and grassy woodlands are amongst Australia’s most cleared habitats. As such, there is a heightened need to ensure remnant examples are protected and enhanced wherever possible. This is

¹¹⁶ Grassy Plains Network, *Submission 580*.

¹¹⁷ *Ibid.*, p. 4.

¹¹⁸ Ecological Society of Australia, *Submission 575*, p. 12.

¹¹⁹ Grassy Plains Network, *Submission 580*, p. 4.

¹²⁰ Jordan Crook, *Transcript of evidence*, p. 23.

¹²¹ Dr Adrian Marshall, *Transcript of evidence*, p. 25.

¹²² Dr Megan O’Shea, *Submission 873*, p. 4.

reflected in their listing as threatened ecosystems under the EPBC Act. It is also important to acknowledge that the grasslands hold significant cultural value for First Nations peoples and other communities.

Like submitters to the Inquiry, the Committee is very concerned by the findings of VAGO's audit report on DELWP's implementation of the MSA program and its offsetting arrangements. It appears that the MSA sought to provide certainty around planning and development to accommodate Melbourne's growing population at the expense of biodiversity values, such as the grasslands. Moreover, DELWP's implementation of the program has been marred by its failure to:

- prioritise the acquisition of remnant high quality grasslands above lower quality, nutrient-rich degraded grasslands
- meaningfully engage landowners in the ecologically sound management of properties through the provision of support and financial incentives
- recognise the risk that noxious weeds present to the biodiversity values of the grasslands and implement adequate measures to protect high-quality remnant vegetation prior to the acquisition of land for the reserves
- secure the additional funding required to expedite the acquisition of grasslands for the Western Grassland Reserve and the Grassy Eucalypt Woodlands Reserve.

Moreover, the Committee feels that offsetting arrangements provided for by the MSA cannot be relied upon to conserve representative examples of native grasslands. It is clear that offset sites are not facilitating the protection of remnant vegetation of commensurate quality to that being destroyed to make way for development. Furthermore, DELWP has failed to establish the Western Grassland Reserve and the Grassy Eucalypt Woodlands Reserve in the timeframe agreed between the Commonwealth and Victorian Governments.

FINDING 19: The Department of Environment, Land, Water and Planning has not delivered the Western Grassland Reserve and the Grassy Eucalypt Woodlands Reserve by 2020, as specified in the Melbourne Strategic Assessment program.

The Committee accepts that historic delays to the acquisition of land earmarked for the grassland reservations has been driven in large part by DELWP's inability to index developer levies to match growth in land values, which is also discussed in Chapter 9. However, it remains to be seen whether legislation introduced in 2020 will address this issue as the acquisition of remnant vegetation will continued to be tied to the pace of development.

This is of great concern to the Committee as managing sensitive grassland ecology is a specialised skillset. There is a real risk that the longer remnant vegetation is left to be privately managed for diverse purposes, including agriculture, the greater the risk of degradation to its biodiversity values prior to acquisition. For this reason, the Committee believes that remaining high value patches of grassland should be purchased and brought under Parks Victoria management as soon as possible.

RECOMMENDATION 18: That the Victorian Government consider funding the immediate purchase or leasing of remnant high quality grasslands within the proposed Western Grassland Reserve and the 36 reserves proposed by the Melbourne Strategic Assessment within Melbourne’s urban growth boundary. These areas should be urgently acquired to facilitate ecologically sound management to conserve and restore biodiversity values.

The Committee would also like to see stronger initiatives for protecting and restoring remnant grassland vegetation prior to its purchase for inclusion in reserves.

RECOMMENDATION 19: That the Victorian Government develop and fund initiatives to ensure that the biodiversity values of private land earmarked for inclusion in the Western Grassland Reserve, the Grassy Eucalypt Woodlands Reserve, and the 36 reserves proposed by the Melbourne Strategic Assessment within Melbourne’s urban growth boundary, are properly managed prior to the acquisition of this land. This should encompass consideration of:

- land tax exemptions for landowners who manage their properties for conservation
- implementation of comprehensive and ongoing weed control programs
- community engagement initiatives to ensure landowners are aware of the value of remnant grasslands, how they can be protected, their obligations to control noxious weeds under the *Catchment and Land Protection Act 1994 (Vic)*, and to engage them in agreed land management plans
- measures to enforce Environmental Significance Overlays
- the introduction of restrictions limiting development and other actions likely to disturb existing hydrology.

The Committee is pleased to see that DELWP has supported all seven recommendations made by VAGO to improve the implementation of the MSA program. It has also outlined how it will respond and nominated agreed completion dates.¹²³ The Committee urges DELWP to ensure it delivers on these commitments. However, the Committee also feels that greater commitment by the Victorian Government is needed to achieve the best environmental and social outcomes from the establishment of the reserves through the MSA program.

In the Committee’s view, the Western Grassland Reserve and the Grassy Eucalypt Woodlands Reserve could be transformed into world-class environmental attractions with some vision and willingness to adequately fund their establishment. Supplementary initiatives, such as the development of a native seed industry to support restoration works, may also be necessary.

¹²³ Victorian Auditor-General’s Office, *Protecting Critically Endangered Grasslands*, pp. 74–76.

RECOMMENDATION 20: That the Victorian Government articulate an ambitious vision for the establishment of the Western Grassland Reserve and the Grassy Eucalypt Woodlands Reserve. This vision should outline how Traditional Owners, environmental groups and the broader community will be engaged with the restoration and promotion of the grassland reserves' unique biodiversity assets.

6.3 Native timber forestry

The Committee received wide-ranging evidence relating to the conservation and management of Victorian forest habitat, in the context of the native timber forestry industry.

There are approximately 8.2 million hectares of forest in Victoria, spread across private and public land, which represents around 6% of total forest in Australia.¹²⁴ Approximately 81% of forest in Victoria is on Crown land, encompassing:

- around 3 million hectares of parks and conservation reserves
- around 3.2 million hectares of state forests, occupying approximately 41% of Crown land in Victoria.¹²⁵

This Section examines the management of forests in Victorian state forests. The conservation, management and restoration of forests as part of national parks and reserves is explored in Chapter 8.

6.3.1 Administration of state forests for forestry

Victorian state forests are primarily managed by DELWP, in some areas in conjunction with Traditional Owner Land Management Boards.¹²⁶ However, VicForests also has a role as the state-owned business responsible for harvesting, commercial sale and regrowing of timber from Victoria's state forests on behalf of the Victorian Government.¹²⁷

VicForests is accountable to the Government through the Minister for Agriculture and Regional Development, and the Treasurer.¹²⁸

The next Sections of the report explore the agreements, legislation, regulations and guidelines informing the management of Victorian state forests.

¹²⁴ Australian Bureau of Agricultural and Resource Economics and Sciences, *Australian Forests at a Glance 2019*, 2019, p. 4.

¹²⁵ Department of Environment, Land, Water and Planning, *Overview of Victoria's Forest Management System*, Victorian Government, Melbourne, December 2019, pp. 2, 8.

¹²⁶ Department of Environment, Land, Water and Planning, *Managing Crown Land*, <<https://www.forestsandreserves.vic.gov.au/land-management/managing-crown-land>> accessed 9 November 2021.

¹²⁷ VicForests, *Our Organisation*, <<https://www.vicforests.com.au/about-vicforests/our-organisation>> accessed 16 November 2021.

¹²⁸ VicForests, *Organisational Structure*, <<https://www.vicforests.com.au/about-vicforests/organisational-structure>> accessed 16 November 2021.

6.3.2 Regional Forest Agreements

The Victorian Government has entered into five Regional Forest Agreements with the Commonwealth Government which provide for the sustainable management and harvesting of approximately 5.6 million hectares of native state forest in Victoria.¹²⁹ The agreements encompass forests in:

- East Gippsland (signed 3 February 1997)
- Central Highlands (signed 27 March 1998)
- North East Victoria (signed 9 August 1999)
- West Victoria (signed 31 March 2000)
- Gippsland (signed 31 March 2000).¹³⁰

The Regional Forest Agreements seek to balance the long-term stability of commercial native timber harvesting with other forest values such as regional employment, biodiversity conservation, water catchment protection, tourism, recreation, and cultural and heritage values. They also aim to protect these values by imposing obligations and commitments on forest managers.¹³¹

The Agreements limit the volume of timber which can be harvested from native forests in each Regional Forest Agreement region for commercial purposes in any financial year. They require this limit to be publicly available.¹³²

The Victorian Government negotiated the modernisation and extension of Regional Forest Agreements with the Commonwealth Government in March 2020. The Agreements now include improved protections for forest biodiversity and threatened species, including:

- recognition of the cessation of native timber harvesting in old growth forests
- a timebound commitment to conduct a threatened species risk assessment and install any necessary protections within two years
- a requirement to undertake outcome-based reporting to inform five-yearly reviews of the Regional Forest Agreements
- the ability to initiate Major Event Reviews to assess the impacts of major natural disturbances, such as a bushfire or flood, in relation to the objectives and operation of the Agreements
- new audit provisions for evaluation of the Agreements' performance and identification of remedial actions.¹³³

¹²⁹ Department of Environment, Land, Water and Planning, *Overview of Victoria's Forest Management System*, p. 2.

¹³⁰ Commonwealth Department of Agriculture, Water and the Environment, *Regional Forest Agreements*, <<https://www.agriculture.gov.au/forestry/policies/rfa>> accessed 16 November 2021.

¹³¹ Department of Environment, Land, Water and Planning, *Overview of Victoria's Forest Management System*, p. 5.

¹³² *Ibid.*, p. 30.

¹³³ Department of Environment, Land, Water and Planning, *Submission 927*, pp. 19–20.

The Institute of Foresters of Australia and Australian Forest Growers noted in its submission that it supports the intent of the modernised Regional Forest Agreements. It called for DELWP and VicForests to be properly resourced to manage state forests in accordance with these agreements.¹³⁴ It also recommended that consideration be given to extending these agreements to 'ensure a longer-term view is applied to active management of public native forests across Victoria'.¹³⁵

In contrast, Professor David Lindenmayer, a forest ecologist from the Fenner School of Environment and Society at the Australian National University, felt that the Regional Forest Agreements are failing to protect the environment. He submitted:

it is clear that Regional Forest Agreements have failed to adequately protect biodiversity (given major declines in a vast number of species, including many species of conservation concern, such as Leadbeater's Possum and the Greater Glider).¹³⁶

Environmental groups which made submissions to the Inquiry, such as BEAM Mitchell Environment Group and Merri Action for Forests, also suggested that the modernised Regional Forest Agreements should have included stronger provisions to protect forest ecosystems.¹³⁷ For example, Merri Action for Forests argued:

The Victorian Government has power to protect the environment, particularly State forests, but has vacated its responsibility by rolling over Regional Forest Agreements, which exempt State forest industrial logging from environment protection. This arrangement locks in biodiversity loss. We call for the values of biodiversity and climate protection to be given precedence, and the Regional Forest Agreement cancelled. World-leading ecologists call for "more stringent protection" of forested lands, in response to the bushfires, climate and extinction emergencies.¹³⁸

6.3.3 Legislation, regulations and guidelines

In addition to Regional Forest Agreements, Victorian state forests are subject to a range of legislation, regulations and guidelines which inform their management and the harvesting of native timber. These are set out in Table 6.4 and described in more detail in the following Sections.

¹³⁴ Institute of Foresters of Australia and Australian Forest Growers, *Submission 660*, pp. 21–23.

¹³⁵ *Ibid.*, p. 23.

¹³⁶ Professor David Lindenmayer AO, *Submission 353*, p. 2.

¹³⁷ BEAM Mitchell Environment Group, *Submission 690*, p. 18.

¹³⁸ Merri Action for Forests, *Submission 741*, p. 1.

Table 6.4 Legislation, regulations and guidelines relevant to the management of Victorian state forests

Legislation	Instruments and regulations	Management guidelines and plans
<i>Forests Act 1958</i> (Vic)	Forest Management Plans	Firewood Collection Areas
	<i>Forests (Domestic Firewood) Regulations 2012</i>	
<i>Conservation, Forests and Lands Act 1987</i> (Vic)	<i>Code of Practice for Timber Production 2014</i>	<i>Management Standards and Procedures for Timber Harvesting Operations in Victoria's State Forests 2014</i> Forest Audit Program and Investigations
<i>Sustainable Forests (Timber) Act 2004</i> (Vic)	State of the Forests reports	Coupe Plans
	<i>Sustainability Charter for State Forests</i>	
	Allocation Orders	
	Timber release plans	

Source: Adapted from, Department of Environment, Land, Water and Planning, *Overview of Victoria's Forest Management System*, December 2019, p. 14.

Forests Act 1958 (Vic)

The *Forests Act 1958* (Vic) (Forests Act) provides for the management, maintenance and improvement of state forests. It establishes that all state forest produce is the property of the Crown and prohibits the removal of produce except in accordance with regulations. Regulations pertain to activities such as restricting the collection of domestic firewood, granting licences to graze cattle, restricting the lighting of campfires or enabling vehicle access.¹³⁹

The Forests Act is also the legislative basis for the development and implementation of working plans for state forests which enable activities like produce harvesting and fire management.¹⁴⁰

The Forests Act also provides for Forest Management Plans, which outline objectives and strategies for the management of forest values at a landscape scale. The forest management planning process identifies important forest values, threats to those values and outlines management actions to reduce threats and enhance the values.¹⁴¹ For example, a plan can provide for the protection of a known heritage site, such as a

¹³⁹ Forest Act regulations include: *Forests (Domestic Firewood) Regulations 2012* (Vic), *Forests (Fire Protection) Regulations 2004* (Vic), *Forests (Licences and Permits) Regulations 2009* (Vic), the *Forests (Recreation) Regulations 2010* (Vic), and *Forests (Tour Operator Licence Fee) Regulations 2011* (Vic).

¹⁴⁰ VicForests, *Forest Act 1958*, <<https://www.vicforests.com.au/primary-legislative-requirements/forest-act-1958>> accessed 11 February 2021; Department of Environment, Land, Water and Planning, *Overview of Victoria's Forest Management System*, p. 9.

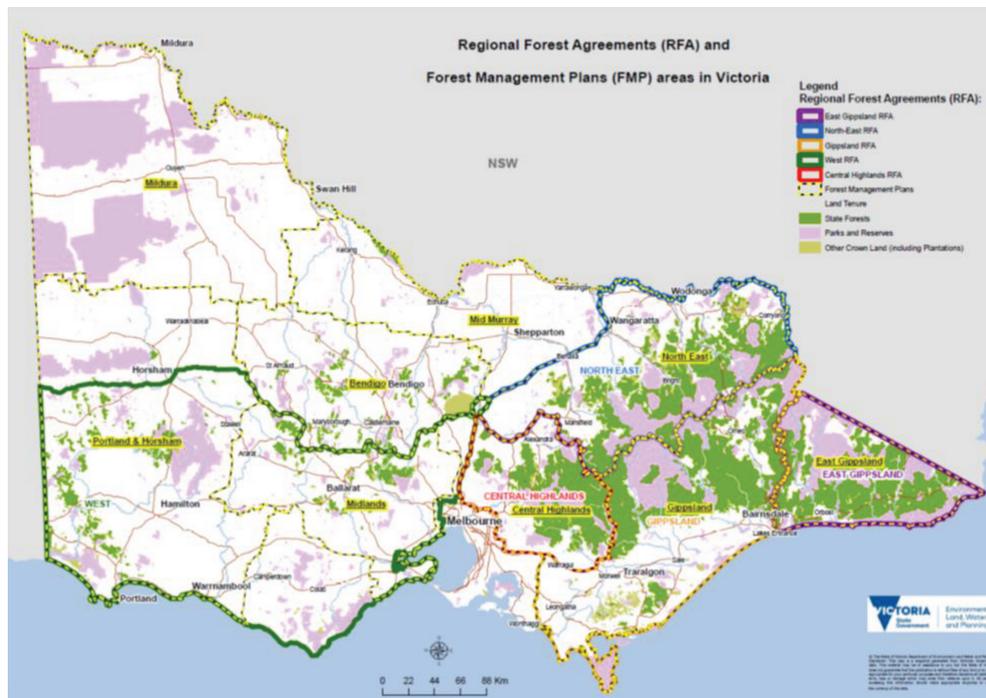
¹⁴¹ Department of Environment, Land, Water and Planning, *Overview of Victoria's Forest Management System*, pp. 10, 20.

landscape feature that is culturally significant to First Nations peoples. It can require specific management actions to protect cultural heritage sites from potential damage.¹⁴²

There are nine Forest Management Plans (developed in the 1990s and early 2000s) that manage activities and establish measures to preserve a range of biodiversity values in state forests.¹⁴³ The Victorian Government plans to develop renewed Forest Management Plans by December 2023.¹⁴⁴ In its submission to the Inquiry, DELWP noted the new plans will ‘support partnerships with Traditional Owners to set forest management priorities that enable the healing and management of Country’.¹⁴⁵

Figure 6.2 shows the overlap between Forest Management Plans (indicated by dotted lines) and Regional Forest Agreements (indicated by block lines).

Figure 6.2 Victoria’s Forest Management Plans and Regional Forest Agreements, 2019



Source: Department of Environment, Land, Water and Planning, *Overview of Victoria’s Forest Management System*, December 2019, p. 21.

Conservation, Forests and Lands Act 1987 (Vic)

The CFL Act provides a framework for the protection of land, water and wildlife prior to the commencement of native timber harvesting or construction activities. It empowers the responsible Minister to make codes of practice, such as the *Code of Practice for*

142 Ibid.

143 Department of Environment, Land, Water and Planning, *Forest management plans*, 2021, <<https://www.forestsandreserves.vic.gov.au/forest-management/forest-management-plans>> accessed 1 October 2021.

144 Department of Environment, Land, Water and Planning, *Submission 927*, p. 20.

145 Ibid.

Timber Production 2014 (Timber Code) and to establish Traditional Owner Land Management Boards in relation to most categories of public land.¹⁴⁶

The Timber Code is the primary regulatory document relevant to timber harvesting in state forests.¹⁴⁷ It guides timber harvesting entities, such as VicForests, through planning for, and sustainably harvesting, native timber. It aims to support native timber harvesting that is economically viable, conserves the environmental, social and cultural values of forests, enables the ecologically sustainable cyclical harvesting of native forests and enhances public confidence in timber production in Victoria's forests. Compliance with the Timber Code on public land is mandatory for licences and authorisations issued under the CFL Act, *Sustainable Forests (Timber) Act 2004* (Vic) (SFT Act) and the Forests Act.¹⁴⁸

The Timber Code is currently under review to clarify its purpose and refine definitions, with a view to:

- minimising the risk to short-term supply arising from third-party litigation
- ensuring it remains fit for purpose and facilitates the implementation of the Victorian Forestry Plan
- strengthening the regulatory powers available to the OCR
- identifying regulatory reforms necessitated by the 2019–20 bushfires.¹⁴⁹

A revised Timber Code has been released for public input with a final version scheduled to be adopted by the end of 2021. In addition to this review, the Victorian Government has committed to a comprehensive review of the Timber Code to be completed by the end of 2023.¹⁵⁰

Sustainable Forests (Timber) Act 2004 (Vic)

The SFT Act provides for sustainable timber harvesting in state forests by establishing:

- Victoria's State of the Forests reports, which assess the State's performance in achieving sustainable forest management objectives every five years¹⁵¹
- the *Sustainability Charter for Victoria's State Forests*, which sets objectives for sustainable forest management in Victoria

¹⁴⁶ Department of Environment, Land, Water and Planning, *Overview of Victoria's Forest Management System*, p. 11.

¹⁴⁷ Victorian Government, *Timber harvesting regulation*, 2021, <<https://www.vic.gov.au/timber-harvesting>> accessed 16 November 2021.

¹⁴⁸ Department of Environment, Land, Water and Planning, *Submission 927*, p. 19.

¹⁴⁹ Hon Daniel Andrews MP, Premier of Victoria, *Review To Protect Victoria's Forests, Jobs And Timber Industry*, media release, Victorian Government, Melbourne,

¹⁵⁰ Department of Environment, Land, Water and Planning, *2021 Proposed Variation of the Code of Practice for Timber Production*, 2021, <<https://engage.vic.gov.au/code-practice-timber-production>> accessed 16 November 2021.

¹⁵¹ The most recent State of the Forests report was produced in 2018.

- the Allocation Order, which allocates timber to VicForests for harvesting and sale from state forests, and sets conditions for those activities¹⁵²
- that VicForests must prepare a Timber Release Plan outlining their plans to harvest timber under an Allocation Order. Timber Release Plans include a schedule of coupes selected for harvesting, details of the location and approximate timing of timber harvesting in the proposed coupes, as well as details of the location of any associated access roads.¹⁵³

Independent Panel Review into Timber Harvesting Regulation

In 2018, an *Independent Panel Review of Timber Harvesting Regulation* found that the system of policy, regulation and legislation governing timber harvesting in Victoria is ‘dated, complex, convoluted – indeed Labyrinthine – and difficult to use’. It made 14 recommendations to improve the legislative framework and regulation of timber harvesting, including that DELWP consider pursuing legislation modernisation.¹⁵⁴

DELWP accepted all 14 recommendations of the independent review. Its response included:

- establishing the OCR to bring together the parts of the department with regulatory responsibilities into a single division that is focused on best-practice regulation
- developing a suite of policy documents, by mid-2019, to educate stakeholders and inform its compliance activities (for example, a *Statement of Regulatory Intent for Timber Harvesting*, a *Stakeholder Communications and Engagement Strategy* and a *Capability Development Plan*)
- working with the Victorian Government to ‘modernise the legislative framework for timber harvesting’ as part of work already underway to update Regional Forest Agreements.¹⁵⁵

6.3.4 Office of the Conservation Regulator

In broad terms, DELWP is responsible for compliance and enforcement in relation to activities in Victorian state forests. However, in 2019, DELWP established the OCR to improve its compliance and enforcement activities in native timber harvesting in state forests. The OCR now has responsibility for a range of environmental regulation in Victoria, including in relation to the *Wildlife Act 1975* (Vic) and *Flora and Fauna Guarantee Act 1988* (Vic).

¹⁵² Department of Jobs, Precincts and Regions, *Forestry Allocation Order*, 2020, <<https://djpr.vic.gov.au/forestry/allocation>> accessed 15 February 2021; Department of Environment, Land, Water and Planning, *Submission 927*, p. 19.

¹⁵³ Department of Environment, Land, Water and Planning, *Overview of Victoria’s Forest Management System*, p. 27.

¹⁵⁴ Independent Review of Timber Harvesting Regulation, *Panel Report to the Secretary of the Department of Environment, Land Water and Planning*, 28 October 2018, p. 3.

¹⁵⁵ Department of Environment, Land, Water and Planning, *Response to the Independent Review of Timber Harvesting Regulation*, March 2019, pp. 4, 8–12.

The OCR sits within DELWP and exercises regulatory powers on its behalf to ensure that natural and heritage values of forests on public land are protected. Regulating native timber harvesting is one of the OCR's stated priorities. Its approach to regulating timber harvesting in state forests involves:

- setting standards which clarify VicForests' regulatory obligations in relation to timber harvesting activities
- informing and educating VicForests about timber harvesting legislation and the rules that must be obeyed to comply with the law
- assisting VicForests, its employees and contractors to understand and comply with their regulatory obligations and encouraging self-reporting of breaches
- monitoring compliance with the law and requiring remedy or applying sanctions for non-compliance
- collaborating with VicForests and the community to improve standards of practice in timber harvesting.¹⁵⁶

Each year, the OCR completes an environmental audit to assess VicForests' timber harvesting operations for compliance with the Timber Code under its Forest Audit Program. The OCR's most recent audit (completed in 2019–20) examined 30 logging coupes across Victoria that were harvested by VicForests during the 2018–19 financial year. Of the coupes examined, 15 were in the Central Highlands Regional Forest Agreement region and 15 were in the Western Victoria Regional Forest Agreement region.

The environmental audit criteria focused on soil, water and biodiversity values. Across the coupes, overall conformance with the audit criteria ranged between 80–100%. The audit found:

- Conformance with audit criteria relating to the protection of forest soils ranged between 75% and 100%, with an average of 96%. There was no non-conformance that was assessed to have a major potential environmental impact and six non-conformances that were assessed to have moderate environmental impact.
- Conformance with audit criteria relating to the protection of water flows, water quality and river health, ranged between 62% and 100%, with an average of 96%. There was no non-conformance that was assessed to have a major potential environmental impact and 13 non-conformances that were assessed to have moderate environmental impact.
- Conformance with audit criteria relating to the protection of biodiversity values ranged being 84% and 100%. One non-conformance incident was detected that was assessed to have major potential environmental impact and five non-conformances were identified with moderate potential environmental impact.¹⁵⁷

¹⁵⁶ Department of Environment, Land, Water and Planning, *Regulating timber harvesting in State forests under the Allocation Order: Statement Of Regulatory Intent*, June 2019, pp. 9–10.

¹⁵⁷ Craig Clifton, Sally Waller and Drew King, *Audit of timber harvesting operations in Victoria's State forests: Report of the 2019-20 Forest Audit Program*, report for Department of Environment, Land, Water and Planning, 30 October 2020, pp. 48–49.

Stakeholder comments regarding the Office of the Conservation Regulator's powers

Throughout the Inquiry, many submitters welcomed the establishment of the OCR, but called for reform to provide it with an independent statutory basis and stronger, more proactive enforcement powers. For example, Environmental Justice Australia asserted that, as an office within DELWP, the OCR is vulnerable to changes in policy, and should instead have a clear legislative basis to ensure it operates in line with best practice.¹⁵⁸

Similarly, Murrindindi Climate Network asserted in a submission to the Inquiry that the OCR lacks independence and may therefore be subject to conflicting internal policy objectives. It recommended an independent legislative basis for the OCR.¹⁵⁹

The evolving role of the OCR in environmental compliance, and stakeholders' views on its future, are explored in more detail in Chapter 10 of the report.

6.4 VicForests' native timber harvesting operations

VicForests undertakes a multi-layered planning and approval process prior to harvesting native timber from Victorian state forests. The process is a legislative requirement developed to protect the environmental values of state forests and limit timber harvesting to suitable areas.

Table 6.5 Planning and approval process for native timber harvesting in state forests

Process	Description
Resource Outlook	VicForests prepares a Resource Outlook to inform the timber industry, government and other stakeholders how much timber it is likely to be able to supply to the market in the medium term.
Allocation Order	The Minister for Agriculture issues an Allocation Order under Part 3 of the SFT Act, allocating timber in specific areas to VicForests for harvesting and/or selling.
Timber Release Plan and Timber Utilisation Plan	VicForests prepares a Timber Release Plan in relation to the area of forest encompassed in an Allocation Order. The Timber Release Plan outlines the schedule of areas, called 'coupes', to be harvested. For small-scale logging outside of the scope of an Allocation Order, such as harvesting for commercial firewood, VicForests prepares a Timber Utilisation Plan which lists the areas it plans to harvest timber in the next five years.
Forest Coupe Plan	VicForests prepares a Forest Coupe Plan in accordance with the requirements of the Timber Code for each area of forest to be harvested. According to the Timber Code, the Forest Coupe Plan must be prepared in advance of harvesting, show the boundaries of harvesting and outline how harvesting will be conducted in a manner which complies with the Timber Code.

¹⁵⁸ Environmental Justice Australia, *Submission 760*, pp. 15–17.

¹⁵⁹ Murrindindi Climate Network, *Submission 759*, p. 11.

Process	Description
Pre-Harvest Assessment	VicForests conducts a Pre-Harvest Assessment encompassing a desktop assessment, physical verification and a targeted species survey of all coupes to be logged to identify and support the management of biodiversity values.
Harvest and regeneration	VicForests harvests timber from coupes and then undertakes activities to support the regeneration of logged areas with local species of trees, in accordance with Timber Code requirements.

Source: Department of Environment, Land, Water and Planning, *Overview of Victoria's Forest Management System*, pp. 26–28.

At a public hearing in Melbourne, Monique Dawson, Chief Executive Officer of VicForests, informed the Committee that the planning process incorporates consultation with the community on the Timber Release Plan. VicForests is also obligated to consult Traditional Owners who have entered into Recognition and Settlement Agreements with the Victorian Government (under the *Traditional Owner Settlement Act 2010* (Vic)) in relation to areas of state forest identified for timber harvesting within a settlement area.¹⁶⁰

However, the Goongerah Environment Centre, an environmental group from East Gippsland, suggested in a submission to the Inquiry that ‘there has been no consent from First Nations groups to log native forests’.¹⁶¹

As part of the planning and approval process, VicForests is also required to undertake habitat assessments, to identify areas important to threatened species prior to harvesting a coupe. Monique Dawson outlined this process:

The first thing that what we do is that we conduct significant surveys and analysis of every area of the forest that we go into. The primary surveying is done by DELWP ... but on top of that we also assess the habit for its likelihood of being supportive particularly of threatened species. We then apply both the formal legal requirements, which are a set of prescriptions given to us by the regulator for how we then treat the different habitat features of those coupes ... buffers for streams or buffers around Leadbeater’s possum sightings and the like. Most of those prescriptions are set by regulation out of the code of practice [the Timber Code], but on top of that we also can decide how we go about our harvest planning so we also produce the best outcomes in terms of connectivity [of habitat] ... to ensure that what we leave behind is also good quality habitat. Apart from that, we also have invested heavily in building up our scientific expertise. We have scientists working inside VicForests who conduct those habitat assessments prior to our activities as well as those post-harvest surveys, so that is spotlight surveys and the like to see whether or not threatened species are persisting in the areas that we operate in.¹⁶²

¹⁶⁰ Monique Dawson, Chief Executive Officer, VicForests, Public hearing, Melbourne, 10 March 2021, *Transcript of evidence*, pp. 8–9.

¹⁶¹ Goongerah Environment Centre, *Submission 266*, p. 3.

¹⁶² Monique Dawson, *Transcript of evidence*, pp. 6–7.

Monique Dawson clarified that the identification of a threatened species within a logging coupe does not disqualify it from being harvested. Rather, a buffer is preserved around the threatened species' habitat to minimise the impacts of timber harvesting:

Those buffers have been determined predominantly through regulation as being the distance that we need to leave, and so we apply those regulated buffers. If in a coupe we can set aside those buffers and there still is an area of that coupe that is merchantable, in that it is worth our while economically for us to harvest, we will still harvest it, because the government has allocated very specific areas of the forest for us to harvest in and we need to be able to generate as much of that timber as we can to supply into our customers so that we can meet our commercial obligations. So that was one question.¹⁶³

Altogether, according to Monique Dawson, the planning and approvals process required before timber can be harvested from state forests takes approximately five years:

It does take five years as a minimum for us to be able to bring a coupe on for harvesting. Coupe is how we describe the area of the forest that is the designated operation area. Through that process we start with a big group of coupes and then it is whittled down and whittled down and whittled down and whittled down. By the time we get to harvesting it is a very small subset of the coupes that we have investigated that we ultimately end up harvesting.¹⁶⁴

Since mid-2019, VicForests' timber harvesting operations have been transitioning from clearfell logging to an adaptive, variable retention approach. This new approach, designed by forest ecologist, Professor Lindenmayer, involves:

- adapting timber harvesting operations to suit the forest species and biodiversity values present in each coupe
- planning to retain trees in each coupe to support regeneration and provide native species habitat.¹⁶⁵

¹⁶³ Ibid., p. 9.

¹⁶⁴ Ibid., p. 2.

¹⁶⁵ VicForests, hearing, response to questions on notice received 26 August 2021, p. 2.

Figure 6.3 Clearfell versus adaptive, variable retention logging

Source: VicForests, *Presentation to the Inquiry into ecosystem decline in Victoria*, Wednesday, 10 March 2021.

According to VicForests, in general, the Timber Code requires the retention of approximately four or five trees per hectare of harvested state forest. However, VicForests' new approach is resulting in the retention of either 10 to 20 trees, or more than 20 trees, depending on which style of variable retention harvesting is deployed in a coupe. Trees are retained in clusters and standalone within a coupe.¹⁶⁶ Monique Dawson said planning considers maintaining connectivity between retained trees and the surrounding unlogged forest:

We set the distance of those islands [of trees] so that it is a small enough distance that particularly the greater gliders will be able to move from one of those islands to another retained forest to avoid the risk of predation in particular, because we do not want those arboreal marsupials having to go across the forest floor, particularly while a coupe is relatively young—because of the risk of predation, particularly from feral animals.¹⁶⁷

VicForests informed the Committee that approximately 80% of its operations now utilise an adaptive, variable retention approach.¹⁶⁸ Monique Dawson explained that clearfell logging is still deployed in coupes assessed to have 'low biodiversity or

¹⁶⁶ VicForests, *Annual Report VicForests 2019-20*, 2021, p. 17.

¹⁶⁷ Monique Dawson, *Transcript of evidence*, p. 3.

¹⁶⁸ Bill Paul, Manager, Environmental Performance, VicForests, public hearing, Melbourne, 10 March 2021, *Transcript of evidence*, p. 4.

conservation values ... because there is no residual value in those areas'. For example, in bushfire-impacted state forest:

An example of that would be an area of mountain ash that has been so completely burnt that all of the trees are burnt. In those circumstances we would still retain a proportion of the trees, because good, old, burnt, dead trees have hollows and they are good for future habitat, but we would clear out all the other old, dead trees because they have no residual biodiversity value.¹⁶⁹

However, Professor Lindenmayer questioned this assertion. He claimed that it is clear from many of the coupes he has observed as part of his research over the previous two years, that VicForests' variable retention harvesting practices 'do not in fact conform to what an informed forester or forest ecologist would consider to actually be Variable Retention Harvesting'. He asserted that a 'fundamental part of Variable Retention Harvesting System is that retained structures need to be within the boundary of the harvested area of a cut-block and not confined to the edges of a harvest unit'. Professor Lindenmayer provided an example of a harvested coupe which appeared to show that this isn't occurring.¹⁷⁰

Figure 6.4 Logging coupe near Matlock in alpine ash forest, 30 July 2019



Source: Professor David Lindenmayer AO, hearing, response to questions on notice received 28 April 2021, p. 9.

¹⁶⁹ Monique Dawson, *Transcript of evidence*, p. 3.

¹⁷⁰ Professor David Lindenmayer AO, hearing, response to questions on notice received 28 April 2021, p. 9.

The Committee notes Professor Lindenmayer's concerns regarding VicForests' approach to variable retention native timber harvesting. However, as it does not have specific expertise or breadth of evidence in relation to these issues, it considers that this is an area for further examination by the Victorian Government and the OCR.

The Committee believes that, as a state-owned business, responsible for harvesting, selling and regrowing timber on behalf of the Victorian Government, VicForests' operations must align with best practice in sustainable forestry.

The Committee acknowledges that VicForests' adoption of adaptive, variable retention forestry goes above and beyond the current requirements of the Timber Code and congratulates it for taking this initiative.

However, the Committee would like to see adaptive, variable retention approaches to native timber harvesting incorporated into the Timber Code as an enforceable standard for VicForests' operations in state forests. This will enable the OCR to provide oversight of this aspect of VicForests' operations to ensure native timber harvesting, on behalf of the Victorian Government, adheres to best practice.

RECOMMENDATION 21: That the Victorian Government consider, as part of its comprehensive review of the *Code of Practice for Timber Production 2014*, mandating adaptive, variable retention approaches to native timber harvesting in Victorian state forests.

6.5 Environmental concerns with forestry

Many submitters to the Inquiry expressed concern that ongoing native timber harvesting in state forests is contributing to ecosystem decline. For example, the Goongerah Environment Centre asserted that logging is a key driver of decline in threatened flora and fauna species, as well as fragile ecosystems and older forest stands.¹⁷¹

Likewise, Professor Lindenmayer asserted that 'widespread' logging is contributing to the fragmentation of Victorian forests and further threatening the viability of 70 threatened species.¹⁷² The Wilderness Society made similar observations in its submission to the Inquiry:

Species such as the Leadbeater's Possum, Greater Glider, Spot-tailed Quoll, Long-footed Potoroo, Smoky Mouse, Powerful Sooty & Masked Owls, Glossy Black-Cockatoo, Spotted Tree Frog, Large Brown Tree Frog, Barred Galaxias, Orbost Spiny Crayfish and Tree Geebung are regularly identified as icon species facing the ongoing loss of habitat due to logging.¹⁷³

¹⁷¹ Goongerah Environment Centre, *Submission 266*, p. 1.

¹⁷² Professor David Lindenmayer AO, *Submission 353*, p. 2.

¹⁷³ The Wilderness Society, *Submission 899*, p. 7.

The BEAM Mitchell Environment Group and Rubicon Snobs Creek Reserve both suggested that they have observed instances where areas of forests have failed to regenerate following native timber harvesting.¹⁷⁴

Evidence presented to the Committee suggested that native timber harvesting is contributing to ecosystem decline in state forests by:

- fragmenting forest ecosystems and reducing forest habitat¹⁷⁵
- reducing the structural and floristic diversity of forest ecosystems and forests' habitat values as hollow-bearing trees are removed¹⁷⁶
- causing large-scale soil disturbance and erosion and facilitating weed infestation¹⁷⁷
- negatively impacting water quality by altering water flow and silting water courses¹⁷⁸
- altering the composition and structure of forests, making them prone to more intense bushfires¹⁷⁹
- reducing the occurrence of mature and old growth trees.¹⁸⁰

Professor Lindenmayer noted that native timber harvesting is also interacting with other drivers of forest ecosystem decline such as climate change and more frequent and intense bushfires. He argued that in this context, logging is not ecologically sustainable.¹⁸¹

In recent years, environmental groups, such as Friends of Leadbeater's Possum, have launched legal proceedings against VicForests in attempts to halt the logging of native forests in Victoria.

¹⁷⁴ BEAM Mitchell Environment Group, *Submission 690*, p. 16; Rubicon Snobs Creek Reserve, *Submission 948*, p. 2.

¹⁷⁵ The Wilderness Society, *Submission 899*, p. 7; Professor David Lindenmayer AO, *Submission 353*, pp. 1-2.

¹⁷⁶ BEAM Mitchell Environment Group, *Submission 690*, p. 16; Professor David Lindenmayer AO, *Submission 353*, pp. 1-2.

¹⁷⁷ Rubicon Snobs Creek Reserve, *Submission 948*, p. 2.

¹⁷⁸ Ibid.; The Wilderness Society, *Submission 899*, p. 7.

¹⁷⁹ Victorian National Parks Association, *Submission 102*, p. 52; Professor David Lindenmayer AO, *Submission 353*, pp. 1-2.

¹⁸⁰ Professor David Lindenmayer AO, *Submission 353*, pp. 2-3.

¹⁸¹ Ibid., pp. 1-2.

BOX 6.4: *Friends of Leadbeater's Possum Inc v VicForests*

Friends of Leadbeater's Possum is an environmental non-government organisation which has been active in conservation efforts for the Leadbeater's Possum for several decades. In 2017, the group mounted a legal challenge against VicForests to halt logging in areas of Leadbeater's possum and greater glider habitat.

The *Friends of Leadbeater's Possum v VicForests* cases hinged on the interaction of the EPBC Act with Regional Forest Agreements. Section 18 of the EPBC Act provides that a person must not take any action that has, will, or is likely to have, a significant impact on a threatened species. However, s 38 of the EPBC Act provides that a forestry operation, like VicForests, is exempt from the application of pt 3 of the EPBC Act if its forestry activities are undertaken in accordance with a Regional Forest Agreement.

In 2017, Friends of Leadbeater's Possum initiated legal proceedings against VicForests, arguing that its forestry activities should not be exempt from EPBC Act provisions because a required five-yearly review of the Central Highlands Regional Forest Agreement had not been completed. The Federal Court of Australia ruled against this, but also rejected VicForests' defence that all logging in a forest covered by an Agreement is exempt from the EPBC Act. The Court ruled that logging operations in a forest covered by a Regional Forest Agreement are only exempt from the EPBC Act if they comply with any forestry regulations associated with the Agreement, such as the Timber Code.

In 2019, Friends of Leadbeater's Possum responded to this ruling by adjusting their claim. They argued that VicForests' forestry operations in 66 logging coupes did not meet the Timber Code requirements to protect threatened species and so the exemption from the EPBC Act shouldn't apply and VicForests' activities should be considered unlawful.

In May 2020, the Federal Court ruled in favour of Friends of Leadbeater's Possum and found that VicForests had failed to comply with several aspects of the Timber Code. It found that VicForests did not apply the Timber Code's precautionary principle in planning and conducting logging in coupes home to the Leadbeater's possum or the greater glider. The precautionary principle requires operators, such as VicForests, to carefully evaluate different options when making decision that will affect the environment to:

- wherever practicable avoid serious or irreversible damage to the environment
- properly assess the risk-weighted consequences of various options.

The precautionary principle also provides that 'when dealing with threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation'.

(Continued)

BOX 6.4: Continued

The Court considered that VicForests had failed to develop a forest survey system or to consider management options to avoid further endangering these two threatened species. The Court ruled that as such, VicForests' logging of 26 coupes and planned logging in a further 41 coupes home to these species was unlawful. It found that these activities did not comply with the Timber Code and therefore were not exempt from the EPBC Act's provision that a person must not take any action that has, will, or is likely to have a significant impact on a threatened species.

In August 2020, the Federal Court delivered final orders regarding the case. Further logging in the areas occupied by the two threatened species was restrained, and subject to court orders. However, VicForests lodged an appeal which was heard by the full bench of the Federal Court in early 2021. The Court found that the initial judgement that VicForests had breached the Timber Code by not complying with the precautionary principle in some forests was factually correct. However, in contrast to the initial case, it also found that VicForests' operations are exempt from the EPBC Act even if it had failed to comply with the Regional Forest Agreement. VicForests' appeal was upheld.

VicForests informed the Committee that it has spent just over \$9.5 million on litigation from January 2018 to April 2021, not including the appeal of the case described above. It noted that appealing the case alone had cost \$324,150 up to April 2021.

Sources: Friends of the Leadbeater's Possum, *Submission 686*, p. 4; *Friends of Leadbeater's Possum Inc v VicForests (No 4)* [2020] FCA 704; *Friends of Leadbeater's Possum Inc v VicForests (No 6)* [2020] FCA 1199; Biggins and Paisley Lawyers Collins, *Noteworthy Federal Court environmental law cases*, <<https://www.cbp.com.au/insights/insights/2020/december/the-year-in-review-a-look-at-nsw-planning-and-en>> accessed 16 November 2021; Julia Dehm, 'The Leadbeater's Possum finally had its day in court', *The Conversation*, 2 June 2020, <<https://theconversation.com/the-leadbeaters-possum-finally-had-its-day-in-court-it-may-change-the-future-of-logging-in-australia-139652>> accessed 16 November 2021; Department of Environment and Primary Industries, *Code of Practice for Timber Production 2014*, 2014, <https://www.forestsandreserves.vic.gov.au/_data/assets/pdf_file/0016/29311/Code-of-Practice-for-Timber-Production-2014.pdf> accessed 16 November 2021; Friends of the Leadbeater's Possum, *Friends of the Leadbeater's Possum Court Case* <<https://www.leadbeaters.org.au>> accessed 16 November 2021; *VicForests v Friends of Leadbeater's Possum Inc* (2021) FCAFC 66; VicForests, hearing, response to questions on notice received 15 April 2021, p. 1.

At a public hearing, Monique Dawson rejected claims that VicForests' native timber harvesting operations are impacting threatened species:

I will start at your proposition that native timber harvesting is having any impact on threatened species; it does not. Mathematically it is impossible for that to occur. I have already outlined the scale of our harvesting activities. Also scientifically—because of the care that we apply in our harvesting activities, all risk to any particular threatened species are managed at a coupe level so there is negligible impact on any threatened species. So it is important that I start by saying that the proposition that there is some significant harm I completely reject.¹⁸²

¹⁸² Monique Dawson, *Transcript of evidence*, p. 5.

The Victorian Government responded to the initial court case by announcing a review of the Timber Code to minimise the risk to short-term supply obligations arising from third party litigation.¹⁸³

The review's work will inform the upcoming comprehensive review of the Timber Code required under Victoria's Regional Forest Agreements, to be completed by December 2023.

Some submitters to the Inquiry expressed support for the review. For example, the Institute of Foresters of Australia and Australian Forest Growers suggested that the review might resolve some of the uncertainty for conservationists and the forestry industry alike.¹⁸⁴ Others are concerned that the review will result in reforms which make it more difficult for environmental groups to take legal action if they believe VicForests has breached environmental regulations.¹⁸⁵ The Newham District Landcare Group argued in its submission to the Inquiry that it shouldn't be up to environmental groups to take on non-compliance with environmental legislation in the first place.¹⁸⁶

The Committee notes that stakeholders have had the opportunity to contribute to the current review of the Timber Code through public hearings and a submissions process. Similar opportunities will be available in the upcoming comprehensive review of the Timber Code. The Committee encourages stakeholders whom feel their views were not adequately reflected in the current review to engage in the upcoming, more comprehensive review of the Timber Code.

6.5.1 Forestry and bushfires

Concerns regarding the interaction between native timber harvesting in state forests and bushfires were repeatedly raised throughout the Inquiry.

Submitters, such as Professor Lindenmayer, the Victorian National Parks Association, Environment East Gippsland and the Wilderness Society, highlighted recent research which demonstrated that logging has changed the composition and structure of forests, making them prone to more intense bushfires.¹⁸⁷ The Victorian National Parks Association highlighted research indicating that trees regrow more densely in areas of forest where logging has occurred, which increases forest flammability and fire severity in forest stands of a particular age. It pointed out that in the 2019–20 bushfires, old growth eucalypt and rainforest, which do not typically experience fires, were burnt as bushfires spread from adjacent logged areas of forest.¹⁸⁸

¹⁸³ Hon Daniel Andrews, *Review To Protect Victoria's Forests, Jobs And Timber Industry*, media release.

¹⁸⁴ Institute of Foresters of Australia and Australian Forest Growers *Submission 660*, p. 9.

¹⁸⁵ Goongerah Environment Centre, *Submission 266*, p. 2.

¹⁸⁶ Newham District Landcare Group, *Submission 517*, p. 3.

¹⁸⁷ Victorian National Parks Association, *Submission 102*, p. 52; Professor David Lindenmayer AO, *Submission 353*, p. 5; The Wilderness Society, *Submission 899*, p. 7; Environment East Gippsland, *Submission 477*, pp. 4–5.

¹⁸⁸ Victorian National Parks Association, *Submission 102*, p. 52.

Professor Lindenmayer also noted this research and explained the relationship between regenerated forest stand age and heightened bushfire risk:

A series of studies have shown that logged and regeneration forests are likely to burn at higher severity fire in the event of a conflagration (Taylor et al., 2014, 2020, Dunn and Zald 2017, Tirribilli et al., 2017). This is underpinned by a relationship between the probability of crown fire and stand age. The relationship is non-linear in which forests 0-7 years after logging have a low probability of burning at high severity. Forests at 7-36 years of age have a steeply increased risk of burning at high severity (Figure 5). Old growth forests burn at the lowest severity. This highly significant non-linear relationship was quantified in Taylor et al., (2014). A more recent study of a different data in the wet ash forests of the Central Highlands of Victoria found a similar stand-age forest flammability relationship (Taylor et al., 2020).¹⁸⁹

Moreover, Professor Lindenmayer acknowledged the findings of a research paper which claimed that logging does not increase the risk of bushfires. He disputed the findings of this paper, arguing that the data used by the scientists involved was not properly analysed and if a 'curve fitting approach is employed, the pattern in the data provided ... is very similar to that reported in the wider peer reviewed scientific literature'. This pattern demonstrates a relationship between forest stand age and heightened bushfire risk.¹⁹⁰

Gippsland Community Fire Watch submitted that interactions between native timber harvesting and bushfire risk are compounded by other drivers of ecosystem decline, such as climate change:

Since the 2019/2020 bushfires, scientific commentary on why the fires burned so extensively and severely has frequently pointed towards logged landscapes, prescription burning and climate change ... Logged landscapes with their dry and flammable regrowth, wide logging roads which funnel wind to fan the flames, and dried out ecosystems created the perfect storm for summer's catastrophe. Dried out landscapes help create climate change, and climate change contributes to fire severity. Land managers need to recognize that these processes are connected, and adapt management plans accordingly. An end to native forest logging is one very important mitigation strategy.¹⁹¹

A contrasting view was presented by forestry industry groups, such as Forest and Wood Communities Australia. It argued that native timber harvesting can help reduce the risk of bushfires by assisting in the management of fuel loads in forests.¹⁹²

The Victorian Association of Forest Industries suggested that forestry can increase a forest's resilience to bushfires through processes such as 'thinning'. Thinning is deployed after native timber has been harvested and reseeded to support forest regeneration has taken place. New growth in a post-harvest forest is all a similar age

¹⁸⁹ Professor David Lindenmayer AO, *Submission 353A*, p. 5.

¹⁹⁰ *Ibid.*, p. 7.

¹⁹¹ Gippsland Community Fire Watch, *Submission 870*, p. 5.

¹⁹² Forest and Wood Communities Australia, *Submission 619*, p. 2.

and is competing for resources. Without human intervention, over a long period of time, a proportion of new growth would naturally die as a result of this competition, leaving the remaining seedlings with greater resources to grow more quickly and achieve a broader canopy. Thinning involves intervening to remove a proportion of young growth to mimic this natural process. It is used in forestry to enable remaining trees to reach a valuable size more quickly at a lower stocking level. The Victorian Association of Forest Industries argued that thinning has the additional benefit of reducing the severity of bushfires:

Thinning forest stands also has the short-term outcome of removing fuel that would have otherwise been burnt in bushfires. Overall, thinning can reduce bushfire risk by slowing the rate at which fire spreads, lowering flame heights and, in the long-term, improving the recovery after a bushfire.¹⁹³

The Victorian Association of Forest Industries cited international and Australian studies describing the impacts of commercial thinning on fuel loads:

A recent study in eucalypt forests in south-eastern Australia investigated the impact of commercial thinning on fuel hazard, fuel loads and bushfire behaviour. The study found that after eight years, thinning decreased surface fuel hazard ratings and fuel loads but had no significant effect on the mass of coarse woody fuels ...

This experiment was then used as the basis for a fire stimulation under severe to extreme weather conditions, similar to those in the 2006/7 Great Divide Fires. There was an almost 30% reduction in fireline intensity and about 20% reduction in the rate of spread and spotting distance in thinned forest compared with unthinned forest. This study indicates the potential of thinning to reduce wildfire severity and to increase the fire-survival of eucalypts.¹⁹⁴

BEAM Mitchell Environment Group also discussed forest thinning in its submission to the Inquiry. It suggested that the practice can enhance the biodiversity values of a disturbed forest so long as trees which are thinned are retained to provide habitat:

A landscape scale approach would use methods including removal of regrowth (retaining larger trees with a diversity of species and room to develop a spreading canopy) and retention on site (no removal for firewood or logs, etc) to help control water flows and provide habitat for a wider spectrum of biodiversity.¹⁹⁵

VicForests' response to the 2019–20 bushfires and salvage logging

Many environmental groups which submitted evidence to this Inquiry were critical of VicForests' native timber harvesting operations following the 2019–20 bushfires.

As the bushfires progressed, VicForests paused timber harvesting in all areas of fire-impacted forest. This enabled DELWP to assess the impact of the fires and

¹⁹³ Victorian Association of Forest Industries, *Submission 630*, p. 7.

¹⁹⁴ *Ibid.*, p. 8.

¹⁹⁵ BEAM Mitchell Environment Group, *Submission 690*, p. 14.

undertake surveys of threatened species, while VicForests undertook fire severity mapping to assess the impact of the fires on timber resources.¹⁹⁶

Following these assessments, VicForests deferred timber harvesting in 'lightly burnt and unburnt' areas of state forest within the bushfire footprint for the remainder of 2020, to provide time for the forest to recover. However, harvesting in these areas recommenced in 2021 following good recovery of the forest understory. VicForests informed the Committee that adaptive, variable retention timber harvesting is being deployed in these areas to minimise the impact of logging on biodiversity values.¹⁹⁷

VicForests' approach to harvesting areas of state forest severely damaged by the 2019–20 bushfires was outlined in more detail by Bill Paul, Manager of Environmental Performance at VicForests, during a public hearing in Melbourne. The practice of harvesting timber from severely burnt areas of forest is known as 'salvage logging'. According to Bill Paul, salvage logging focuses on the removal of burnt trees without habitat value:

We first of all assess the area based on the severity of the bushfire, so we map all the forest and we use mapping that DELWP provide as well. That categorises the bushfire into one, two, three, four and five. The most severely burnt areas are where we focus our salvage harvesting operations. While we are harvesting in those severely burnt areas it means we can set aside green areas from harvesting that might be refuge as well. When we are planning our harvesting in those burnt areas we only harvest the burnt trees. Trees that are alive, or even if they are dead but have potential habitat values, we retain and protect them beyond the harvesting operation. So it is about harvesting those trees that are dead, leaving behind the habitat values that are still present so that when the regeneration comes through we have got a multistructured forest. Clearly those dead trees in time will fall over, but if we have got live trees as well that survived the fire we save them and protect them too.¹⁹⁸

Bill Paul stated that field forestry staff, trained by VicForests scientists, assess severely burnt areas to identify trees that remain alive and dead trees that have habitat value, for possible retention:

Our forestry staff assess those, but we have scientists, as we said, in the business and we utilise them to train our staff to identify those habitat values. But it is our field forestry staff who in most cases are qualified with tertiary qualifications as well, and they are out assessing those areas, identifying the habitat values and marking out and then supervising the operations to ensure they comply with the requirements we have set up.¹⁹⁹

¹⁹⁶ VicForests, *Annual Report*, p. 10; VicForests, hearing, response to questions on notice received 7 May 2021, p. 1.

¹⁹⁷ *Ibid.*, p. 1.

¹⁹⁸ Bill Paul, Manager, Environmental Performance, VicForests, Public hearing, Melbourne, 10 March 2021, *Transcript of evidence*, p. 7.

¹⁹⁹ *Ibid.*, p. 8.

Stakeholders, such as the Victorian National Parks Association, were critical of ‘salvage logging’. The Association argued that most of Victoria’s eucalypts re-sprout and provide shade which is critical to the recovery of lower vegetation. It suggested that dead trees provide shelter for native animal populations which are also under pressure after a fire.²⁰⁰ Lastly, the Association alleged that salvage logging results in permanent forest clearing as it is not required to be regrown for future harvest.²⁰¹

The Wilderness Society submitted that salvage logging is ‘highly damaging’ because ‘fire affected forests need time and care to recover, not a second round of damage through intensive logging operations’. It described how salvage logging can inhibit the regeneration of forest ecosystems following a bushfire:

After a fire, many trees that have been burnt may look dead, but will resprout in the following months, and must not be logged as they are vital to the recovery of habitat for species such as Greater Gliders. Introducing heavy logging machinery to burnt areas kills many plants regrowing on the forest floor, tree fern populations are known to crash, while fungi and nutrients may take a century or longer to recover and there is increased risk of soil erosion and water quality impacts.²⁰²

In his submission to the Inquiry, Professor Lindenmayer referred to ‘global studies showing the substantial negative impacts of salvage logging on biodiversity and key ecological processes’.²⁰³ Likewise, Wildlife Victoria asserted that salvage logging is ‘compounding bushfire damage to the environment’.²⁰⁴ Environment East Gippsland characterised salvage logging as ‘putting the commercial interests of one large pulping company over the long-term ecological interests of native forests trying to recover from an incredibly severe fire season’.²⁰⁵

Submitters were also critical of native timber harvesting in unburnt areas of state forest following the 2019–20 bushfires. Professor Lindenmayer noted that approximately 60% of forest set aside for logging in East Gippsland under the current Timber Release Plan was burned in 2019–20. He argued that such destruction increases the biodiversity values of intact forest and called for it to be preserved:

What occurs when large parts of the areas planned for logging burn is that the remaining “green” areas are cut instead, to maintain the mandated sustained yield of timber. These remaining areas should be off limits as alternative areas for logging, as they have increased value for biodiversity because they escaped previous fire, and especially because so much old growth forest has been lost state-wide in the past 25 years.²⁰⁶

²⁰⁰ Victorian National Parks Association, *Submission 102*, p. 52.

²⁰¹ *Ibid.*, p. 55.

²⁰² The Wilderness Society, *Submission 899*, p. 8.

²⁰³ Professor David Lindenmayer AO, *Submission 353*, p. 4.

²⁰⁴ Wildlife Victoria, *Submission 712*, p. 8.

²⁰⁵ Environment East Gippsland, *Submission 477*, pp. 4–5.

²⁰⁶ Professor David Lindenmayer AO, *Submission 353*, p. 4.

Similar concerns were expressed in submissions made by the Wilderness Society, the Goongerah Environment Centre and Gippsland Community Fire Watch. These groups noted the widespread impact of the 2019–20 bushfires on the forests of East Gippsland and expressed alarm regarding plans to harvest native timber outside the fire's footprint.²⁰⁷ Gippsland Community Fire Watch asserted that the forest remaining intact outside of the bushfires' imprint provides important habitat and resources to surviving fauna:

During summer's devastating bushfires, over 70% of forests in East Gippsland were burned, while millions of native animals perished. Despite this desperate situation, Vic Forests has approved logging in around 100 new coupes in the region. The remaining unburned refuges of forest are absolutely vital to the survival of the fauna who survived the fires. While the coupes will be logged over several years, they will all eventually join up to provide a sea of flammable, habitat-poor regrowth forest. Vic Forests' agenda couldn't be more inappropriate at this time.²⁰⁸

The Committee accepts stakeholders' concerns regarding the potential of salvage logging to compound habitat loss driven by the 2019–20 bushfires. These fires have had a significant impact on Victorian forest ecosystems, and it is critical that these sensitive habitats are supported to recover. The Committee believes it would be valuable to examine the impact of salvage logging on forest recovery by comparing regeneration in areas of bushfire-impacted forest where this practice has and has not occurred. The impacts on threatened species following a major bushfire event of this nature should also be examined. This could be undertaken by the Arthur Rylah Institute for Environmental Research.

RECOMMENDATION 22: That the Victorian Government work with First Nations experts in Country and fire to examine the impacts of salvage logging on the regeneration of bushfire-impacted forest ecosystems, as well as the impacts on threatened species following a major bushfire event, with a view to incorporating the findings into forestry policy to support forest recovery in the aftermath of major bushfires.

6.5.2 Victorian Forestry Plan

In November 2019, the Victorian Government announced the Victorian Forestry Plan, which established the gradual phase-out of all logging in native forests and the immediate cessation of logging in old growth forests. Under the Plan, VicForests will have security of native timber supply to meet its contractual obligations until mid-2024. After this time, a competitive process will be used to allocate a gradually decreasing native timber supply until native forest logging ceases altogether in 2030.²⁰⁹

²⁰⁷ The Wilderness Society, *Submission 899*, p. 7; Goongerah Environment Centre, *Submission 266*, p. 2; Gippsland Community Fire Watch, *Submission 870*, p. 5.

²⁰⁸ Gippsland Community Fire Watch, *Submission 870*, p. 5.

²⁰⁹ Department of Jobs, Precincts and Regions, *Victorian Forestry Plan*, <<https://djpr.vic.gov.au/forestry/forestry-plan>> accessed 15 August 2021.

Monique Dawson informed the Committee that VicForests expects to harvest between 10,000 and 12,000 hectares of ash-type forest (incorporating both mountain ash and alpine ash) before 2030 and 20,000 to 23,000 hectares of mixed species forest.²¹⁰

From 2030, the forestry industry will have to rely on plantation timber. The Victorian Forestry Plan provides for \$110 million in funding for a Gippsland Plantations Investment Program. The program aims to incentivise plantation investors to undertake ‘industrial-scale planting’ to add 30 million trees to the plantation timber supply over the next decade.²¹¹ It also includes a \$120 million package to support businesses, workers and regional communities to transition away from the forestry industry, by providing:

- training and re-training programs
- case management and employment assistance
- additional support through the Back to Work program
- top-ups to redundancy payments.²¹²

Environmental groups broadly welcomed the announcement of the Victorian Forestry Plan and the gradual phase-out of native timber harvesting in state forests. However, some questioned whether native timber harvesting in old growth forests has actually ceased and many called for the phase-out of logging to be brought forward. Forestry and industry groups who submitted to the Inquiry were less supportive of the plan.

Cessation of old growth timber harvesting

As previously acknowledged, the announcement of the Victorian Forestry Plan in November 2019 encompassed the immediate cessation of native timber harvesting of old growth forest. Old growth forest is defined in the *Management Standards and Procedures for timber harvesting operations in Victoria’s State forests 2014* as:

forest which contains significant amounts of its oldest growth stage – usually senescent [aging] trees – in the upper stratum and has been subject to any disturbance, the effect of which is now negligible.²¹³

For forest to qualify as old growth, any regrowth present must be sparse (less than 10% of the total crown cover of the stand). Likewise, instances of disturbed forest must be negligible—meaning that disturbance is known to have occurred but is unlikely to have altered the structure (growth stage and crown cover) or the usual species

²¹⁰ Monique Dawson, *Transcript of evidence*, p. 2.

²¹¹ Department of Jobs, Precincts and Regions, *Victorian Forestry Plan: plantations and timber innovation underway*, <<https://dipr.vic.gov.au/about-us/news/victorian-forestry-plan-plantations-and-timber-innovation-underway>> accessed 16 November 2021.

²¹² Department of Jobs, Precincts and Regions, *Victorian Forestry Plan*.

²¹³ Department of Environment and Primary Industries, *Management Standards and Procedures for timber harvesting operations in Victoria’s State forests 2014*, Victorian Government, 2014, p. 15.

composition which characterises that type of forest. Or, if the alteration did occur in the past, it is no longer measurable.²¹⁴

The OCR has developed an old growth forest identification assessment tool to support the cessation of this type of harvesting. It notes that the height and age of trees is a function of species and growing site characteristics (for example, tree height may be reduced in areas with poor soil fertility and low rainfall). It also points out that ash-type forests in Victoria are known to have experienced disturbance since the 1900s through bushfires or timber harvesting (for example, the 1939 bushfires). The OCR therefore specifies that:

As such, [approximately] 80-year-old regrowth trees originating from the 1939 fires may display more mature attributes, however these are still classified as a regrowth tree rather than a mature tree given they are still actively growing and have pointed crowns. Further, trees must pass through each growth stage before progressing to the next, in other words an unhealthy tree with a dying crown may not necessarily be at the senescing phase, it may be a regrowth tree displaying senescing attributes.²¹⁵

The assessment tool classifies trees and forest stands into three growth stages defined by characteristics such as tree height, crown shape and stand density. The full classifications are described in Table 6.6.

²¹⁴ Ibid.

²¹⁵ Office of the Conservation Regulator, *Old growth forest identification: Assessment Tool*, Victorian Government, July 2020, pp. 12–13.

Table 6.6 Description of growth stages across forest types

Forest type	Regrowth stage	Mature growth stage	Senescing growth stage
Ash-type forest	<ul style="list-style-type: none"> Actively growing Crown = healthy, very pointed to pointed Height = 50–90% of potential height, <90 m Stand density = 80–200 stems/ha Diameter at Breast Height Over Bark = -60–160 cm Age = <120 years 	<ul style="list-style-type: none"> Crown = high to moderately regular, rounded to flattened Height = final potential reached, 65–100 m Stand density = 50–120 stems/ha Diameter at Breast Height Over Bark = -90–250 cm Age = 120–250 years Hollows beginning to develop Substantial buttressing 	<ul style="list-style-type: none"> Crown = irregular to very irregular, smaller and lighter in colour Height = loss of height as crown limbs die and fall, 40–90 m Stand density = 10–50 stems/ha Diameter at Breast Height Over Bark = -200–450 cm Age = >250 years Presence of bumps, burls, dead limbs
Mixed-species forests	<ul style="list-style-type: none"> Actively growing Crown = healthy, very pointed to becoming rounded Height = 50–90% of potential height, <50 m Stand density = 80–200 stems/ha Diameter at Breast Height Over Bark = -30–90 cm Age = <120 years 	<ul style="list-style-type: none"> Crown = high to moderately regular, rounded through to considerable distortion Height = final potential reached, 35–60 m Stand density = 50–120 stems/ha Diameter at Breast Height Over Bark = -70–200 cm Age = 120–250 years Hollows beginning to develop Substantial buttressing 	<ul style="list-style-type: none"> Crown = irregular to very irregular, smaller and lighter in colour Height = loss of height as crown limbs die and fall, 30–60 m Stand density = 10–50 stems/ha Diameter at Breast Height Over Bark = -120–300 cm Age = >250 years Presence of bumps, burls, dead limbs

Source: Office of the Conservation Regulator, *Old growth forest identification: Assessment Tool*, July 2020.

At a public hearing, Monique Dawson assured the Committee that VicForests does not harvest old growth forest:

We are obliged at law not to harvest old-growth forest and we apply the prescription that is set by the regulator. There is often confusion about very old single trees and old-growth forest. You need to have more than one tree to have a forest, and any old trees that you see us harvest will be trees that we have been directed to remove because they are dangerous trees, although we will generally do that as part of a broader effort that is managed by the Department of Environment, Land, Water and Planning.²¹⁶

She noted that most areas currently subject to native timber harvesting by VicForests, particularly in the Central Highlands, are areas of forest that have regenerated following the 1939 Victorian bushfires.²¹⁷

Despite these assurances, stakeholders expressed concern that the definition of old growth forest is too narrow and is enabling logging in those areas to continue. For

²¹⁶ Monique Dawson, *Transcript of evidence*, p. 2.

²¹⁷ *Ibid.*

example, Gippsland Community Fire Watch was critical of the definition of old growth discussed above:

Despite the Victorian government announcing this year that logging in native forests will be phased out by 2030, with an immediate end to old growth logging, native and high conservation value forests which may not qualify as 'old growth' under the department's working definition (20) can little afford another 10 years of clearing. DELWP's field assessment tool for identifying old growth forest has been changed, making it easier to exclude old growth forests from being identified as such, and then logged (20). They have altered the definition of 'regrowth' to include trees from 80- 100 years old. These previously 'mature' trees can now be counted towards the regrowth quota, which if exceeding 15% prevents an area from being classified as old growth.²¹⁸

The group suggested that old growth forests are a system, and as such, contain trees of different ages—including saplings, regrowth, mature and senescent—which maintain forest structure and health. It advocated for amending the definition so that it is a 'less restrictive, less industry oriented, and more ecologically accurate old growth definition'.²¹⁹

Professor Lindenmayer similarly expressed concern that the definition of old growth forest used by VicForests is too narrow:

A further issue of considerable concern in an environmental protection context is the arbitrary nature of old growth classification in Victoria ... In 2013, the definition of "old growth" was narrowed by the Victorian Government from forest older than 150 years to forest older than 250 years, thus allowing logging of indisputably old forest. Many Australian mammals such as the Greater Glider, Yellowbellied Glider and Leadbeater's Possum use hollows typically found in trees about 170 years old and older. The change in classification will have major negative effects on these threatened species.²²⁰

The East Gippsland Conservation Management Network was also critical of the age requirements for forests to be defined as old growth and questioned the requirement for regrowth to comprise less than 10% of a forest strand.²²¹

The Wilderness Society called for the old growth forest identification assessment tool to be reformed, 'to ensure the presence of a minority of regrowth trees does not rule out the classification of an entire stand'.²²²

Environment East Gippsland advocated for the protection of mature trees as well as old growth forests, in recognition of their contribution to bushfire and climate change mitigation.²²³

218 Gippsland Community Fire Watch, *Submission 870*, p. 5.

219 Ibid.

220 Professor David Lindenmayer AO, *Submission 353*, p. 3.

221 East Gippsland Conservation Management Network, *Submission 831*, p. 4.

222 The Wilderness Society, *Submission 899*, p. 9.

223 Environment East Gippsland, *Submission 477*, p. 5.

The Committee accepts stakeholder concerns that the definition of old growth forest utilised in Victorian forestry is too narrow and is enabling irreplaceable, mature forest ecosystems to be disturbed. In light of the landscape-scale damage to Victorian forests wrought by the 2019–20 Black Summer bushfires, and increased bushfire risk presented by climate change, the Committee feels that it is appropriate to re-evaluate forest definitions. Consideration should be given to expanding the definition of old growth to include mature trees, and/or forests with more than 10% but less than 50% regrowth.

RECOMMENDATION 23: That the Victorian Government review the definitions of forests utilised in forestry regulation and operations. Consideration should be given to expanding the definition of ‘old growth’ to include mature trees and/or forests with more than 10% but less than 50% regrowth.

Calls for Victorian Forestry Plan to be brought forward

As previously noted, environmental groups that contributed to the Inquiry were generally supportive of the Victorian Forestry Plan, with some, such as the Victorian National Parks Association, calling for the phase-out to be brought forward.²²⁴

The Wilderness Society characterised the Victorian Forestry Plan as a ‘positive step’ but argued that phasing out logging has become more important in light of the environmental damage caused by the 2019–20 bushfires:

While a positive step, the reforms do not go far enough quickly enough to avoid serious damage to forest ecosystems and push species closer to extinction. Given the announcement was made prior to the 2019-20 bushfires, and their impact on threatened species populations and log availability – there is now an urgent need for further reform.²²⁵

It recommended bringing forward the cessation of native timber harvesting in all Victorian state forests, alongside the industry support contained in the Victorian Forestry Plan, to support the transition of saw mills to plantation timber.²²⁶

Warburton Environment submitted that ‘Victoria should immediately transition out of native forest logging, with financial support for workers and the industry’:

Bring forward the plan to end native forest logging by 2030 and immediately start the transition to a pulp and timber industry which is not reliant on native forests ... Some of the remaining contractors working in the native forest industry could be redeployed as machine fire fighters (something they currently do). Some of the funding could be used

²²⁴ Victorian National Parks Association, *Submission 102*, p. 54; Friends of the Earth (Melbourne), *Submission 178*, p. 8; Australian Conservation Foundation Community, Bendigo District and Bendigo and District Environment Council, *Submission 265*, p. 7.

²²⁵ The Wilderness Society, *Submission 899*, p. 8.

²²⁶ *Ibid.*, p. 9.

to assist the smaller mills in updating their saws to be able to accommodate plantation timber. Projects should be fast tracked.²²⁷

The Murrindindi Climate Network argued in a written contribution to the Inquiry that Victoria's forest ecosystems and economy would both benefit if the Victorian Forestry Plan was fast-tracked.²²⁸ It suggested that an earlier transition out of native timber forestry presents opportunities such as:

- redeploying forestry workers to support the commercial plantations sector's recovery from the 2019–20 bushfires
- redirecting VicForests to support on-farm hardwood plantation and commercial plantations to take advantage of the national Emissions Reduction Fund.²²⁹

The BEAM Mitchell Environment Group, Newham District Landcare Group, Bendigo and District Environment Council and Professor Lindenmayer also called for native timber harvesting in Victorian state forests to cease earlier than prescribed in the Victorian Forestry Plan.²³⁰

Industry criticism of the Victorian Forestry Plan

Some forestry and industry stakeholders expressed concerns regarding the Victorian Forestry Plan.

The Australian Forest Products Association warned that there will be 'significant job losses' in the lead up to the 2030 phase-out of native forest logging.²³¹ It suggested that Victoria's forestry industry will struggle to transition to a solely plantation-based timber supply as sawmill equipment is specialised to either native hardwood or plantation softwood and cannot be readily adapted. Moreover, it inferred that the plantation estate is not large enough to supply the entire forestry industry. The Australian Forest Products Association stated:

Quite simply, the transition to plantation by 2030 is a fallacy and nothing more than spin to hide the economic wrecking ball across Gippsland, the Latrobe Valley and many other regional Victorian communities that the Andrews Government's policy to end native timber harvesting will bring.²³²

Forest and Wood Communities Australia asserted that phasing out native forest logging in Victoria would increase the State's reliance on carbon-intensive materials such as plastic and concrete, and potentially unsustainable international timber sources. It said the decision would have far-reaching environmental and social consequences:

²²⁷ Warburton Environment, *Submission 554*, p. 7.

²²⁸ Murrindindi Climate Network, *Submission 759*, p. 8.

²²⁹ Ibid.

²³⁰ BEAM Mitchell Environment Group, *Submission 690*, p. 18; Newham District Landcare Group, *Submission 517*, p. 3; Bendigo and District Environment Council, *Submission 265*, p. 7; Professor David Lindenmayer AO, *Submission 353*, p. 2.

²³¹ Australian Forest Products Association, *Submission 691*, p. 5.

²³² Ibid., p. 8.

The decision to shut down native forestry in Victoria will have far-reaching impacts on not only timber workers, their communities and those who regard the value of ethically sourced native timber, but on the environment it manages.²³³

The Institute of Foresters of Australia and Australian Forest Growers expressed concern that the phase-out will reduce the active management of state forests, increasing their vulnerability to bushfires, introduced species and climate change.²³⁴ It submitted that:

the Institute considers that active management of native forests, including renewable timber production in a minor portion, is vital to their sustainability and provides many benefits to Australian society. It also ensures that Australia meets more of its timber needs domestically, rather than sourcing timber and paper products from other countries, which may not be subject to the same level of environmental management standards applied in Australia.²³⁵

In addition, the submission stated that government support for regionally-based community groups would engage regional communities in environmental work to combat ecosystem decline. It recommended that the Victorian Government:

Invest further in strengthening regionally based natural resource management programs, to more effectively engage local communities to arrest ecosystem decline, to integrate resources more efficiently, and achieve improvements in the state of the environment within catchment boundaries.²³⁶

The Gippsland Apiarist Association noted that clearfell logging is ‘incompatible with proper fire management with low intensity burns’. However, it expressed support for ‘selective logging in association with regular low intensity conducted burns as a means of returning the forests to a structure closer to pre-European times’.²³⁷

While it did not express support for the Victorian Forestry Plan or the phase-out of native timber harvesting, the Victorian Association of Forest Industries did advocate for expanding timber plantations. It suggested that expanding plantations can deliver economic and environmental benefits:

Plantations can supply locally sourced and processed timber production products, maximising the mitigation opportunities from timber. Increased plantation tree cover, achieved through a balanced mix of production zones, farm forestry, and environmental plantings can increase carbon sequestration and provide environmental co-benefits such as salinity mitigation; forest landscape restoration and linkage; and improved water quality.²³⁸

²³³ Forest and Wood Communities Australia, *Submission 619*, p. 3.

²³⁴ Institute of Foresters of Australia and Australian Forest Growers *Submission 660*, pp. 20–22.

²³⁵ *Ibid.*, p. 22.

²³⁶ *Ibid.*, p. 19.

²³⁷ Gippsland Apiarist Association, *Submission 539*, pp. 1, 11.

²³⁸ Victorian Association of Forest Industries, *Submission 630*, p. 10.

The Committee appreciates that stakeholders' views on the Victorian Forestry Plan vary. However, the Committee feels that the Plan strikes the right balance between increasing the conservation and protection of Victorian forest ecosystems and providing time for the forestry industry to successfully transition to a more sustainable, plantation-based supply.

FINDING 20: The Victorian Forestry Plan strikes the right balance between increasing the conservation of Victorian forests and providing time and support to successfully transition the forestry industry to a more environmentally sustainable, plantation-based supply.

PARLIAMENT OF VICTORIA

LEGISLATIVE COUNCIL

Environment and Planning Committee



Inquiry into ecosystem decline in Victoria

Volume 2

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About the Committee

Functions

The functions of the Legislative Council Environment and Planning Committee are to inquire into and report on any proposal, matter or thing concerned with the arts, environment and planning the use, development and protection of land.

The Environment and Planning Committee may inquire into, hold public hearings, consider and report on any Bills or draft Bills referred by the Legislative Council, annual reports, estimates of expenditure or other documents laid before the Legislative Council in accordance with an Act, provided these are relevant to its functions.

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Terms of reference

Inquiry into ecosystem decline in Victoria

On 30 October 2019 the Legislative Council agreed to the following motion:

That this House requires the Environment and Planning Committee to inquire into, consider and report, within 12 months*, on the decline of Victoria's ecosystems and measures to restore habitats and populations of threatened and endangered species, including but not limited to—

- a) the extent of the decline of Victoria's biodiversity and the likely impact on people, particularly First Peoples, and ecosystems, if more is not done to address this, including consideration of climate change impacts;
- b) the adequacy of the legislative framework protecting Victoria's environment, including grasslands, forests and the marine and coastal environment, and native species;
- c) the adequacy and effectiveness of government programs and funding protecting and restoring Victoria's ecosystems;
- d) legislative, policy, program, governance and funding solutions to facilitate ecosystem and species protection, restoration and recovery in Victoria, in the context of climate change impacts;
- e) opportunities to restore Victoria's environment while upholding First Peoples' connection to country, and increasing and diversifying employment opportunities in Victoria; and
- f) any other related matters.

* The reporting date for this Inquiry was extended to 2 December 2021.

Findings and recommendations

1 Introduction

RECOMMENDATION 1: That the Victorian Government consider referring a parliamentary inquiry into the health of rivers, waterways and the marine environment. 3

3 First Nations and biodiversity

FINDING 1: Traditional Owners have intrinsic connection and belonging to Country. The impacts of biodiversity decline, as observed by Traditional Owner groups, are significant and ongoing. Ensuring that Traditional Owners have a major role in caring for, and healing, Country is critical. 46

4 Invasive species

FINDING 2: Lists of noxious weed and pest animal species declared under the *Catchment and Land Protection Act 1994 (Vic)* are not comprehensive and exclude invasive plants and animals with the potential to devastate Victoria's biodiversity values. Moreover, the control of noxious weeds and pest animals declared under the Act requires better enforcement. 70

RECOMMENDATION 2: That the Victorian Government review the administration and enforcement of the *Catchment and Land Protection Act 1994 (Vic)* to ascertain if the functions prescribed under the Act could be more appropriately undertaken by another agency. 70

FINDING 3: Where native species come into competition for resources in an agricultural setting, there is a shift in how they are viewed. They move from being revered to being regarded as a pest species, resulting in Authority to Control Wildlife permits to kill them being issued. The Committee notes that this directly impacts the biodiversity and native environment of an area or landscape. 70

FINDING 4: Administration of the legislative framework for the management of invasive species should be a responsibility of the Minister for Environment and the Department of Environment, Land, Water and Planning, to ensure its focus is on preserving biodiversity values as opposed to facilitating Victorian agriculture. 71

FINDING 5: Conflicting classification systems for plants and animals provided for by the *Catchment and Land Protection Act 1994* (Vic), *Flora and Fauna Guarantee Act 1988* (Vic) and *Wildlife Act 1975* (Vic) are impeding the effective control of noxious weeds and pest animals. The classification schemes under each Act require review and harmonisation to ensure ecosystems are managed and protected efficiently.

84

RECOMMENDATION 3: That the Victorian Government resource and monitor research into innovative deer control methods, including, but not limited to, methods aimed at curbing pest deer reproduction and fertility.

84

FINDING 6: The Victorian legislative framework for the management of invasive species should be modernised to ensure it aligns with best practice biosecurity or environmental conservation approaches.

90

RECOMMENDATION 4: That the Victorian Government review the legislative framework for the management of invasive species with a view to developing a legislative reform package. The review should consider:

- the economic impact (including agricultural and environmental) of invasive species in Victoria
- the formulation of legislative provisions to prioritise prevention and early intervention measures to control invasive species
- the simplification and harmonisation of the complex classification systems for plants and animals under the *Catchment and Land Protection Act 1994* (Vic), *Flora and Fauna Guarantee Act 1988* (Vic) and *Wildlife Act 1975* (Vic) to facilitate the more effective control of noxious weeds and pest animals across land tenures
- the merits of shifting to a permitted ‘safe list’ approach defining which taxa non-indigenous to Victoria can be introduced, sold, or kept in the State, as opposed to the current practice of listing restricted pest species under the *Catchment and Land Protection Act 1994* (Vic)
- expanding the application of the legislative framework to include the management and control of invasive fish or invertebrates and native invasive plants and animals
- making the administration of the legislative framework for the management of invasive species a responsibility of the Minister for Environment and the Department of Environment, Land, Water and Planning, to ensure its focus is on preserving biodiversity values as opposed to a focus on facilitating Victorian agriculture.

91

RECOMMENDATION 5: That the Victorian Government consider supporting regional, cross-tenure coordination of pest animal and noxious weed management which includes Traditional Owners, local government authorities, catchment management authorities, private landowners, environmental groups and the broader community.

95

RECOMMENDATION 6: That the Victorian Government allocate adequate resources to administer and fully implement the *Catchment and Land Protection Act 1994 (Vic)* and the *Invasive Plants and Animals Policy Framework*.

99

RECOMMENDATION 7: That the Victorian Government consider phasing out the use of 1080 baits to control invasive species. This should occur in conjunction with increased government support for the research and wider use of more effective and humane methods for controlling pest animals. This phase-out should begin in July 2022, beginning in national parks in the first year. It should then be expanded into agricultural and other applications in the second year and be completed by December 2023.

106

RECOMMENDATION 8: That the Victorian Government trial the reintroduction of dingoes as an apex predator into suitable Victorian ecosystems to assess the ecological benefits. The trial, if agreed to by the Victorian Government, should take place within no later than two years of such agreement and should:

- take place with the support and close involvement of Traditional Owners
- take place in a park or conservation reserve where dingoes previously occurred, but have since suffered localised extinction
- be designed with input from ecologists and dingo experts
- encompass the collection of baseline ecological data to support the evaluation of post-trial outcomes and the identification of any impacts to biodiversity and ecosystems processes.

The trial should be accompanied by:

- the cessation of lethal control for pest species in the trial area
- consultation with adjoining public and/or private land managers in order to ensure support for the implementation of non-lethal protection of agricultural livestock, including the use of companion guard animals to protect stock
- the introduction of a compensation scheme for farmers whose livestock is predated by dingoes
- comprehensive monitoring and reporting on the impact of the reintroduction of dingoes on biodiversity values in the trial area.

106

FINDING 7: There are conflicting views on the impact of cats across a range of landscapes. However, significant concerns exist about the impact of cats on biodiversity. Humane approaches to the management of cats must be prioritised.

113

FINDING 8: De-sexing is an effective and humane method for controlling owned, semi-owned or unowned cat populations in urban landscapes.

113

RECOMMENDATION 9: That the Victorian Government consider implementation of the following measures:

- the standardisation of cat definitions across legislation, policy and stakeholder groups in line with the definitions utilised in the RSPCA's *Identifying Best Practice Domestic Cat Management in Australia* (2018)
- the establishment of a state-based advisory group to guide a more coordinated approach to domestic cat management
- the implementation of consistent and effective approaches to domestic cat management across local government areas, modelled on the Banyule City Council example, which also:
 - minimise the impact of domestic cats on Victoria's biodiversity values and wildlife by focusing on reproductive control measures as a priority and offering rehoming measures where this can be achieved
 - provide ongoing funding for programs that encourage responsible cat ownership, such as subsidised de-sexing and/or microchipping programs up to and including trap, control, neuter and release measures. These programs should involve local government authorities as key partners in the roll out of localised de-sexing programs
 - is adaptable and responsive to areas adjacent to significant biodiversity values or areas where unowned or semi-owned domestic cats are a particular issue
 - prioritises funding for humane reproductive control methods over programs which prioritise lethal control methods.

113

5 Climate change

FINDING 9: Climate change is almost exclusively driven by burning fossil fuels for energy, as well as greenhouse gas emissions produced from agriculture and changes to the land and marine environment.

117

FINDING 10: Detailed, localised projections of climate change can inform appropriate planning and adaptation measures to increase the resilience of Victoria's biodiversity values to the varied impacts of climate change.

122

FINDING 11: Climate change is a major driver of ecosystem decline. 122

RECOMMENDATION 10: That the Victorian Government, in coordination with research partners, conduct further research and analysis to improve localised climate projections for both Victoria’s agricultural and biodiversity values. As part of this research, the Government should:

- ensure projections are fulsome—identifying climate change impacts beyond predicting rainfall—and incorporate new modelling and findings made by the Intergovernmental Panel on Climate Change
- identify innovative opportunities to improve the ongoing monitoring, protection and leveraging of localised climate projections through the use of tools such as digital spatial capability, data analytics and predictive modelling, citizen science and environmental economic accounting
- seek opportunities to maximise investment opportunities with diverse stakeholders.

122

FINDING 12: Climate change is already driving ecosystem decline across Victoria with devastating impacts for native floral and faunal species. 128

FINDING 13: Climate change is contributing to the decline of Country and impacting the health and wellbeing of Traditional Owners. 136

RECOMMENDATION 11: That the Victorian Government review environmental legislation with a view to ensuring that it:

- articulates clear standards for environmental restoration
- imposes a general duty on public and private land managers to restore or enhance biodiversity in partnership with Traditional Owners
- is underpinned by ministerial guidelines describing how environmental restoration and enhancement should be undertaken by public land managers and emphasising that this duty goes further than simply avoiding harm to biodiversity. These guidelines should highlight the importance of empowering Traditional Owners to drive environmental restoration on Country.

142

RECOMMENDATION 12: That the Victorian Government review funding and other support available to land managers, including Traditional Owners, to ensure they are properly supported and resourced to undertake environmental conservation and restoration. This should include:

- funding and support which secures co-benefits (such as economic stimulus, employment and training opportunities) alongside environment restoration, and which focuses on facilitating positive outcomes for young Victorians, Traditional Owners and Victorians who have lost work due to the COVID-19 pandemic
- development and delivery of a program enabling private land managers and Traditional Owner organisations to access ecological expertise and education to support environmental restoration. This program should also seek to facilitate partnerships between private land managers and Traditional Owners in undertaking restoration activities.

142

RECOMMENDATION 13: That the Victorian Government, in collaboration with Traditional Owner corporations, provide funding and other resources to support the development of revegetated biolinks to increase connectivity between ecosystems. Opportunities for corporate and philanthropic collaboration on such projects should be explored.

149

FINDING 14: Ecosystems, such as forests and wetlands, are an important part of the global carbon cycle and, if well managed, can sequester a large quantity of carbon over long periods of time.

154

FINDING 15: Climate change is driving more frequent and severe bushfires in Victoria. More frequent and severe fires are devastating native faunal populations and threatening the viability of the State's ash forests, rainforests and other sensitive flora populations.

161

6 Habitat loss and fragmentation

FINDING 16: The ongoing removal and degradation of native vegetation is a key driver of ecosystem decline and is threatening Victorian biodiversity.

170

RECOMMENDATION 14: That the Victorian Government consider the introduction of a statewide accreditation process for ecologists and other environmental professionals contributing to environmental impact assessment processes. This accreditation process should encompass a professional code of conduct and standards for data and other information submitted as part of environmental impact assessments.

179

RECOMMENDATION 15: That the Victorian Government ensure local government authorities have adequate staff, with appropriate training available, to work collaboratively with applicants in applying the *Guidelines for the removal, destruction or lopping of native vegetation*. Caution should be taken not to further erode and fragment ecosystems by applying a piecemeal approach. A whole-of-ecosystem approach must be applied when making decisions.

184

RECOMMENDATION 16: That the Victorian Government amend the *Guidelines for the removal, destruction or lopping of native vegetation* to ensure they:

- incorporate the ‘like for like’ principle in offsetting arrangements, whereby habitat loss is compensated for through the protection and enhanced management of another site capable of serving similar ecological functions
- includes strong specification that potential offset sites must not be:
 - already subject to environmental protections
 - already being managed to improve habitat and biodiversity values
 - previously used in an offsetting capacity
- only permit offsets to be used as a last resort.

189

FINDING 17: Offsetting arrangements provided for by the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) are contributing to ecosystem decline.

195

FINDING 18: The full implementation of recommendations made as part of the independent review of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) will help to ensure that the environmental impacts of developments under this legislation are adequately compensated through offsetting arrangements.

195

RECOMMENDATION 17: That the Victorian Government review how the environmental impacts of developments are offset in Victorian environmental impact assessment processes to ensure they reflect the findings and recommendations of the independent review of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth).

196

FINDING 19: The Department of Environment, Land, Water and Planning has not delivered the Western Grassland Reserve and the Grassy Eucalypt Woodlands Reserve by 2020, as specified in the Melbourne Strategic Assessment program.

204

RECOMMENDATION 18: That the Victorian Government consider funding the immediate purchase or leasing of remnant high quality grasslands within the proposed Western Grassland Reserve and the 36 reserves proposed by the Melbourne Strategic Assessment within Melbourne’s urban growth boundary. These areas should be urgently acquired to facilitate ecologically sound management to conserve and restore biodiversity values.

205

RECOMMENDATION 19: That the Victorian Government develop and fund initiatives to ensure that the biodiversity values of private land earmarked for inclusion in the Western Grassland Reserve, the Grassy Eucalypt Woodlands Reserve, and the 36 reserves proposed by the Melbourne Strategic Assessment within Melbourne’s urban growth boundary, are properly managed prior to the acquisition of this land. This should encompass consideration of:

- land tax exemptions for landowners who manage their properties for conservation
- implementation of comprehensive and ongoing weed control programs
- community engagement initiatives to ensure landowners are aware of the value of remnant grasslands, how they can be protected, their obligations to control noxious weeds under the *Catchment and Land Protection Act 1994* (Vic), and to engage them in agreed land management plans
- measures to enforce Environmental Significance Overlays
- the introduction of restrictions limiting development and other actions likely to disturb existing hydrology.

205

RECOMMENDATION 20: That the Victorian Government articulate an ambitious vision for the establishment of the Western Grassland Reserve and the Grassy Eucalypt Woodlands Reserve. This vision should outline how Traditional Owners, environmental groups and the broader community will be engaged with the restoration and promotion of the grassland reserves’ unique biodiversity assets.

206

RECOMMENDATION 21: That the Victorian Government consider, as part of its comprehensive review of the *Code of Practice for Timber Production 2014*, mandating adaptive, variable retention approaches to native timber harvesting in Victorian state forests.

219

RECOMMENDATION 22: That the Victorian Government work with First Nations experts in Country and fire to examine the impacts of salvage logging on the regeneration of bushfire-impacted forest ecosystems, as well as the impacts on threatened species following a major bushfire event, with a view to incorporating the findings into forestry policy to support forest recovery in the aftermath of major bushfires. 228

RECOMMENDATION 23: That the Victorian Government review the definitions of forests utilised in forestry regulation and operations. Consideration should be given to expanding the definition of ‘old growth’ to include mature trees and/or forests with more than 10% but less than 50% regrowth. 233

FINDING 20: The Victorian Forestry Plan strikes the right balance between increasing the conservation of Victorian forests and providing time and support to successfully transition the forestry industry to a more environmentally sustainable, plantation-based supply. 236

7 Threatened species

FINDING 21: According to recent research from the Threatened Species Recovery Hub and Victoria’s *State of the Environment 2018*, native species of flora and fauna are experiencing significant declines in population size and distribution. Species that have already been listed as threatened are not being holistically protected. 239

FINDING 22: Key threats to native species in Victoria include climate change, changes to fire frequency and intensity, invasive species, land clearing and changes to rivers, wetlands and floodplains. 241

FINDING 23: It is crucial to prevent further decline in native species—not just for individual species themselves, but for the vast array of ecosystems services they provide. 242

FINDING 24: Only a small proportion of action statements for threatened species and communities and potentially threatening processes are in place, despite these being a mandatory requirement under the *Flora and Fauna Guarantee Act 1988 (Vic)*. 253

RECOMMENDATION 24: That the Victorian Government ensure, as a matter of urgency, that all threatened species and communities and potentially threatening processes listed under the *Flora and Fauna Guarantee Act 1988* (Vic) have action statements in place and that appropriate funding is allocated to their implementation. An action plan which identifies priority action statements should be developed to facilitate this process.

253

RECOMMENDATION 25: That the Department of Environment, Land, Water and Planning undertake regular assessment and revision of the conservation status of species listed under the *Flora and Fauna Guarantee Act 1988* (Vic) to ensure that species population changes are monitored, and the most appropriate conservation status is recommended. This will help to inform action statements and any related conservation management activities and will prevent continued species decline from going unnoticed.

253

FINDING 25: Critical habitat determinations and habitat conservation orders under the *Flora and Fauna Guarantee Act 1988* (Vic) have not been utilised to protect areas of habitat for threatened species and communities.

257

RECOMMENDATION 26: That the Victorian Government amend the *Flora and Fauna Guarantee Act 1988* (Vic) to specify circumstances where the Secretary of the Department of Environment, Land, Water and Planning must make a declaration of critical habitat.

257

RECOMMENDATION 27: That the Victorian Government allocate adequate resources to administer and fully implement the *Flora and Fauna Guarantee (Amendment) Act 2019* (Vic), including communicating the Act's changes to relevant stakeholders and the broader community. The resourcing of the *Flora and Fauna Guarantee Act 1988* (Vic) should include locating staff close to ecosystems, equipped with job descriptions that are sufficiently process complete and with appropriate authority limits so that they can operate more efficiently and effectively.

258

FINDING 26: The *Wildlife Act 1975* (Vic) is outdated and does not meet community expectations around the protection and conservation of wildlife.

263

RECOMMENDATION 28: That the Victorian Government consider, in relation to dingoes and dingo-dog hybrids:

- revoking the Order in Council made under the *Wildlife Act 1975* (Vic) that declared dingoes as ‘unprotected wildlife’
- funding and fully implementing Action Statement No. 248 for the dingo under the *Flora and Fauna Guarantee Act 1988* (Vic), which identifies various actions for its conservation including genetic research into the current genetic definition of the dingo
- working with Agriculture Victoria to improve non-lethal strategies for protecting livestock in areas where there are increased levels of predation
- developing other mechanisms to support landowners to use non-lethal means to manage dingoes and wild dogs in relation to potential impacts on livestock
- reviewing the Fox and Wild Dog Bounty program.

264

FINDING 27: The Authority to Control Wildlife permit system under the *Wildlife Act 1975* (Vic) inhibits the conservation of threatened species in Victoria through the issuing of permits to control threatened species by non-lethal or lethal means.

266

RECOMMENDATION 29: That the Victorian Government ensure that future amendment of the *Wildlife Act 1975* (Vic), in conjunction with the recommendations made by the independent panel undertaking review of the Act, at a minimum:

- prevents the use of the Authority to Control Wildlife permit system in relation to species listed as threatened under the *Flora and Fauna Guarantee Act 1988* (Vic) or *Environment Protection and Biodiversity Conservation Act 1999* (Cth)
- takes into consideration the views of Traditional Owners in relation to wildlife and habitat protection, noting the particular importance of native species as part of living culture and heritage.

266

FINDING 28: The provision contained in the *Kangaroo Harvest Management Plan 2021–2023* to suspend the Kangaroo Harvesting Program in response to environmental factors or significant natural events that may affect short-term changes in kangaroo populations in a harvesting zone or zone segment (local government area) is an important tool to prevent further decline of native species.

270

RECOMMENDATION 30: That the Victorian Government ensure that suspension of the Kangaroo Harvesting Program occurs in the aftermath of any event likely to have an impact on kangaroo populations, such as bushfires, as provided for in the *Kangaroo Harvest Management Plan 2021–2023*. Suspension should be accompanied in every circumstance with proactive compliance and enforcement activities to ensure that illegal harvesting activity does not take place during a period of suspension of the program. 270

FINDING 29: The Victorian Government’s biodiversity strategy, *Protecting Victoria’s Environment – Biodiversity 2037*, sets important goals around protecting and restoring threatened species in Victoria. However, the plan lacks the necessary funding for full implementation of its goals and actions. 283

RECOMMENDATION 31: That the Victorian Government consider significantly increasing the funding allocated to threatened species and habitat conservation activities under *Protecting Victoria’s Environment – Biodiversity 2037*. 283

RECOMMENDATION 32: That the Victorian Government ensure that *Protecting Victoria’s Environment – Biodiversity 2037* and the *Flora and Fauna Guarantee Act 1988* (Vic) are complementary in terms of the key principles and objectives of the Victorian Government’s approach towards threatened species management, and that the State’s biodiversity strategy is updated in conjunction with any future legislative change. 283

RECOMMENDATION 33: That the Victorian Government review and incorporate, if and where appropriate, features of New South Wales’ *Saving our Species* program into community engagement and communications strategies for threatened species activities under *Protecting Victoria’s Environment – Biodiversity 2037*. 290

FINDING 30: Both landscape-scale and individual species approaches are important in threatened species management to ensure the best outcomes for species. Evaluation of the correct balance between these approaches must be outcomes-based and reviewed on an ongoing basis in order to ensure that actions are achieving desired outcomes for threatened species management, conservation and restoration. 292

FINDING 31: Country plans convey important aspirations and strategies for caring for Country, including strategies to conserve and restore threatened species. Victoria’s biodiversity strategy, *Protecting Victoria’s Environment – Biodiversity 2037*, should recognise the importance of Country plans as central to the protection of biodiversity and threatened species and establish how they will be supported in their implementation. 295

RECOMMENDATION 34: That the Victorian Government incorporate into *Protecting Victoria's Environment – Biodiversity 2037* how the strategies contained in Country plans, created by First Nations peoples, will assist in informing the State's biodiversity actions, including in relation to the conservation of threatened species. **295**

RECOMMENDATION 35: That the Victorian Government investigate whether amendment of the *Flora and Fauna Guarantee Act 1988 (Vic)* to include emergency listing provisions could provide additional legislative protection for species where significant events have critically impacted their chance of survival. **297**

8 Land management

RECOMMENDATION 36: That the Victorian Government consider providing additional funding, as recommended by the Victorian Environmental Assessment Council, to enable Parks Victoria to manage the newly created national parks in Victoria's central west region. **310**

FINDING 32: Development of a new Public Land Act presents an important opportunity to modernise and simplify the existing legislative framework for the management of public land. This process provides an important opportunity to advance Traditional Owner self-determination in land management in Victoria. **313**

FINDING 33: Active and adaptive land management is crucial to ensuring effective management of protected areas. **315**

RECOMMENDATION 37: That the Victorian Government increase funding for Parks Victoria to undertake active and adaptive land management in the State's parks and reserves, and consider increasing this funding to 1% of Gross State Product. **318**

FINDING 34: The *Victorian Traditional Owner Cultural Landscapes Strategy* provides important direction for future partnerships between Traditional Owners, the Victorian Government and other relevant stakeholders in relation to the management of, and care for, Victoria's cultural landscapes. **322**

RECOMMENDATION 38: That the Victorian Government:

- commit to the vision identified in the Traditional Owner-led *Victorian Traditional Owner Cultural Landscapes Strategy* and provide public reporting on progress towards implementation
- progress Traditional Owner-led development of contemporary cultural indicators to inform future environmental reporting.

322

FINDING 35: Trust for Nature undertakes important work in biodiversity conservation, restoration and protection on private land through the use of conservation covenants. However, limitations in relation to its funding mechanisms has meant that it is unable to meet demand for covenants.

334

RECOMMENDATION 39: That the Victorian Government consider enhanced support for Trust for Nature in permanently protecting important conservation values on private land, including:

- continuing to increase funding allocations to the Trust to enable it to pursue identified strategic goals and to increase its capacity to support additional conservation covenants, including through its Revolving Fund
- engaging with pastoralists who may want to sell their property in order to purchase land with high conservation value for conservation and restoration purposes
- supporting local government authorities to offer rate rebates and other incentives to landowners who include a conservation covenant on their property
- investigating mechanisms to encourage new landowners to retain conservation covenants
- working with Trust for Nature to increase the ways in which First Nations peoples are involved in conservation and restoration activities on private land.

335

RECOMMENDATION 40: That the Victorian Government explore other options to assist private landowners in land conservation efforts outside of the use of conservation covenants, that includes, but is not limited to, working with local government authorities and First Nations peoples to promote broader conservation and restoration activities on private land alongside existing agricultural practices.

335

FINDING 36: Victorian Landcare groups undertake critical biodiversity protection, conservation and restoration activities that provide significant value to Victoria, including on private land.

339

RECOMMENDATION 41: That the Victorian Government establish a scheme that offers a suite of incentives to support private landowners to undertake conservation and/or restoration activities on their land, including:

- support for local government authorities to offer property rate reductions for landholders who undertake prescribed conservation and/or restoration activities on their properties that improve biodiversity outcomes
- consideration of various approaches and options to reflect the differing needs, means and motivations of different landowners.

344

RECOMMENDATION 42: That the Victorian Government undertake to improve education and other supports for landholders to realise financial and ecological benefits through biodiversity-friendly farming activities.

346

RECOMMENDATION 43: That the Victorian Government continue to investigate research and other partnerships to support a more comprehensive statewide system of soil health and land condition monitoring, noting that soil health is not only critical to the survival of our ecosystems, but also impacts air quality.

349

RECOMMENDATION 44: That the Victorian Government ensure that *Protecting Victoria's Environment – Biodiversity 2037* contains specific targets or actions relating to the impacts of bushfires and fire management activities on biodiversity values. In conjunction with a whole-of-government approach to implementation of the plan, this would ensure that work being undertaken under the *Safer Together: A new approach to reducing the risk of bushfire in Victoria* program occurs in collaboration with the goals identified in the State's biodiversity strategy. This could include, for example, targets in relation to ecosystem resilience monitoring as part of current bushfire management initiatives. In addition, where possible, such work should also be responsive to the vision articulated in the *Victorian Traditional Owner Cultural Fire Strategy*.

360

FINDING 37: Cultural fire is an important component of management of Country for Traditional Owner groups. The vision for the future of cultural fire in Victoria, as articulated by Traditional Owners in the *Victorian Traditional Owner Cultural Fire Strategy*, must be supported and implemented by the Victorian Government.

365

RECOMMENDATION 45: That the Victorian Government continue to work with local government authorities and other relevant land managers to promote and enable partnerships between these bodies and Traditional Owner groups, in order to realise the vision articulated in the *Victorian Traditional Owner Cultural Fire Strategy*, and achieve greater use of cultural fire on Country.

365

RECOMMENDATION 46: That the Victorian Government work in collaboration with Traditional Owners to offer accredited qualifications in conservation and Indigenous land management, such as, for example, the Certificate III in Indigenous Land Management offered in NSW. 366

9 Governance and implementation

RECOMMENDATION 47: That the Victorian Government consider the establishment of a Chief Biodiversity Scientist to provide scientific leadership and coordination of publicly-funded biodiversity research across the environment portfolio, and to promote the use of biodiversity science and data within government policy, programs and initiatives. 374

FINDING 38: Some stakeholders have concerns regarding perceived conflicts in policy areas within the Department of Environment, Land, Water and Planning and partnering agencies. 375

RECOMMENDATION 48: That the Victorian Government establish a standalone Department of the Environment, with its own Minister, that has the sole purpose of protecting the environment and, in particular, native species. 375

RECOMMENDATION 49: That the Victorian Government ensure that the new public authority duty introduced by the *Flora and Fauna Guarantee Amendment Act 2019* (Vic) be effectively implemented, including through:

- information and education for public authorities and the broader community on the new requirements of the Act
- development of ministerial guidelines which provide practical advice to support the implementation of the duty, with a public consultation process
- demonstration of how the Victorian Government will ensure that public authorities are responsive to their obligations in relation to the duty.

379

RECOMMENDATION 50: That the Victorian Government investigate and implement whole-of-government training on ecological literacy for all Victorian public servants. 381

RECOMMENDATION 51: That the Victorian Government consider expanding the powers of the Commissioner for Environmental Sustainability, under the *Commissioner for Environmental Sustainability Act 2003* (Vic), to include functions to undertake performance audits in relation to environmental outcomes on a regular basis, and for key programs or agencies, at least every four years. This role could potentially be facilitated through the Victorian Auditor-General's Office. **382**

RECOMMENDATION 52: That the Victorian Government undertake a review of funding mechanisms for programs or policies that have significant impacts on Victoria's biodiversity, with a view to ensuring that cost recovery mechanisms are appropriate and capable of adequately funding their objectives. **385**

RECOMMENDATION 53: That the Victorian Government ensure continued support for, and implementation of, the findings and recommendations of key audits and inquiry reports, including recent reports of the Commissioner for Environmental Sustainability and Victorian Auditor-General's Office. **386**

RECOMMENDATION 54: That the Victorian Government increase future funding allocations for *Protecting Victoria's Environment – Biodiversity 2037* to ensure that the targets identified in the plan are able to be achieved. **389**

FINDING 39: Partnerships for co-investment in *Protecting Victoria's Environment – Biodiversity 2037's* actions are crucial in the successful delivery of the strategy. This includes in terms of maximising investment and facilitating broader community momentum on biodiversity conservation. **391**

RECOMMENDATION 55: That the Victorian Government expedite the completion and release of a Biodiversity Investment Prospectus in order to facilitate and attract opportunities for co-investment in biodiversity conservation. This Prospectus should identify appropriate investment models, incorporate checks and balances for conservation and restoration activities, and specify how the economic viability and scientific rigour of co-investment proposals will be assessed. **391**

FINDING 40: The Biodiversity Response Planning Program is an innovative, area-based planning approach for on-ground actions that will support the implementation of *Protecting Victoria's Environment – Biodiversity 2037*. **393**

RECOMMENDATION 56: That the Victorian Government review, assess and identify legislative or other barriers which prevent greater Traditional Owner leadership in biodiversity protection, restoration and broader management. This should be undertaken with a view to increasing Traditional Owner involvement in land and water management in Victoria, including in relation to sole management of Country as a matter of priority.

398

RECOMMENDATION 57: That the Victorian Government continue to support First Nations-led strategies, plans and other initiatives in biodiversity management, in line with the principle of self-determination. This work should also include:

- recognising the fundamental connection of First Nations peoples to Country across government and ensuring that staff of government bodies have appropriate cultural knowledge
- continuing to strengthen whole-of-government partnerships with First Nations groups
- ensuring Traditional Owners are able to speak for Country in relation to decision-making that impacts the environment, including regarding biodiversity protection, conservation and restoration activities
- supporting the development of partnerships between Traditional Owners and public and private land managers to ensure meaningful and collaborative relationships in order to best protect biodiversity.

398

FINDING 41: Local government authorities play a key role in biodiversity protection, conservation and restoration. However, they often face significant resourcing challenges in managing local biodiversity values.

402

RECOMMENDATION 58: That the Victorian Government work with local government authorities to improve financial and other supports available for councils to specifically undertake localised biodiversity initiatives, including in relation to activities contributing to the targets identified in *Protecting Victoria’s Environment – Biodiversity 2037*.

402

FINDING 42: The COVID-19 pandemic has highlighted the importance of Victoria’s environment and biodiversity values for many within the community. The post-pandemic phase presents a critical opportunity for building on the ways in which individuals and communities value and connect with nature.

405

FINDING 43: The general environmental duty, introduced by the *Environment Protection Amendment Act 2018* (Vic), is an important step forward in environmental protection and recognises the responsibility of all members of the Victorian community in preventing environmental harms.

406

RECOMMENDATION 59: That the Victorian Government explore the feasibility of the further introduction and use of general duties that can be connected to conservation and ecosystem restoration in Victoria. **407**

FINDING 44: The Victorian community generally feels connected to nature. However, there are opportunities to address identified barriers to improve environmental knowledge and connection through more targeted education campaigns for the broader community and specific campaigns for school children using age appropriate approaches, materials and experiences. This will ensure that opportunities to learn about the importance of protecting Victoria’s biodiversity are maximised. **409**

RECOMMENDATION 60: That the Victorian Government review current educational initiatives, programs and curriculum in Victorian schools to ensure the facilitation of comprehensive education on the important of healthy ecosystems and functioning biodiversity. **410**

FINDING 45: Volunteers play a vital role in protecting, conserving and restoring Victoria’s ecosystems. **413**

10 Compliance and enforcement

RECOMMENDATION 61: That the Victorian Government, in light of the evidence received by this Committee, considers the establishment of an independent agency with responsibility for regulatory activities in relation to conservation and the environment. Regulatory responsibilities of this agency should include, at a minimum, those currently overseen by the Office of the Conservation Regulator within the Department of Environment, Land, Water and Planning. As part of this process, the Victorian Government should seek to streamline regulatory activities. Further, additional resourcing should be provided to the newly-formed regulator to ensure that it is able to continue to effectively carry out its compliance and enforcement functions. **423**

RECOMMENDATION 62: That the Victorian Government streamline environmental regulatory activities in Victoria by considering the establishment of a single office to act as a first point of contact for environmental regulation, with functions to undertake broad-based public communication and engagement activities and provide information and advice on environmental issues that fall across the various regulators. Guidance and communication should be widely distributed and appropriate for differing accessibility needs. This office should ideally be situated in a new independent agency with responsibility for environmental and conservation regulation. **426**

FINDING 46: Penalties for crimes that harm Victoria’s ecosystems and biodiversity must act as an effective deterrent and be balanced with the costs of complying with relevant regulations. **430**

RECOMMENDATION 63: That the Victorian Government undertake a review of penalties for offences that threaten Victoria’s ecosystems and biodiversity in order to ensure that they act as an appropriate deterrent, including in relation to penalties for offences under the *Planning and Environment Act 1987* (Vic). **431**

FINDING 47: Comprehensive, up-to-date data and modelling on the condition and extent of native vegetation across the State is an important tool for decision-makers in the application and enforcement of the native vegetation clearing regulations. **438**

RECOMMENDATION 64: That the Victorian Government continue to support the development of data and mapping on the coverage and condition of native vegetation across the State, and investigate mechanisms for ensuring this can support the inclusion or overlaying of approved native vegetation removals and offsets to support decision-making. **438**

RECOMMENDATION 65: That the Victorian Government consider amending the *Planning and Environment Act 1987* (Vic) to ensure that local government authorities are able to effectively investigate suspected offences, including:

- minimising the notice required to be provided to the occupier of the land subject to investigation
- allowing a person with particular technical expertise who is supporting an investigation to accompany an authorised officer without the specific authorisation of the Minister
- ensuring the statute of limitations allows adequate time for responsible authorities to effectively investigate and finalise a suspected offence
- allowing enforcement orders to require actions be taken on land other than where an offence took place where all other onsite options have been exhausted. **439**

RECOMMENDATION 66: That the Victorian Government consider including information regarding native vegetation and the requirements of the native vegetation clearing regulations as part of Planning Property Reports produced through VicPlan. **441**

FINDING 48: Many councils do not have adequate resourcing to effectively undertake compliance and enforcement activities in relation to environmental laws within their municipalities, with significant and ongoing impacts on biodiversity in Victoria. 443

RECOMMENDATION 67: That the Victorian Government provide greater support to local government authorities to undertake compliance and enforcement activities in order to protect biodiversity, including through:

- providing specific resources to enable important compliance and enforcement activities with a focus on protecting biodiversity values, in conjunction with the goals identified in *Protecting Victoria's Environment – Biodiversity 2037*
- increasing opportunities for education and training in undertaking best practice compliance and enforcement
- supporting and facilitating peer networks and working groups to promote information-sharing
- providing additional resourcing to ensure that they have suitably qualified staff available to undertake compliance and enforcement. 444

11 Monitoring and data

FINDING 49: The *Biodiversity Monitoring Framework* and *Biodiversity 2037 Monitoring, Evaluation, Reporting and Improvements Framework* are beginning to steer strategic investment in environmental monitoring and data collection to support the implementation of *Protecting Victoria's Environment – Biodiversity 2037*. 454

FINDING 50: Environmental monitoring and data collection in Victoria are insufficient, and too patchy and incomplete to accurately identify the extent of native species in decline. This is hampering efforts to effectively categorise native species as threatened under Victorian or Commonwealth environmental legislation. 461

FINDING 51: Without adequate monitoring of threatened native species, the factors driving decline cannot be properly identified or assessed over time and it is difficult to design effective interventions to restore species. 461

FINDING 52: Despite the need for improved monitoring and data collection being well documented, the distribution and abundance of many invasive terrestrial and marine plant, animal and pathogen species remains poorly understood. 465

RECOMMENDATION 68: That the Department of Environment, Land, Water and Planning adopt a leadership role and work proactively with its delivery partners to ensure that environmental monitoring and data collection are coordinated, comprehensive and made publicly available. 467

FINDING 53: Funding for ongoing, comprehensive environmental monitoring and data collection to inform and evaluate efforts to reverse ecosystem decline in Victoria is inadequate. Whilst an increase in resources is required to support this important task, work is also needed to develop an appropriate and fit for purpose framework to ensure data collection is consistent in order to inform responses to ecosystem decline. 471

RECOMMENDATION 69: That the Victorian Government provide increased, ongoing funding to support comprehensive environmental monitoring and data collection addressing priority knowledge gaps that support the implementation of *Protecting Victoria’s Environment – Biodiversity 2037*. Funding should be commensurate with the importance of reversing ecosystem decline in Victoria and the scale of this objective. 472

RECOMMENDATION 70: That the Victorian Government consider providing ongoing funding to Traditional Owner organisations to support the delivery of Reading Country programs, which will facilitate the collection and analysis of environmental data related to the health of Country. 472

RECOMMENDATION 71: That the Victorian Government continue its dialogue with First Nations peoples as custodians of the land to ensure that Traditional Owners play a significant role in informing Government responses to protecting native flora and fauna. 472

FINDING 54: Citizen science projects, which are designed by professional scientists and involve volunteers, can engage the community in environmental issues and collect data vital to the management of Victoria’s unique biodiversity values. Citizen science projects can complement professional scientific research projects. 475

RECOMMENDATION 72: That the Victorian Government investigate mechanisms to require biodiversity data obtained by professional assessors to be uploaded into a central, publicly available government database (such as the Victorian Biodiversity Atlas) within a prescribed period from the date of assessment. This could include environmental impact assessments undertaken as part of mining operations and planning and development projects. 478

RECOMMENDATION 73: That the Victorian Government refine the operation of the Victorian Biodiversity Atlas and the VBA Go mobile application to make these more user-friendly to upload environmental data. Refinement of the Victorian Biodiversity Atlas should be accompanied by an awareness campaign to encourage the Victorian community to contribute to the Atlas and expand data collection across the State.

478

RECOMMENDATION 74: That the Victorian Government consider providing ongoing funding to local government authorities to support them to undertake robust data collection and environmental monitoring in areas with significant biodiversity values. The Department of Environment, Land, Water and Planning should auspice a rolling application process for the funding, and data collected should be added to the Victorian Biodiversity Atlas to ensure it informs Victorian Government environmental policy and program development and implementation.

479

What happens next?

There are several stages to a parliamentary inquiry.

The Committee conducts the Inquiry

This report on the Inquiry into ecosystem decline in Victoria is the result of extensive research and consultation by the Legislative Council's Environment and Planning Committee at the Parliament of Victoria.

We received written submissions, spoke with people at public hearings, reviewed research evidence and deliberated over a number of meetings. Experts, government representatives and individuals expressed their views directly to us as Members of Parliament.

A Parliamentary Committee is not part of the Government. Our Committee is a group of members of different political parties (including independent members). Parliament has asked us to look closely at an issue and report back. This process helps Parliament do its work by encouraging public debate and involvement in issues. We also examine government policies and the actions of the public service.

You can learn more about the Committee's work, including all of its current and past inquiries, at: <https://www.parliament.vic.gov.au/epc-lc>.

The report is presented to Parliament

This report was presented to Parliament and can be found at: <https://www.parliament.vic.gov.au/epc-lc/article/4455>.

A response from the Government

The Government has six months to respond in writing to any recommendations we have made. The response is public and put on the inquiry page of Parliament's website when it is received at: <https://www.parliament.vic.gov.au/epc-lc/article/4456>.

In its response, the Government indicates whether it supports the Committee's recommendations. It can also outline actions it may take.

PART C: LANDSCAPES AND THREATENED SPECIES

7 Threatened species

Australia is one of 17 countries that are considered to be ‘mega diverse’ in terms of their ecosystems and species. These countries make up less than 10% of the world’s surface area yet support over 70% of total biodiversity.¹ However, as at August 2021, approximately 1,800 native species of flora and fauna are considered to be threatened and at risk of extinction, with 67 faunal species and 37 floral species already extinct.² At the state level, the Department of Environment, Land, Water and Planning (DELWP) provides that since European settlement, 18 mammal species, two bird species, one snake species, three freshwater fish species, six invertebrates species and 51 plant species have gone extinct.³

Professor Brendan Wintle, Professor of Conservation Ecology at the University of Melbourne, described the extent of Australia’s species loss in evidence to the Committee: ‘We have lost 10 per cent of our mammal fauna here in Australia. We are responsible for 35 per cent of global mammal extinction since 1700 ... we are in a global extinction crisis.’ He described the graph of cumulative extinctions as ‘linear and upward’.⁴

The Ecological Consultants Association of Victoria summarised the sheer scale of the threat facing native species in Australia and the challenge faced by governments in aiming to protect and restore them:

The result of these threats is illuminated in the increasing evidence that Victoria is in the active phase of a significant, sustained extinction event. Many once-common flora and fauna species have undergone dramatic declines in population size and distribution. This is particularly evident in woodland birds, reptiles and plants. Many species common in the 1990s are now rare regionally and/or across the state – they are not recognised nor listed as threatened and will increasingly become regionally extinct. As species become regionally extinct, their resilience and capacity to avoid

1 *Australia’s Strategy for Nature 2019–2030*, report prepared by Biodiversity Working Group for the Meeting of Environment Ministers, Commonwealth of Australia, 2019, p. 6.

2 Commonwealth Department of Agriculture, Water and the Environment, *Species Profile and Threats Database: EPBC Act List of Threatened Fauna*, <<http://www.environment.gov.au/cgi-bin/sprat/public/publicthreatenedlist.pl>> accessed 17 August 2021; Commonwealth Department of Agriculture, Water and the Environment, *Species Profile and Threats Database: EPBC Act List of Threatened Flora*, <<http://www.environment.gov.au/cgi-bin/sprat/public/publicthreatenedlist.pl>> accessed 17 August 2021.

3 Department of Environment, Land, Water and Planning, *Threatened species overview*, 2021, <<https://www.environment.vic.gov.au/conserving-threatened-species/threatened-species-overview>> accessed 17 August 2021.

4 Professor Brendan Wintle, Professor of Conservation Ecology, University of Melbourne, Public hearing, Melbourne, 23 February 2021, *Transcript of evidence*, pp. 50–51.

extinction is significantly decreased. Further, shepherding such species back from the brink of extinction – restoring extensive habitat, managing threatening processes, sourcing material for genetic rescue, funding captive breeding programmes – becomes increasingly costly and difficult.⁵

This Chapter provides an overview of the current status of threatened species at both state and national levels and the main threats to these species and their habitats. It sets out the regulatory framework, including processes for ‘listing’ species as threatened, as well as the key policies aimed at protecting threatened species. The Chapter also discusses Traditional Owner roles in species conservation and emergency response frameworks.

7.1 Threatened species in Victoria

7.1.1 What is threatened?

The Victorian *State of the Environment 2018*, a five-year statutory environmental assessment of the health of different elements of Victoria’s environment, reported that:

Due to the cumulative physical pressures, and a historically fragmented approach to policy investment and management implementation, many of Victoria’s native species are now considered threatened.⁶

The report noted that Victoria has the highest number of threatened species by subregion in Australia, with over 700 fauna and flora species and ecological communities listed as threatened under Victoria’s threatened species framework.⁷ Between one quarter and one third of all terrestrial plants, birds, reptiles, amphibians and mammals, along with numerous invertebrates and ecological communities, are considered to be at risk of extinction.⁸ Vertebrate groups, and particularly reptiles, have experienced an increase in the number classified as critically endangered and vulnerable, and to a lesser extent, as endangered. Frogs including the spotted tree frog, Booroolong tree frog and Baw Baw frog are listed at both state and national levels as endangered, and all three frog species face ongoing population decline.

Subsequent evidence was received by the Inquiry from DELWP that there are now approximately 2,000 listed plants, animals and ecological communities.⁹

The Threatened Species Recovery Hub, part of the National Environmental Science Program, has developed a Threatened Species Index for Australia. The interactive digital

⁵ Ecological Consultants Association of Victoria, *Submission 499*, p. 11.

⁶ Office of the Commissioner for Environmental Sustainability, *Victorian State of the Environment 2018 Summary Report: Biodiversity (B) Scientific Assessments Part III*, 2017, p. 3.

⁷ *Ibid.*, pp. 4, 15.

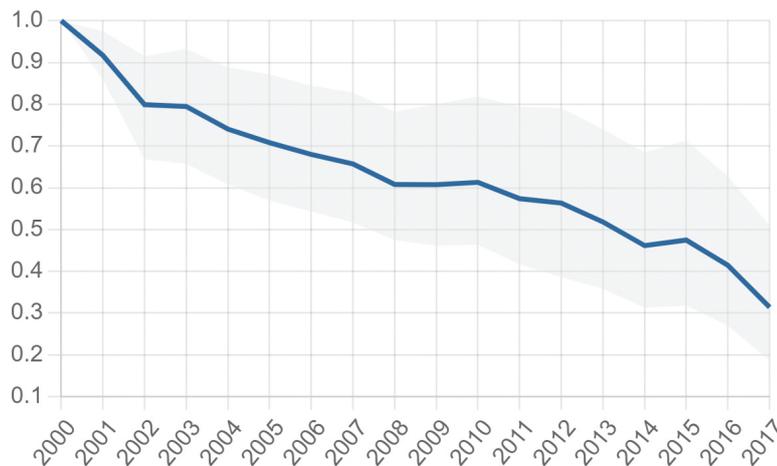
⁸ Department of Environment, Land, Water and Planning, *Submission 927*, p. 7.

⁹ Carolyn Jackson, Acting Deputy Secretary, Environment and Climate Change, Department of Environment, Land, Water and Planning, Public hearing, Via videoconference, 10 August 2021, *Transcript of evidence*, p. 3.

index aims to assist policymakers, conservation managers and the public to understand how population trends across Australia's threatened species are changing over time.¹⁰

The below graph shows the average change in threatened species populations of birds, mammals and plants (those that are vulnerable, endangered and critically endangered) between 2000 and 2017 in Victoria. It displays a relative change in relation to the 'reference year', rather than changes to population numbers themselves. For example, a score of 0.8 in a particular year would mean an average decrease of 20% compared to the reference year.

Figure 7.1 Average change in threatened species population, Victoria, 2000–17



Source: Threatened Species Recovery Hub, *The Australian Threatened Species Index 2020*, 2020, <<https://tsx.org.au/tsx/#>> accessed 29 July 2021.

Monitoring threatened species, including population numbers, has inherent challenges. The Committee received evidence that current monitoring does not adequately capture changes in population numbers. This is due to the difficulty and cost of comprehensive monitoring programs, as well as challenges relating to monitoring on private land. Efforts to monitor population numbers on private land requires cooperation from landowners. Monitoring and data collection relating to threatened species is discussed further in Chapter 11.

FINDING 21: According to recent research from the Threatened Species Recovery Hub and Victoria's *State of the Environment 2018*, native species of flora and fauna are experiencing significant declines in population size and distribution. Species that have already been listed as threatened are not being holistically protected.

¹⁰ Threatened Species Recovery Hub, *Threatened Species Index: About*, 2021, <<https://tsx.org.au/about>> accessed 25 November 2021.

7.1.2 What are the key threats?

Native species can become threatened as a result of changes to their habitats and can become endangered or extinct if action does not take place to effectively manage those threats. There are a number of key threats to native species:

Victoria has experienced extensive biodiversity loss over the past two centuries due to land clearing, fire, pest plants and animals, land development, river regulation, water pollution and, more recently, reduced resilience under climate change.¹¹

Some of these key threats are outlined in Table 7.1 below.

Table 7.1 Key threats to native species in Victoria

Climate change	Climate change has brought new challenges and exacerbated existing threats to natural ecosystems and native species, including increases to water temperature and acidification, increases to average and extreme air temperatures and decreasing rainfall. Loss of terrestrial climatic habitat caused by anthropogenic emissions of greenhouse gases is listed as a potentially threatening process in Victoria.
Changes to fire frequency and intensity	Fires are increasing in both frequency and intensity. Significant and recurring damage can result in regeneration failure for key 'seeder species' that need long periods to regenerate between fires, such as alpine ash. The 2019–20 bushfires resulted in the loss of over 1.5 million hectares of habitat, which was the third time in 20 years that over 1 million hectares had been burnt across the state in a single season. Inappropriate fire regimes causing disruption to sustainable ecosystem processes, and high frequency fire resulting in disruption of life cycle processes in plants and animals and loss of vegetation, are listed as potentially threatening processes in Victoria.
Invasive species	Invasive species are one of the primary threats to native species across Victoria and facilitate rapid biodiversity loss. Degradation and loss of habitat caused by feral horses, predation of native wildlife by cats and red foxes, damage by rabbits and feral goats and invasion of native vegetation by weeds are listed as potentially threatening processes in Victoria.
Human impacts	Native vegetation is being lost at a rate of approximately 4,000 habitat hectares per year, including through land clearing. This loss increases the risk, vulnerability and exposure of native animals and plants to other pressures and threats. For example, the regent honeyeater and swift parrot are at risk of extinction due to habitat fragmentation as a result of extensive clearing of productive woodlands. Hunting of wildlife, including recreational killing of otherwise protected species, impacts native animal populations, both target and non-target, as well as surrounding habitats. Habitat fragmentation, as well as the loss of hollow-bearing trees and coarse woody debris from Victorian native forests, are listed as potentially threatening processes in Victoria.
Changes to riverflows, wetlands and floodplains	Marine and riparian ecosystems face threats from catchment-based impacts such as urban development, which lead to sediment and litter entering these ecosystems. Overfishing puts pressure on key species and there have been widespread alterations to the structure of algal communities, affecting the productivity of some marine ecosystems. Alteration to natural flow and temperature regimes of rivers and streams, degradation of native riparian vegetation, wetland losses due to changes in water regimes, and increased sediment and toxic substance input into rivers and streams, are listed as potentially threatening processes in Victoria.

Source: Compiled by the Legislative Council Environment and Planning Committee. See, Department of Environment, Land, Water and Planning, *Submission 927*, and Department of Environment, Land, Water & Planning, *Flora and Fauna Guarantee Act 1988 Processes List*, December 2016.

¹¹ Office of the Commissioner for Environmental Sustainability, *Victorian State of the Environment 2018 Summary Report: Biodiversity (B) Scientific Assessments Part III*, p. 3.

Importantly, the key threats to native species are inherently linked to the drivers of biodiversity decline, as discussed in Chapters 4 to 6.¹² Addressing those drivers will have significant impacts on the ability to protect and/or restore threatened populations and prevent further species loss.

FINDING 22: Key threats to native species in Victoria include climate change, changes to fire frequency and intensity, invasive species, land clearing and changes to rivers, wetlands and floodplains.

7.1.3 Impacts of species loss

The impacts of declining species numbers and inadequate restoration initiatives for individual species is clear—and without action, irreversible. More broadly, species vulnerability and extinction can have significant and wide-ranging flow-on effects. This includes in terms of disrupting ecosystems, affecting the viability of other native species. There are also impacts for the services that ecosystems provide humans, such as agriculture and food security.

An example of this is provided in Box 7.1, in relation to the role of bees as pollinators.

BOX 7.1: Native bees

There are over 2,000 native bee species in Australia ranging between 2mm and 24mm in size. Bees provide crucial services to ecosystems, as well as to sectors like agriculture and horticulture, with crops receiving diverse benefits such as increased yield.

However, bee species are facing global threats. In Australia, three species are listed as critically endangered under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) and one species (the metallic green carpenter bee) is listed as extinct in Victoria under the *Flora and Fauna Guarantee Act 1988* (Vic).

Native bees were catastrophically affected by the 2019–20 Black Summer bushfires. A recent study undertaken by researchers across Australian universities modelled the extinction risk of various bee species as a result of the fires. The study found that an additional two species are eligible for listing as endangered, and nine as vulnerable, under International Union for Conservation of Nature (IUCN) criteria.

(Continued)

¹² See, also, Professor Brendan Wintle, *Transcript of evidence*, p. 51.

BOX 7.1: Continued

The use of agricultural chemicals, such as insecticides, can cause bee deaths when they are pollinating in farm areas. Bees also face threats from bee diseases and pests, such as the varroa mite, as well as habitat destruction.

Source: Agriculture Victoria, *Pollination services*, 2021, <<https://agriculture.vic.gov.au/livestock-and-animals/honey-bees/pollination-services>> accessed 5 October 2021; Dorey, James B., Celina M. Rebola, Olivia K. Davies, Kit S. Prendergast, Ben A. Parslow, Katja Hogendoorn, Remko Leijts, Lucas R. Hearn, Emrys J. Leitch, Robert L. O'Reilly, Jessica Marsh, John C. Z. Woinarski and Stefan Caddy-Retalic, 'Continental risk assessment for understudied taxa postcatastrophic wildfire indicates severe impacts on the Australian bee fauna', *Global Change Biology*, 2021, p. 1, When Bee Foundation, *Bees and pollination*, <<https://www.whenbeefoundation.org.au/about-bees-pollination>> accessed 5 October 2021.

At a public hearing, Professor Brendan Wintle described the importance of pollinators and the risks of further decline in numbers:

Pollinator loss is a particularly important type of biodiversity loss. Ninety per cent of wild flowering plants and 80 per cent of crops depend on animals and insects for pollination. In Europe there has been a 75 per cent decline in insect pollinator biomass over the last 30 years, and 30 per cent of bees are currently listed as at risk of extinction under the IUCN. So this represents a risk of \$560 billion a year in crop production globally, but if we saw the collapse of pollinators, I think that \$560 billion would be the last thing on our minds—we would see famine, we would see global mobility and basically the meltdown of our social systems. So this is a major implication of biodiversity loss for us as a species.¹³

In its submission, the Gippsland Apiarists Association attributed some of the decline to changes in forest structure:

The scientific analysis of the factors causing a decline in ecosystem health support what the beekeepers have been saying for a long time about a decline in flowering cycles and a noticeable and significant reduction in nectar production from the forests. Many species across a wide range of insects, animals and birds are dependent on nectar producing plants for their food and breeding cycles. We are likely facing a potential ecosystem breakdown with the pollinators dependent on reliable and regular nectar supplies from a diversity of plants going into decline, to the point pollination of species is an issue in adapting to a changing climate.¹⁴

FINDING 23: It is crucial to prevent further decline in native species—not just for individual species themselves, but for the vast array of ecosystems services they provide.

¹³ Ibid., p. 50.

¹⁴ Gippsland Apiarist Association, *Submission 539*, p. 2.

7.2 Listing threatened species

There are mechanisms in place at both the State and Commonwealth levels for the listing of threatened species, under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) and *Flora and Fauna Guarantee Act 1988* (Vic) (FFG Act). These processes are discussed in detail in the following sections.

7.2.1 *Environment Protection and Biodiversity Conservation Act 1999* (Cth)

As outlined in Chapter 2, the EPBC Act is the primary national environmental legislation. The Act establishes a comprehensive framework for the collaboration with states and territories on environmental and biodiversity conservation matters. It provides a mechanism for listing species as threatened, with listed species divided into the following categories:

- extinct—where there is ‘no reasonable doubt’ that a species has died out
- extinct in the wild—where species are known to survive only in cultivation or captivity
- critically endangered—where a species is facing an ‘extremely high risk’ of extinction in the wild in the immediate future
- endangered—where a species is facing a ‘very high risk’ of extinction in the wild in the near future
- vulnerable—where a species is facing a ‘high risk’ of extinction in the wild in the medium-term future
- conservation dependent—where a species is the subject of a conservation program, without which it would likely be vulnerable, endangered or critically endangered, or under certain other circumstances.¹⁵

Species undergo a complex nomination and assessment process before they can be listed. Following this, the national Threatened Species Scientific Committee provides the Minister for the Environment with advice regarding particular species and threatening processes.¹⁶

Once listed, species are deemed to hold ‘national environmental significance’. Specific obligations arise in relation to each listed species, including the development of advice regarding conservation and specific recovery plans and reduction of the impact of key threatening processes through the development of threat abatement plans.¹⁷

¹⁵ *Environment Protection and Biodiversity Conservation Act 1999* (Cth) ss 178–179.

¹⁶ Commonwealth Department of Agriculture, Water and the Environment, *Threatened species & ecological communities: Threatened Species Scientific Committee*, <<https://www.environment.gov.au/biodiversity/threatened/tssc>> accessed 25 November 2021.

¹⁷ *Environment Protection and Biodiversity Conservation Act 1999* (Cth) pt 13 div 5.

Environmental impact assessments must be undertaken where an action is likely to have a ‘significant impact’ on listed species.¹⁸

In addition, key threatening processes may be listed, which are processes that ‘threaten the survival, abundance or evolutionary development of a native species or ecological community’.¹⁹ Among those currently listed under the EPBC Act are:

- land clearance
- predation by feral cats, feral pigs, and European red foxes
- injury and fatality to vertebrate marine life caused by ingestion of, or entanglement in, harmful marine debris
- loss of climatic habitat caused by anthropogenic emissions of greenhouse gases.²⁰

Independent review of the EPBC Act

The 2019 independent review of the EPBC Act, led by Professor Graeme Samuel AC, provided its final report to the Minister for the Environment on 30 October 2020. The report was released to the public on 28 January 2021.

The report made diverse and comprehensive findings and recommendations, including finding that the EPBC Act is ‘ineffective’ and ‘not fit to address current or future environmental challenges’.²¹ In relation to matters of national environmental significance and listed species, the report stated:

The EPBC Act focuses on nationally important matters, termed ‘matters of national environmental significance’ (MNES). Good outcomes for the environment, including heritage, cannot be achieved under the current laws.

Cumulative impacts on MNES are not holistically addressed, as the Commonwealth and the States and Territories do not manage their environmental and heritage responsibilities in concert. The overall result for the nation is net environmental decline, rather than protection and conservation.

The lack of integration between jurisdictions is exacerbated by the construction of the EPBC Act and the way the Commonwealth implements it. Significant efforts are made to assess and list threatened species. However, once listed, not enough is done to deliver improved outcomes for them.²²

¹⁸ Commonwealth Department of Agriculture, Water and the Environment, *Environment Protection and Biodiversity Conservation Act 1999: Listed threatened species and ecological communities*, <<https://www.environment.gov.au/epbc/what-is-protected/threatened-species-ecological-communities>> accessed 25 November 2021.

¹⁹ Commonwealth Department of Agriculture, Water and the Environment, *Threatened species & ecological communities: Key threatening processes under the EPBC Act*, <<https://www.environment.gov.au/biodiversity/threatened/key-threatening-processes>> accessed 25 November 2021.

²⁰ Commonwealth Department of Agriculture, Water and the Environment, *Species Profile and Threats Database: Listed Key Threatening Processes*, <<http://www.environment.gov.au/cgi-bin/sprat/public/publicgetkeythreats.pl>> accessed 25 November 2021.

²¹ Professor Graeme Samuel AC, *Independent Review of the EPBC Act – Final Report*, report for Department of Agriculture, Water and the Environment, Commonwealth of Australia, Canberra, October 2020, p. 1.

²² Ibid.

In addition, it concludes that planning processes for the recovery of threatened species are ‘piecemeal’, as each species is dealt with individually, rather than through more holistic planning.²³

The report found that current threat abatement plans are largely outdated and the Act has no mechanism for dealing with urgent, acute threats, such as major bushfires or biosecurity incursions. Further, opportunities for coordinated responses across jurisdictions to key threats—such as feral animals and climate change—are ‘ad hoc, rather than a key national priority’.²⁴

The review recommended that the EPBC Act be amended to support the development of both national and regional recovery plans, which would provide for ‘coordinated threat management and investment’ aimed at reducing impacts on threatened species.²⁵

7.2.2 ***Flora and Fauna Guarantee Act 1988 (Vic)***

The FFG Act is the primary state-level legislation for the conservation of threatened species and the management of potentially threatening processes. Its objectives relating to threatened species include the prevention of flora and fauna from becoming threatened and improvement of the conservation status of threatened species; mitigation of potentially threatening processes; and the conservation of determined critical habitat areas.²⁶

Similar to the EPBC Act, the FFG Act provides mechanisms for the listing of threatened species in Victoria as well as the listing of potentially threatening processes. The list of threatened species is called the FFG Act Threatened List. Any person may nominate a particular species for inclusion on the list, in line with the eligibility criteria prescribed in the *Flora and Fauna Guarantee Regulations 2020 (Vic)*.²⁷ The Victorian Scientific Advisory Committee—an independent group of scientists who advise the Minister for Environment in relation to listing threatened species, ecological communities and potentially threatening processes—then makes recommendations to the Minister on whether the nomination should be supported.²⁸ The Minister exercises discretionary powers in either accepting or rejecting the Committee’s recommendations, provided that they have considered the Committee’s recommendations. However, reasons for any decision must be published.²⁹

The FFG Act Threatened List was previously complemented by the Threatened Species Advisory Lists, which were non-statutory advisory lists provided by relevant experts based on technical and scientific information. However, recent amendments to the

²³ Ibid., p. 17.

²⁴ Ibid.

²⁵ Ibid., p. 32.

²⁶ *Flora and Fauna Guarantee Act 1988 (Vic)* s 4.

²⁷ *Flora and Fauna Guarantee Regulations 2020 (Vic)* s 1.

²⁸ *Flora and Fauna Guarantee Act 1988 (Vic)* s 16F.

²⁹ Ibid., s 16G.

FFG Act—made by the *Flora and Fauna Guarantee (Amendment) Act 2019* (Vic) (FFG Amendment Act)—included enactment of the Common Assessment Method (CAM) for threatened species. Adoption of the CAM resulted in subsequent revocation of the Threatened Species Advisory Lists.³⁰ The CAM is being implemented in accordance with an intergovernmental agreement signed by all states and territories and the Commonwealth. It aims to reduce duplication between jurisdictions and facilitate the monitoring and reporting of species' conservation status.

The CAM uses criteria established by the IUCN—the international authority on the status of the natural world and its conservation—and in conformance with standards developed by an Australian interjurisdictional working group. Once implemented, each state and territory will have a single list of threatened species:

The Threatened List will have two parts - a national section, consisting of EPBC Act listed species, and a state section, consisting of species considered to be threatened in Victoria but have not been assessed nationally as threatened. A species can only be in one of them.³¹

Victoria's Conservation Status Assessment Project, which consolidated the existing lists in accordance with the CAM, was completed in 2021.

At a public hearing, Fiona Sutton, President of the Ecological Consultants Association of Victoria, critiqued the process for implementing the CAM in Victoria:

It is also worth noting that through that process, I believe it was due to funding, all of the species that had a status of 'poorly known but thought to be threatened' and 'data deficient but thought to be threatened' were dropped from the assessment, and so they are no longer going to have a status moving forward. So that obviously has impacts. The ability to nominate those species is very slow, it is very time consuming and it is often done on a volunteer basis by passionate naturalists that end up making the nominations to get additional species listed under the Act.³²

The Victorian Scientific Advisory Committee submitted that the FFG Act 'was created to conserve species and communities, rather than to prevent decline', and that implementation of recovery or mitigation actions 'should result in de-listing'. However, few species, communities or potentially threatening processes have been removed from the FFG Act Threatened List.³³

The FFG Amendment Act also enacted a number of other changes related to threatened species, including the introduction of a duty for public authorities to give proper consideration to the objectives of the FFG Act. The public duty is discussed further in Chapter 9.

³⁰ Department of Environment, Land, Water and Planning, *Flora and Fauna Guarantee Act Threatened List*, 2021, <<https://www.environment.vic.gov.au/conserving-threatened-species/threatened-list>> accessed 3 August 2021.

³¹ Department of Environment, Land, Water and Planning, *Common Assessment Method: Fact Sheet*, 2020, p. 2.

³² Fiona Sutton, President, Ecological Consultants Association of Victoria, Public hearing, Melbourne, 24 February 2021, *Transcript of evidence*, p. 28.

³³ Victorian Scientific Advisory Committee, *Submission 439*, p. 3.

Stakeholder views

Stakeholders to the Inquiry raised a number of concerns regarding the listing process under the FFG Act. The primary concerns were:

- significant time and effort are required by members of the public to nominate a species for listing and threatened species are likely to be missed
- once listed, many species and threatening processes don't have action statements in place despite these being mandatory under the FFG Act
- for species and threatening processes that have action statements, they are subject to varied implementation, including some that are not implemented at all
- provisions for the creation of flora and fauna management plans are not being used
- there is limited reassessment of listed species, rendering the listing process ineffective in preventing further decline.

In terms of public input, the Ecological Consultants Association of Victoria noted in its submission that listing processes at both the Commonwealth and State levels 'rely on people nominating them'.³⁴ Except where the Committee itself nominates a species, this requires public knowledge around the potential status of a particular species as well as time and resourcing to nominate it. Environmental Justice Australia stated that the effectiveness of threatened species conservation efforts relies on lists that are comprehensive and up to date:

The principal objective of these laws is to get species and processes off these lists through recovery planning and other actions, not onto them, however the effective and efficient identification of species and communities at risk is critical to the operation of the system. In other words the purpose of listing is to establish means for reducing or eliminating extinction risks and to establish trajectories of recovery and restoration, not merely to enable administration of the Act (or other laws).

Delays in listing, lists that are incomplete or not comprehensive, or uninformative listing categories can all compromise the effectiveness of the protection and recovery efforts for endangered species and communities that legislation like the Flora and Fauna Guarantee Act is intended to promote.³⁵

The FFG Act specifies criteria for inclusion on the FFG Act Threatened List, which public nominations must address.³⁶ The Victorian Scientific Advisory Committee noted that the thresholds for listing species are 'specific and stringent', and provided an example of circumstances that would not meet the listing criteria:

For example, a species or community can decline significantly, but if it has parts or populations that are protected and those are unlikely to face extinction, it doesn't meet

³⁴ Ecological Consultants Association of Victoria, *Submission 499*, p. 34.

³⁵ Environmental Justice Australia, *Submission 760*, p. 8.

³⁶ *Flora and Fauna Guarantee Act 1988* (Vic) s 16C.

the criteria for listing. Similarly, a species has to be absent and undetected for 40 years or more before it meets the criteria for extinction.³⁷

A second key concern raised regarding listing processes under the FFG Act is that many species which have been listed on the FFG Act Threatened List do not have action statements in place. Action statements set out conservation and management activities that are needed for a particular species and are mandatory for all listed species.³⁸ Management plans may accompany action statements, and the Minister can make guidelines specifying when a management plan must be prepared.³⁹

A 2009 report by the Victorian Auditor-General on the administration of the FFG Act found that action statements had only been made for 43% of listed species. It stated that there was a significant backlog of statements to prepare:

While ‘action statements’ are mandatory, their development and finalisation has been protracted. There is no time limit in the Act for these tools to be finalised—‘as soon as possible’ is the time standard set. At the current rate of progress, with existing resources, it will take a further 22 years for the department to complete action statements for the 653 items currently listed as threatened.⁴⁰

DELWP’s website lists approved action statements, with 288 statements available for threatened species (plus an additional 17 statements for threatened communities and 15 for potentially threatening processes) at the time of writing.⁴¹ DELWP’s website also provides that approximately 2,000 species, communities and threats are listed under the FFG Act. As argued by The Wilderness Society, this equates to approximately 14% of threatened species with an action statement in place.⁴²

Environmental Justice Australia argued in its submission that the FFG Act ‘failed to fulfil the expectations it created for many reasons but principal amongst these ... is a lack of a commitment to implementation’. Acknowledging the complexity of protecting and restoring native species, the organisation argued that the limited number of action statements in place is a key failing:

Perhaps the clearest example of neglect that has characterised the administration of the Act is the continuing failure to prepare “Action Statements”. Action Statements are the recovery plans that set out how to get species off threatened lists, which is the point of the threatened species laws such as the Flora and Fauna Guarantee. Preparation of Actions Statements remains one of the few precise, mandatory requirements under the Act.⁴³

³⁷ Victorian Scientific Advisory Committee, *Submission 439*, p. 3.

³⁸ *Flora and Fauna Guarantee Act 1988* (Vic) s 19.

³⁹ *Ibid.*, s 21.

⁴⁰ Victorian Auditor-General, *Administration of the Flora and Fauna Guarantee Act 1988*, April 2009, p. 2.

⁴¹ Department of Environment, Land, Water and Planning, *Conserving threatened species: Action statements*, 2021, <<https://www.environment.vic.gov.au/conserving-threatened-species/action-statements>> accessed 11 November 2021.

⁴² The Wilderness Society, *Submission 899*, p. 12.

⁴³ Environmental Justice Australia, *Submission 760*, p. 4.

The Ecological Society of Australia stated that a lack of formal process or defined timelines has contributed to this backlog, and that key threatening processes have not been dealt with systematically:

There is currently a lack of formalised process or defined timelines applied to much of the work which underpins the FFG Act. This has contributed to a limited number of the listed species, communities and threatening processes being the subject of an Action Statement. Additionally, the potentially threatening processes that are listed have not been dealt with in any systematic way. The identification of feasible, efficient and practical ways of addressing threatening processes should be a key objective of the FFG Act. Targets should be SMART (specific, measurable, agreed upon, realistic and time-based).⁴⁴

Further, Dr Jim Radford, Principal Research Fellow at the Research Centre for Future Landscapes, told the Committee that there are species with ‘outdated’ statements, and that statements are ‘very rarely costed’, leading to limited knowledge on the true cost of associated actions.⁴⁵

The absence of comprehensive and up to date action statements has implications for conservation activities. The Ecological Consultants Association of Victoria stated that: ‘The lack of Action Statements for FFG-listed species often means that management occurs without coordinated direction.’⁴⁶ Stakeholders advocated for the completion and implementation of action statements for listed species.⁴⁷

In relation to potentially threatening processes, the Victorian Scientific Advisory Committee submitted that processes without action statements were likely to be continuing biodiversity decline:

Despite the listing of processes and the requirement for these to have action statements, only 14 of the 44 PTPs [Potentially Threatening Processes] currently have action statements ... For those PTPs for which Action Statements are available, remedial actions have been identified, and can be put into policy and implemented (e.g. some actions from the ‘Alteration to the natural flow regimes of rivers and streams Action Statement’ are in place state-wide), but for PTPs for which Action Statements are not currently available it is not known if remedial action is occurring, or how it might be directed. The listed PTPs (whether they have Action Statements or not) are still acting on Victoria’s biodiversity, and in some cases, accelerating biodiversity loss.⁴⁸

Environmental Justice Australia noted that during review of the FFG Act, the Victorian Government proposed making the requirement to prepare an action statement for listed species and communities optional. However, the mandatory requirement was retained.⁴⁹

⁴⁴ Ecological Society of Australia, *Submission 575*, p. 6.

⁴⁵ Dr Jim Radford, Principal Research Fellow, Research Centre for Future Landscapes, La Trobe University, Public hearing, Melbourne, 21 Tuesday 2021, *Transcript of evidence*, p. 61.

⁴⁶ Ecological Consultants Association of Victoria, *Submission 499*, p. 14.

⁴⁷ See, for example, Friends of the Koalas, *Submission 825*, p. 1.

⁴⁸ Victorian Scientific Advisory Committee, *Submission 439*, p. 3.

⁴⁹ Environmental Justice Australia, *Submission 760*, p. 6.

At a public hearing in August 2021, Carolyn Jackson, Acting Deputy Secretary, Environment and Climate Change at DELWP, provided a progress update on the creation of Action Statements:

The new Flora and Fauna Guarantee Act threatened list has recently been published, with just under 2000 species making up the new list. The focus for DELWP is now on the development of action statements for all listed species over the next five years, which will identify the threats and management actions required to protect and recover threatened species and their habitats.⁵⁰

A third key stakeholder critique of the FFG Act's listing processes is that of those action statements that are in place, many are not implemented. The Research Centre for Future Landscapes at La Trobe University submitted that limited implementation is a result of a lack of dedicated funding:

The tragedy of having dozens of unfunded, ironically named "Action Statements" (which are a legislative requirement under the FFG Act) for threatened species or communities highlights that in many cases we have documented what needs to be done to conserve species or ecosystems; but governments and communities have not regarded these to be of sufficient priority to receive funding. Many listed threatened species don't even have an Action Statement and for many that do the Action Statements languish as unfunded and undelivered statements of good intentions. Capacity, knowledge, efficiency and innovation are all vital ingredients for preventing extinctions, but ultimately, funding is the essential key to success.⁵¹

Dr Nicholas Aberle, Campaigns Manager at Environment Victoria, highlighted the irony of having mandatory action statements without any matching mandatory implementation:

Once something is listed, the Act says it is mandatory for there to be an action statement, and the action statement should set out, 'Well, here's what needs to be done for that particular species or that ecological community'. But after that there is nothing that needs to happen, so we could have this plan for all 600 or so species that are listed as threatened in Victoria, but this Act that is supposed to give a guarantee for these species does not actually require anything to happen beyond the production of a piece of paper.⁵²

Jonathan La Nauze, Chief Executive Officer of Environment Victoria, described implementation and enforcement under the FFG Act as 'like optional extras', with the Act itself not doing 'what it says on the packet'.⁵³ John Morgan, Co-chair of the Policy Working Group at the Ecological Society of Australia, stated that: 'it is great to have all

⁵⁰ Carolyn Jackson, *Transcript of evidence*, p. 3.

⁵¹ La Trobe University Research Centre for Future Landscapes, *Submission 682*, p. 5.

⁵² Dr Nicholas Aberle, Campaigns Manager, Environment Victoria, Public hearing, Melbourne, 20 April 2021, *Transcript of evidence*, p. 13.

⁵³ Jonathan La Nauze, Chief Executive Officer, Environment Victoria, Public hearing, Melbourne, 20 April 2021, *Transcript of evidence*, p. 10.

these action statements and threatened species listed, because the alternative is we do not have those', but highlighted that implementation, monitoring and reporting has been left lacking.⁵⁴

The Research Centre for Future Landscapes advocated for legislated mandatory implementation of action statements, with the provision of adequate funding to support implementation.⁵⁵

A fourth issue relates to flora and fauna management plans, which the Secretary of DELWP can make for threatened species and communities or potentially threatening processes. Management plans may provide, for example, for conservation or restoration activities, mitigation of impacts, or the management of critical habitat. The FFG Act provides that the Minister can make guidelines in relation to circumstances where the Secretary must make a management plan.⁵⁶ However, no management plans had been created at the time of writing.⁵⁷

The Victorian National Parks Association explained the role of this mechanism flowing from action statements under the Act:

The intention of management plans under the FFG Act is to follow on from action statements and guide the actual implementation of actions for conserving flora and fauna and mitigating threatening processes. While the amended Act does slightly strengthen provisions, it is really still a question of resources and political will if any new management plans will actually be undertaken. It is unacceptable that not even one management plan has been created in the history of the Act.

... The Minister may also ... make guidelines in relation to the circumstances in which the Secretary must make a management plan under section 21 of the Act. These can effectively provide "triggers" that obligate, instigate and prioritise the making of a management plan by DELWP ...⁵⁸

The Association advocated for the creation of ministerial guidelines which specify when flora and fauna management plans must be made, in conjunction with consultation processes.⁵⁹ In a submission, Robert Pease advocated for amendment of the FFG Act to include 'a requirement for the creation of enforceable management plans to guide and implement conservation action for all listed species and communities'.⁶⁰

A further stakeholder critique is that the conservation status of listed species needs to be regularly revised to ensure that they remain up to date and that any continued decline is reflected and managed under the FFG Act Threatened List. The Ecological

⁵⁴ Dr John Morgan, Co-chair, Policy Working Group, Ecological Society of Australia, Public hearing, Melbourne, 21 April 2021, *Transcript of evidence*, p. 67.

⁵⁵ Research Centre for Future Landscapes, *Submission 682*, p. 2.

⁵⁶ *Flora and Fauna Guarantee Act 1988 (Vic)* pt 4 div 3.

⁵⁷ Department of Environment, Land, Water and Planning, *Conserving threatened species: Management plans*, 2020, <<https://www.environment.vic.gov.au/conserving-threatened-species/management-plans>> accessed 11 August 2021.

⁵⁸ Victorian National Parks Association, *Submission 102*, p. 16.

⁵⁹ *Ibid.*, p. 4.

⁶⁰ Robert Pease, *Submission 829*, p. 1.

Consultants Association of Victoria highlighted the importance of regular review in its submission:

Conservation statuses need regular revisions to adjust to temporal changes as populations and suitable habitat decline ... Given the rapid rate at which many common species' populations are declining across Victoria, delays recognising their decline or increases in effects exerted by threatening processes, will result in increased costs associated with managing their population recovery and risk of local-, regional- or state-wide extinction. This is particularly pertinent after events such as significant bushfires, droughts and floods.⁶¹

Similarly, Environmental Justice Australia stated that the new list, compiled in accordance with the CAM, will provide the Victorian community with 'more useful information... provided of course the lists are kept up to date'. It stated:

Addition of new species to the list, and especially the progression of species to higher categories of endangerment (eg "endangered" to "critically endangered") will be an important indicator that of continuing decline requiring attention rather than the improvement in status and ultimately de-listing that the Act should facilitate.⁶²

As argued by the Ecological Society of Australia, in order to be effective, the FFG Act: 'should seek through design to ensure that it is implemented in the intended manner, and it should set a strong standard of protection for all threatened species to halt and reverse the decline in biodiversity'.⁶³ Importantly, the objectives of the FFG Act can only be realised with comprehensive implementation of the Act's provisions, including in relation to listing processes.

The Committee notes that the mandatory requirement to prepare action statements for all threatened species and communities and potentially threatening processes listed under the FFG Act has been retained following the recent review of the Act and that the Victorian Government is required to comply with this requirement. As such, it has a responsibility to ensure that appropriate resourcing is provided to DELWP to implement this process for each threatened species and community and potentially threatening process. Without the approval and implementation of action statements, the FFG Act's listing process is not capable of preventing the continued decline in status of threatened species in Victoria.

The Committee supports stakeholder suggestions that the backlog of incomplete action statements could be addressed through publication of an action plan which identifies priority statements, and which could also facilitate the making of management plans.⁶⁴

⁶¹ Ecological Consultants Association of Victoria, *Submission 499*, p. 34.

⁶² Environmental Justice Australia, *Submission 760*, pp. 8–9.

⁶³ Ecological Society of Australia, *Submission 575*, p. 5.

⁶⁴ Victorian National Parks Association, *Submission 102*, p. 4.

FINDING 24: Only a small proportion of action statements for threatened species and communities and potentially threatening processes are in place, despite these being a mandatory requirement under the *Flora and Fauna Guarantee Act 1988* (Vic).

RECOMMENDATION 24: That the Victorian Government ensure, as a matter of urgency, that all threatened species and communities and potentially threatening processes listed under the *Flora and Fauna Guarantee Act 1988* (Vic) have action statements in place and that appropriate funding is allocated to their implementation. An action plan which identifies priority action statements should be developed to facilitate this process.

In addition, the Committee is concerned about the continuing decline in status of listed threatened species, including that any decline may not be captured under the current regulatory frameworks. It is crucial that conservation status remains up to date and that any continuing decline is reflected in the FFG Act Threatened List in order to meaningfully protect and conserve Victoria's threatened species.

RECOMMENDATION 25: That the Department of Environment, Land, Water and Planning undertake regular assessment and revision of the conservation status of species listed under the *Flora and Fauna Guarantee Act 1988* (Vic) to ensure that species population changes are monitored, and the most appropriate conservation status is recommended. This will help to inform action statements and any related conservation management activities and will prevent continued species decline from going unnoticed.

7

Critical habitat determinations and habitat conservation orders

The FFG Act also establishes a process for determining a habitat to be a 'critical habitat'—one that is crucial to the survival of a species or ecological community. The Secretary of DELWP is authorised to make a determination provided that certain conditions are met, such as that the area significantly contributes to the conservation of threatened species or communities.⁶⁵ Once a determination is made, the area is considered to be of state biodiversity significance. Importantly, public authorities must give 'proper consideration' to critical habitat determinations in exercising their functions, including in relation to the potential impacts on biodiversity.⁶⁶ As such, determinations are intended to influence whole-of-government administration and operation.

The area subject to a determination can be on both public and private land. As a result, critical habitat is managed cooperatively by DELWP and any relevant landholders or land managers.⁶⁷

⁶⁵ *Flora and Fauna Guarantee Act 1988* (Vic) s 20.

⁶⁶ *Ibid.*, s 4B(2)(c).

⁶⁷ Department of Environment, Land, Water and Planning, *Flora and Fauna Guarantee Act 1988 - Critical habitat and habitat conservation orders*, 2020, p. 1.

Amendments to the determination scheme were enacted through the FFG Amendment Act. This included that the Scientific Advisory Committee can advise the Secretary of DELWP on whether critical habitat determinations should be made. Importantly, the Secretary must give reasons for any decision in response to the Committee's recommendations and publish those reasons.⁶⁸ Environmental Justice Australia described this requirement as 'obligations for responsiveness' which 'have added some measures of accountability to the process of determining critical habitat'.⁶⁹

Certain conditions must be complied with in the making of a determination. For example, the Secretary of DELWP must consult with affected persons or public bodies prior to determinations being made and ensure notice is published in the Government Gazette.⁷⁰

Other changes to the scheme under the FFG Amendment Act include that the Minister for Environment may make a habitat conservation order (previously an interim conservation order) in order to conserve, protect or manage critical habitat. Habitat conservation orders are an enforceable mechanism which may prohibit damage to areas of critical habitat or require mediation of damage that has already occurred. Contravention of an order is an offence and can result in up to two years' imprisonment and/or a fine of up to 240 penalty units. However, notice must be given to affected persons to enable them to make submissions in relation to an order, and they are entitled to compensation for any financial loss that may occur in relation to an existing use or pre-existing approval. Further, an order can provide for certain activities to proceed where a permit is granted by the Minister, provided that impacts on critical habitat can be appropriately managed.⁷¹

Stakeholders to the Inquiry broadly praised the potential of critical habitat determinations and habitat conservation orders but noted that they relied on discretionary powers and had not been used when they were most needed. For example, Environmental Justice Australia described the legislative framing of 'critical habitat' as providing 'a relatively liberal and flexible canvas for biodiversity protection'.⁷² It described the value of determinations in prompting further conservation or protection pathways:

'Critical habitat' informs various machinery under the Act as well as having direct effect once 'determined'. The value of critical habitat determination under the Act is that it can then function via various pathways, with broader or more precise application (for example, as a consideration across government or as a targeted regulatory measure) and with greater or lesser regulatory force (for example as a 'consideration' of set of binding legal prescriptions).⁷³

⁶⁸ *Flora and Fauna Guarantee Act 1988 (Vic)* s 20A.

⁶⁹ Environmental Justice Australia, *Submission 760*, pp. 9-10.

⁷⁰ *Flora and Fauna Guarantee Act 1988 (Vic)* ss 20B-20C.

⁷¹ *Ibid.*, pt 5 div 1.

⁷² Environmental Justice Australia, *Submission 760*, p. 9.

⁷³ *Ibid.*, p. 11.

However, Environmental Justice Australia described the discretionary nature of the use of determinations as the ‘major flaw in the drafting of the Act’.⁷⁴ The Australian Conservation Foundation, Macnamara Community Group submitted that there is ‘still too much discretion available from ministers to override the existing legislation and no real accountability’.⁷⁵ The Victorian Wildlife Shelters Coalition stated that the central reason for the FFG Act’s failure in addressing biodiversity loss is ‘the broad discretions conferred on DELWP in critical decision-making processes’.⁷⁶

Environment Victoria described how inclusion of a mandatory requirement for critical habitat determinations and habitat conservation orders would not be administratively onerous and would provide improved biodiversity outcomes:

For critical habitat determinations, the Act specifies that such a determination “*must not be made unless*” a range of criteria are met (s.20(2)), but nowhere does it require that a determination *must be made* if other criteria are met ... Mandatory declarations of critical habitat are not particularly onerous or challenging in a regulatory sense, because the primary action that flows from the declaration is a requirement that the Secretary try to reach an agreement with any affected land managers.

Likewise, section 26(3) specifies that a habitat conservation order “must not be made *unless*” a range of criteria are met, but for this tool as well, the Act is silent on circumstances under which such an order *must* be made ... The Act makes clear that habitat conservation orders can take a variety of forms and allows a range of measures to be implemented. Therefore, even if a conservation order *must* be issued, there is still scope for the Minister to decide how best or most appropriately to intervene ...

Ultimately, habitat conservation orders are the last line of defence – this is where the buck stops for the Minister of the day. For an Act that claims to provide a ‘guarantee’ for species survival, the lack of any mandatory, even last-ditched measures to require intervention sits rather awkwardly, and continues to leave Victorian flora and fauna exposed to the whim of the Minister or government of the day.⁷⁷

Other stakeholders raised concerns regarding the limited use of these conservation tools to date. The Victorian National Parks Association stated that ‘one critical habitat determination and zero conservation orders have been made in the 32 year history of the Act’.⁷⁸ The Ecological Consultants Association of Victoria noted that its members considered that ‘there has been little or no use’ of these and other powers under the Act, ‘rendering this legislation essentially ineffective, leaving consultants to rely on the EPBC Act for any type of protection for threatened species’.⁷⁹

⁷⁴ Ibid.

⁷⁵ Australian Conservation Foundation, Macnamara Community Group, *Submission 592*, p. 2.

⁷⁶ Victorian Wildlife Shelters Coalition, *Submission 496*, p. 10.

⁷⁷ Environment Victoria, *Submission 906*, p. 16.

⁷⁸ Victorian National Parks Association, *Submission 102*, p. 14.

⁷⁹ Ecological Consultants Association of Victoria, *Submission 499*, p. 14.

The Nature Conservancy Australia described the importance of proper use of these mechanisms:

‘Critical habitat’ is both a matter of fact and a matter of law. Critical habitat determination is a pivotal device under the Act, but spectacularly under-utilised (or avoided). It is crucial because proper identification and protective action toward threatened species’ critical habitat is fundamental in responding to their risk of extinction (and setting paths of recovery, as well as avoiding other species and communities becoming threatened with extinction).⁸⁰

The Ecological Society of Australia noted that critical habitat determinations and habitat conservation orders are among the few mechanisms for protecting threatened species that apply on private land, and the Victorian Government’s reluctance to employ them has meant that the FFG Act ‘has been ineffectual in influencing or preventing actions that result in negative biodiversity impacts on privately owned land’.⁸¹

Dr Grainne Maguire, Coastal Birds Program Leader at BirdLife Australia, provided an example of how critical habitat determinations could be used to protect and restore threatened species populations:

As a quick case study, the hooded plover is a threatened resident beach-dependent shorebird listed as vulnerable in Victoria and also nationally threatened. They are an example of a successful threatened species recovery project led by an NGO but where recovery is now limited by a lack of statewide powers or a mechanism to protect habitat and mitigate threats further. Hooded plovers experience poor breeding success primarily due to human-based threats such as disturbance and predation of chicks by off-leash dogs as well as habitat loss due to development and coastal armouring, for example. If critical habitat was declared under the [FFG Act] and a set of protections were enforceable for this critical habitat, this would mean standardised protections that were not subject to frequent change as our local council by-laws and it would greatly free up capacity to tackle recovery actions and create long-term sustainable threat mitigation. It would achieve large wins for low cost. The mechanism exists to declare critical habitat but has never been implemented.⁸²

BirdLife Australia’s submission noted that protection of critical habitat in the USA has been successful in the recovery of threatened species and argued that securing and improving critical habitat ‘remains one of the most powerful and cost-effective conservation tools at our disposal’.⁸³

Some stakeholders argued that critical habitat determinations and enforceable habitat conservation orders should have been used in response to the 2019–20 bushfires, to conserve remaining habitat for severely impacted species and communities. For example, The Nature Conservancy Australia argued that critical habitat

⁸⁰ The Nature Conservancy Australia, *Submission 743*, pp. 3–4.

⁸¹ Ecological Society of Australia, *Submission 575*, p. 6.

⁸² Dr Grainne Maguire, Coastal Birds Program Leader, BirdLife Australia, Public hearing, Via videoconference, 20 April 2021, *Transcript of evidence*, pp. 37–38.

⁸³ BirdLife Australia, *Submission 886*, p. 5.

determinations should have been utilised for ‘unburnt refugia following the Black Summer bushfires’.⁸⁴

The Committee notes, however, that the Threatened Species and Communities Risk Assessment—which was completed in October 2020 in conjunction with the modernised Regional Forest Agreements (RFAs)—made recommendations on the types of interim enforceable protections that could be used to address urgent needs and prevent serious harm. In relation to critical habitat determinations, it stated: ‘Use of Critical Habitat Determination was assessed as not feasible due to the process and timelines involved but will be considered for future use where appropriate.’⁸⁵ Under the FFG Act, consultation processes with affected persons should take no less than 30 days, however, no other process timeframes are provided.⁸⁶

In order to ensure the use of habitat protection tools under the FFG Act, BirdLife Australia recommended that critical habitat determinations should be mandatory.⁸⁷ Similarly, Environment Victoria advocated for amendment of the FFG Act to ‘specify circumstances under which the Minister and Secretary, respectively, *must* make habitat conservation orders or critical habitat declarations’.⁸⁸

The Committee considers that critical habitat determinations and habitat conservation orders are important tools for protecting areas of critical habitat in Victoria. However, these have been historically underutilised. In order to prevent the further decline in status of the many threatened flora and fauna across the state, all available protection mechanisms must be applied and used cohesively. For this reason, the Committee believes that the FFG Act should be amended to specify criteria where critical habitat determinations must be made by the Secretary of DELWP. Further, while the Minister is required to consider whether to make a habitat conservation order within two years of the making of a critical habitat determination, the Committee considers that this should happen as soon as possible after the making of a determination.

FINDING 25: Critical habitat determinations and habitat conservation orders under the *Flora and Fauna Guarantee Act 1988* (Vic) have not been utilised to protect areas of habitat for threatened species and communities.

RECOMMENDATION 26: That the Victorian Government amend the *Flora and Fauna Guarantee Act 1988* (Vic) to specify circumstances where the Secretary of the Department of Environment, Land, Water and Planning must make a declaration of critical habitat.

⁸⁴ The Nature Conservancy Australia, *Submission 743*, pp. 3–4.

⁸⁵ Department of Environment, Land, Water and Planning, *Threatened Species and Communities Risk Assessment: Interim Protections and Management Actions*, April 2021, p. 10.

⁸⁶ *Flora and Fauna Guarantee Act 1988* (Vic) ss 20B–20C.

⁸⁷ BirdLife Australia, *Submission 886*, p. 7.

⁸⁸ Environment Victoria, *Submission 906*, p. 17.

Implementation and funding

In terms of the FFG Act more broadly, stakeholders advocated for additional resourcing to ensure proper implementation and oversight, particularly in light of the changes introduced under the FFG Amendment Act.

Environmental Justice Australia submitted that the FFG Act has ‘failed in the past through lack of implementation and will fail again if a more thorough job is not done to implement the refreshed and modernised Act following the 2019 reforms’. It argued that the first couple of years following enactment are ‘critical’ as ‘the failure to send a strong signal that new provisions will be utilised in this critical start up phase will effectively communicate that the Act is once again not to be taken seriously’. In relation to the current funding available for implementation, Environmental Justice Australia stated that ‘a requirement to operate within the current resourcing is a commitment to failure’.⁸⁹

Environment Victoria advocated for the provision of additional resourcing to DELWP to ensure ‘adequate implementation of all parts of the Act’, not just mechanisms related to listing threatened species.⁹⁰

The Committee agrees with stakeholder concerns that the efficacy of the FFG Amendment Act will be dependent on its implementation, including through adequate resourcing. It also considers that public awareness and involvement in the provisions of the revised Act will be dependent on how DELWP and partner agencies deliver and communicate them.

RECOMMENDATION 27: That the Victorian Government allocate adequate resources to administer and fully implement the *Flora and Fauna Guarantee (Amendment) Act 2019* (Vic), including communicating the Act’s changes to relevant stakeholders and the broader community. The resourcing of the *Flora and Fauna Guarantee Act 1988* (Vic) should include locating staff close to ecosystems, equipped with job descriptions that are sufficiently process complete and with appropriate authority limits so that they can operate more efficiently and effectively.

7.3 Other legislation and agreements

The regulatory framework for the conservation of threatened species is complex and listing processes overlap with a number of other pieces of legislation and agreements. The following sections discuss some of the key Victorian legislation and agreements.

⁸⁹ Environmental Justice Australia, *Submission 760*, p. 11.

⁹⁰ Environment Victoria, *Submission 906*, p. 17.

7.3.1 *Wildlife Act 1975 (Vic)*

The *Wildlife Act 1975 (Vic)* (Wildlife Act) aims to protect and conserve wildlife, including preventing wildlife from becoming extinct.⁹¹ It establishes various offences for hunting, taking or destroying threatened and ‘protected’ wildlife, with penalties of up to 240 penalty units or 24 months imprisonment, or both.⁹² However, section 7A of the Act also provides that the Governor in Council may declare protected wildlife to be ‘unprotected’ in an area of Victoria under certain circumstances, in order to allow authorised persons to ‘kill, take or otherwise control’ that wildlife. This includes in circumstances where the otherwise protected wildlife is causing injury or damage to property, crops or vegetation.

For otherwise protected species, DELWP administers an authorisation process whereby landowners can apply for a permit called an Authority to Control Wildlife (ATCW) which allows them to manage those species on their property. Non-lethal methods must first be considered, such as exclusion techniques of fencing or netting or modifying agricultural practices, before lethal methods can be used. In relation to threatened species, DELWP has stated that: ‘ATCWs are sometimes [issued] for the non-lethal control of threatened species (for example grey-headed Flying-foxes causing damage to property)’.⁹³ It has also stated that permits for lethal control are ‘generally not issued unless there is a significant and unavoidable risk to human health and safety and all non-lethal control options have been exhausted’.⁹⁴

The Wildlife Act has not been subject to review since its introduction over 45 years ago, and various stakeholders to the Inquiry have advocated for reform on the basis that it is outdated and ineffective.⁹⁵ However, the Act was not addressed in DELWP’s submission to the Inquiry.

On 15 February 2021, the Victorian Government announced the appointment of an independent expert advisory panel to undertake a review of the Wildlife Act.⁹⁶ The independent panel is due to provide its recommendations to Government by late 2021, after which DELWP will prepare a future directions paper for release in mid-2022.⁹⁷

The RSPCA has suggested recreational duck shooting (which is currently permitted under the Act) be prohibited based on data provided by the aerial survey of wetland birds in eastern Australia. The survey illustrated dire conditions for native waterbirds:

⁹¹ *Wildlife Act 1975 (Vic)* s 1A.

⁹² *Ibid.*, ss 41–42.

⁹³ Department of Environment, Land, Water and Planning, *Authority to Control Wildlife (ATCW) Data*, 2020, p. 1.

⁹⁴ Office of the Conservation Regulator, *Authorities to Control Wildlife: 2020: ATCWs issued between 1 January and 31 December 2020*, 2020, p. 1.

⁹⁵ See, for example, Wildlife Victoria, *Submission 712*, p. 6; Victorian Wildlife Shelters Coalition, *Submission 496*, pp. 3–5; Environmental Justice Australia, *Submission 760*, p. 18; BirdLife Australia, *Submission 886*, p. 7; Australian Wildlife Society, *Submission 900*, p. 2; Warburton Environment, *Submission 554*, p. 5.

⁹⁶ Premier of Victoria, *Experts To Lead Major Independent Review Of Wildlife Act*, media release, 15 February 2021.

⁹⁷ Department of Environment, Land, Water and Planning, *Review of the Wildlife Act 1975*, 2021, <<https://www.wildlife.vic.gov.au/wildlife-act-review>> accessed 11 August 2021.

Many waterbird species have abundances well below long-term averages, in some cases by an order of magnitude. We are very concerned to note that while there has been a small increase in available habitat, such as in the Murray-Darling Basin, we have continued to see a decline in game bird abundance. This is in direct contrast to what has been the understanding where habitat availability and game duck abundance have a positive relationship. While there is no explanation as to why this could be the case, we know that there is a long history of dry conditions, possibly exacerbated following the 2019–20 bushfires. It is not clear if this is an aberration or the beginning of a crisis in native duck populations. Unless this is properly understood, we do not believe that duck hunting should continue, as it is likely to increase pressure on a population that at this stage seems unable to rebound with improving habitat.⁹⁸

Environmental Justice Australia submitted that penalties for wildlife crime under the Wildlife Act have not been reviewed and updated for some time and that permits and licences lack clarity and accountability. Further, it argued that the legislation is ‘outdated and confusing’ and ‘not drafted in accordance with contemporary standards of legislative drafting’.⁹⁹ East Gippsland Conservation Management Network stated that the Act is ‘no longer consistent with modern scientific understanding or community expectations’.¹⁰⁰

Environmental Justice Australia also noted that the Wildlife Act predates the state’s threatened species legislation—the FFG Act—and is poorly integrated with it.¹⁰¹ The Ecological Consultants Association of Victoria similarly acknowledged the ‘contradictory aspects’ of the two Acts. For example, it noted that sambar deer are listed as a potentially threatening process under the FFG Act, but that they are listed as a protected species under the Wildlife Act.¹⁰² The impacts of invasive species were discussed further in Chapter 4.

Another example of the complex, overlapping legislative framework with regard to threatened species is outlined in Box 7.2 below.

⁹⁸ Rebecca Cook, Head of Prevention, RSPCA Victoria, Public hearing, Melbourne, 11 March 2021, *Transcript of evidence*, p. 54.

⁹⁹ Environmental Justice Australia, *Submission 760*, pp. 18–19.

¹⁰⁰ East Gippsland Conservation Management Network, *Submission 831*, p. 5.

¹⁰¹ Environmental Justice Australia, *Submission 760*, pp. 18–19.

¹⁰² Ecological Consultants Association of Victoria, *Submission 499*, p. 14.

BOX 7.2: Case study—Dingoes

The dingo is a top-order predator and plays an ecological role in suppressing populations of large herbivores and introduced mesopredators. It is culturally important to Traditional Owners and valued as an iconic species.

The dingo is listed as vulnerable under the FFG Act and an action statement has been approved which sets out a number of priority conservation actions.

Dingo-dog hybrids are classified as an established pest animal under the *Catchment and Land Protection Act 1994* (Vic), meaning that they are considered to be a serious threat to primary production, public land, the environment or community health and should be eradicated, controlled, or have their further spread prevented.

Although dingoes are protected under the FFG Act, an Order in Council was made under the Wildlife Act on 1 October 2010 which declared dingoes as ‘unprotected wildlife’ on private land and along some boundaries of public land. This is intended to enable the control of dingoes where they are a danger to livestock, in light of the difficulty in visually distinguishing between dingoes and dingo-dog hybrids. As a result, dingoes are protected only when on public land in Victoria.

Source: Department of Environment, Land, Water & Planning, *Our wildlife: Dingoes*, 2021, <<https://www.wildlife.vic.gov.au/our-wildlife/dingoes>> accessed 11 August 2021; *Catchment and Land Protection Act 1994* (Vic), pt 8 div 1.

Stakeholders to the Inquiry raised strong concerns around the differing classifications for dingoes and dingo-dog hybrids, and the inconsistent legislative framework this provided. At a public hearing, Dr Ernest Healy, Secretary of the Association for Conservation of Australian Dingoes, outlined the complication of dingoes being both protected and unprotected:

In practice the dingo receives no more protection today than it did prior to its listing under the Flora and Fauna Guarantee Act. The dingo is still officially unprotected in those areas of Crown land which were most lethally controlled prior to the threatened species listing—that is, the 3-kilometre buffer. Indeed since the dingo was listed, lethal control has intensified through the introduction of aerial baiting and the wild dog bounty. In Victoria a threatened native taxon has a bounty on its head. Recreational hunters can still hunt dingoes with virtual immunity, including in those parts of public land where the dingo is notionally protected, where even government controllers are not permitted to operate. That is the current reality.¹⁰³

Lyn Watson, Director and Founder of the Australian Dingo Foundation, stated that it was a myth that dingoes breed regularly with dogs, producing dingo-dog hybrids, and that evidence shows that dingoes will not choose to breed with domestic dogs. She told

¹⁰³ Dr Ernest Healy, Secretary, Association for Conservation of Australian Dingoes, Public hearing, Melbourne, 24 February 2021, *Transcript of evidence*, p. 36.

the Committee that female dingoes are only capable of conception for a short period (one or two days) in a year, and that dingoes seek a long term mate for breeding which is rarely found in a domesticated dog. Ms Watson argued that there are few hybrid species and to ‘forget the term “wild dog”’.¹⁰⁴

To support the control of wild dogs (which includes dingo-dog hybrids), the Victorian Fox and Wild Dog Bounty rewards landowners by way of a bounty for each animal killed. Noting that effective wild dog management ‘requires an integrated approach utilising all suitable management practices’, Agriculture Victoria states that management methods can include poison baiting, trapping, exclusion fencing, fumigation, appropriate animal husbandry and hunting.¹⁰⁵ In order to receive the bounty, applicants must submit approved body parts, which for wild dogs is an ‘entire single piece of skin and fur running from the snout, incorporating the ears, along the animal’s back and including the tail’.¹⁰⁶

The Victorian Farmers Federation submitted:

the failure to manage pest plant and animal problems often leads to exponential growth with impacts to biodiversity and the economy which are extremely costly and difficult to minimise or eradicate.¹⁰⁷

Chris Commins, Special Project Officer at the Mountain Cattlemen’s Association of Victoria, raised the issue of invasive species at a public hearing in Melbourne:

There are a number of species of introduced weeds that have compounded, namely blackberries and English broom. As far as vermin, it is just overrun with deer and overrun with wild dogs, cats and pigs. There are a lot of different species that have manifested.¹⁰⁸ As noted in Chapter 4, the Committee heard that the impacts of dingoes in terms of livestock predation are relatively minor. For example, Dr Kylie Cairns from the Centre for Ecosystem Science at the University of New South Wales, who conducts research into dingoes, stated in a response to a question taken on notice that ‘the diet of dingoes (either pure or with dog ancestry) demonstrate that large-medium marsupials are their common prey’, and that livestock are not dominant prey:

Most studies have observed that whilst sheep do appear in the diet of dingoes (scats or stomach contents), they are not the dominant prey item. This is corroborated by the data that DELWP/DEDJTR [former Department of Economic Development, Jobs, Transport and Resources] hold in relation to livestock loss in Victoria showing less than 1500 sheep lost per year due to predation by dingoes out of a total sheep population

¹⁰⁴ Lyn Watson, Director and Founder, Australian Dingo Foundation, Public hearing, Via videoconference, 17 June 2021, *Transcript of evidence*, p. 2.

¹⁰⁵ Agriculture Victoria, *The fox and wild dog bounty*, 2021, <<https://agriculture.vic.gov.au/biosecurity/pest-animals/victorian-fox-and-wild-dog-bounty/the-fox-and-wild-dog-bounty>> accessed 6 October 2021.

¹⁰⁶ Agriculture Victoria, *Acceptable fox and wild dog body parts*, 2021, <<https://agriculture.vic.gov.au/biosecurity/pest-animals/victorian-fox-and-wild-dog-bounty/acceptable-fox-and-wild-dog-body-parts>> accessed 6 October 2021.

¹⁰⁷ Victorian Farmers Federation, *Submission 882*, p. 6.

¹⁰⁸ Chris Commins, Projects Officer, Mountain Cattlemen’s Association of Victoria, Public hearing, Melbourne, 11 May 2021, *Transcript of evidence*, p. 49.

in the state of over 14 million (based on data released under FOI to the Association for Conservation of Australian Dingoes Incorporated).¹⁰⁹

Dingo CARE Network asserted that ‘In outback Australia cattle graziers can make up to \$0.83/hectare more when dingo populations are healthy (no lethal control)’, noting that ‘Dingoes reduce the numbers of kangaroos leaving greater biomass for cattle’. It described lethal control programs as ‘largely ineffective’.¹¹⁰ Melinda Browning, spokesperson for the Australian Dingo Foundation, recommended that ‘non-lethal methods of livestock protection need to be the first form of defence with broadscale baiting and trapping banned’.¹¹¹

Dr Kylie Cairns stated that: ‘Continued lethal control of dingoes under the name ‘wild dog’ harms ecosystem resilience and the recovery of dingoes as a threatened species in Victoria’.¹¹² Lyn Watson from the Australian Dingo Foundation asserted that the declaration of dingoes as unprotected wildlife has led to ‘a reintroduction of rortable bounties, the resumption of cruel trapping and baiting, and the introduction of aerial baiting’.¹¹³

The impacts of lethal control methods on dingoes were discussed further in Chapter 4, including regarding negative impacts on ecosystems and disturbance of pack structure.

The Committee notes the diverse concerns raised by stakeholders to the Inquiry, including that the Wildlife Act is outdated and no longer meets community expectations. The panel undertaking the independent review of the Wildlife Act is due to report its findings to the Minister for Energy, Environment and Climate Change in late 2021. The Committee notes the consultation processes that have been completed as part of the independent review and hopes that the concerns raised during this Inquiry are addressed as part of the review’s findings and recommendations.

FINDING 26: The *Wildlife Act 1975* (Vic) is outdated and does not meet community expectations around the protection and conservation of wildlife.

In addition, the Committee notes concerns raised by stakeholders regarding the treatment of dingoes in Victoria. This includes in relation to the complex and conflicting legislative framework that enables them to be considered both a threatened species and a pest animal. It also includes the approved use of lethal methods for their management through the Order in Council made under the Wildlife Act, which declared dingoes as ‘unprotected wildlife’, and the Fox and Wild Dog Bounty program.

¹⁰⁹ Dr Kylie Cairns, Centre for Ecosystem Science, School of Biological, Earth and Environmental Sciences, UNSW, hearing, response to questions on notice received 26 March 2021, p. 1.

¹¹⁰ Dingo CARE Network, *Submission 887*, p. 4.

¹¹¹ Melinda Browning, Spokesperson, Australian Dingo Foundation, Public hearing, Via videoconference, 17 June 2021, *Transcript of evidence*, p. 5.

¹¹² Dr Kylie Cairns, Centre for Ecosystem Science, School of Biological, Earth and Environmental Sciences, University of New South Wales, Public hearing, Melbourne, 23 February 2021, *Transcript of evidence*, p. 27.

¹¹³ Lyn Watson, *Transcript of evidence*, p. 1.

The Committee considers that these mechanisms are not in line with community expectations and the Victorian Government's obligation to protect and conserve the dingo in accordance with Action Statement No. 248, made for the purposes of the *Flora and Fauna Guarantee Act 1988* (Vic).

RECOMMENDATION 28: That the Victorian Government consider, in relation to dingoes and dingo-dog hybrids:

- revoking the Order in Council made under the *Wildlife Act 1975* (Vic) that declared dingoes as 'unprotected wildlife'
- funding and fully implementing Action Statement No. 248 for the dingo under the *Flora and Fauna Guarantee Act 1988* (Vic), which identifies various actions for its conservation including genetic research into the current genetic definition of the dingo
- working with Agriculture Victoria to improve non-lethal strategies for protecting livestock in areas where there are increased levels of predation
- developing other mechanisms to support landowners to use non-lethal means to manage dingoes and wild dogs in relation to potential impacts on livestock
- reviewing the Fox and Wild Dog Bounty program.

Dingoes, the use of 1080 baits and a potential trial of dingoes back into the landscape were discussed further in Chapter 4.

Authority to Control Wildlife

The Committee received broad criticism from Inquiry stakeholders on the impact of the ATCW process on threatened species. In particular, the ability to obtain a permit for their non-lethal control and, in some circumstances, approval of lethal methods. For example, Humane Society International submitted that: 'a lack of transparency surrounding what type of control they are issued for (lethal or deterrent) makes understanding the impact the system is having impossible'.¹¹⁴ The Australian Society for Kangaroos asserted that the ATCW permit system 'does not appear to be consistent with either of the stated purposes of the Wildlife Act'.¹¹⁵ The Biodiversity Planning Network advocated for stronger protection for threatened species under the Wildlife Act.¹¹⁶

The below case study outlines some of the concerns raised regarding the ATCW system and threatened species conservation.

¹¹⁴ Humane Society International, *Submission 823*, p. 2.

¹¹⁵ Australian Society for Kangaroos, *Submission 605*, p. 12.

¹¹⁶ Biodiversity Planning Network, *Submission 523*, p. 13.

BOX 7.3: Case study—Grey-headed flying fox

The grey-headed flying fox is the only species of flying fox permanent in southern Australia. Flying foxes provide important ecological functions, including regenerating native plant species by pollinating as they feed and then dispersing seeds as they travel. One flying fox can disperse up to 60,000 seeds in a single night.

The grey-headed flying-fox is listed as vulnerable under the EPBC Act and FFG Act. It is considered vulnerable due to a significant decline in numbers, resulting from the loss of feeding habitat and disruptions to camp sites. It is at risk of extinction due to slow reproductive rates, relatively lengthy timeframes for males to become sexually mature, and high rates of infant mortality.

However, grey-headed flying foxes may be the subject of an ATCW under the Wildlife Act for the purposes of non-lethal control. DELWP data shows that in 2020, two ATCWs were authorised for a total of 11,399 grey-headed flying foxes.

Source: Department of Environment, Land, Water & Planning, *Our wildlife: Flying foxes*, 2019, <<https://www.wildlife.vic.gov.au/our-wildlife/flying-foxes>> accessed 11 August 2021; Office of the Conservation Regulator, *Authorities to Control Wildlife: 2020: ATCWs issued between 1 January and 31 December 2020*, 2020, p. 2.

Various submitters emphasised the importance of the grey-headed flying fox. The Australian Wildlife Protection Council stated that flying foxes ‘play a major role in the regeneration of hardwood forests and rainforests’.¹¹⁷

Wildlife Victoria raised concerns around the continued issuing of ATCWs for the grey-headed flying fox despite multiple and persistent threats to the species in recent years:

This year, bushfires have destroyed millions of hectares of native forest in Victoria and NSW that this species would normally rely on for food resources. The species, which may have lost 15%-20% of its numbers due to extreme heat events across its range, and starvation from prolonged drought in NSW and Queensland, is now being put under even more pressure in Victoria by logging of unburned forests in East Gippsland.

Flying fox carers and conservationists are anticipating the possibility of widespread starvation of Grey-headed flying foxes this summer as they fail to find sufficient food resources following the loss of so much foraging habitat.

In addition, an ATCW was issued for the next three years by DELWP to permit dispersal of the species from the Colac Botanic Gardens, ensuring that animals will be pushed into less summer-survivable locations and contribute to deaths of more animals.¹¹⁸

¹¹⁷ Australian Wildlife Protection Council, *Submission 73*, p. 5.

¹¹⁸ Wildlife Victoria, *Submission 712*, p. 4.

The Coalition for the Protection of Kangaroos called for suspension of the ATCW scheme altogether, ‘pending a comprehensive, open, transparent and public inquiry into the ATCW policy and its implementation, monitoring and enforcement’.¹¹⁹

The Committee notes the widespread concerns raised regarding the ATCW permit system in addition to those outlined in relation to the Wildlife Act more broadly. It considers that allowing private landowners to control threatened species through non-lethal means, and in some circumstances through lethal means, does little to assist the conservation of threatened species in the State and may further exacerbate species decline, including in areas of key habitat. It urges the Victorian Government to review and revise this process, in conjunction with any other recommendations made by the independent panel reviewing the Wildlife Act. In addition, the Committee urges the Victorian Government to ensure the views of Traditional Owners are taken into account in relation to wildlife and habitat protection, as many native species are important aspects of First Nations living culture and heritage, including as totem species.

FINDING 27: The Authority to Control Wildlife permit system under the *Wildlife Act 1975* (Vic) inhibits the conservation of threatened species in Victoria through the issuing of permits to control threatened species by non-lethal or lethal means.

RECOMMENDATION 29: That the Victorian Government ensure that future amendment of the *Wildlife Act 1975* (Vic), in conjunction with the recommendations made by the independent panel undertaking review of the Act, at a minimum:

- prevents the use of the Authority to Control Wildlife permit system in relation to species listed as threatened under the *Flora and Fauna Guarantee Act 1988* (Vic) or *Environment Protection and Biodiversity Conservation Act 1999* (Cth)
- takes into consideration the views of Traditional Owners in relation to wildlife and habitat protection, noting the particular importance of native species as part of living culture and heritage.

Kangaroo Harvesting Program

The Kangaroo Harvesting Program provides for the permitted harvesting of eastern and western grey kangaroos. The Victorian Government describes it as an ‘alternative to the existing Authority to Control Wildlife (ATCW) system for landholders wishing to control kangaroos on their property’. It states that the program helps reduce on-farm issues such as crop destruction and competition with livestock, makes use of carcasses and provides income for trained harvesters.¹²⁰

¹¹⁹ Coalition for the Protection of Kangaroos, *Submission 544*, p. 6.

¹²⁰ Department of Jobs, Precincts and Regions, *Kangaroo harvesting*, 2021, <<https://dipr.vic.gov.au/game-hunting/kangaroo-harvesting>> accessed 5 October 2021.

Harvest through the program is limited by the use of annual quotas, which are set for different ‘harvest zones’. Quotas are set on the basis of population estimates and predicted numbers of ATCWs for the forward year. To participate, landholders can engage an authorised harvester to kill kangaroos at no cost, with carcasses provided to processing centres for use as food and other products. Harvesters must be accredited in relation to firearm proficiency and game harvesting and operate in accordance with the *National Code of Practice for the Humane Shooting of Kangaroos and Wallabies for Commercial Purposes*.¹²¹

The Committee received evidence from stakeholders regarding the Kangaroo Harvesting Program and the treatment of an iconic species.

The Australian Society for Kangaroos asserted in its submission that the delegation of power to the Game Management Authority to oversee the Program raised serious issues:

The GMA [Game Management Authority] was the subject of a damning Pegasus Economics report in 2017 which found that the GMA was neither a credible nor an independent regulator of hunting in Victoria following its failure to enforce its own regulations during the 2016 duck hunting season ... The delegation of [DELWP’s] oversight role in the commercial kangaroo industry to a discredited and incompetent regulator raises serious questions about DELWP’s ability to properly monitor and protect Victoria’s kangaroo populations from overexploitation and long term harm.¹²²

Michelle Thomas, President and Shelter Director of Animalia Wildlife Shelter and Rescue, described how wildlife shelters saw a conflict in their relationship with DELWP, including in relation to their ability to care for kangaroo joeys following legal culling or in the aftermath of bushfire events:

Now all wildlife shelters feel in Victoria we are being attacked by our department, the very department that issues our licences, and that we are constantly the ones that are trying to help the environment but having everything thrown back in our face. Authority-to-cull permits—so it is okay for somebody to go out and shoot a kangaroo, but they do not want me to look after its joey and bring that back. For every kangaroo that is shot, if it is a female, it is her ... joey at foot, it is her joey in the pouch and it is her joey in utero that is sitting there in stasis. So that is four generations that are lost, and each of those joeys takes two years to get to full maturity and it is another year on top of that before they can actually breed. So what is actually happening out there in the environment is completely different. For us to be told we cannot look after the wildlife or we cannot assist it, to be pushed out of bushfire zone areas and to be not allowed to go in there during the black summer fires was horrendous and put most of the carers in Victoria in a state of high stress.¹²³

¹²¹ Ibid.

¹²² Australian Society for Kangaroos, *Submission 605*, p. 20.

¹²³ Michelle Thomas, President and Shelter Director, Animalia Wildlife Shelter and Rescue, Public hearing, Melbourne, 23 February 2021, *Transcript of evidence*, p. 36.

Ms Thomas told the Committee of significant difficulties in obtaining permission to translocate kangaroos for conservation purposes. She cited examples of animal cruelty she has witnessed in relation to kangaroo culling:

For the last four weeks I have been running down to a property on the peninsula where there is a kangaroo hopping around with just a little bit of his front arm left and another female that has been shot through the side of the face and half of her jaw is blown off; she is surviving on her body fat. Then there is a juvenile that is slowly starving to death that is accompanying that female; but there is no food source for that baby or that juvenile that is at foot, because it is actually too young to be at foot. It has been pulled out of the pouch by a shooter. It has been thrown on the ground. They have tried to stomp on it, and they have actually broken its forearm and then it has got away from them in fear. And this is the sort of stuff that our wildlife is facing on a daily basis.¹²⁴

The Coalition for the Protection of Kangaroos stated in its submission that, 'kangaroos have been much maligned and persecuted' over recent decades, which is 'being driven largely by commercial and vested interests which put profits ahead of the welfare of these animals'. It advocated for the cessation of the Kangaroo Harvesting Program, alongside a complete overhaul of the ATCW permit system.¹²⁵

Peter Hylands, President of the Australian Wildlife Protection Council, described the numbers of kangaroos which have been permitted to be harvested:

I am going to give you three numbers. The first is 23. That is the number of red kangaroos counted in the Victorian government's kangaroo survey in 2017. The next number is 270. That is the latest number I have for Australian wildlife rescued from public lands, including state and national parks in Victoria during the catastrophic wildfires of last summer. The third number is 724,694. This is the number of kangaroos for which permits were issued to kill commercial harvest species since the beginning of 2018, and that includes this year and a small addition for joeys.¹²⁶

Mr Hylands raised concerns regarding the ways in which kangaroo numbers are estimated, which provide a basis for the setting of quotas. He stated that the estimates are 'clearly absurd, and the Victorian Government should not be in a position where it is promoting these numbers without carefully checking what has gone on'.¹²⁷

The *Kangaroo Harvest Management Plan 2021–2023* provides for expanded use of kangaroo carcasses to include human consumption, which was previously limited to their use for pet food. Harvested kangaroos can also now be traded interstate and exported overseas. In addition, the Plan provides for the suspension of harvesting in a harvest zone or local government area where an event occurs that could affect populations of kangaroos, such as bushfires.¹²⁸ Once suspended, the Plan provides

¹²⁴ Ibid., p. 38.

¹²⁵ Coalition for the Protection of Kangaroos, *Submission 544*, pp. 4–5.

¹²⁶ Peter Hylands, President, Australian Wildlife Protection Council Public hearing, Melbourne, 23 February 2021, *Transcript of evidence*, p. 43.

¹²⁷ Ibid., p. 48.

¹²⁸ Department of Jobs, *Kangaroo harvesting*.

that recommencement of harvesting will take place following analysis of the expected impact of the event on kangaroos in that area.¹²⁹

The 2019–20 bushfires had significant impacts on native kangaroo populations. In March 2020, the Arthur Rylah Institute for Environmental Research published its report on the impacts of the fires on eastern grey kangaroos in the north east and Gippsland kangaroo harvest zones. This research was used to inform the calculation of kangaroo harvest quotas in 2020. In its 2020 report on the Kangaroo Harvesting Program, DELWP stated:

Due to the bushfires which affected Victoria in late December 2019 and early 2020, harvesting under the KHP [Kangaroo Harvesting Program] was suspended in all zones during January 2020. Harvesting remained closed (control through ATCW's was still allowed) in the Gippsland and North East harvest zones to allow DELWP to carry out an assessment of kangaroo populations in these zones.

The assessment identified that the Towong, East Gippsland and Alpine local government areas (LGAs) were found to have experienced the greatest impacts of the fire. Following the assessment, the KHP resumed in the North East and Gippsland zones in August 2020, with the exception of three LGA's. The KHP remained closed in Towong, East Gippsland and Alpine LGAs for the remainder of 2020 and quotas were revised down to 11,300 (from 12,550) in the Gippsland zone, and 3,100 (from 4,000) in the North East zone to reflect the shortened harvest period and the effects of fire on the population on kangaroos in these areas.¹³⁰

The report noted that aerial and ground surveys were undertaken in late 2020 to inform the quotas for 2021, and that these are planned to be completed every two years. Approximately 80% of the quota for 2020 was utilised by harvesters.¹³¹

The Committee considers that the introduction of a mechanism to suspend the Kangaroo Harvesting Program, in the event of environmental factors or a significant natural event that may affect kangaroo populations, is an important tool for allowing flexibility in the management of otherwise overabundant native species. This tool should be implemented in situations of population decline as well as where there is uncertainty around the impacts of an event to ensure that monitoring and assessment of species numbers can be undertaken. Compliance and enforcement activities that accompany suspensions should ensure that illegal activity is investigated appropriately.

However, the Committee is concerned regarding stakeholder evidence of wildlife cruelty taking place in conjunction with the Kangaroo Harvesting Program. This is an important issue and compliance and enforcement mechanisms must be capable of investigating and prosecuting such cases. Compliance with, and enforcement of, environmental laws is discussed further in Chapter 10.

¹²⁹ Department of Environment, Land, Water and Planning, *Victorian Kangaroo Harvest Management Plan: 2021–2023*, Victorian Government, Melbourne, 2021.

¹³⁰ Department of Environment, Land, Water and Planning, *Kangaroo Harvesting Program: 2020 report*, March 2021, p. 6.

¹³¹ *Ibid.*, pp. 6–7.

FINDING 28: The provision contained in the *Kangaroo Harvest Management Plan 2021–2023* to suspend the Kangaroo Harvesting Program in response to environmental factors or significant natural events that may affect short-term changes in kangaroo populations in a harvesting zone or zone segment (local government area) is an important tool to prevent further decline of native species.

RECOMMENDATION 30: That the Victorian Government ensure that suspension of the Kangaroo Harvesting Program occurs in the aftermath of any event likely to have an impact on kangaroo populations, such as bushfires, as provided for in the *Kangaroo Harvest Management Plan 2021–2023*. Suspension should be accompanied in every circumstance with proactive compliance and enforcement activities to ensure that illegal harvesting activity does not take place during a period of suspension of the program.

7.3.2 *Environment Effects Act 1978 (Vic)*

The *Environment Effects Act 1978 (Vic)* provides for the assessment of major projects that have the potential to significantly affect the environment. This includes where there may be potential long-term and significant loss of known remaining habitat or population of a threatened species, or in relation to matters listed under the FFG Act, such as the potential loss of a listed species.¹³² DELWP explained the importance of this assessment process for biodiversity outcomes in its submission:

Under the EE Act [*Environment Effects Act 1978 (Vic)*] the Minister for Planning can make an assessment that works are environmentally unacceptable in light of likely biodiversity effects and existing policy. The EE Act provides for consideration of ecological assets which otherwise have little legislative protection, for example non-threatened species and communities, threatened species and communities listed under the FFG Act on privately-held land, non-native vegetation which provides habitat for native species and the long-term health of aquatic ecosystems.¹³³

However, in its submission, Australian Marine Ecology asserted that in environmental offset processes under the Act, proponents proposing an activity may use the absence of a listed species in that area as a way of dismissing any further species or habitat concerns:

The lack of listed species can be used to dismiss consideration of any species of conservation concern: there is a disingenuous assumption that the listing process has captured all species that an effects assessment needs to consider.

... In the Channel Deepening Project SEES [supplementary environment effects statement] deep reef impact report, it was claimed there were no listed species present and therefore no issues of conservation concern. There was no attempt to address

¹³² Department of Sustainability and Environment, *Ministerial guidelines for assessment of environmental effects under the Environment Effects Act 1978*, Melbourne, 2006, p. 7.

¹³³ Department of Environment, Land, Water and Planning, *Submission 927*, p. 22.

conservation concerns for non-listed species and communities. The whole community was later listed as a threatened community under the FFG Act. This highlighted considerable issues with the EES [environment effects statement] process, particularly with respect to sources of truth.¹³⁴

The *Environment Effects Act 1978* (Vic) and assessment processes regarding the environmental effects of major projects was discussed further in Chapter 6.

7.3.3 Native vegetation clearing regulations

Native vegetation provides critical habitat for many flora and fauna species and is an important part of Victorian ecosystems. Removal of native vegetation is regulated in Victoria by the native vegetation clearing regulations.

The *Guidelines for the removal, destruction or lopping of native vegetation* are incorporated into all Victorian planning schemes and must be considered by relevant authorities in relation to planning decisions.¹³⁵ The guidelines stipulate requirements to obtain a permit in order to remove, destroy or lop native vegetation, including dead native vegetation. Importantly, they establish a three-step approach which aims to ‘achieve no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation’: avoid removal, minimise impacts and offset to compensate for biodiversity loss.¹³⁶

The existence of habitat for rare or threatened species is taken into consideration during the assessment process for applications to remove native vegetation. Where a permit is approved in relation to an area which contains habitat for threatened species, and the removal of vegetation will significantly impact on that habitat, a ‘species offset’ is required. A species offset must compensate for the removal of that habitat and must be located in another area of habitat for that same species.¹³⁷

The impacts of the continuing loss of native vegetation are significant for threatened ecosystems such as grasslands, as well as for threatened species which rely on native vegetation as habitat. The Commonwealth Endangered Species Scientific Sub-committee has stated that it is ‘strongly of the view that land clearance has been the most significant threatening process in Australia since European settlement’ and that if it continues, it will ‘lead to additional species becoming endangered’.¹³⁸

A number of stakeholders raised concerns regarding the impacts of the native vegetation clearing regulations on threatened species. In a submission, Dr Megan O’Shea highlighted the benefits of protecting endangered native grasslands

¹³⁴ Australian Marine Ecology, *Submission 815*, p. 19.

¹³⁵ Department of Environment, Land, Water and Planning, *Guidelines for the removal, destruction or lopping of native vegetation*, Victorian Government, Melbourne, 2017, p. 3.

¹³⁶ *Ibid.*, p. 12.

¹³⁷ *Ibid.*, pp. 10, 15.

¹³⁸ Commonwealth Department of Agriculture, Water and the Environment, *Land clearance*, <<http://www.environment.gov.au/biodiversity/threatened/key-threatening-processes/land-clearance>> accessed 12 August 2021.

in urban settings, including that they provide high floristic diversity and habitat for threatened fauna, such as the striped legless lizard.¹³⁹

The Biodiversity Planning Network noted that the native vegetation planning controls seek to preserve habitat for threatened species in areas of native vegetation, but that they don't provide protection outside areas of native vegetation. Further, it stated that the controls do not 'consider the actual presence or absence of rare or threatened species - unless local councils have been able to establish local planning controls for their protection'.¹⁴⁰

In addition to broad concerns around the native vegetation regulations, stakeholders raised particular concerns around the offset process for threatened species habitat. The Ecological Consultants Association of Victoria criticised the limited protection for threatened species and lack of transparency around species offsets, and argued that the system is 'driving ecosystem decline'.¹⁴¹ At a public hearing, Jordan Crook, a member of the Grassy Plains Network, described how offsets are not 'like for like' and that there is a risk of providing lower quality habitat in offset areas for species:

With grasslands, it is all about quality. When they have not been ploughed, when the rocks have not been taken off, those habitat structures are still in place for the species like the striped legless lizard. Offsets are not like for like and that means we are offsetting really high-quality stuff where the threatened species are already living. They should be managed where they are. They are being offset to areas that have a few things; they look like grasslands, but when you get down on your hands and knees and see what is going on, they are not like for like. That quality is not being transferred from site to site.¹⁴²

The native vegetation clearing regulations and development were discussed in more detail in Chapter 6, and their enforcement is discussed in Chapter 10.

7.3.4 Regional Forest Agreements

Victoria's RFAs, which are agreements made between the Victorian and Commonwealth Governments regarding the use and management of forests, were updated in March 2020 to improve protections for forest biodiversity and threatened species. Amendments included providing for the creation of action statements, which aim to facilitate faster interventions to protect threatened species. They also included identifying and prioritising for research knowledge gaps around management actions and emerging threats to vulnerable species. The new RFAs also include commitments around working with Traditional Owners to 'protect Country'.¹⁴³

¹³⁹ Dr Megan O'Shea, *Submission 873*, p. 2.

¹⁴⁰ Biodiversity Planning Network, *Submission 523*, p. 9.

¹⁴¹ Ecological Consultants Association of Victoria, *Submission 499*, p. 25.

¹⁴² Jordan Crook, Member, Grassy Plains Network, Public hearing, Melbourne, 12 May 2021, *Transcript of evidence*, p. 22.

¹⁴³ Department of Environment, Land, Water and Planning, *Victorian Regional Forest Agreements*, 2021, <<https://www.delwp.vic.gov.au/futureforests/what-were-doing/victorian-regional-forest-agreements>> accessed 11 August 2021.

In conjunction with the updated RFAs, DELWP has undertaken a risk assessment for threatened species and communities that may be affected by forestry operations in the regions covered by the agreements. As part of this assessment, DELWP's website notes that it 'identified 32 species and communities at the greatest risk of serious or irreversible environmental damage in the short term' for which it would be implementing interim protections. The website further notes that the majority of interim protections are targeted within fire-affected regions, due to the 2019–20 bushfires. Following implementation of these measures, the risk assessment will then consider whether permanent protections are needed.¹⁴⁴

Some of the interim measures include:

- southern greater glider and giant burrowing frog—special management zoning for important populations to mitigate the identified hazard of 'forestry operations'
- long-footed potoroo—conduct pre-harvest surveys of all unburned or low severity burned coupes in the top 20% of habitat to mitigate the identified hazard of 'forestry operations'
- white-footed dunnart—undertake a gene-mixing project under the Bushfire Biodiversity Response and Recovery Program to mitigate the identified hazard of 'inappropriate fire regimes'.¹⁴⁵

In addition, under the Victorian Forestry Plan, the Victorian Government has committed to cease commercial logging of native timber in the State by 2030.¹⁴⁶

Stakeholders to the Inquiry provided evidence on the ongoing impacts of forestry operations on threatened species. For example, Professor David Lindenmayer AO, Professor of Ecology and Conservation Science at the Australian National University, submitted that logging continues to have negative effects on forest-dependent species:

it is clear that Regional Forest Agreements have failed to adequately protect biodiversity (given major declines in a vast number of species, including many species of conservation concern, such as Leadbeater's Possum and the Greater Glider). Conversely, ongoing logging as mandated under Timber Release Plans ... will only increase levels of threats to biodiversity because logging operations will take place in forests that have high conservation value for threatened forest-dependent species. From a scientific perspective, it appears inappropriate to continue logging in the Mountain Ash ecosystem which is classified as Critically Endangered.¹⁴⁷

¹⁴⁴ Department of Environment, Land, Water and Planning, *Conserving threatened species: Threatened Species and Communities Risk Assessment*, 2021, <<https://www.environment.vic.gov.au/conserving-threatened-species/threatened-species-and-communities-risk-assessment>> accessed 11 August 2021.

¹⁴⁵ Department of Environment, Land, Water and Planning, *Threatened Species and Communities Risk Assessment*, pp. 12, 19–20, 22.

¹⁴⁶ Department of Jobs, Precincts and Regions, *Victorian Forestry Plan*, <<https://djpr.vic.gov.au/forestry/forestry-plan>> accessed 15 August 2021.

¹⁴⁷ Professor David Lindenmayer AO, *Submission 353*, p. 2.

The Wilderness Society similarly stated that ‘numerous forest-dependent flora and fauna’ are ‘being pushed ever closer to extinction due to logging-induced habitat loss’.¹⁴⁸ The Ecological Consultants Association of Victoria, in reporting results of a survey of its members, stated that there has been a loss of hollow bearing trees which has reduced the breeding and feeding capacity ‘of countless species’, many of which are now listed as threatened.¹⁴⁹ Wildlife Victoria submitted that logging of native forests is ‘one immediately preventable cause of the destruction of habitat of threatened and other species’.¹⁵⁰

In addition, submitters criticised the persistence of ‘salvage logging’, where forestry operations take place in areas affected by fire. Doctors for the Environment Australia argued that salvage logging continues ‘despite clear scientific evidence showing that this is the most damaging form of logging in native forests’ and that it ‘can impair the recovery of birds, plants, insects, soils and microbes for decades or even centuries afterward’.¹⁵¹

Professor David Lindenmayer described claims that logging does not impact threatened species as ‘patently absurd’, and stated: ‘the evidence is clear, and it is compelling to indicate that logging has significantly altered ecosystems and has contributed to the decline of species’.¹⁵²

In evidence to the Committee, Monique Dawson, Chief Executive Officer of VicForests, explained how threatened species are taken into consideration during forestry activities. She stated that VicForests assesses forest areas for the likelihood of them containing habitat for threatened species, before applying the ‘formal legal requirements’ in relation to the ‘different habitat features’ of the coupes. For example, the inclusion of buffers around areas of threatened species habitat. Ms Dawson noted that VicForests has ‘invested heavily in building up ... scientific expertise’, including in terms of scientific capacity to conduct pre- and post-harvest surveys which are used to assess which harvest techniques are ‘going to be the most supportive of the persistence of threatened species in our coupes’.¹⁵³

Ms Dawson also described the ways in which VicForests has improved its operations in recent years in relation to threatened species conservation. She noted that ‘variable retention’ techniques had been implemented in coupes to ensure that clusters of trees remain in each coupe to provide habitat. Ms Dawson stated that where salvage logging occurs, VicForests would not take those trees that provide critical habitat.¹⁵⁴

¹⁴⁸ The Wilderness Society, *Submission 899*, p. 7.

¹⁴⁹ Ecological Consultants Association of Victoria, *Submission 499*, p. 8.

¹⁵⁰ Wildlife Victoria, *Submission 712*, p. 4.

¹⁵¹ Doctors for the Environment Australia, *Submission 725*, p. 15.

¹⁵² Professor David Lindenmayer AO, Fenner School of Environment and Society, Australian National University, Public hearing, Melbourne, 10 March 2021, *Transcript of evidence*, p. 42.

¹⁵³ Monique Dawson, Chief Executive Officer, VicForests, Public hearing, Melbourne, 10 March 2021, *Transcript of evidence*, pp. 6–7.

¹⁵⁴ *Ibid.*, pp. 2–3.

The Office of the Conservation Regulator has functions to regulate timber harvesting in Victoria in order to ensure VicForests complies with relevant laws. At a public hearing, Kate Gavens, the Victorian Chief Conservation Regulator, described how her office monitors VicForests operations as they relate to threatened species conservation, including in terms of surveying coupes ahead of harvest to detect threatened species populations. She stated that in response to these surveys, actions have been put in place to modify or exclude harvesting in areas where those populations are found. Ms Gavens also stated that the office has worked to ensure VicForests is 'meeting its legal obligations', particularly in relation to application of the precautionary principle.¹⁵⁵

RFAs and the Victorian Forestry Plan were discussed in more detail in Chapter 6.

7.4 Policy response

The following sections outline key policies related to threatened species, for Victoria and other jurisdictions.

7.4.1 Biodiversity 2037

In 2017, the Victorian Government released its 20-year plan to protect biodiversity and halt the decline of native flora and fauna, *Protecting Victoria's Environment – Biodiversity 2037* (Biodiversity 2037).¹⁵⁶ It announced funding of \$86.3 million over four years for the plan's measures, as well as \$20 million per year on an ongoing basis for implementation. In its submission, DELWP stated that this 'represented the greatest ever single investment in biodiversity conservation by a Victorian government'.¹⁵⁷ However, the plan also acknowledges that co-investment will be needed to implement the plan's objectives, including from non-government, philanthropic and business sectors, with support from the Victorian community.

The plan sets a number of priorities, which include, in relation to threatened species, to 'Deliver excellence in management of all land and waters.' Another priority relates to the use of decision support tools in biodiversity planning processes, with actions to continually improve tools and to establish of a cost-benefit framework that enables improved decision-making and investment in the conservation of endangered species.¹⁵⁸

Approach to threatened species management

Biodiversity 2037 prioritises prevention in conservation management. It adapts the previous approach of producing protection plans for individual threatened species (which are often expensive and have high levels of risk) to a focus on broader-scale

¹⁵⁵ Ms Kate Gavens, Chief Conservation Regulator, Office of the Conservation Regulator, Public hearing, Via Zoom, 10 March 2021, *Transcript of evidence*, p. 12.

¹⁵⁶ In accordance with the requirements set out under pt 4, div 1 of the FFG Act (Flora and Fauna Guarantee Strategy).

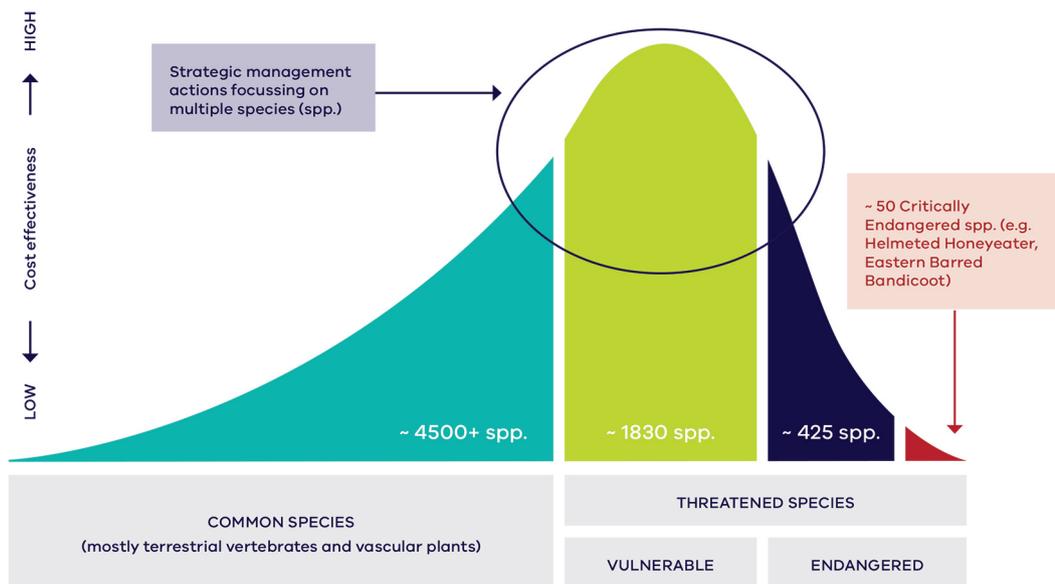
¹⁵⁷ Department of Environment, Land, Water and Planning, *Submission 927*, p. 4.

¹⁵⁸ Department of Environment, Land, Water and Planning, *Protecting Victoria's Environment – Biodiversity 2037*, 2017, p. 61.

threat management. This new approach seeks to benefit multiple species and prevent species becoming threatened. However, it also acknowledges that some species—in particular, those that are critically endangered—will require specific, individualised threat management.¹⁵⁹

Figure 7.2 visualises this conservation management approach, which aims to identify the actions that are cost-effective yet benefit the most species, while also identifying those species that require an individualised response.

Figure 7.2 Conservation management approach under Biodiversity 2037



Source: Department of Environment, Land, Water & Planning, *Protecting Victoria's Environment – Biodiversity 2037*, 2017, p. 18.

Biodiversity 2037 states that individualised responses for particular species are important, but where they are ‘very expensive and/or have a relatively poor chance of success, these options will need to be balanced against what can be achieved for other species’.¹⁶⁰

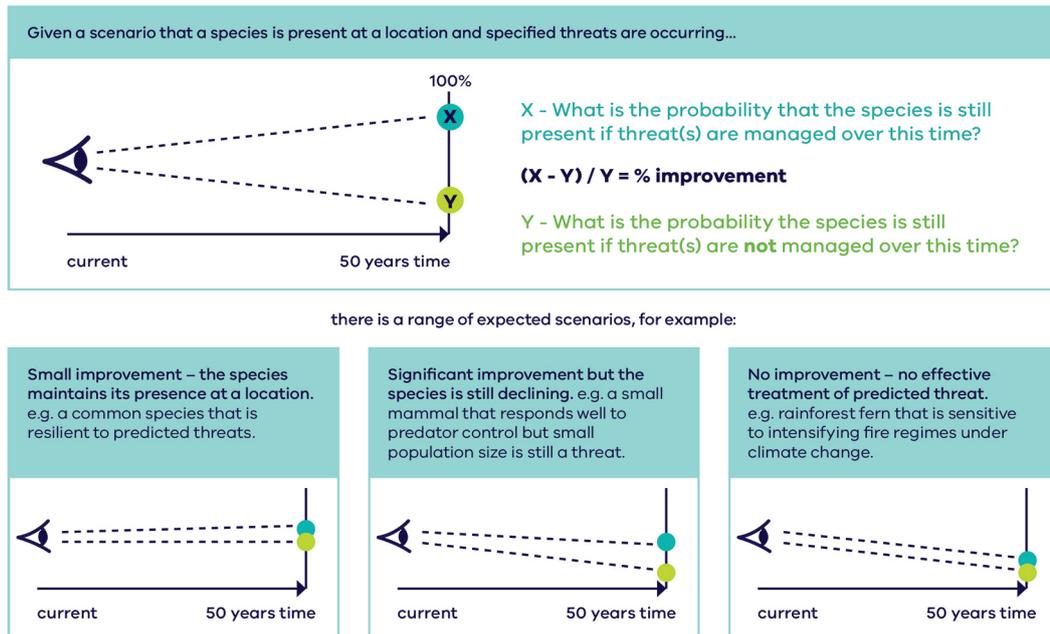
The Victorian Government has adopted the measure of Change in Suitable Habitat (CSH) to guide future decisions, set targets and measure progress. The development of this measure is intended to ‘assess the most effective options for improving the future of native species across the state under climate change’. Specifically, CSH is the change in a species’ likelihood of existing at a particular location at a future point in time (for example, in 50 years) as a result of management of relevant threats. Biodiversity 2037 explains that this is ‘expressed as the percentage increase in likelihood when comparing sustained management to no management’.¹⁶¹

¹⁵⁹ Ibid., p. 17.

¹⁶⁰ Department of Environment, Land, Water and Planning, *Protecting Victoria's Environment – Biodiversity 2037*, 2017, p. 18.

¹⁶¹ Ibid., p. 19.

Figure 7.3 Change in Suitable Habitat measure



Source: Department of Environment, Land, Water & Planning, *Protecting Victoria's Environment – Biodiversity 2037*, 2017, p. 54.

Biodiversity 2037 sets a statewide target of achieving a 'net improvement in the outlook across all species by 2037'. It also sets a long-term target of achieving, on average, a '100% net positive Change in Suitable Habitat in 50 years for threatened species, with co-benefits for non-threatened species'.¹⁶² However, DELWP's submission acknowledges that achieving this target will be difficult:

The most recent reporting across Victoria, based on available data on current management actions, indicates that on average, only an 8.7% CSH could be achieved for threatened species over 50 years. This suggests our efforts need to substantially increase and be targeted more effectively if we are to achieve the Biodiversity 2037 target.¹⁶³

In order to pursue the outcomes under Biodiversity 2037, DELWP is using NaturePrint, a suite of products that utilises comprehensive data to support informed decision-making around which actions to take and where. NaturePrint's Strategic Management Prospects tool has been developed to compile and compare information on the benefits and costs of different threatened species conservation activities, and, importantly, enables calculations of CSH.¹⁶⁴ DELWP explained in its submission that these products 'provide a view across multiple species across multiple locations and under multiple threats' and are easily updated when new data becomes available.¹⁶⁵

¹⁶² Ibid., pp. 19–20.

¹⁶³ Department of Environment, Land, Water and Planning, *Submission 927*, p. 31.

¹⁶⁴ Department of Environment, Land, Water and Planning, *Protecting Victoria's Environment – Biodiversity 2037*, p. 19.

¹⁶⁵ Department of Environment, Land, Water and Planning, *Submission 927*, p. 27.

Monitoring and refinement of the targets and actions for threatened species occurs in conjunction with the *Biodiversity 2037 Monitoring, Evaluation, Reporting and Improvements Framework*. The importance of well-funded, ongoing monitoring and data collection in relation to threatened species is discussed further in Chapter 11.

Victorian Auditor-General's 2021 audit

As noted in Chapter 1, in October 2021, the Victorian Auditor-General's Office tabled its audit report, *Protecting Victoria's Biodiversity*. This report examined how DELWP is protecting threatened species in accordance with the FFG Act and Biodiversity 2037. The audit report was tabled as the Committee was finalising its report, however, many of its findings and recommendations are relevant to the Committee's consideration of threatened species management.

The audit report concluded that DELWP 'cannot demonstrate if, or how well, it is halting further decline in Victoria's threatened species populations'.¹⁶⁶ It noted a number of issues relating to monitoring and data, which are discussed in Chapter 11.

Importantly, the report found that the cost-benefit approach to threatened species management aims to benefit a greater number of species but misses some endangered species at the highest risk of extinction—with no appropriate process for prioritising management actions for these species. There are 556 species listed as critically endangered under the FFG Act, many of which may require individualised action plans and which 'may not be adequately protected by DELWP's approach to prioritise common landscape threats'. The report notes funding levels do not allow for tailored activities for each of these species, and that the method of choosing particular species for protection activities is not transparent, objective, cost-effective or undertaken with scientific rigour.¹⁶⁷ The Victorian Auditor-General recommended the prioritisation of species for the development of action statements, along with implementation, evaluation, monitoring and reporting of these statements. It also recommended the development of risk-based criteria for prioritising critically endangered species for management actions.¹⁶⁸

The report also found that DELWP does not make use of the tools contained in the FFG Act, including action statements. Despite the critical backlog of action statements for listed species, the report advises that DELWP did not receive government funding to address this, despite a request in the 2020–21 budget process.¹⁶⁹

Further funding issues were raised in relation to the total funding allocated for threatened species management. The report stated that DELWP received less than half of the funding requested for implementation of Biodiversity 2037, and that ongoing funding after 2021 would drop to approximately a third of what was requested. It noted

¹⁶⁶ Victorian Auditor-General's Office, *Protecting Victoria's Biodiversity Independent assurance report to Parliament 2021–22:07*, 2021, p. 1.

¹⁶⁷ *Ibid.*

¹⁶⁸ *Ibid.*, p. 11.

¹⁶⁹ *Ibid.*, p. 8.

that DELWP did not adequately prosecute its case for the need for the requested amount of funding in budget submissions. It also found that DELWP had not provided updated advice on the impacts of limited funding, and for these reasons, recommended that DELWP provide updated advice to the Victorian Government about required investment.¹⁷⁰ Stakeholder views on funding for Biodiversity 2037 are discussed further in the following section.

The Committee welcomes the Victorian Auditor-General's report and encourages the Victorian Government to urgently implement all of its recommendations.

Stakeholder views

Many stakeholders to the Inquiry provided positive commentary around Biodiversity 2037's approach towards threatened species conservation and restoration. However, one core criticism was that it lacks the necessary funding to achieve its aims. For example, Yasmin Kelsall, Events Coordinator at the Ecological Consultants Association of Victoria, stated that Biodiversity 2037 had 'good aims' but that the allocated funding was 'lacking':

basically Biodiversity 2037 has some good aims, and some of its goals and objectives are some of the best that we have seen for a long time, but I think the level of funding that goes along with them is very lacking. I mean, the kind of funding that I think we are really talking about is just the kind of funding that we have not seen—maybe we have never seen; I am not sure. It really will take some serious investment to start to turn things around, and it will just start to turn things around.¹⁷¹

As noted, \$86.3 million was allocated by the Victorian Government over four years for the plan's measures, as well as \$20 million per year for implementation. Biodiversity 2037 acknowledges a history of under-funding in conservation activities:

There has been persistent under-investment in programs and measures to address the legacy of biodiversity loss (particularly for terrestrial biodiversity) and to counter-balance the ongoing losses that occur due to decisions and activities today (such as loss of native vegetation outside the regulatory system). Much of the past investment and planning has been short term, rather than long term, and in line with ecological time scales ...¹⁷²

Stakeholders similarly noted the historical context of low funding, or otherwise inconsistent funding, for threatened species recovery programs—which has led to poor outcomes for species over time.¹⁷³ However, the Ecological Consultants Association of Victoria asserted that there was still limited funding for ongoing initiatives with

¹⁷⁰ Ibid., pp. 11–13.

¹⁷¹ Yasmin Kelsall, Events Coordinator, Ecological Consultants Association of Victoria, Public hearing, Via videoconference, 24 February 2021, *Transcript of evidence*, p. 33.

¹⁷² Department of Environment, Land, Water and Planning, *Protecting Victoria's Environment - Biodiversity 2037*, p. 11.

¹⁷³ See, for example, Threatened Species Conservancy, *Submission 749*, p. 2.

programs having only short-term benefits, and that current investment ‘is not adequate to achieve real change and prevent ecosystem decline’.¹⁷⁴

The Threatened Species Conservancy argued that recent Victorian Government investment had been made into developing information and modelling tools, but that little resourcing had been allocated to implement programs on the ground:

the Victorian State Government continues to invest substantial energy and resources into the development of policy, information systems, species prioritisation tools, spatial modelling and reporting to improve the allocation of resources and the delivery of biodiversity conservation. Yet for threatened species, this investment has not been matched to deliver programs that lead to on-ground benefits for the majority of the State’s threatened species. Considerable thought has been given to how best to allocate resources for threatened species without these resources ever materialising.¹⁷⁵

In addition, the Conservancy submitted that by not fully funding threatened species programs, ‘we are committing to widespread plant and animal extinctions on our watch’.¹⁷⁶

In evidence to the Committee, Professor Wintle stated that appropriately funded programs have the capacity to prevent further loss and restore threatened species:

The good news is that when we spend money on biodiversity conservation it works. This paper published by Anthony Waldron and colleagues in *Nature* in 2017 looks at the spending of different countries that have high rates of biodiversity loss, and it shows that the countries that are spending more ... are having lower biodiversity loss ... so the more you spend, the more you save. That is a simple message.¹⁷⁷

Professor Wintle estimated that the necessary funding to ensure targeted threatened species recovery—based on average estimates of costs to conserve different types of species—was approximately \$1.7 billion per annum at the national level.¹⁷⁸ This figure was calculated in a 2019 study, published in *Conservation Letters*, based on per-species expenditure for recovery in the USA. In this study, Wintle et al noted that the USA provides a case study of how funding for biodiversity conservation results in lower levels of species loss.¹⁷⁹ The *Endangered Species Act 1973*¹⁸⁰ mandates funding for the actions listed in threatened species recovery plans. Wintle et al stated that listed species have seen ‘relatively strong recovery’ and that strategic spending has achieved improvements in the status of threatened species.¹⁸¹

¹⁷⁴ Ecological Consultants Association of Victoria, *Submission 499*, p. 17.

¹⁷⁵ Threatened Species Conservancy, *Submission 749*, p. 2.

¹⁷⁶ *Ibid.*, p. 4.

¹⁷⁷ Professor Brendan Wintle, *Transcript of evidence*, p. 52.

¹⁷⁸ *Ibid.*

¹⁷⁹ Brendan Wintle, et al., ‘Spending to save: What will it cost to halt Australia’s extinction crisis?’, *Conservation Letters*, vol. 12, no. 6, 2019, p. 4.

¹⁸⁰ (16 USC 1531–1544, 87 Stat. 884).

¹⁸¹ Brendan Wintle, et al., ‘Spending to save: What will it cost to halt Australia’s extinction crisis?’, p. 4.

In its submission, BirdLife Australia similarly noted the USA's statutory arrangements and the positive results for managed threatened species. It credited this success to 'strong plans based on robust science and consistent funding which leverage land manager involvement'.¹⁸² It advocated for 'adequately funding and resourcing recovery and management actions' for threatened species conservation.¹⁸³

Anna Murphy, Director and Head of Flora Ecology at the Threatened Species Conservancy, argued that increased funding would improve methodologies and create more cost-effective programs:

there is this sort of assumption that threatened species recovery is expensive, but the thing is the more we invest, the more we improve our methodologies, and we have seen some incredibly successful programs from investing in threatened species recovery. For example, I mentioned there are two small programs that are currently going through the Royal Botanic Gardens and the zoo. The terrestrial orchid conservation program has really revolutionised the way we recover threatened orchids in Australia, and it has developed techniques that really make orchid conservation much more feasible, much more cost effective.¹⁸⁴

The Threatened Species Conservancy advocated for consistent, ongoing funding in this area, stating that it would 'instil confidence in the broader community that the Victorian State Government has a genuine commitment to addressing the extinction crisis' and 'provide good and meaningful employment opportunities for Victorians and stimulate regional economies'.¹⁸⁵ In terms of cost, Professor David Cantrill, Executive Director, Science at the Royal Botanic Gardens Victoria, acknowledged that estimated funding at around \$300 million per year is 'a big sum of money', but noted that 'when you look at what the natural environment gives to the Victorian people and the Victorian economy, I would say it is trivial'.¹⁸⁶

A further issue raised in relation to Biodiversity 2037 is that the plan has not been updated since the FFG Amendment Act came into force. This means that new mechanisms and obligations in relation to threatened species are not reflected in the strategy. Environmental Justice Australia provided an example of why this was needed, in relation to critical habitat declarations:

The Biodiversity Strategy needs to be revised and updated to incorporate the utilisation of the new or refreshed conservation tools now provided for under the Act. For example, the Biodiversity Strategy needs to set out clearly how critical habitat will be used in conservation efforts and how it will relate to policy measures such as 'Strategic Management Prospects'.¹⁸⁷

¹⁸² BirdLife Australia, *Submission 886*, p. 5.

¹⁸³ *Ibid.*, p. 7.

¹⁸⁴ Anna Murphy, Director and Head of Flora Ecology, Threatened Species Conservancy, Public hearing, Melbourne 23 February 2021, *Transcript of evidence*, p. 12.

¹⁸⁵ Threatened Species Conservancy, *Submission 749*, p. 5.

¹⁸⁶ Professor David Cantrill, Executive Director, Science, Royal Botanic Gardens Victoria, Public hearing, Melbourne, 21 April 2021, *Transcript of evidence*, p. 7.

¹⁸⁷ Environmental Justice Australia, *Submission 760*, p. 11.

In addition, the objectives of the FFG Act include to guarantee that all Victorian flora and fauna 'can persist and improve in the wild', to prevent species and ecological communities from becoming threatened, and to recover threatened species.¹⁸⁸ This includes through individual species-focused listing processes, action statements and flora and fauna management plans. However, as noted, the approach contained in Biodiversity 2037 in relation to threatened species is to focus on broader landscape-scale threat management. It is important to ensure that the Victorian Government's approach across legislation and policy is complementary to ensure the most targeted and effective outcomes for species across the state.

In its recent report, *Protecting Victoria's Biodiversity*, the Victorian Auditor-General's Office noted this contradiction between the FFG Act's objectives and Biodiversity 2037's approach to threatened species management:

This approach, however, is not fully aligned with the objectives of the *Flora and Fauna Guarantee Act 1988* (FFG Act) ... DELWP advised us that it cannot guarantee the protection of all threatened species given:

- current funding levels
- scientific constraints around how species respond to threats and actions to control these in the wild, particularly in a time of climate change
- the long-term lag effects on Victoria's biodiversity of over 200 years of colonisation.

This is a reasonable argument, but DELWP has not clearly communicated to the government or the public this gap between the FFG Act objectives and the approach taken through Biodiversity 2037. The Act creates an expectation among stakeholders that all species will be protected and there will be no further decline in threatened species status. The misalignment of expectations could lead to community concern and a lack of confidence in the government to protect threatened species.¹⁸⁹

The Committee acknowledges the important goals set by Biodiversity 2037 in protecting species from becoming endangered and conserving already threatened species.

However, the evidence received in relation to the funding required to successfully improve the status of threatened species indicates that the resourcing allocated for Biodiversity 2037's implementation is insufficient. Without adequate funding from the Victorian Government, the status of threatened species in Victoria will continue to be at risk of further decline. Further, the Committee considers that alignment of legislation and policy is crucial to ensure the delivery of key objectives in relation to threatened species.

¹⁸⁸ *Flora and Fauna Guarantee Act 1988* (Vic) s 4.

¹⁸⁹ Victorian Auditor-General's Office, *Protecting Victoria's Biodiversity* pp. 2-3.

FINDING 29: The Victorian Government’s biodiversity strategy, *Protecting Victoria’s Environment – Biodiversity 2037*, sets important goals around protecting and restoring threatened species in Victoria. However, the plan lacks the necessary funding for full implementation of its goals and actions.

RECOMMENDATION 31: That the Victorian Government consider significantly increasing the funding allocated to threatened species and habitat conservation activities under *Protecting Victoria’s Environment – Biodiversity 2037*.

RECOMMENDATION 32: That the Victorian Government ensure that *Protecting Victoria’s Environment – Biodiversity 2037* and the *Flora and Fauna Guarantee Act 1988* (Vic) are complementary in terms of the key principles and objectives of the Victorian Government’s approach towards threatened species management, and that the State’s biodiversity strategy is updated in conjunction with any future legislative change.

7.4.2 Policy responses in other jurisdictions

Commonwealth *Threatened Species Strategy*

The national strategy for the conservation of threatened species is the Commonwealth Government’s *Threatened Species Strategy*. The first iteration of the strategy was released in 2015, for an initial period up to 2020. The focus areas were to improve the population trajectories of 20 mammal, 21 bird and 30 plant species; improve practices to recover threatened species populations; and improve feral cat management. Following review, the second iteration of the Strategy was released in May 2021 for a 10-year period.

In the first strategy’s five-year progress report, outcomes were provided for the 13 targets. In relation to the recovery of threatened species, a number of key targets were not met, including:

- Only 6 of a targeted 20 priority bird species have improved trajectories.
- Only 8 of a targeted 20 priority mammal species have improved trajectories.
- Only 10 of a targeted at least 30 bird species have improved trajectories.¹⁹⁰

The target of all of Australia’s threatened plant species being stored in a conservation seed bank was considered to be ‘partially met’—approximately 67% of threatened plant species are currently stored. Further, a target aimed at ensuring that up-to-date

¹⁹⁰ Commonwealth Department of Agriculture, Water and the Environment, *Threatened Species Strategy – Year Five Report*, 2021, p. 18.

recovery plans and conservation advice were in place was not met, as plans and advice are ‘not in place for all priority species’.¹⁹¹

Professor Euan Ritchie, Professor in Wildlife Ecology and Conservation at Deakin University, and Dr Ayesha Tulloch from the University of Sydney, have argued that the five year period for the first strategy was ‘never enough time to turn things around’. The authors asserted that the progress report findings mean that either the wrong actions were implemented; the right actions were implemented but inadequate effort and funding were provided; or the five-year time period was too short for improvements to be seen in the selected species.¹⁹²

The second strategy was released in May 2021 and sets a 10-year vision for threatened species conservation. It builds on the first strategy and incorporates community feedback. It includes:

- broadening ‘priority species’ to include reptiles, frogs, insects and fish (previously only birds, mammals and plants had been included)
- a revised focus on landscape-scale actions, including through a new focus on ‘priority places’ and an expansion of key action areas
- other activities such as habitat improvement to support species recovery and building partnerships.¹⁹³

Public commentary by Professors Ritchie and Don Driscoll of Deakin University and Dr Tulloch acknowledged some improvements to the earlier version. They considered that the broader focus on the various key threats—such as altered fire regimes, land clearing and other invasive species—rather than just feral cats was important. Further, they noted that the assessment process for prioritising species for action would be more rigorous and evidence-based. However, they highlighted a lack of clarity in how the plan would be funded and implemented.¹⁹⁴

New South Wales *Saving our Species* program

The NSW Government introduced its ‘flagship threatened species conservation program’, *Saving our Species*, in 2016. The plan has two core objectives—to maximise the number of threatened species that can survive in the wild and to control key threats.

¹⁹¹ Ibid.

¹⁹² Euan Ritchie and Ayesha Tulloch, ‘Australia’s threatened species plan has failed on several counts. Without change, more extinctions are assured’, *The Conversation*, 1 July 2021, <<https://theconversation.com/australias-threatened-species-plan-has-failed-on-several-counts-without-change-more-extinctions-are-assured-163434>> accessed 25 November 2021.

¹⁹³ Commonwealth Department of Agriculture, Water and the Environment, *Threatened Species Strategy 2021 – 2031*, 2021, <<https://www.environment.gov.au/biodiversity/threatened/publications/threatened-species-strategy-2021-2031>> accessed 25 November 2021.

¹⁹⁴ Euan Ritchie, Ayesha Tulloch and Don Driscoll, ‘Australia’s threatened species plan sends in the ambulances but ignores glaring dangers’, *The Conversation*, 27 May 2021, <<https://theconversation.com/australias-threatened-species-plan-sends-in-the-ambulances-but-ignores-glaring-dangers-161407>> accessed 25 November 2021.

Projects under the program are adopted on the basis of peer-reviewed evidence and expert advice and are monitored to analyse their efficacy.¹⁹⁵

Threatened species are allocated to one of a number of ‘management streams’ in accordance with their conservation and management needs and can be moved between streams as their circumstances change. These streams include:

- Site-managed species—threatened species that can be secured by conservation projects at specific sites. Nearly half of all threatened species are managed under this stream.
- Landscape-managed species—threatened species that need landscape-scale conservation projects, such as to address habitat loss or degradation.
- Iconic species—species that hold social, cultural and economic importance.
- Data-deficient species—threatened species with inadequate information on their ecology, distribution, threats or management needs. These species require investment in targeted research in order to fill knowledge gaps and inform management strategies.¹⁹⁶

Other management streams include key threatening processes, threatened ecological communities, threatened populations of a species, partnership species and keep watch species.¹⁹⁷

A key component of *Saving our Species* is a focus on collaboration between government, not-for-profits and business. Partnerships are encouraged in order to pool ‘funds, expertise and resources’ to produce innovative and effective programs. A number of co-investment partnerships have also been established, with funding and resourcing contributions matched by government. There are different types of partnerships:

- direct financial investment in projects
- provision of resource support, such as equipment or expertise
- collaboration on innovation to improve projects, such as technology and communications
- volunteering and citizen science which enables widespread participation in program activities.¹⁹⁸

195 NSW Department of Planning, Industry and Environment, *Saving our Species program*, 2021, <<https://www.environment.nsw.gov.au/topics/animals-and-plants/threatened-species/saving-our-species-program>> accessed 25 November 2021.

196 NSW Office of Environment and Heritage, *More plants and animals to be saved from extinction: Saving our Species 2016–21*, Sydney, 2016, pp. 4–5.

197 NSW Department of Planning, Industry and Environment, *Saving our Species management*, 2018, <<https://www.environment.nsw.gov.au/topics/animals-and-plants/threatened-species/saving-our-species-program/threatened-species-conservation>> accessed 25 November 2021.

198 NSW Department of Planning, Industry and Environment, *Saving our Species partnerships*, 2021, <<https://www.environment.nsw.gov.au/topics/animals-and-plants/threatened-species/saving-our-species-program/saving-our-species-partnerships>> accessed 25 November 2021.

The program also promotes private landholder agreements, which assist landholders to 'manage their land for conservation of threatened species and ecological communities'. This component of the program received a separate funding allocation of \$240 million over five years.

The NSW Government produces public 'report cards' for threatened species, which provide an easily accessible snapshot of a species' conservation status and management activities underway in each financial year. This includes, for example, relevant management sites, whether management actions are being implemented, total expenditure and conservation partners. The program's database also provides a public register of strategies for threatened species and key threatening processes and allows members of the public to access a map of conservation activities across NSW.

The program was initially allocated funding of \$100 million for a five-year period between 2016 and 2021. In the 2021–22 NSW Budget, the program was extended for a further five years at a total cost of \$75 million.¹⁹⁹ This equates to a reduction of \$5 million per year in terms of the program's operation.

In evidence to the Committee, Professor Brendan Wintle stated that in relation to the *Saving our Species* program, the NSW Government is 'spending about a tenth of what they need to spend to solve the problem, but the program is a good design'.²⁰⁰

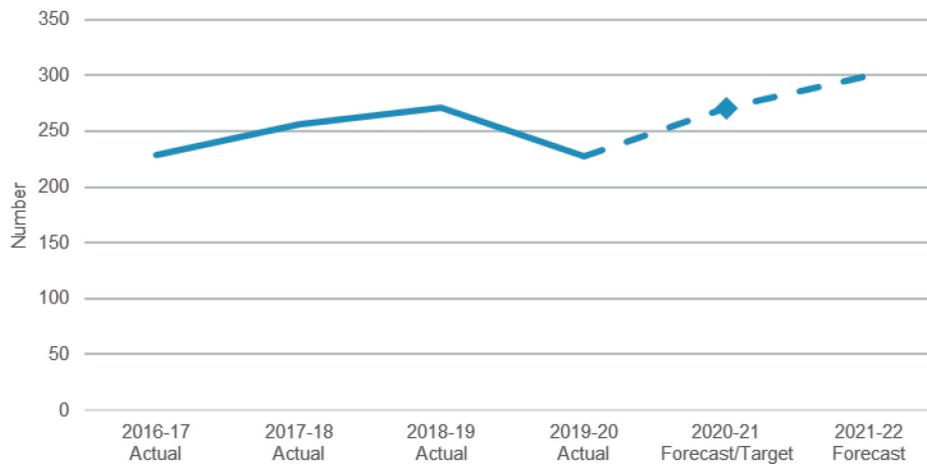
The NSW Government reported in 2021 that the number of threatened species and ecological communities being actively managed had risen from 94 at the beginning of the program to over 400 species at 1,050 different sites. It also provided that the program had established over 220 partnerships. However, a decrease in the security of threatened species and ecological communities had been experienced as a result of drought and the 2019–20 bushfires.²⁰¹ This is displayed in Figure 7.4 below.

¹⁹⁹ NSW Treasury, *NSW Budget 2021–22 Paper No. 2: Outcomes Statement 2021*, p. 56.

²⁰⁰ Professor Brendan Wintle, *Transcript of evidence*, p. 53.

²⁰¹ NSW Treasury, *NSW Budget 2021–22 Paper No. 2*, p. 59.

Figure 7.4 Number of threatened species and ecological communities on track to be secure in the wild, NSW, 2016–17 to 2021–22



Note: An estimate for 2020–21 has been provided as the actual data was not available at the time of publication.

Source: NSW Treasury, *NSW Budget 2021–22 Paper No. 2: Outcomes Statement*, 2021, p. 59.

This program was raised by multiple stakeholders to the Inquiry as an example of effective policy around threatened species. For example, the Threatened Species Conservancy described it as a ‘resounding success’, including through involving local communities in recovery activities, citizen science projects and environmental education.²⁰² In a submission to the Inquiry, Michelle Fox praised the program’s report cards as ‘an easily accessible way for anyone to see and keep track of exactly what flora and fauna are endangered and what efforts are being made on their behalf’.²⁰³ Paul Sullivan, Chief Executive Officer of Birdlife Australia, described the program as having been ‘a successful formula for us in terms of bringing partners together and bringing more resources to the table to do conservation’.²⁰⁴

7.4.3 Reshaping threatened species policy

Biodiversity 2037 sets out bold objectives for restoring threatened species in the landscape and preventing more common species from becoming vulnerable. While these aims will undoubtedly be difficult to achieve, only transformative action is capable of reversing current trends of species decline.

The following sections discuss two core themes raised in relation to reforming threatened species policy in Victoria: the need for a dedicated threatened species policy and individual versus landscape-scale approaches in threatened species management.

²⁰² Threatened Species Conservancy, *Submission 749*, p. 4.

²⁰³ Michelle Fox, *Submission 83*, p. 5.

²⁰⁴ Paul Sullivan, Chief Executive Officer, Birdlife Australia, Public hearing, Melbourne, 20 April 2021, *Transcript of evidence*, p. 38.

Dedicated threatened species program

Various stakeholders advocated for the introduction of a dedicated threatened species program in Victoria, similar to NSW's *Saving our Species* initiative.²⁰⁵ For example, Professor Wintle advocated for a 'much more targeted and much more focused Saving our Species style program in Victoria', which would have dual benefits of direct, targeted action and joint conservation programs on private agricultural land.²⁰⁶ He also described its focus, prioritisation of actions and community connections as key strengths:

The Saving our Species program is a good program in the way that it prioritises the actions that it is going to do and in the way that it is starting to collect the data to demonstrate both what is happening to their priority species and what benefit they are getting from the management ... by and large the best attribute is its focus and the way it can connect to the public and connect the public to the plight of threatened species. And they are expanding now into programs like the Iconic Species in Schools program and other things in New South Wales because they do have that focus and also culturally relevant support for local Traditional Owners who want to bring that confluence of species conservation and cultural awareness and cultural understanding. So I think there is a lot about it to like ... but it is too small.²⁰⁷

Anna Murphy from the Threatened Species Conservancy told the Committee that *Saving our Species* demonstrated what was possible in terms of preventing further extinctions:

I worked on this program, so I saw how beneficial it is and what a huge success it is. It has boosted threatened plant and animal populations across New South Wales and drawn local communities into on-ground works, citizen science projects and nature-based community education. It has also produced numerous good news stories for the New South Wales government. The success of this program demonstrates that the cost of preventing extinction is far from exorbitant and that funding threatened species recovery is entirely feasible.²⁰⁸

Ms Murphy also outlined the importance of NSW's approach in bringing communities together to support threatened species recovery initiatives:

People really benefit from threatened species recovery. So yes, it has been successful in a number of ways: it has delivered on-ground benefits for threatened species; it has brought communities together. It has drawn people who would normally not have much to do with parks or whatever together. It is a really great way of teaching people about evolution and biodiversity and some of those scientific elements of what we do. That really connects people. It is a hook to get people more involved in nature.²⁰⁹

²⁰⁵ See, for example, Fox, *Submission 83*, p. 5; Gemma Hocking, *Submission 94*, p. 3; Hannah Robert, *Submission 136*, p. 2; Sanne de Swart, *Submission 141*, p. 3; Vivien Smith, *Submission 189*, p. 3.

²⁰⁶ Professor Brendan Wintle, *Transcript of evidence*, pp. 52–53.

²⁰⁷ *Ibid.*, p. 58.

²⁰⁸ Anna Murphy, *Transcript of evidence*, p. 10.

²⁰⁹ *Ibid.*, p. 11.

Doctors for the Environment Australia stated that a dedicated threatened species strategy could complement existing approaches:

the existence of such a program in Victoria would complement, and fill a major gap left by, Victoria's Biodiversity Response Planning Program. It would also vastly increase the chance of Victoria's Biodiversity Strategy to 2037 threatened species targets being met.²¹⁰

The Threatened Species Conservancy put forward a proposal for a five-year 'Threatened Species Eco-Stimulus Program' for Victoria that would aim to 'implement well-designed threatened species recovery projects and improve the conservation status of the State's threatened species'. It provided estimated costs of approximately \$102 million over five years, consistent with funding allocated to the NSW program.²¹¹

In evidence to the Committee, James Todd, Executive Director, Biodiversity Division at DELWP, responded to suggestions that Victoria should adopt a dedicated threatened species program by noting that the current approach under Biodiversity 2037 seeks to benefit the largest number of species, not just those that are threatened:

conservation should not focus solely on the most endangered species. Focusing on critically endangered species alone is unlikely to be the most effective way of preventing extinctions, because the actions are typically high risk and high cost and highly uncertain, so Biodiversity 2037 focuses more on how ecosystems and ecological processes can be managed to the benefit of all species, particularly given the impacts of climate change. And as you say, this includes broadscale threat management that benefits multiple species, reducing the risk of species becoming more threatened ... and specific threat management to meet unique needs of individual species or situations ...

... [Saving our Species] is a fantastic program, it is really admirable, but the reality is that it also is just biting off a chunk of the species and saying, 'Well, we're going to focus on these species', and not necessarily being concerned about, as I said, the tide of species that are coming behind. So Victoria's approach is different to that, but we also recognise we need to do a better job in reporting some of the threatened species outcomes that have been delivered through our programs and approaches ...²¹²

In light of evidence received from Inquiry stakeholders and from DELWP, the Committee considers that certain aspects of the NSW approach, through its *Saving our Species* program, could be used to inform the implementation of actions under Biodiversity 2037. In particular, improvement of community engagement approaches and communication regarding conservation activities could help to build public support and enhance community education around Biodiversity 2037's threatened species activities.

²¹⁰ Doctors for the Environment Australia, *Submission 725*, p. 12.

²¹¹ Threatened Species Conservancy, *Submission 749*, p. 4.

²¹² James Todd, Executive Director, Biodiversity Division, Department of Environment, Land, Water and Planning, Public hearing, Via videoconference, 10 August 2021, *Transcript of evidence*, p. 7.

RECOMMENDATION 33: That the Victorian Government review and incorporate, if and where appropriate, features of New South Wales' *Saving our Species* program into community engagement and communications strategies for threatened species activities under *Protecting Victoria's Environment – Biodiversity 2037*.

Individual and landscape-scale planning

As noted above, Biodiversity 2037's approach is to prioritise prevention and focus on landscape-scale threat management. However, it also acknowledges the need to provide individualised responses for some species.

Stakeholders provided different perspectives on this approach, and in particular, the shift away from individual threat management plans for each threatened species. The Committee notes that discussion around whether a landscape or individual species approach is best can often be unhelpful and do little to achieve improvements in species conservation status. Instead, focusing on identified outcomes is likely to be more fruitful, in conjunction with a balance of both approaches.

Anna Murphy from the Threatened Species Conservancy highlighted the differing views on which approach was the most appropriate:

What has sort of happened in our field is that there are these two polarised perspectives on biodiversity conservation—that threatened species recovery is at the expense of landscape-scale restoration and that landscape-scale restoration must take priority over single-species recovery. But the reality is both are really critically important. Unfortunately the biodiversity strategy really focuses on landscape-scale restoration and pretty much states that single-species recovery is not something that will be focused on and that the majority of investment will not be spent on those species most at risk of extinction that are tricky to restore.²¹³

In its submission, the Threatened Species Conservancy asserted that Biodiversity 2037 focuses too heavily on landscape-scale activities, stating that: 'At the core of this approach, is the assumption that these actions will reverse declines in the conservation status of threatened species'. It further argued that: 'the reality for threatened species on the ground is far from the picture this paints'. The submission explained that threatened species require more targeted management:

Actions that bring about landscape scale benefits (such as revegetation, removal of stock and legal protection) may bring some benefits to threatened species populations, but rarely prevent plant and animal extinctions on their own. This is because processes that often have the greatest deleterious impact on threatened species tend to be different to those of more common species. For example, small population size and isolation has led to genetic inbreeding depression in many plants and animals. Consequently, the actions required to ameliorate these threats are species-specific rather than at the landscape scale.

²¹³ Anna Murphy, *Transcript of evidence*, p. 12.

In addition to this, those processes that do impact both common and threatened species frequently require more intensive management to mitigate threats for threatened species. This is because threatened species populations are generally smaller and more vulnerable to extirpation. For example, the benefits of installing enclosure fencing to protect threatened species populations from herbivore browsing is far more effective (and cost efficient) than controlling herbivores across an entire landscape.²¹⁴

However, Professor Andrew Bennett, Director and Professor of Ecology at the Research Centre for Future Landscapes, described the inherent difficulty in focusing solely on an individualised approach to threatened species management:

I guess what we are arguing is whatever we do needs to be large scale and long term. There are hundreds and hundreds of threatened species. If we try and do each of them individually, it is going to be very difficult, and in many cases we can address them in combination. So if we take the Mallee ecosystem, there is a series of birds, there are mammals, and, for example, how we manage fire can address a number of those species at the same time. I do not think it is either/or. It is a combination of both. There is always going to be need for work on particular threatened species. But we have to think big and long term. What is Victoria going to be like in 20, 30, 50, 100 years? Our concern is that we are tinkering around the edges.²¹⁵

Dr John Morgan from the Ecological Society of Australia told the Committee that: ‘some of the processes that threaten species occur at landscape scales—no greater than things such as climate change or invasive animals that are actually across the entire landscape’. He argued that ‘until you deal with that problem it is very difficult to deal with a single species’, and so both approaches are needed.²¹⁶

Doctors for the Environment Australia similarly supported the move away from single pspecies management but noted that ‘such a shift must not occur at the expense of the protection of threatened species and ecological communities’.²¹⁷

Professor Wintle told the Committee that in terms of approaches, ‘you definitely need both’, but that in employing landscape-scale coordination, ‘we need to do it more specifically cognisant of the outcomes that we are seeking for threatened species’.²¹⁸

The Committee recognises the importance of both landscape-scale approaches and individual species management where needed. It hopes that future reviews of Biodiversity 2037 will assess whether the right balance has been struck between these approaches.

²¹⁴ Threatened Species Conservancy, *Submission 749*, p. 3.

²¹⁵ Professor Andrew Bennett, Director and Professor of Ecology, Research Centre for Future Landscapes, La Trobe University, Public hearing, Melbourne, 21 April 2021, *Transcript of evidence*, p. 56.

²¹⁶ Morgan, *Transcript of evidence*, p. 67.

²¹⁷ Doctors for the Environment Australia, *Submission 725*, p. 11.

²¹⁸ Professor Brendan Wintle, *Transcript of evidence*, p. 59.

FINDING 30: Both landscape-scale and individual species approaches are important in threatened species management to ensure the best outcomes for species. Evaluation of the correct balance between these approaches must be outcomes-based and reviewed on an ongoing basis in order to ensure that actions are achieving desired outcomes for threatened species management, conservation and restoration.

7.5 Traditional Owner management

Traditional Owners told the Committee how the decline in native flora and fauna was impacting Country. Matthew Shanks, Strategic Advisor, Cultural and Natural Resource Management at Taungurung Land and Waters Council Aboriginal Corporation, provided examples of species that are continuing to decline across the landscape and the consequences for Taungurung People and Country:

The Cherry Balert was a valuable food source but is rarer to find on Taungurung Country due to land clearing and forestry activities and when they are found, they are fruiting for a shorter season. Wattle seed, collected by our community for a variety of food and medicinal reasons are less abundant year after year and medicinal species were often found lining waterways and billabongs. With the increase of grazing and cropping, the conditions of these species has decreased dramatically.

One of my Elders who has used and relied on Old Man Weed and River Mint for toothaches and other pain relief is unable to find them in places she has harvested for decades often due to the impact cattle and sheep have had on stream beds and the drainage of swamps and billabongs due to irrigation and damming, drastically altering the natural flow of water on Country. Barramul, or emu, was found roaming open plains and open lands of Taungurung Country and was a source of food for our people.

Now Barramul is rarely found on Taungurung Country except in the north west due to habitat destruction of various forms. Emu play a key role on Country due to the vast distances they can travel, spreading seed and their scat. Returning emu to Country is an objective the Taungurung nation seeks to achieve in the future. Emu's one of our major totems.²¹⁹

In its submission, Gunditj Mirring Traditional Owners Aboriginal Corporation stated that the 'majority of our Culturally important species are key indicator species for the overall health of the ecosystem to which they belong' and that their threatened status 'isn't just a bad sign for us, but for all people who reside on Mirring [Country]'. The submission noted that despite many species being recognised under legislation as threatened, 'most of them are provided with no additional protection or resources in western planning or actions'. Gunditj Mirring described the impacts of this species decline on Gunditjmarra people:

The effects that this has on our people is profound and is as complex and interconnected as the ecosystems we're trying to protect. We consider our totem as family, so when we

²¹⁹ Matthew Shanks, Strategic Advisor, Cultural & Natural Resource Management, Taungurung Land and Waters Council Aboriginal Corporation, Public hearing, Shepparton, 27 April 2021, *Transcript of evidence*, p. 22.

can't hear or see them in the landscape it's felt as a great loss. The species we hold in high regard all have needs in regards to food, shelter and safety. Gunditjmara see Mirring as an extension of ourselves, so if it's not healthy, neither are we. We belong to Mirring and as such have a role to play in the various ecosystems, just like any of the other species that reside within.²²⁰

Nathan Wong, Program Manager, Land Strategy Djandak at Dja Dja Wurrung Clans Aboriginal Corporation, described the work being undertaken by Dja Dja Wurrung to create a vision for the health and restoration of native species on Country:

Murrup knowledge of many of these species, including gal gal, or dingo, are essential to manage and maintain the health, and therefore ecosystems, of Djandak [Country]. Through work that Dja Dja Wurrung are undertaking, with the Department of Environment, Land, Water and Planning, to improve the understanding of the State of the importance of our spirits in maintaining functional landscapes, we currently have a vision for gal gal, the dingo; for yung, the quoll; and barramul, the emu, to be present in the landscape. These key species, as examples, have suffered to the level of being completely removed from country.

On Djandak, they have purpose, and are needed; as the mesopredator, yung, the quoll; the apex predator, gal gal, the dingo; and major seed disperser, barramul, the emu; and ecosystem engineers like lawan, the mallee fowl; and soil engineers like pirri, or pademelons. The loss of these species, and the associated degradation of Country, are carried by Djaara [Dja Dja Wurrung people] to this day. And the continued degradation and ongoing decline continue to impact and affect Djaara.²²¹

Traditional Owner Settlement Act 2010 (Vic)

Under the *Traditional Owner Settlement Act 2010* (Vic), Traditional Owners can negotiate Natural Resource Agreements as part of a settlement package with the Victorian Government. These Agreements recognise rights to take and use particular natural resources and may also facilitate participation in the management of those resources, including native flora and fauna.²²² In addition, a Land Agreement as part of a settlement can provide for the return of land (such as parks and reserves) as Aboriginal Title. In conjunction with a Land Management Agreement, that land is then jointly managed with the Victorian Government.²²³ Traditional Owner groups with joint management arrangements therefore have functions to manage conservation activities on those lands, including in relation to threatened flora and fauna, in partnership with the State.

²²⁰ Gunditj Mirring Traditional Owners Aboriginal Corporation, *Submission 908*, p. 2.

²²¹ Nathan Wong, Program Manager, Land Strategy Djandak, Dja Dja Wurrung Clans Aboriginal Corporation, public hearing, Shepparton, 27 April 2021, *Transcript of evidence*, pp. 14–15.

²²² *Traditional Owner Settlement Act 2010* (Vic) s 80.

²²³ *Ibid.*, p. 12; *Conservation, Forests and Lands Act 1987* (Vic) s pt 8A. Land can also be granted as an estate in fee simple if the land is unreserved public land. However, only approximately 300,000 hectares of government land in Victoria is unreserved public land, compared with approximately 7.7 million hectares which is reserved public land. See, Department of Environment, Land, Water and Planning, *What is government land?*, 2020, <<https://www.land.vic.gov.au/government-land/first-time-here/what-is-government-land>> accessed 11 August 2021.

For example, the Gunaikurnai and Victorian Government Joint Management Plan notes the important value of the threatened flora and fauna species listed under the EPBC Act and FFG Act that are present in their jointly managed parks,²²⁴ and includes conservation strategies to deal with identified threats in those areas.²²⁵

Country plans

As outlined in Chapter 2, Country plans outline visions for the care and management of Country.²²⁶ Plans can include goals and strategies for managing native species, including those that are threatened. For example, the *Dhelkunya Dja* Country Plan—prepared by Dja Dja Wurrung Clans Aboriginal Corporation—includes objectives around the management of Country, such as understanding what plants and animals exist on Country and what condition they are in, in order to inform management activities. Some of the identified future actions include partnering with the Victorian Government on threatened species prioritisation processes and training staff on the entry of species data into the Victorian Biodiversity Atlas.²²⁷

In relation to partnerships with Traditional Owners on biodiversity planning and management, Biodiversity 2037 provides that:

Traditional Owners want to share their traditional land and water management practices and work with government to have their traditional ecological knowledge recognised in policy decisions to restore, sustain and improve productive landscapes. By engaging with Traditional Owners and Aboriginal Victorians, biodiversity managers will seek to incorporate this knowledge into Victoria’s biodiversity management approach. This will give government an opportunity to recognise and protect Aboriginal biodiversity values, improve the sustainable management of biodiversity, and provide more opportunities to support Traditional Owners in their implementation of Country Plans.²²⁸

However, the strategy does not establish how Country plans will inform biodiversity priorities or actions under the plan, including in relation to threatened species.

The Committee recognises the critical importance of Traditional Owner-led actions in caring for Country, including in relation to threatened species. While Biodiversity 2037 acknowledges the importance of Country plans, the Committee considers that the strategy should give more primacy to the role of Traditional Owners and specify how the aspirations and strategies contained in Country plans will be used to inform biodiversity actions, in particular, in relation to the conservation of threatened fauna and flora.

²²⁴ Gunaikurnai Traditional Owner Land Management Board and State of Victoria, *Gunaikurnai and Victorian Government Joint Management Plan*, Gunaikurnai Traditional Owner Land Management Board Bairnsdale, September 2018 p. 26.

²²⁵ *Ibid.*, pp. 74–75.

²²⁶ Department of Environment, Land, Water and Planning, *Pupangarli Marnmarnepu ‘Owning Our Future’: Aboriginal Self-Determination Reform Strategy 2020–2025*, 2019, p. 3.

²²⁷ Dja Dja Wurrung Clans Aboriginal Corporation, *Dhelkunya Dja: Dja Dja Wurrung Country Plan 2014–2034*, 2014, pp. 18–19.

²²⁸ Department of Environment, *Protecting Victoria’s Environment – Biodiversity 2037*, p. 44.

FINDING 31: Country plans convey important aspirations and strategies for caring for Country, including strategies to conserve and restore threatened species. Victoria's biodiversity strategy, *Protecting Victoria's Environment – Biodiversity 2037*, should recognise the importance of Country plans as central to the protection of biodiversity and threatened species and establish how they will be supported in their implementation.

RECOMMENDATION 34: That the Victorian Government incorporate into *Protecting Victoria's Environment – Biodiversity 2037* how the strategies contained in Country plans, created by First Nations peoples, will assist in informing the State's biodiversity actions, including in relation to the conservation of threatened species.

7.6 Emergency response

The 2019–20 Victorian bushfires were devastating for flora and fauna across the State. Approximately 1.5 million hectares were burnt, having significant impacts for critical habitat. Following the bushfire season, the Victorian Government released *Victoria's bushfire emergency: Biodiversity response and recovery*. This report assessed the impact of the fires on 4,400 species and coordinated recovery actions. It found that three animal and 13 plant species listed under the FFG Act had over 95% of their habitat affected by the fires, and 12 animal and 187 plant species listed under the Act had over 50% of their habitat affected.

Table 7.2 Species impacted by the 2019–20 Victorian bushfires

Per cent of modelled habitat in the current fire extent	Total species	Listed under the EPBC Act	Listed under the FFG Act	Listed as Victorian Rare or Threatened species
Fauna				
Over 95%	3	0	3	3
50% or more	17	2	9	12
10% or more	167	4	26	33
Flora				
Over 95%	103	0	1	13
50% or more	211	2	23	187
10% or more	1,168	11	40	328

Source: Department of Environment, Land, Water & Planning, *Victoria's bushfire emergency: Biodiversity response and recovery*, 2021, <<https://www.wildlife.vic.gov.au/home/biodiversity-bushfire-response-and-recovery>> accessed 17 August 2021.

The Victorian Government allocated an initial \$22.5 million to support the biodiversity response, with an additional \$29 million provided in the 2019–20 Victorian Budget. As at December 2020, 14 at-risk threatened species had been extracted from impacted habitat, cared for and then returned when safe and appropriate.²²⁹

Stakeholders welcomed the approach taken by the response plan and the funding allocated to carry out recovery actions. Dr Jennifer Gray, Chief Executive Officer of Zoos Victoria, lauded it as an example of good biodiversity planning:

We need to get really good at this planning, and while Biodiversity 2037 is a good example, I think an even better example is *Victoria's Bushfire Emergency: Biodiversity Response and Recovery* plan. I was sitting on the Threatened Species Commissioner expert panel during the bushfire recovery phase, and Victoria stood out head and shoulders above the other states in this country. This plan was brought together, they brought all of the experts in the State together and they ran a number of large workshops where they allowed industry and scientists to provide input and feedback into the plan, and what they have come out with is exceptional. I am really pleased that the Victorian Government has chosen to put money into the delivery of this plan. This sets us apart, and it really is a fantastic step forward.²³⁰

However, the Committee heard many concerns regarding the ongoing impacts for threatened species. In particular, concerns were raised around future emergencies in light of the impacts of climate change, and whether the legislative framework is flexible and robust enough to plan for these threats. Environmental Justice Australia stated that environmental laws 'currently respond poorly to these catastrophic events'. It noted the long timeframes for listing species as threatened:

As the Department's analysis of the impacts of the fires demonstrates, one summer's bushfires can result in the rapid changes to the status of threatened species. Decisions about listing (including under the new regime decisions about whether a species should be elevated to a higher risk category) proceed relatively slowly, as does the development let alone the variation to recovery plans.²³¹

The Wilderness Society recommended the introduction of 'rapid and appropriate responses' to emergency events such as bushfires that impact the 'viability or condition of threatened species, communities and other natural values'.²³² The Ecological Society of Australia noted that the 'range of species recovery actions required is broad' and should be informed by individual species' recovery needs.²³³

²²⁹ Kylie White, Deputy Secretary, Environment and Climate Change, Department of Environment, Land, Water and Planning, Public hearing, Melbourne, 3 December 2020, *Transcript of evidence*, p. 13.

²³⁰ Dr Jennifer Gray, Chief Executive Officer, Zoos Victoria, Public hearing, Melbourne, 3 December 2020, *Transcript of evidence*, p. 31.

²³¹ Environmental Justice Australia, *Submission 760*, p. 14.

²³² The Wilderness Society, *Submission 899*, p. 13.

²³³ Ecological Society of Australia, *Submission 575*, pp. 7–8.

Environmental Justice Australia submitted that the FFG Act could support biodiversity response planning by providing for emergency listing of species in the aftermath of a significant event:

One way in which the *Flora and Fauna Guarantee Act 1988* could respond to these catastrophic events would be to include provision for emergency listing, however regrettably the facility to do this was not part of the 2019 reforms to the Act. We recommend that the inclusion of emergency listing provisions be reconsidered as even listing on a provisional basis while further information is collected would greatly assist in guiding decision making and potentially using some of the protections under the Act where species suffer catastrophic impacts as a result of a single event like a major bushfire.²³⁴

The Committee welcomes the approach taken by *Victoria's bushfire emergency: Biodiversity response and recovery* and the funding allocated to support the restoration of critical habitat and recovery of threatened species. However, it notes the dramatic impacts on habitat and population numbers resulting from the catastrophic 2019–20 bushfires. These impacts are likely to necessitate the listing of new species as threatened and the upgrading of already listed species. In light of the time required to list species under the FFG Act, the Committee considers that an emergency provision to list species, at least on a preliminary basis, could provide an additional legislative tool to support the protection and restoration of species in the aftermath of an emergency situation.

RECOMMENDATION 35: That the Victorian Government investigate whether amendment of the *Flora and Fauna Guarantee Act 1988* (Vic) to include emergency listing provisions could provide additional legislative protection for species where significant events have critically impacted their chance of survival.

²³⁴ Environmental Justice Australia, *Submission 760*, p. 14.

8 Land management

8.1 Introduction

Maintaining and improving Victoria's land health is essential to the health and wellbeing of all Victorians. Covering 22.8 million hectares, Victoria's terrestrial area provides clean air and soil for food production.¹ It is the lifeblood of Victoria's economy and vital to the spiritual and physical wellbeing of Traditional Owners and Aboriginal Victorians.

Effective land management supports the restoration of Victoria's land health, protection of native vegetation, and prevention of habitat loss and fragmentation.

In recent decades, the Victorian Government has looked beyond public land use planning and allocation as the only solution to conservation, concentrating more of its efforts on privately held land. With this, land management is increasingly administered across interconnected networks of public, private, voluntary and community ownership and management.

This Chapter discusses the management of land in Victoria, across public and private land areas. In terms of public land, it considers the management of protected areas, including state forests, parks and conservation reserves. It also discusses Traditional Owner roles in land management.

In terms of private land, this Chapter outlines the shift in Victoria's conservation efforts towards a focus on private landholdings and the creation of partnerships between government, private landholders, and the community. It highlights some of the key conservation mechanisms for protecting and restoring biodiversity on private land as well as some of the challenges in this space, including in terms of land and soil health.

The Chapter also considers fire management in Victoria, and the role of cultural burning.

8.1.1 Public and private land

Land management can be broadly divided into two classes of ownership: public and private. While the overarching goals of biodiversity conservation span both categories, each are subject to different rules and types of governance that give rise to different conservation challenges.

Crown land, or publicly held land, refers to all land that has not been 'alienated' from the Crown. Public land includes protected areas such as parks and conservation reserves, managed under the *National Parks Act 1975* (Vic) (National Parks Act) and *Crown Land*

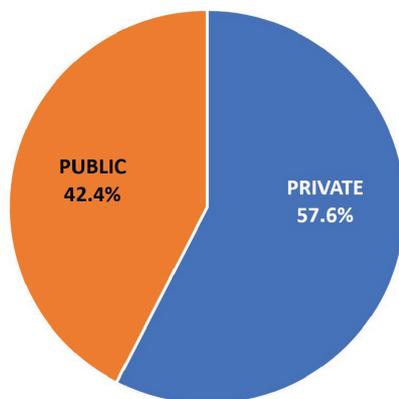
¹ Office of the Commissioner for Environmental Sustainability, *Victorian State of the Environment 2018 Summary Report: Biodiversity (B) Scientific Assessments Part III*, 2017, p. 3.

(Reserves) Act 1978 (Vic) (Crown Land (Reserves) Act), and state forests, managed under the *Forests Act 1958* (Vic) (Forests Act).

Privately held land is land under ownership of individuals, families, or other non-public entities. Private landholders are private actors who have unrestricted ownership and rights to deal with that land, subject to compliance with applicable laws. Accordingly, the existence of private property rights makes government involvement in conservation on private land more complex, especially when conservation mechanisms are not providing a benefit to the landholders themselves.²

Figure 8.1 shows the publicly- and privately-owned land in Victoria, according to 2016–17 data from the Victorian Land Use Information System.

Figure 8.1 Public versus private land ownership in Victoria



Source: Office of the Commissioner for Environmental Sustainability, *Victorian State of the Environment 2018: Land (L) Scientific Assessments Part III*, 2017, p. 11.

Australia’s *State of the Environment Report 2016* states that nature conservation and other forms of protected land—together with minimal use land—total 38% of Australia’s land area. This makes nature conservation and other forms of protection the second most common land use after livestock grazing. Land managed for nature conservation and protection is located primarily in central and northern Australia, and in the forested ranges of the east and south-west of both mainland Australia and Tasmania.³

Increasingly, land under conservation management includes areas dedicated to, and managed for, conservation by private owners, with the extent of private conservation lands now more than 4 million hectares. This increase in private conservation presents both opportunities and challenges across the various sectors.

² Sristi Kamal, Malgorzata Grodzinska-Jurczaka and Gregory Brown, ‘Conservation on private land: a review of global strategies with a proposed classification system’, *Journal of Environmental Planning and Management*, vol. 58, no. 4, 2015, p. 577.

³ Dr Daniel J Metcalfe and Dr Elisabeth N Bui, *Australia State of the Environment 2016: Land*, report for Commonwealth Department of the Environment and Energy, Commonwealth Government, 2017, p. 46.

8.1.2 Governance

The governance system for Victoria's landscapes is very complex. Management takes place at the individual, local, regional, state and national levels; and is actioned via an elaborate framework of legislation, policies and planning documents. While these mechanisms aim to protect, conserve and restore land, land managers and communities have cited inconsistencies, overlaps and gaps in the framework as a disincentive and source of confusion.

The following sections outline the role of the Commonwealth and Victorian Governments in governance across private and public land. Victoria has primary responsibility for managing land, with broad powers to legislate on environmental issues within its borders. The Commonwealth does, however, have power and responsibility over matters of national environmental significance as well as powers of coordination over the National Reserve System, discussed below.

Commonwealth

As outlined in Chapter 2, the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act), is the Commonwealth Government's key piece of environmental legislation. The EPBC Act regulates activities on public and private land by imposing environmental restrictions. Primarily, the Act prohibits actions on land that may have a significant impact on matters of national environmental significance, which include:

- world heritage properties
- national heritage places
- wetlands of international importance (Ramsar wetlands)
- listed threatened species and ecological communities
- listed migratory species.⁴

Another important component of the national policy for managing land is Australia's National Reserve System, which was originally established in conjunction with Australia's voluntarily accepted obligations under the 1992 *Convention on Biological Diversity*.⁵ The National Reserve System is an evolving national network of formally recognised parks, reserves and protected areas dedicated to the long-term protection of Australia's biodiversity. It comprises both public and private land, with 44% of Australia's reserve system made up of Indigenous Protected Areas. As at 2020, Victoria's protected areas in the National Reserve System totalled nearly 4 million hectares, out of a total 22.74 million hectares of protected areas across the state.⁶

⁴ *Environment Protection and Biodiversity Conservation Act 1999* (Cth) pt 3 div 1.

⁵ Commonwealth Department of Agriculture, Water and the Environment, *History of the National Reserve System*, <<https://www.environment.gov.au/land/nrs/about-nrs/history>> accessed 1 October 2021.

⁶ Commonwealth Department of Agriculture, Water and the Environment, *Ownership of protected areas*, <<https://www.environment.gov.au/land/nrs/about-nrs/ownership#levels>> accessed 1 October 2021.

Australia's Strategy for the National Reserve System 2009–2030 provides a national framework for interjurisdictional coordination and collaborative action by protected area managers and stakeholders. Its key directions include:

- improved design and selection of protected areas
- accelerated establishment of further protected areas, using partnerships to secure important areas and diverse habitats, to develop a comprehensive, adequate and representative system of protected areas under climate change
- improved availability, accessibility and integration of knowledge and information to support the planning for, and management of, protected areas
- strengthened partnerships and increased community support, with improved understanding of the reserve system's role in biodiversity conservation.⁷

The Strategy sets targets to improve the National Reserve System, including to ensure that it is comprehensive and representative of regional ecosystems, and protects critical habitat and important sites for climate change resilience.⁸

More broadly, *Australia's Strategy for Nature 2019–2030*—the national biodiversity conservation strategy—has a number of objectives relating to land management. This includes empowering Australians to be active stewards of nature, including on private land through privately managed protected areas, covenants and stewardship agreements. It also highlights the importance of public-private partnerships and cross-sector collaborations to protect biodiversity. Another objective is to respect and maintain traditional ecological knowledge and stewardship of nature, in partnership with First Nations communities.⁹

Victoria

Victoria's legislative framework relating to the management of public and private land includes:

- National Parks Act—establishes a permanent reserve system of national, state, wilderness and marine national parks and other areas in order to conserve representative areas of Victoria's natural environment
- Crown Land (Reserves) Act—establishes a system of reservation and management of Crown land for public purposes, with committees of management appointed to manage reserves
- Forests Act—provides for the management of state forests and the regulation of certain activities, such as taking forest produce

⁷ Natural Resource Management Ministerial Council, *Australia's Strategy for the National Reserve System 2009–2030*, Commonwealth Government, May 2009, p. 12.

⁸ *Ibid.*, p. 13.

⁹ *Australia's Strategy for Nature 2019–2030*, report prepared by Biodiversity Working Group for the Meeting of Environment Ministers, Commonwealth of Australia, 2019, pp. 16–17.

- *Land Act 1958 (Vic)* (Land Act)—deals with the sale, leasing and licensing of Crown land
- *Planning and Environment Act 1987 (Vic)*—provides for land use and planning in Victoria, including through the Victoria Planning Provisions and planning schemes
- *Victorian Conservation Trust Act 1972 (Vic)*—establishes a system through which private landowners can enter into a voluntary conservation covenant with Trust for Nature in relation to an area of land, which is protected in perpetuity
- *Catchment and Land Protection Act 1994 (Vic)*—establishes a framework for the regulation of noxious weeds and pest animals across public and private land.

Protecting Victoria's Environment – Biodiversity 2037 (Biodiversity 2037) outlines various goals and targets with respect to private and public land management, including:

- increasing the amount of native habitat that is protected and managed on private land
- creating more opportunities for private landholders to permanently protect biodiversity on private land
- developing more diverse mechanisms to make it easier for landholders to protect biodiversity long-term
- establishing consistent and recognisable voluntary standards for biodiversity management on private land
- increasing incentives and exploring market opportunities for private landholders
- creating better collaborate arrangements so that stakeholders and partners are engaged in decisions that affect them
- maintaining and improving a world-class reserve system on public and private land
- using strategic land use planning tools to better protect areas of private land that support significant biodiversity values, and to identify opportunities for targeted land purchases.¹⁰

The Department of Environment, Land, Water and Planning (DELWP) is the primary Victorian agency in relation to land management. Its key goal in this space is to have productive and effective land management, including through sustainable management, increasing public value benefits and improving Traditional Owner land management decision-making.¹¹

¹⁰ Department of Environment, Land, Water and Planning, *Protecting Victoria's Environment – Biodiversity 2037*, 2017, p. 49.

¹¹ Department of Environment, Land, Water and Planning, *Productive and effective land management*, 2021, <<https://www.delwp.vic.gov.au/corporate-plan/productive-and-effective-land-management>> accessed 18 October 2021.

8.2 Public land management

The following sections provide an overview of Victoria’s protected areas and their management, changes to the legislative framework relating to public land, critiques of public land management and the roles of Traditional Owners in governance mechanisms.

8.2.1 Protected areas

Protected areas—areas recognised and managed on a long-term basis for the conservation of nature—are a critical tool for biodiversity conservation.¹² The Commonwealth Department of Agriculture, Water and the Environment has described the value of conserving biodiversity and protecting ecosystems through protected areas:

The reserve system is building more resilient landscapes that will provide refuges and wildlife corridors for plants and animals to adapt as climate change alters their existing habitat.

Protected areas are not locked away or isolated, but are a valued part of our land use. They provide a range of social, economic and scientific benefits, from healthy outdoor activities to new eco-tourism businesses for regional economies.¹³

The International Union for Conservation of Nature has described protected areas as ‘at the core of efforts towards conserving nature and the services it provides us’.¹⁴

As the state with the highest rate of land clearing, maintaining publicly protected land is critical. According to Biodiversity 2037, 70% of Victoria’s highest value terrestrial biodiversity areas are located on the 40% of land that is publicly owned.¹⁵

In Victoria, formal protected areas are established through the National Parks Act, Crown Land (Reserves) Act and *Wildlife Act 1975* (Vic). These are accompanied by an informal reserve system of state forests in conjunction with the Forests Act. Some of the main types of land protected in Victoria for conservation or other purposes are outlined in Table 8.1.

¹² International Union for Conservation of Nature, *Protected Areas: About*, 2021, <<https://www.iucn.org/theme/protected-areas/about>> accessed 30 September 2021.

¹³ Commonwealth Department of Agriculture, Water and the Environment, *Australia’s protected areas*, <<https://www.environment.gov.au/land/nrs/about-nrs/australias-protected-areas>> accessed 1 October 2021.

¹⁴ International Union for Conservation of Nature, *Protected Areas*.

¹⁵ Department of Environment, Land, Water and Planning, *Protecting Victoria’s Environment – Biodiversity 2037*, p. 47.

Table 8.1 Victoria's reserve system

National, state and wilderness parks	<p>National and state parks are areas of national significance or with outstanding natural values, which are intended to be representative of Victoria's ecosystems and species.</p> <p>Wilderness parks are managed for conservation and self-reliant recreation purposes, with the aim of allowing them to remain relatively untouched as 'wilderness'.</p> <p>National, state and wilderness parks are managed by Parks Victoria in accordance with the National Parks Act.</p>
Indigenous protected areas	<p>Declared areas that are managed by First Nations groups, in voluntary agreements with the Commonwealth Government, for biodiversity conservation. In Victoria, Indigenous protected areas include Deen Maar, Tyrendarra, Kurtonitj, Framlingham Forest and Lake Condah.</p>
Reserves	<p>Temporary or permanent reserves for public purposes, including in relation to the preservation of areas of ecological significance, conservation of areas of natural interest and preservation of native plant species.</p> <p>Reserves are managed by committees of management in accordance with the Crown Land (Reserves) Act.</p>
State forests	<p>State forests are established as informal reserves which are managed for the supply of forest products, environmental values and other uses.</p> <p>State forests are managed by DELWP in accordance with the Forests Act.</p>

Source: *National Parks Act 1975* (Vic) pt 3; Department of Agriculture, Water and the Environment, *Indigenous Protected Areas*, <<https://www.environment.gov.au/land/indigenous-protected-areas>> accessed 1 October 2021; *Crown Land (Reserves) Act 1978* (Vic) pt 2; *Forests Act 1958* (Vic) s 42.

Victoria's national park and conservation reserve system encompasses approximately 8 million hectares of:

- national parks and conservation reserves (4 million hectares)
- state forests (3.2 million hectares)
- over 1,200 public land reserves (approximately 550,000 hectares).¹⁶

DELWP and Parks Victoria are the primary government agencies for public land management in Victoria. To ensure effective and collaborative management and protection, DELWP partners with Traditional Owners and a range of other stakeholders in managing public land. Managers of public land reserves also include state government departments, statutory agencies, local councils and voluntary committees of management.

Victoria also has a dedicated public land use designation authority, the Victorian Environmental Assessment Council (VEAC), established under the *Victorian Environmental Assessment Council Act 2001* (Vic). Victoria was the first Australian jurisdiction to have its own designated public land use authority. VEAC assesses and makes recommendations to guide the categorisation and management of Victorian's public land to protect natural values and allow for recreation and other uses. According to Biodiversity 2037, through its commitment to public land use planning by VEAC

¹⁶ Department of Environment, Land, Water and Planning, *Managing Crown Land*, <<https://www.forestsandreserves.vic.gov.au/land-management/managing-crown-land>> accessed 9 November 2021.

(and its predecessors), Victoria now has a world-class terrestrial reserve system, ranging across most of Victoria’s environments and habitats.¹⁷

An overview of Victoria’s public land is shown in Figure 8.2 below.

Figure 8.2 Victoria’s public land



Source: Office of the Commissioner for Environmental Sustainability, *State of the Forests: 2018 report*, report for Victorian Government, Melbourne, 2018, p. 38.

Forests

Forests are managed primarily for ecosystem and biodiversity values. They are also managed for other purposes, depending on the type of area, including timber harvesting, recreation, and the protection of flora and fauna. Across public and private land areas, Victoria has approximately 8.2 million hectares of forests including native forest and plantations.¹⁸

State forests provide a wealth of environmental, economic, and social benefits. Strategic planning for state forests is delivered through Forest Management Plans. These plans map forests into zones, and set out objectives for conservation, land management and uses (such as timber harvesting).¹⁹

17 Department of Environment, Land, Water and Planning, *Protecting Victoria’s Environment – Biodiversity 2037*, p. 48.
 18 Department of Environment, Land, Water and Planning, *Overview of Victoria’s Forest Management System*, December 2019, p. 2.
 19 Department of Environment, Land, Water and Planning, *Forest management plans*, 2021, <<https://www.forestsandreserves.vic.gov.au/forest-management/forest-management-plans>> accessed 1 October 2021.

Victoria's forest management system comprises legislative and regulatory instruments operating at international, national, state and local levels for the ecologically sustainable management of Victoria's forests. The system is administered by a number of state and local government authorities and applies to both public and private land. A number of agencies have partnered to oversee and undertake forest management, including DELWP, the Department of Jobs, Precincts and Regions and VicForests.²⁰ DELWP is responsible for managing Victoria's state forest estate.²¹

To provide for the protection of matters of national environmental significance in accordance with the EPBC Act, the Commonwealth, State and Territory Governments have agreed under the 1992 *National Forest Policy Statement* to criteria of a comprehensive, adequate and representative system of reserves within forests in Australia, comprised of private and public land areas. These nationally agreed criteria have been incorporated into Victoria's forest management system through five Regional Forest Agreements (RFAs). The RFAs are agreements between the Commonwealth and State Governments that provide for sustainable management and use of Victoria's forests.

Forests, RFAs and forestry operations were discussed in more detail in Chapter 6.

Parks and conservation reserves

The National Parks Act (and to a lesser extent the Crown Land (Reserves) Act and *Wildlife Act 1975* (Vic)) establish a network of national parks and reserves. This legislation sets out a framework for the protection and management of representative samples of the diverse natural environments occurring on Crown land in Victoria (including marine and coastal Crown land) that are managed for the primary purpose of conservation.

Parks Victoria is the primary agency responsible for managing Victoria's parks and reserves system. Established by the *Parks Victoria Act 2018* (Vic), Parks Victoria works in collaboration with other bodies such as government agencies, catchment management authorities, community groups and private landowners.²² According to the *National Parks Act Annual Report 2019–20*, as at 30 June 2020, Parks Victoria managed 139 areas—with a total area of 3.46 million hectares—under various provisions of the National Parks Act.²³

Each managed area is subject to an approved management plan. These plans identify a vision, goals, outcomes, measures and long-term strategies in managing that area. In areas where Traditional Owner groups have been recognised by the Victorian

²⁰ Department of Environment, Land, Water and Planning, *Overview of Victoria's Forest Management System*, p. 13.

²¹ VicForests, *Forest Management: The care and ongoing management of our native forests is our primary concern, 2020*, <<https://www.vicforests.com.au/vicforest-forest-management/forest-management-landing-page>> accessed 7 October 2021.

²² Parks Victoria, *About us*, <<https://www.parks.vic.gov.au/about-us>> accessed 1 October 2021.

²³ Parks Victoria, *National Parks Act Annual Report 2019–2020, 2020*, p. 3.

Government, Parks Victoria undertakes joint management planning with those Traditional Owners.²⁴ Joint management is discussed further in Section 8.2.4.

Gaps in the protected area network

Biodiversity 2037 stipulates that ‘to maintain and improve biodiversity, the extent and condition of parks and other permanently protected areas needs to be enhanced’. It includes a priority of maintaining and enhancing a ‘world-class system of protected areas’. Initiatives to achieve this involve a review of the extent, representativeness and adequacy of the current reserve system and identification of future reserve system priorities (such as targeted acquisition) through strategic land use planning.²⁵

The observation that there are gaps in the conservation reserve system was broadly echoed by stakeholders during the Inquiry. For example, in evidence at a public hearing, Dr Jim Radford, Principal Research Fellow at the Research Centre for Future Landscapes at La Trobe University, stated:

We have a pretty good conservation reserve system in Victoria, one of the best in the world, but there are still gaps in it and so that can be addressed. So, for example, there are the western grassland reserves, which no doubt you have heard a lot about, that are still yet to be implemented fully. There are recommendations from VEAC in regard to the Wombat State Forest, Mount Cole and the Wellsford State Forest that are still sitting on desks and have been for over 18 months now. They can be enacted, and they are gaps in our conservation reserve system.²⁶

The Victorian National Parks Association drew the Committee’s attention to analysis it conducted in 2014 of the different ecological vegetation classes encompassed by Victoria’s national parks and conservation reserves. This analysis identified ‘substantial gaps’ in representation. The Association suggested that a total of approximately 3.1 million additional hectares—comprised of 1.5 million hectares of public land and 1.7 million hectares of private land—must be protected to complete ‘a minimally comprehensive reserve system: one that gives the necessary protection to all habitat types’. Regions of Victoria that the Association felt are underrepresented and should be protected include:

- woodlands and wetlands in the Glenelg Plain and Dundas Tablelands in south west Victoria
- forests and woodlands in central west Victoria and the goldfields
- grasslands and volcanic plains west of Melbourne
- forests in the Yarra River, Goulburn, Bunyip, Latrobe and Thompsons basins in the central highlands of Victoria

²⁴ Parks Victoria, *Park planning and knowledge* <<https://www.parks.vic.gov.au/get-into-nature/conservation-and-science/science-and-research/state-of-the-parks/park-planning-and-knowledge>> accessed 1 October 2021.

²⁵ Department of Environment, Land, Water and Planning, *Protecting Victoria’s Environment – Biodiversity 2037*, p. 61.

²⁶ Dr Jim Radford, Principal Research Fellow, Research Centre for Future Landscapes, La Trobe University, Public hearing, Melbourne, 21 April 2021, *Transcript of evidence*, p. 57.

- the Strzelecki Ranges and Gippsland Plains
- East Gippsland.²⁷

Multiple stakeholders directed the Committee to a similar finding made by VEAC. VEAC conducts investigations, assessments and advises the Victorian Government in relation to the protection and sustainable management of the environment and natural resources on public land. In its 2017 *Statewide Assessment of Public Land*, it suggested that there are three regions of Victoria which contain ‘clusters’ of ecological vegetation communities currently underrepresented in the national parks and conservation reserve system. These regions include south west Victoria, the Strzelecki Ranges, Gippsland Plains and the Central Victorian Uplands.²⁸

VEAC expanded on this finding in 2019 when it completed an investigation into public land in the central west of Victoria, including the Wombat, Wellsford, Mount Cole and Pyrenees Range forests. VEAC was tasked with investigating balanced use and appropriate management arrangements to conserve and enhance the natural and cultural values of the region. It recommended the declaration of multiple new national park areas, the enlargement of regional parks and conservation parks, as well as the retention of areas of state forest.²⁹

Stakeholders such as the Ecological Society of Australia, Victorian National Parks Association, Wombat Forest Care and Save Our Strathbogie Forest submitted in support of VEAC’s findings.³⁰ The Ecological Society of Australia recommended that Victoria ‘prioritise identification, protection and restoration of critical habitat, informed by a scientific analysis of critical habitats under-represented in the system so far’. It submitted:

Conservation reserves in Victoria total ~18% of the state (about 4.1 M hectares). However, there are still significant gaps to be filled to meet Australia’s criteria for a comprehensive, adequate and representative (CAR) reserve system. According to the Victorian Government, ~2.1 M hectares of additional habitat protection is necessary to achieve this goal (Biodiversity 2037 strategy). Poor habitat representation of natural ecosystems in the reserve network is concentrated in South West Victoria, the Central Victorian Uplands and the Gippsland Plains and thus these areas should be a priority focus for attention.³¹

While not taking a position on the expansion of Victoria’s national parks and reserves, DELWP pointed out in its submission that Victoria already ‘has a well-established system of formal parks and reserves and informal reserves within state forests that are critical to achieving biodiversity outcomes’.³²

²⁷ Victorian National Parks Association, *Submission 102*, p. 93.

²⁸ Victorian Environmental Assessment Council, *Statewide Assessment of Public Land: Final Report*, 2017, p. 21.

²⁹ Victorian Environmental Assessment Council, *Central West Investigation: Final Report*, June 2019, p. 7.

³⁰ Save Our Strathbogie Forest, *Submission 864*, p. 3; Victorian National Parks Association, *Submission 102*, p. 24; Wombat Forest Care Inc, *Submission 315*, pp. 2-3.

³¹ Ecological Society of Australia, *Submission 575*, pp. 6-7.

³² Department of Environment, Land, Water and Planning, *Submission 927*, p. 5.

Moreover, DELWP noted that despite investment in the national park and reserve system's biodiversity values, the longer-term outlook for conservation remains poor:

Over the past 5 years, more than \$1 billion has been invested to ensure Parks Victoria is able to effectively manage 4.1 million hectares of Victoria's most special and precious environments ... However, despite this investment, the longer-term outlook for many threatened species and habitats that rely on Victoria's approximately 8 million hectare public land estate for their conservation is poor. Achieving better protection of these values will require biodiversity conservation being given greater consideration in decisions involving competing public land uses as well as increased, better targeted and coordinated investment to manage key threats within a tenure-blind ecosystem-based framework.³³

The Committee also received evidence from forestry groups who felt that Victoria's national parks and reserves are already comprehensive and suggested that further reserving forests would limit their ability to be 'actively managed' to mitigate biodiversity risks, such as bushfires. For example, a joint submission from the Institute of Foresters of Australia and Australian Forest Growers argued that the expansion of protected areas is contributing to ecosystem decline. It suggested that the reservation of protected land has reduced the capacity for active management of these landscapes to address threats to biodiversity:

the substantial expansion of 'protected areas' in forests over the past 50-years has excluded human use, this has providing minimal benefit in reducing the risks or the impacts to biodiversity being caused by the critical threats of bushfire and introduced pests. Indeed, as the expansion of 'protected areas' has generally been accompanied by a reduced management capacity to actively address these threats, it is more likely to have exacerbated ecosystem decline in Victoria's public forests.³⁴

The Victorian Government tabled its response to VEAC's *Central West Investigation Final Report* in Parliament on 24 June 2021. It indicated that it accepted, accepted in principle or accepted in part 76 of the 77 recommendations made by VEAC. As a result, three new national parks will be declared and new conservation parks, nature reserves and bushland reserves will be established, increasing Victoria's protected areas by approximately 55,000 hectares.³⁵

RECOMMENDATION 36: That the Victorian Government consider providing additional funding, as recommended by the Victorian Environmental Assessment Council, to enable Parks Victoria to manage the newly created national parks in Victoria's central west region.

³³ Ibid.

³⁴ Institute of Foresters of Australia and Australian Forest Growers, *Submission 660*, pp. ii & 2, 3.

³⁵ Victorian Government, *Victorian Government Response to the Victorian Environmental Assessment Council's Central West Investigation Final Report*, 24 June 2021, pp. 3-4.

At a public hearing, Carolyn Jackson, Acting Deputy Secretary, Environment and Climate Change at DELWP, provided an overview of this commitment:

Further protection of Victoria's natural environment was enhanced by the announcement of 65 106 hectares of new national parks in Victoria's central west. These will link existing state forests, parks and reserves. The largest will bring together the Lerderderg State Park and much of the existing Wombat State Forest to create a new national park covering more than 44 000 hectares between Daylesford and Bacchus Marsh. A 15 000- hectare Pyrenees national park will be created north-west of Avoca, and a 5282-hectare Mount Buangor national park will double the size of the existing state park.³⁶

In the Committee's view, protecting remaining biodiversity values is an important first step in reversing the current trajectory of ecosystem decline across Victoria and improving the State's resilience to climate change. It welcomes the Victorian Government's commitment in June 2021 to adding an additional 55,000 hectares to Victoria's network of protected areas.

The Committee notes, however, that Biodiversity 2037 does not identify further targets for the acquisition of new protected areas on public land in the reserve system. Further, stakeholders have raised concerns regarding the management of public land—this is discussed further in Section 8.2.3.

8.2.2 Changes to the legislative framework

In 2017, VEAC published the final report for its *Statewide Assessment of Public Land*. In this report, VEAC noted a number of issues regarding the existing framework, such as confusion around land use categories and a lack of alignment with legislation. For example, it reported confusion around terminology used in relation to protected areas:

while Victoria's national parks and state parks are listed in different schedules of the National Parks Act, they are managed for the same purposes.

Currently, state parks are often confused with state forest, which has a very different legislated purpose and permitted uses.

The national and state designations probably arose from the U.S. system where the terms reflect the level of government under which they are established, unlike the Victorian situation. The national and state park designations in Victoria are also sometimes mistakenly thought to represent the level of significance of the land or the level of protection. Neither is correct.³⁷

³⁶ Carolyn Jackson, Acting Deputy Secretary, Environment and Climate Change, Department of Environment, Land, Water and Planning, Public hearing, Via videoconference, 10 August 2021, *Transcript of evidence*, p. 3.

³⁷ Victorian Environmental Assessment Council, *Statewide Assessment of Public Land*, p. 27.

VEAC made a number of recommendations, including that public land use categories be refined and consolidated, legislation relating to state forests be consolidated, and a new Public Land Act be developed to replace the Land Act, Crown Land (Reserves) Act and Forests Act.³⁸

In response to VEAC’s recommendations, the Victorian Government committed to expanding the National Parks Act to include revised public land use categories. It stated that this would ‘consolidate and rationalise legislation relating to protected areas (which is currently spread across several Acts) and better support the effective management of Victoria’s most valued Crown land’.³⁹

In addition, the Victorian Government committed to developing a new Public Land Act within five years. It acknowledged that:

Much of the legislation in these Acts dates to the 19th century and early 20th century, is not necessarily fit for purpose and does not support the efficient administration of Crown land or the achievement of management objectives. A single, simplified and modernised Act will reduce complexity and duplication, be more efficient to administer and better facilitate community involvement in public land.⁴⁰

In a paper as part of consultation processes on a new Public Land Act, the Victorian Government proposed that this Act could feature:

- a simplified legislative framework, with clear objectives and decision-making principles for public land management
- revised, simple and clear public land categories
- a streamlined framework for tenures, such as leases and licences
- modernised compliance, enforcement and regulation provisions.⁴¹

Importantly, the consultation paper also identified that there are barriers to self-determination for Traditional Owners in relation to opportunities to manage land, as well as a lack of formal mechanisms to use cultural knowledge in land management activities. It also noted that there was insufficient recognition of Traditional Owners in the current legislative framework (the Land Act, Crown Land (Reserves) Act and Forests Act). The paper proposed that a new Public Land Act could include, in relation to Traditional Owners:

- guiding objectives and principles to promote self-determination and recognise knowledge of, and rights and interests in, public land management

³⁸ Ibid., pp. 32–33.

³⁹ Victorian Government, *Victorian Government Response to the Victorian Environmental Assessment Council’s Statewide Assessment of Public Land Final Report*, 2017, p. 7.

⁴⁰ Ibid., p. 8.

⁴¹ Department of Environment, Land, Water and Planning, *Realising the value of Victoria’s public land: Renewing Victoria’s public land legislation*, Victorian Government, 2021, p. 6.

- a mechanism to formally recognise strategies and plans developed by Traditional Owners (such as Country plans) to facilitate the use of cultural knowledge in public land management
- improved land management opportunities and removal of legislative barriers that prevent Traditional Owners from being directly appointed as land managers on areas of public land.⁴²

At the time of writing this report, consultation processes for renewing Victoria's public land legislation had been completed and legislation is expected to be developed by 2022.⁴³

The Committee welcomes the Victorian Government's work to date in modernising and simplifying Victoria's legislative framework relating to the use of public land. In addition, it hopes that the legislation that is developed addresses identified barriers to self-determination for Traditional Owners in public land management.

FINDING 32: Development of a new Public Land Act presents an important opportunity to modernise and simplify the existing legislative framework for the management of public land. This process provides an important opportunity to advance Traditional Owner self-determination in land management in Victoria.

8.2.3 Critiques of public land management

The Committee heard evidence throughout the Inquiry that active and adaptive management, funding and monitoring are the three main challenges in relation to public land and biodiversity management. Monitoring underpins adaptive management, while both rely on consistent and adequate funding. Dr Melanie Birtchnell, a member of the Ecological Consultants Association of Victoria, explained to the Committee that when it comes to management, these are 'the three pillars of where things fall over'.⁴⁴

Active and adaptive management

As noted above, setting aside protected areas for conservation is a key component of Victoria's land management strategy. Historically, this has been the main approach to minimising the impacts of environmental threats such as land clearing and development, with restrictions on how the land is subsequently used.

However, DELWP noted in its submission that despite Victoria's well-established system of formal parks and reserves, the 'longer-term outlook for many threatened species and habitats that rely on Victoria's approximately 8-million-hectare public land

⁴² Ibid., p. 4.

⁴³ Department of Environment, Land, Water and Planning, *Renewing Victoria's public land legislation*, 2021, <<https://engage.vic.gov.au/renewing-victorias-public-land-legislation>> accessed 7 October 2021.

⁴⁴ Dr Melanie Birtchnell, Member, Ecological Consultants Association of Victoria, public hearing, Melbourne, 24 February 2021, *Transcript of evidence*, p. 33.

estate for their conservation is poor'.⁴⁵ Similarly, Dr Michelle Freeman, Vice-President of the Institute of Foresters of Australia and Australian Forest Growers, highlighted in her evidence at a public hearing that 'our national park estate has increased by over 500 per cent since 1970, yet we are still seeing declines'.⁴⁶

Increasingly, evidence shows that the impacts of large-scale forestry and other industrial developments have transformed forest ecosystems from being governed mostly by natural processes to being under strong human influence. Major changes to the environment, such as climate change and variations in land use intensity, have meant that approaches to conservation and restoration have had to be adaptive. Dr Freeman explained to the Committee how these transitions have had far-reaching consequences for forest structures and dynamics:

Society has modified our environment to such an extent that we cannot now expect that our forests will simply recover from the effects of key threats. Although forests are inherently resilient, these natural capacities are being impacted by broader environmental change, so we need to understand and harness aspects of forest resilience to enhance recovery outcomes.⁴⁷

While stakeholders generally communicated that the protected land discussed above plays an important role, there was broad agreement that solely reserving land is not enough to properly manage and conserve biodiversity.⁴⁸ The impacts of modern life on the environment require conservation to be informed by an understanding of the changing environmental structure. This management strategy is known as 'adaptive management', which DELWP defines as 'an ongoing program of management and monitoring that may be adjusted over time as our understanding of an ecological system's response to management improves'.⁴⁹

Biodiversity 2037 states that an active and adaptive approach to land conservation management will 'maintain and enhance biodiversity and improve its ability to recover from shocks and stresses'.⁵⁰ Many stakeholders favour this management approach, as it has been shown to sustain or accelerate natural recovery of biodiversity. For example, Dr Freeman used ash forests as an example of where active management is needed:

In particular I would like to draw your attention to a major ecosystem decline that requires an active silvicultural response: the large areas of immature ash forest that have resulted from too frequent bushfires over the last 20 years... Within the extent of the Black Summer bushfires in Victoria approximately 21 000 hectares of ash forest is at the stage of population collapse, and if left untreated is expected to change vegetation

⁴⁵ Department of Environment, Land, Water and Planning, *Submission 927*, p. 5.

⁴⁶ Dr Michelle Freeman, Vice-President, Institute of Foresters of Australia and Australian Forest Growers, Public hearing, Melbourne, 10 March 2021, *Transcript of evidence*, p. 32.

⁴⁷ *Ibid.*, p. 33.

⁴⁸ See, for example, Associate Professor Craig Nitschke, Landscape Dynamics, School of Ecosystem and Forest Sciences, Melbourne University, Public hearing, Melbourne, 20 April 2021, *Transcript of evidence*, pp. 32–33.

⁴⁹ Department of Environment, Land, Water and Planning, *Adaptive management*, 2021, <<https://www.msa.vic.gov.au/conservation-actions/adaptive-management>> accessed 18 October 2021.

⁵⁰ Department of Environment, Land, Water and Planning, *Protecting Victoria's Environment – Biodiversity 2037*, p. 43.

community, with a major loss of forest cover. This is called type change, and due to the effects of earlier bushfires the extent of type change outside the Black Summer fire extent is actually predicted to be even larger. Forest Solutions have been working with agencies to address this problem and actively sow ash seed onto these areas; however, not all areas needing treatment have received it due to the state holding insufficient seed in store. This is an example where active and adaptive management is now required.⁵¹

Similarly, Dr Grainne Maguire, Coastal Birds Program Leader at BirdLife, described how the lack of an active approach to managing national parks can significantly threaten areas in need of protection, using Ramsar wetlands as an example:

there was an inquiry into Ramsar site protection and whether it was meeting its obligations ... we did have some concerns at the time in terms of many of our Ramsar sites are not even adequately monitored to even have alarm bells as to whether they are being properly managed or otherwise. Often we kind of lean heavily on the fact that, 'Okay, we've locked an area up; it's protected'. It might be a national park or a Ramsar site, so we kind of think, 'Well, it must be well protected', but of course the resources are not injected into properly managing the threats within those Ramsar sites, so often these will become a real issue. What happens on the edge of a Ramsar site will also threaten the integrity of that site. So there are still obvious issues with Ramsar protection and making sure that the habitat is genuinely protected and in good quality for the species that rely on it. There is still lots of work to do there.⁵²

Dr Jack Pascoe, Conservation and Research Manager at the Conservation Ecology Centre, advocated to abolish the notion of wilderness and ensure that people are able to effectively manage land:

If we could abolish that notion of wilderness and just get people back into places ... the lock up and leave it thing. I understand why it was done. Jeez, it has had some impact. You know, just getting people who understand the landscape back in there and doing things on country—it is really important.⁵³

The Committee heard that what is critically needed, in addition to the protections afforded by the reserve system, is active and adaptive land management strategies. An understanding of the ways in which landscapes change and require varying conservation and management approaches is crucial to delivering effective management of protected areas.⁵⁴

FINDING 33: Active and adaptive land management is crucial to ensuring effective management of protected areas.

⁵¹ Dr Michelle Freeman, *Transcript of evidence*, p. 33.

⁵² Dr Grainne Maguire, Coastal Birds Program Leader, BirdLife Australia, Public hearing, Via videoconference, 20 April 2021, *Transcript of evidence*, p. 39.

⁵³ Dr Jack Pascoe, Conservation and Research Manager, Conservation Ecology Centre, Public hearing, Melbourne, 21 April 2021, *Transcript of evidence*, p. 52.

⁵⁴ Rowan Reid, Otway Agroforestry Network, Public hearing, Melbourne, 11 May 2021, *Transcript of evidence*, p. 69.

Funding

Many stakeholders called for increased funding for Victoria's state land managers, namely DELWP and Parks Victoria.⁵⁵ They argued that poor funding and under resourcing of public land managers contributed to inadequate management of different threats, such as invasive species in national parks.⁵⁶ For example, Professor Brendan Wintle, Professor of Conservation Ecology at the University of Melbourne, expressed his view that:

Parks are not very well funded. They are not getting the funding attention that you would need to solve the big problems like overabundant deer, overabundant goats, horses—you name it—and the plethora of invasive species.⁵⁷

For this reason, a number of stakeholders recommended an increase in funding for parks to 1% of Gross State Product (GSP).⁵⁸ Dr Radford from the Research Centre for Future Landscapes stated that this would allow for action plans for potentially threatening processes to be implemented, where they are currently 'sitting on shelves'.⁵⁹

The Committee heard that limited funding impinges upon the quality of natural resource management undertaken in Victoria's national parks. Fiona Sutton, President of the Ecological Consultants Association of Victoria, explained:

I have seen it many times, in our national parks, for example, where Parks [Victoria] have engaged a contractor, that contractor has been spraying a particular weed and there are large areas of off-target damage as a result of their spraying because they are not trained natural resource management contractors; they do not understand the complexity of it. And it has largely come down to funding, because Parks [Victoria] have had so many funding cuts that they cannot afford to pay for the good contractors. They have to pay for the cheapest contractors, for example. And it is not just limited to Parks Victoria as well. So there is definitely a funding issue, which then transpires into the quality of work that is undertaken.⁶⁰

Further, inadequate funding of parks can lead to a loss of consistency for environmental programs, impacting their overall effectiveness. The need for consistency in managing biodiversity was noted by Matt Ruchel, Executive Director of the Victorian National Parks Association, at a public hearing:

⁵⁵ See, for example, Krista Patterson-Majoor, Biodiversity Projects Officer, Macedon Ranges Shire Council, Public hearing, Melbourne, 12 May 2021, *Transcript of evidence*, p. 10; Andrew Maclean, Chief Executive Officer, Landcare Victoria, Public hearing, Melbourne, 11 May 2021, *Transcript of evidence*, p. 8; Dr Holly Sitters, University of Melbourne, Public hearing, Melbourne, 11 March 2021, *Transcript of evidence*, p. 9.

⁵⁶ Dr Jim Radford, *Transcript of evidence*, p. 58; Matt Ruchel, Executive Director, Victorian National Parks Association, Public hearing, Melbourne, 11 May 2021, *Transcript of evidence*, p. 21; Dr Holly Sitters, *Transcript of evidence*, p. 9.

⁵⁷ Professor Brendan Wintle, Professor of Conservation Ecology, University of Melbourne, Public hearing, Melbourne, 23 February 2021, *Transcript of evidence*, p. 58.

⁵⁸ See, for example, Matt Ruchel, *Transcript of evidence*, p. 24; Dr Jim Radford, *Transcript of evidence*, p. 57; La Trobe University Research Centre for Future Landscapes, *Submission 682*, p. 2.

⁵⁹ Dr Jim Radford, *Transcript of evidence*, p. 58.

⁶⁰ Fiona Sutton, President, Ecological Consultants Association of Victoria, Public hearing, Melbourne, 24 February 2021, *Transcript of evidence*, p. 33.

In a lot of the funding programs it is again about consistency of programs over time as opposed to necessarily the huge quantum. Over time—we see it with Landcare, we see it with on-ground programs, we see it with parks funding—they go up and down. You lose capacity, you lose connections and you lose continuity. The easiest way to think about it is the pesky pigs, deer, weeds. If you are not there every year, you come back and you are starting again. So it is about effectiveness as well.⁶¹

Dr Mark Norman, Chief Conservation Scientist at Parks Victoria, explained how funding is used to manage parks. He noted that in the 2019–20 financial year, Parks Victoria managed approximately \$20 million in externally funded conservation programs, with a ‘large proportion’ of its annual operating budget (approximately \$160 million) being used for ‘baseline programs’. He also highlighted the importance of the ‘connection to the visitor experience and infrastructure’, including in terms of ensuring ‘sustainable contact in positive, constructive ways that does not kill the golden goose of nature’.⁶² Dr Norman stated that Parks Victoria was receiving increased funding from previous years but that the scale of the challenge being faced, in the context of climate change, is significant:

In terms of funding overall, we have had an increase in funding. It has been going up in the last couple of years and is anticipated to be higher again next year. There are major announcements which I think have huge significance, like the Prom Sanctuary announcement to put the predator-proof fence across Wilsons Promontory and, for 10 kilometres of fence, build 50 000 hectares of the biggest climate refuge in Australia in terms of a diversity of species and habitats in the cool waters of Bass Strait, so protected from climate change. It is absolutely a game changer, and it will be a model for other sanctuaries and other programs like that around the state.

We are not going in a going-backwards state in terms of support; we are actually going forward with both baseline and individual initiatives that have put us in a better place in recent years. But the scale of it is still absolutely huge, and I am really concerned that that can be understated in terms of how transformative things are. Our rainforests burned in the recent fires. They have always been too wet to burn. We are in new, uncharted waters.⁶³

The Committee notes widespread concerns regarding the ability of Parks Victoria and other public land managers to undertake active and adaptive management of the State’s parks and reserves within current funding frameworks. While funding allocations have increased from previous years, there are significant challenges in managing the parks estate, including in relation to the rapid effects of climate change. It is imperative that these protected areas are effectively managed in order to conserve and restore Victoria’s precious biodiversity. In light of the need for transformative change to reverse the current trajectory of ecosystem decline, the Committee considers that further

⁶¹ Matt Ruchel, *Transcript of evidence*, p. 24.

⁶² Dr Mark Norman, Chief Conservation Scientist and Executive Director of Environment and Science, Parks Victoria, Public hearing, Melbourne, 3 December 2020, *Transcript of evidence*, p. 27.

⁶³ *Ibid.*

increased funding for Parks Victoria to undertake active and adaptive land management in the State's parks and reserves is crucial.

RECOMMENDATION 37: That the Victorian Government increase funding for Parks Victoria to undertake active and adaptive land management in the State's parks and reserves, and consider increasing this funding to 1% of Gross State Product.

Monitoring

Biodiversity 2037 notes that without comprehensive data, evidence-based targets, scenario modelling and program evaluation cannot be achieved.⁶⁴ Throughout the Inquiry, stakeholders advocated for improvements in the ways in which environmental monitoring and data collection takes place in Victoria.

The Committee received evidence about the importance of implementing a comprehensive statewide program of ongoing ecological monitoring and evaluation. This could be used to track the health of ecosystems, species and key threats and to evaluate whether management actions are effective.

Effective monitoring also facilitates adaptive management, which, as discussed above, is needed in the context of the rapidly changing climate to improve land management outcomes. For example, Fiona Sutton from the Ecological Consultants Association of Victoria described how monitoring underpins adaptive management:

it is also monitoring of those species so that you can have adaptive management to say 'This has actually worked really well' or 'Hang on, there's another threat that's now come in, and so we need to focus on that now as well'. So it is not just 'Keep going on the same path of the management plan that was written 10 years ago'; you need to actually have ecologists going back and assessing what is going on on the site to make sure that, 'Yes, this is still our highest priority. These are the priorities that we need to manage', and not having to deal with additional things that have come in since. A new weed, for example, might come in, or a new pest animal. There might be deer that are new to the area—whatever it is.⁶⁵

Many other stakeholders expressed the need to increase monitoring in terrestrial ecosystems. For example, Nillumbik Shire Council's submission expressed concern that a lack of resourcing to undertake biodiversity monitoring has meant that the extent of ecosystem decline in its municipality cannot be measured. It emphasised the importance of longitudinal studies over time to understand why things are changing and noted that without this evidence, biodiversity outcomes cannot be improved.⁶⁶

⁶⁴ Department of Environment, Land, Water and Planning, *Protecting Victoria's Environment – Biodiversity 2037*, pp. 16–22.

⁶⁵ Fiona Sutton, *Transcript of evidence*, p. 33.

⁶⁶ Nillumbik Shire Council, *Submission 392*, p. 3.

Professor Wintle highlighted that data gaps in relation to biodiversity are a national issue, and that there is a ‘psychological barrier’ for government when it comes to allocating budget spend on measurement:

We have a significant gap. This is national; this is definitely not just a problem in Victoria. We have got a significant gap in our data that means that it is very hard for us to (a) say what is going on and (b) prioritise where we need to spend our money for the most urgent cases and to get the biggest bang for our buck. Also, we are unable to say which kinds of actions work best where because we are not measuring ... There is a monitoring program under the biodiversity strategy, but it is a very common thing for that to be grossly underfunded, because governments like to announce spending on action, not spending on measurement.⁶⁷

Monitoring and data collection is discussed in detail in Chapter 11.

8.2.4 Traditional Owner land management

As outlined in Chapter 3, Traditional Owners told the Committee throughout the Inquiry of the importance of caring for Country holistically, including for the complex interrelationships between ecosystems and species. Traditional Owner-led land management initiatives often incorporate this holistic approach.

There are various ways in which Traditional Owners are involved in land management in Victoria. This includes through Traditional Owner-led strategies and plans, such as Country plans and the *Victorian Traditional Owner Cultural Landscapes Strategy* (Cultural Landscapes Strategy), as well as through partnerships with government agencies and other land managers on local, regional and statewide initiatives. Some Traditional Owner corporations operate commercial enterprises to support self-determination and offer employment and other opportunities for their communities. An example of these enterprises is discussed in Box 8.1 below.

⁶⁷ Professor Brendan Wintle, *Transcript of evidence*, p. 56.

BOX 8.1: Woka Walla

Woka Walla, meaning ‘land’ and ‘water’, is the commercial enterprise of Yorta Yorta Nation Aboriginal Corporation. It provides meaningful employment and training in natural resource management for Yorta Yorta and other First Nations peoples. Woka Walla’s vision is to ‘have Yorta Yorta and other Aboriginal people participating in real economy, real jobs and real development through a successful on-country [Yorta Yorta Nation Aboriginal Corporation] led procurement business with strong and innovative partnerships in place’.

Woka Walla provides diverse services across public and private land, including:

- biodiversity restoration—such as park regeneration, biodiversity corridor works, protection and rehabilitation activities and landscaping and maintenance
- pests, plants and animals—protection of threatened species and management of weeds and pest animals, such as foxes and cats
- monitoring—such as in relation to threatened flora and fauna habitat mapping, infrastructure, farm and land management and river water health.

The enterprise supports young people to develop careers in natural resource management and become advocates for First Nations peoples in working on, and caring for, Country. Traditional ecological knowledge is used throughout their work, and staff have participated in cultural fire workshops and firefighter training with DELWP, in order to be able to conduct burns on areas of public land.

Woka Walla has been involved in a wide range of projects, including building resilience of the Barmah Forest Ramsar site. As part of this project, the crew undertook control of pest plant and animals, ecological surveys and leaf litter assessments.

In 2019, Woka Walla was awarded the Victorian Landcare Indigenous Land Management Award.

Source: Yorta Yorta Nation Aboriginal Corporation, *Woka Walla*, 2019, <<https://yynac.com.au/programs/woka-walla>> accessed 3 October 2021; Yorta Yorta Nation Aboriginal Corporation, *Brochure: Woka Walla Natural Resource Management*, p. 2; ‘Indigenous Land Management Award - Woka Walla Land Management Crew’, *Victorian Landcare Magazine*, Spring 2019, <<https://www.landcarevic.org.au/landcare-magazine/spring-2019/indigenous-land-management-award-woka-walla-land-management-crew>> accessed 3 October 2021.

The following sections discuss the importance of cultural landscapes and the operation of joint management arrangements.

Cultural landscapes

As discussed in Chapter 3, the Cultural Landscapes Strategy establishes a Traditional Owner-led strategic framework for the management of Country across the State. It includes five objectives:

- To restore and protect the Traditional Owner knowledge system
- To strengthen Traditional Owner Nation resilience to enable delivery of our contemporary role as custodians of Country
- To enable Traditional Owner cultural landscapes planning
- To embed Traditional Owner knowledge and practice into policy, planning and the management of Country
- To enable the application of Traditional Owner cultural objectives, knowledge and practice in the management of public land.⁶⁸

The Cultural Landscapes Strategy defines cultural landscapes as:

both material and symbolic and include Traditional Owner societies' unique worldview, ontology, history, institutions, practices and the networks of relationships between human and non-human animals, plants, ancestors, song lines, physical structures, trade routes and other significant cultural connections to Country. Traditional Owner Cultural Landscapes reflect the management and modification of Country over many thousands of generations to provide maximum benefit to all of the inhabitants of Country, both human and non-human.⁶⁹

Cultural landscapes encompass a more holistic understanding than ecological definitions of ecosystems and landscapes. They recognise the complex and interwoven nature of tangible and intangible elements of Country. Importantly, the Strategy identifies cultural landscapes as the preferred 'planning units' for Traditional Owner groups.⁷⁰

The Victorian Government has committed to implementing the Strategy together with Parks Victoria in recognition of the direction it provides, in line with the principle of self-determination.⁷¹

The *State of the Environment 2018* (SoE 2018) report discussed the importance of cultural landscapes. It highlighted that there are 'opportunities to enhance the role of Victoria's Traditional Owners in cultural landscape health and management based on the objectives outlined in the *Aboriginal Heritage Act 2006*'.⁷² The report recommended the development, in consultation with Traditional Owners and relevant agencies, of contemporary cultural indicators which can be used to inform future environmental reporting. It stated that these should reflect the priorities of Traditional Owners, have practical and cost-effective data collection methods, be meaningful, and demonstrate change within a five-year reporting period.⁷³ The Victorian Government gave its in

⁶⁸ Victorian Traditional Owners, *Victorian Traditional Owner Cultural Landscapes Strategy*, Victorian Government, 2021, p. 11.

⁶⁹ Ibid., p. 55.

⁷⁰ Ibid.

⁷¹ Department of Environment, Land, Water and Planning, *Submission 927*, p. 30.

⁷² Office of the Commissioner for Environmental Sustainability, *Victorian State of the Environment 2018 Summary Report: Cultural landscape health and management (CL) Scientific Assessments Part III*, 2018, p. 13.

⁷³ Ibid., p. 56.

principle support for this recommendation, but did not provide specific details of how this process would take place:

The Victorian Government is committed to supporting Aboriginal self-determination and Traditional Owner aspirations for culture and Country. The Government will support Traditional Owners to identify cultural indicators for biocultural landscape health within the principles of self-determination, as outlined in the *Victorian Government's Aboriginal Affairs Framework 2018–2023*.⁷⁴

At a public hearing prior to the Victorian Government's response, Dr Gillian Sparkes, Victoria's Commissioner for Environmental Sustainability, stated that her office is 'hoping that in our 2023 report we will have a program that has developed indicators for us to start more comprehensively reporting on cultural landscape, health and management.'⁷⁵

The Cultural Landscapes Strategy outlines the need to assess health of Country, including through the development of cultural indicators.⁷⁶

The Committee supports the recommendation of SoE 2018. It considers that incorporation of cultural landscapes within governance structures and environmental reporting would promote a more holistic view of Country and improve the ways in which cultural values are embedded in land management.

This must be a key driver for future direction and focus in relation to public and private land management. As noted in the report, these indicators must be developed in accordance with Traditional Owner and First Nations priorities.

FINDING 34: The *Victorian Traditional Owner Cultural Landscapes Strategy* provides important direction for future partnerships between Traditional Owners, the Victorian Government and other relevant stakeholders in relation to the management of, and care for, Victoria's cultural landscapes.

RECOMMENDATION 38: That the Victorian Government:

- commit to the vision identified in the Traditional Owner-led *Victorian Traditional Owner Cultural Landscapes Strategy* and provide public reporting on progress towards implementation
- progress Traditional Owner-led development of contemporary cultural indicators to inform future environmental reporting.

⁷⁴ Victorian Government, *Victorian Government response to the State of the Environment 2018 report*, 10 December 2020, p. 8.

⁷⁵ Dr Gillian Sparkes, Commissioner, Commissioner for Environmental Sustainability Victoria, Public hearing, Melbourne, 3 December 2020, *Transcript of evidence*, p. 3.

⁷⁶ Victorian Traditional Owners, *Victorian Traditional Owner Cultural Landscapes Strategy*, p. 34.

Joint management

As set out in Chapter 3, joint management of public land is facilitated through agreements made under the *Traditional Owner Settlement Act 2010* (Vic) (TOS Act), which recognise First Nations groups as Traditional Owners of an area. As part of a settlement package, the Victorian Government may enter into an agreement which provides for establishment of a Traditional Owner Land Management Board, made up of persons nominated by both the relevant Traditional Owner group and the Victorian Government. This Board has functions to provide management oversight of agreed areas of public land within a settlement area.

In its submission to the Inquiry, the Victorian Government stated that this land management approach ‘values Aboriginal culture, knowledge and practice as the foundation underpinning the better management of parks and reserves for the benefit of all Victorians’. It also asserted that joint management arrangements have ‘proved highly-valued by Traditional Owners for the management status it affords and related outcomes that can be obtained’.⁷⁷

While funding is provided for the operations of a Traditional Owner Land Management Board and development of a Joint Management Plan—which establishes how the land will be managed—the Victorian Government submitted that funding for implementation of a Joint Management Plan is ‘the subject of future negotiation between the Traditional Owner and the State’. It asserted that funding provided to the delegated land manager, generally Parks Victoria, has been broadly insufficient to support ‘significant change management’ needed in conjunction with the implementation of a Joint Management Plan. The submission stated that funding is intended to enable development of more sustainable funding streams:

[Joint management plans] and the associated funding enables Traditional Owner groups to commence activities that provide employment and revenue streams to support ongoing implementation. For example, commercial ventures such as cultural tours have proved to be of high demand and lucrative in other joint management models in Australia, such as Mossman Gorge (Qld), Kakadu and Uluru (NT) and have enabled Traditional Owners to generate revenue from the jointly managed parks.⁷⁸

Biodiversity 2037 provides that joint management ‘values Aboriginal culture, knowledge and practice as the foundation underpinning the better management of parks and reserves for the benefit of all Victorians’.⁷⁹

However, one theme that emerged during the Inquiry was the absence of mechanisms to provide for sole management of land. Monica Morgan, Chief Executive Officer of the

⁷⁷ Department of Environment, Land, Water and Planning, *Submission 927*, p. 17.

⁷⁸ *Ibid.*, p. 29.

⁷⁹ Department of Environment, Land, Water and Planning, *Protecting Victoria’s Environment – Biodiversity 2037*, p. 17.

Yorta Yorta Nation Aboriginal Corporation, argued that there needs to be more than solely access to land:

just having access to land is not good enough. We need land rights. And we are looking at sole management and sole protection of Country, and returning many of those remnant bushlands.⁸⁰

Daniel Miller, General Manager, On Country at Gunaikurnai Land and Waters Aboriginal Corporation, noted that while joint management is a starting point, greater self-determination in land management is needed:

Gunnai/Kurnai people have what we call joint management over a number of parks and reserves within their settlement area. We consider that to be a start and a stepping stone for both us and for the State. So when we think of managing country we do not just think of those 10 parks and reserves; we think of the whole settlement and in fact even beyond the recognised settlement area, you know, because we consider it a joined up landscape. And using fire as an example—and I think it is a good one—the state have legislative responsibility around fire and forest management, and we all know and accept that. So GLaWAC [Gunaikurnai Land and Waters Aboriginal Corporation], as the Traditional Owner group for the Gunnai/Kurnai people, are starting to exercise their interests and what we see as rights in that space, again for the settlement area, not just for those bits of joint management.

... We are not saying that we need to put a fence around anything or take control of anything. We very much want to do it with the State, but we want the State to do it in a genuine way that recognises a change in the balance a bit, so over time we will get more involved in more elements of it.⁸¹

In its submission to the Inquiry, DELWP identified legislative barriers to increased self-determination in land management:

The current TOS Act legislation contains barriers that limit the ability to appoint Traditional Owners to directly manage public land. Public land management functions on Aboriginal title land can be delegated to a Traditional Owner Land Management Board (TOLMB), at the discretion of the Minister for Energy, Environment and Climate Change, but cannot be delegated to a Traditional Owner Corporation. The existing model is not designed to align with culturally appropriate planning and decision-making structures, protocols and information needs. Therefore, the TOLMB can inadvertently inhibit the development of the strategic joint management partnership between the Traditional Owner Corporation and the State, as there is an underlying imbalance in ‘power’, preventing equality in the partnership. There is an opportunity to address these barriers through the proposed modernisation of Victoria’s public land legislation.⁸²

⁸⁰ Monica Morgan, Chief Executive Officer, Yorta Yorta Nation Aboriginal Corporation, Public hearing, Shepparton, 27 April 2021, *Transcript of evidence*, p. 5.

⁸¹ Daniel Miller, General Manager, On Country, Gunaikurnai Land and Waters Aboriginal Corporation, Public hearing, Melbourne, 26 August 2021, *Transcript of evidence*, p. 46.

⁸² Department of Environment, Land, Water and Planning, *Submission 927*, p. 35.

As highlighted in Section 8.2.2, the Victorian Government is undertaking consultation in relation to the creation of a new Public Land Act, which is expected to evaluate ways to address these identified legislative barriers.

Self-determination in relation to Traditional Owner roles in land management is discussed further in Chapter 9.

8.2.5 Camping on Crown land

Crown land reserves include caravan and camping parks, with approximately 175 caravan and camping parks across Victoria. Key documents guiding the use of these parks are the *Best Practice Management Guidelines* and the *Policy Statement: Improving Equity of Access to Crown Land Caravan and Camping Parks*.

The *Land (Regulated Watercourse Land) Regulations 2021 (Vic)* (Regulated Watercourse Land Regulations), which came into effect on 1 September 2021, facilitate the recreational use of Crown land near water frontages. Areas of Crown land near rivers can be used in accordance with a licence issued by DELWP or Parks Victoria to an adjacent landholder, under s 130 of the Land Act. The Regulated Watercourse Land Regulations enable the use of licensed Crown river frontages for camping, provided the area has been deemed suitable for that use. Camping is permitted only in specified areas, which are at least 200 metres from a residential property, up to a maximum of 14 nights. In conjunction with assessment by DELWP, Traditional Owners also assess sites for cultural heritage purposes before it is approved for camping.⁸³ For areas of unlicensed land, DELWP and Parks Victoria can allow camping in accordance with a permit, up to a maximum of 28 nights.⁸⁴

Stakeholders told the Committee that the expansion of riverfront camping is creating safety and other issues that can affect biodiversity. For example, Sharon Terry, Manager Environment at Greater Shepparton City Council, stated:

we are seeing camping, a significant amount of camping happening in our riparian area, in the urban zone. And that is creating significant issues around safety for the rest of the community, and rubbish is an enormous issue. We are – the amount of times that between Parks Victoria and council, jointly, go and clean up the river banks from the waste that is just tipped over the bank ... it really is affecting biodiversity now ...⁸⁵

Similarly, Emma Germano, President of the Victorian Farmers Federation, expressed concerns about the impact that camping on river frontages is having on the environment:

the proposed rules to allow camping on our licensed river frontages—farmers are seeing decades of stewardship of riparian lands being threatened through regulation to

⁸³ Department of Environment, Land, Water and Planning, *Camping on licensed Crown river frontages*, Victorian Government, 2021, pp. 1–2; *Land (Regulated Watercourse Land) Regulations 2021 (Vic)* pt 7 div 2.

⁸⁴ *Land (Regulated Watercourse Land) Regulations 2021 (Vic)* pt 8.

⁸⁵ Sharon Terry, Manager Environment, Greater Shepparton City Council, Public hearing, Shepparton, 28 April 2021, *Transcript of evidence*, p. 29.

promote long-term occupation of sensitive land for recreational camping, including the ability to collect firewood in these areas, and that is at odds with the native vegetation regulations. In addition, these changes not only threaten landholders' environmental programs but so too their safety and productivity.⁸⁶

The Victorian Government has stated that it has consulted broadly in developing and refining the Regulated Watercourse Land Regulations, including with landowners and licensees, recreational users such as campers, Traditional Owners and representative organisations. It has asserted that the Regulations 'reflect the expectations of the entire community' and represent a 'fair balance' between environmental protection, recreational uses and protection of existing interests.⁸⁷

8.3 Private land management

In recent years, private land has been seen to present a key conservation opportunity to extend Victoria's protected area estate and make progress towards conservation targets. While presenting special challenges, given the issues it raises in relation to private expenditure and property rights, the SoE 2018 report card revealed its potential—with private land conservation being one of the few environmental indicators to trend upward on the report.⁸⁸

The Victorian Government is increasingly recognising the importance of working with private landholders to improve biodiversity outcomes on private land. Private landholders own approximately two thirds of the State's area,⁸⁹ and 56% of the State is occupied by agricultural land.⁹⁰ As a result, farmers and pastoralists are the 'largest single group of land managers whose decisions impact directly on natural resources'.⁹¹ Trust for Nature has described Victoria, of all Australian jurisdictions, as 'the state where private land conservation is arguably the most important' due to the high proportion of private land relative to public land, and high levels of land clearing and habitat loss.⁹²

A core challenge for biodiversity governance is in relation to the coordination of conservation activities across land tenures. In evidence to the Committee, Dr Michelle Freeman of the Institute of Foresters of Australia and Australian Forest Growers advocated for a tenure-blind approach to be used when addressing the broad suite of ecosystem decline issues:

⁸⁶ Emma Germano, President, Victorian Farmers Federation, Public hearing, Melbourne, 11 May 2021, *Transcript of evidence*, p. 31.

⁸⁷ Department of Environment, Land, Water and Planning, *Access to Crown water frontages*, 2021, <<https://www.forestsandreserves.vic.gov.au/land-management/managing-crown-land/access-to-crown-water-frontages>> accessed 2 October 2021.

⁸⁸ Office of the Commissioner for Environmental Sustainability, *Victorian State of the Environment 2018 Report: Summary Report*, 2018, p. 32.

⁸⁹ Office of the Commissioner for Environmental Sustainability, *Victorian State of the Environment 2018 Summary Report: Cultural landscape health and management (CL) Scientific Assessments Part III*, p. 58.

⁹⁰ Department of Environment, Land, Water and Planning, *Submission 927*, p. 9.

⁹¹ Sarah Ryan, et al., *Australia's NRM Governance System: Foundations and principles for meeting future challenges*, report for Australian Regional NRM Chairs, Canberra, 2010, p. 22.

⁹² Trust for Nature, *Statewide Conservation Plan for Private Land in Victoria*, Melbourne, 2013, p. 8.

regardless of tenure, we need to shift our conservation strategy away from simply creating more protective areas to a broader strategy of targeted management actions designed to specifically address major threats to our forests, flora and fauna.⁹³

The following sections provide an overview of policy and management approaches to biodiversity conservation on private land, as well as types of mechanisms for promoting these activities.

8.3.1 Policy and management approaches

Over the past few decades, conservation of biodiversity on private land has become an increasingly important policy objective. Evidence from Inquiry stakeholders including farmers, pastoralists and private landowners, outlined different types of collaboration with government and volunteer groups to undertake conservation work. Recently, media reports have noted an increase in Victorians moving regionally as a result of the COVID-19 pandemic, with growing interest in purchasing property with conservation values.⁹⁴

As noted above, the SoE 2018 report card reflects this shift.⁹⁵ In revealing private land conservation to be one of the only improving trends, it recommended that 'DELWP improve biodiversity outcomes on private land by accelerating private land conservation', which will 'require resourcing permanent protection measures that focus on high priority ecosystems and landscapes'.⁹⁶

At a public hearing, Dr Gillian Sparkes, Victoria's Commissioner for Environmental Sustainability, highlighted the importance of additional focus in this space:

around 67 per cent of Victoria is private land. We talk often about public land, but actually private land has a huge role to play and private landholders have a huge role to play in ecosystem decline and stopping the ecosystem decline. So we are saying that the department should improve the biodiversity outcomes by accelerating private land conservation. This is a key area that I would recommend the committee look at, because of two-thirds of Victoria being privately owned.⁹⁷

Policy experts have identified several reasons why Victoria has increasingly looked towards private land for conservation purposes. First, it is recognised that publicly held protected areas are, in isolation, insufficient to sustain Victoria's biodiversity. While protected areas have an important role in promoting nature conservation, Victoria has nearly 23 million hectares of land, with public land accounting for around one third.

⁹³ Dr Michelle Freeman, *Transcript of evidence*, p. 33.

⁹⁴ Emilia Terzon, 'Could coronavirus have a silver lining for regional housing markets as people flee the country?', *ABC News*, 26 August 2020, <<https://www.abc.net.au/news/2020-08-26/regional-city-property-markets-covid-urban-tree-changer/12541598>> accessed 7 October 2021; Trust for Nature, *Annual Report 2019–20*, Melbourne, 2021, p. 5.

⁹⁵ Matt Ruchel, 'Extinct Victoria: state of nature decline', *Park Watch*, no. 277, 2019, pp. 11–13.

⁹⁶ Office of the Commissioner for Environmental Sustainability, *Victorian State of the Environment 2018 Report: Summary Report*, p. 59.

⁹⁷ Dr Gillian Sparkes, *Transcript of evidence*, p. 3.

Even within public protected areas, land is susceptible to human degradation and downgrades in protection. It is also not possible to convert all land with significant conservation value into a formally recognised protected area.⁹⁸

Second, based on land distribution alone, meaningful engagement with the agricultural sector is critical for turning around the deterioration in natural resources—over half of Victoria’s land area is used for agriculture.⁹⁹ An added consequence of agricultural activity is land use pressure, which has contributed to declines in biodiversity values. The historic scale of primary production, coupled with pressures that farming can exert on the environment, makes conservation and restoration on private land extremely important.¹⁰⁰

Further, private land hosts threatened species habitat as well as important native vegetation. It also contains some of the most intact vegetated areas of Victoria.¹⁰¹ According to DELWP, 60% of remnant native vegetation on private land is of high conservation significance and about 29% of this vegetation supports 30% of Victoria’s threatened species populations.¹⁰²

Finally, experts argue that management of smaller, isolated parts of land ignores the fact that land is part of a wider ecosystem. Where human activity has fragmented and threatened biodiversity, having a landscape-wide, holistic approach—across public and private land—acknowledges the importance of ecological connectivity. This approach, according to the former Council of Australian Governments Standing Council on Environment and Water, will ‘increase the likelihood that native plant communities can adapt and be resilient to climate change’.¹⁰³

Biodiversity 2037

Biodiversity 2037 acknowledges the work of private landholders in undertaking biodiversity protection, conservation and restoration activities on their land, stating that:

These landholders make significant contributions to nature conservation by protecting and managing their biodiversity to a high standard, participating in private land networks via [catchment management authorities] and groups such as Landcare and Land for Wildlife, or by entering into voluntary conservation covenants with the assistance of Trust for Nature.¹⁰⁴

⁹⁸ Kamal, Grodzinska-Jurczaka and Brown, ‘Conservation on private land: a review of global strategies with a proposed classification system’, p. 577.

⁹⁹ Agriculture Victoria, *Land Use* 2021, <<http://vro.agriculture.vic.gov.au/dpi/vro/vrosite.nsf/pages/landuse-home>> accessed 6 May 2021.

¹⁰⁰ Office of the Commissioner for Environmental Sustainability, *Victorian State of the Environment 2018 Summary Report: Land (L) Scientific Assessments Part III*, 2018, pp. 1–3.

¹⁰¹ Matt Ruchel, ‘Conserving nature on private land’, *Park Watch*, no. 265, 2016, pp. 10–11.

¹⁰² Department of Environment, Land, Water and Planning, *Innovative Market Approaches: BushTender*, 2019, <<https://www.environment.vic.gov.au/innovative-market-approaches/bushtender>> accessed 6 May 2021.

¹⁰³ COAG Standing Council on Environment and Water, *Australia’s Native Vegetation Framework: A national framework to guide the ecologically sustainable management of Australia’s native vegetation*, report for Department of Sustainability, Environment, Water, Population and Communities, Australian Government, Canberra, 2012, p. 26.

¹⁰⁴ Department of Environment, Land, Water and Planning, *Protecting Victoria’s Environment – Biodiversity 2037*, p. 36.

The strategy recognises the importance of ensuring that private land is a central focus of biodiversity conservation activities. It sets a target of acquiring 200,000 hectares of new permanently protected areas on private land, to contribute towards the goal of ensuring a healthy natural environment in Victoria.¹⁰⁵ It also sets a priority action of increasing incentives and exploring market opportunities for private landholders to conserve biodiversity, with a number of identified priority initiatives:

- Encourage greater landholder participation in conservation through increased support for agencies, Traditional Owner Corporations, Landcare, local government and community group programs that encourage community action.
- Develop consistent land management standards and apply them to the various voluntary private land conservation programs.
- Increase the use of conservation auctions and private land stewardship payment schemes, with an increased emphasis on permanent payments.
- Build biodiversity credit markets to promote future interactions with markets for water, carbon and other public benefits, and facilitate private investment.
- Work with partners and stakeholders to investigate other effective incentives for private landholders.¹⁰⁶

A number of initiatives relating to biodiversity conservation, restoration and protection on private land are considered in the following sections.

8.3.2 Conservation covenants

Conservation covenants are permanent, legally-binding agreements which are placed on a property's title to ensure that the biodiversity on the property is protected in perpetuity. These voluntary agreements define limitations, conditions or restrictions on the use of the land for all current and future owners.¹⁰⁷

Private landowners retain ownership of a property, while the covenanting body adopts a formal interest in that land, including in terms of ensuring ongoing management and monitoring.¹⁰⁸

Covenants agreed under approved programs, including those in Victoria, can be eligible for certain tax concessions through the Commonwealth Government. This includes income tax deductions and exemptions from Capital Gains Tax. These concessions are aimed at providing incentives for landowners to undertake conservation on private land.¹⁰⁹

¹⁰⁵ Ibid., p. 20.

¹⁰⁶ Ibid., p. 37.

¹⁰⁷ Commonwealth Department of Agriculture, Water and the Environment, *Conservation covenants*, <<https://www.environment.gov.au/biodiversity/conservation/covenants>> accessed 25 November 2021.

¹⁰⁸ James Fitzsimons and Ben Carr, 'Conservation covenants on private land: issues with measuring and achieving biodiversity outcomes in Australia', *Environmental Management*, vol. 54, 2014, p. 609.

¹⁰⁹ Commonwealth Department of Agriculture, Water and the Environment, *Tax incentives for conservation*, <<https://www.environment.gov.au/biodiversity/publications/tax-incentives-for-conservation>> accessed 25 November 2021.

Victoria's conservation covenant mechanisms are discussed below.

Trust for Nature

Under the *Victorian Conservation Trust Act 1972* (Vic), Trust for Nature (Trust) has functions to provide for the protection of flora and fauna on private land. Guided by its *Statewide Conservation Plan*, the Trust's mission is to work collaboratively with government and community to conserve Victoria's threatened species and enhance biodiversity. It works across Victoria to secure important sites within large-scale corridors and networks of conservation lands.¹¹⁰ To date, Victoria's Trust has assisted with the permanent protection of more than 100,000 hectares of native habitat on private land across Victoria.¹¹¹

The Trust's work is predominantly carried out through conservation covenants, which are negotiated between individual landowners and the Trust.¹¹² Its Stewardship Program provides support to landowners with covenants to improve areas of habitat on their land, including in terms of biodiversity mapping, revegetation projects, pest plant and animal control and monitoring.¹¹³

DELWP's submission outlined how conservation covenants would be central to achieving Biodiversity 2037's target of permanently protecting an additional 200,000 hectares of private land:

Biodiversity 2037 acknowledges the need to address the ongoing decline in the extent and quality of native vegetation on private land and includes a target to permanently protect 200,000 hectares of private land habitat by 2037. The primary mechanism for this is through the establishment of conservation covenants registered on the title of private landholdings by Trust for Nature via the *Victorian Conservation Trust Act 1972*. Investment in protecting and restoring ecosystems on private land through covenants represents value-for-money conservation as willing landowners become long-term protected area land managers. Covenants can help leverage the management contributions of private landowners.¹¹⁴

At a public hearing in December 2020, James Todd, Executive Director, Biodiversity Division at DELWP, stated that in order to increase rates of protection under covenants, the Trust is 'working on a number of strategies to address that and to help achieve that target'.¹¹⁵ DELWP's submission also described the Trust's development of 'farm covenants' for farmers to demonstrate sustainable land management practices.¹¹⁶

¹¹⁰ Commonwealth Department of Agriculture, *Conservation covenants*.

¹¹¹ Trust for Nature, *Protecting our Heritage*, <<https://trustfornature.org.au/project/protecting-our-heritage>> accessed 25 November 2021.

¹¹² Trust for Nature, *Preserving our natural heritage*, 2017, <<https://trustfornature.org.au/what-we-do>> accessed 3 October 2021.

¹¹³ Trust for Nature, *Land services for business*, 2017, <<https://trustfornature.org.au/what-we-do/land-restoration>> accessed 4 October 2021.

¹¹⁴ Department of Environment, Land, Water and Planning, *Submission 927*, pp. 25–26.

¹¹⁵ James Todd, Executive Director, Biodiversity Division, Department of Environment, Land, Water and Planning, public hearing, Melbourne, 3 December 2020, *Transcript of evidence*, p. 23.

¹¹⁶ Department of Environment, Land, Water and Planning, *Submission 927*, p. 26.

As noted, SoE 2018 reported that conservation on private land is fair and trending upward.¹¹⁷ Associate Professor Geoffrey Wescott, Honorary Research Fellow, School of Life and Environmental Sciences at Deakin University, has attributed this largely to the efforts of the Trust.¹¹⁸

In 2019–20, the Trust reported 30 new conservation covenants and covenant amendments had been agreed, increasing the National Reserve System by 1,772 hectares.¹¹⁹ SoE 2018 noted the Trust's commitment under its strategic plan to add 50,000 hectares of private land to the protected area network in the five years leading up to 2021, which it stated is aligned with Biodiversity 2037's target of protecting an additional 200,000 hectares on private land over the next 20 years.¹²⁰

In addition, the Trust's *Annual Report 2019–20* provided an overview of the ecosystems and species being protected under recent conservation covenants:

Covenants were registered in 12 of Victoria's 28 bioregions including nine of the 14 bioregions that are underrepresented ... In total, 83% of all registered covenants in 2019–20 were located in the underrepresented bioregions, and these comprised 82% of the area protected.

Altogether, 90% of the registered covenants included native vegetation types assessed as being underrepresented in the National Reserve System. This collectively represented 55% of the extent protected through these new covenants in 2019–20. Further, of the 60 different ecological vegetation classes (EVCs) protected under covenant during 2019–20, 65% were classified as rare or threatened in Victoria and 30% as endangered.

Notable ecosystems protected by the Trust in 2019–20 included examples of five communities listed as nationally threatened under the *Environment Protection and Biodiversity Conservation Act 1999*, which were collectively represented on 53% of all covenants registered this financial year.¹²¹

In addition, the Trust has a Revolving Fund, which is a market-based conservation instrument allowing it to purchase land with unique conservation value. The Fund aims to 'use the real estate market to achieve conservation outcomes', with properties sold to purchasers on the proviso that covenants are included on them. Profits are returned to the Fund to contribute towards future land purchases. In its *Annual Report 2019–20*, the Trust noted that there had been increased interest in Revolving Fund properties despite the economic impacts of the COVID-19 pandemic.¹²²

117 Commissioner for Environmental Sustainability Victoria, *Summary Report Part 1 SoE 2018 Report Card*, <https://www.ces.vic.gov.au/sites/default/files/SoE2018IndicatorReportCard_CC.pdf>, 2018, p. 32.

118 Geoffrey Wescott, 'What Australia can learn from Victoria's shocking biodiversity record', *The Conversation*, 21 March 2019, <<https://theconversation.com/what-australia-can-learn-from-victorias-shocking-biodiversity-record-113757>> accessed 10 September 2021.

119 Trust for Nature, *Annual Report 2019–20*, p. 13.

120 Office of the Commissioner for Environmental Sustainability, *Victorian State of the Environment 2018 Summary Report: Biodiversity (B) Scientific Assessments Part III*, p. 29.

121 Trust for Nature, *Annual Report 2019–20*, p. 13.

122 *Ibid.*, p. 10.

Table 8.2 shows the properties bought and sold using the Revolving Fund from 2017 to 2020.

Table 8.2 Trust for Nature’s Revolving Fund statistics, 2017–18 to 2019–20

	2019–20	2018–19	2017–18
Properties sold	<ul style="list-style-type: none"> • 4 properties • total 341.31 ha • value \$1,138,386 	<ul style="list-style-type: none"> • 2 properties • total 96.48 ha • value \$464,739 	<ul style="list-style-type: none"> • 4 properties • total 500 ha • value \$1,204,534
Properties bought	Nil	<ul style="list-style-type: none"> • 5 properties • total 301.11 ha • value \$1,052,248 	<ul style="list-style-type: none"> • 1 property • total 36 ha • value \$175,000
Investment income	\$13,243	\$109,681	\$42,043
Donations/transfers in	\$1,000	\$100	Nil
Properties retained	<ul style="list-style-type: none"> • 8 properties • total 378.27 ha • value \$1,310,879 	<ul style="list-style-type: none"> • 12 properties • total 719.58 ha • value \$2,017,477 	<ul style="list-style-type: none"> • 8 properties • total 536 ha • value \$1,225,607
Cash/amounts owing	\$2,648,183	\$1,828,737	\$2,596,574
Total value of Revolving Fund	\$3,959,061	\$3,846,214	\$3,822,181

Source: Trust for Nature, *Annual Report 2019–20*, Melbourne, 2021, p. 10.

The Trust’s strategic plan contained a commitment to expand the Revolving Fund to \$40 million by 2021:

Conservation revolving funds are recognised internationally as a highly efficient and effective way to capitalise on the real estate market to achieve conservation outcomes. They do this by purchasing land of high conservation significance, protecting it, selling it to a conservation-minded buyer then returning the proceeds to the fund for future purchases. We aim for Victoria to have a Revolving Fund of at least \$40m by 2021.¹²³

While the 2020–21 figures were not publicly available at the time of writing this report, the 2019–20 figures placed the total value of the Fund at approximately \$4 million.

Throughout the Inquiry, the Committee received evidence around the need to increase private land conservation activities through the use of conservation covenants. For example, Matt Ruchel of the Victorian National Parks Association highlighted the success of conservation covenants and the need for their expansion:

Victoria was a leader in the 1970s with the creation of Trust for Nature, which is a state classic 1970s quango. They have been very successful through covenants mostly, which is a voluntary arrangement with landholders for those important bits on private land, and some direct purchases, like Neds Corner. I suppose one of the policy things

¹²³ Trust for Nature, *Private Land Conservation: Raising the Bar: Strategic Plan to 2021*, Melbourne, 2017, p. 10.

which we think is a really practical thing is to ramp up private land conservation, either supporting more covenants or investment in something like a revolving fund.¹²⁴

Several stakeholders emphasised the importance of ensuring that owners of covenanted properties are supported over the long-term. For example, Cam Walker, Campaigns Coordinator at Friends of the Earth, explained:

what we do understand is there is no point putting some trees in or helping people put a covenant on their place if then you have got to walk away because you do not have money in the next year. The key thing to successful on-land, both public and private, conservation efforts is consistency and funding over years, if not decades. So it is not about a short-term fix. It is about changing our commitment to where we allocate state budget money.¹²⁵

Michelle Wyatt, Environment Coordinator at Macedon Ranges Shire Council, described the Trust as ‘under-resourced, to say the least’, and noted that it ‘struggle[s] to also keep up with the demand for [its] services’.¹²⁶ In a submission, Dr Bruce McGregor recommended that the Victorian Government provide significant funding to the Trust (\$40 million) to support further development and use of its Revolving Fund.¹²⁷ Doctors for the Environment Australia and The Nature Conservancy similarly supported the provision of additional funding for the Revolving Fund.¹²⁸

Climate Action Moreland advocated for the Committee to support initiatives in the Trust’s *Statewide Conservation Plan*, including in relation to focusing on protecting priority ecosystems and species.¹²⁹

Some councils provide rate rebates or other concessions to private landowners with conservation covenants. Krista Patterson-Majoor, Biodiversity Projects Officer at Macedon Ranges Shire Council, told the Committee about the rate rebate in place for covenanted properties in their municipality. She noted, however, that there is ‘more demand for covenanting in our area than Trust for Nature can support, so there are landholders who are keen to do it but there is no ability for Trust for Nature to service that demand’. As the Trust has identified priority areas, those areas that are not priorities are likely to miss out.¹³⁰

The Upper Maribyrnong Catchment Group advocated for the Victorian Government to improve incentives to ‘encourage private landholders to put a conservation covenant on significant remnant vegetation on their land’.¹³¹ Similarly, the Goulburn Valley

¹²⁴ Matt Ruchel, *Transcript of evidence*, p. 21.

¹²⁵ Cam Walker, Campaigns Coordinator, Friends of the Earth (Melbourne), Public hearing, Melbourne, 17 June 2021, *Transcript of evidence*, p. 24.

¹²⁶ Michelle Wyatt, Environment Coordinator, Macedon Ranges Shire Council, Public hearing, Melbourne, 12 May 2021, *Transcript of evidence*, p. 10.

¹²⁷ Dr Bruce McGregor, *Submission 703*, p. 6.

¹²⁸ The Nature Conservancy Australia, *Submission 743*, p. 3; Doctors for the Environment Australia, *Submission 725*, p. 5.

¹²⁹ Climate Action Moreland, *Submission 855*, p. 5.

¹³⁰ Krista Patterson-Majoor, *Transcript of evidence*, p. 11.

¹³¹ Upper Maribyrnong Catchment Group, *Submission 904*, p. 4.

Environment Group recommended the use of rate and stamp duty exemptions for properties protected under a conservation covenant.¹³²

However, while many stakeholders supported the operation of conservation covenants, some noted that they can be easily overturned. For example, Bellarine Landcare Group argued that there must be mechanisms in place to ensure conservation covenants are enforced.¹³³ Dr Andrea Lindsay, a member of the Bellarine Landcare Group, expanded on this at a public hearing, asserting that it should be more difficult for landowners to set covenants aside:

a simple answer to that would be yes, and they should actually be enforced... at least I think that the person who set up the covenant should have the right of appeal on any effort to overturn one. But strictly they should not be overturned anyway. It is hard to see any reason why they would be. And they have certainly undermined our efforts to restore and protect vegetation. It is very disheartening and discouraging to know that all your work can be undone just because someone, a new owner, decides they do not like the covenant.¹³⁴

As noted, DELWP has committed to permanently protecting an additional 200,000 hectares of private land habitat by 2037, with a focus on covenants through the Trust. It has stated that conservation covenants represent 'value-for-money conservation' which can 'help leverage the management contributions of private landowners'.¹³⁵

The Trust performs important work in ensuring that all Victorians support biodiversity conservation activities, and that these take place outside of the public protected area network. The Committee commends the Trust's work to date and its initiatives in seeking sustainable funding through additional mechanisms such as the Revolving Fund. However, there are resourcing limitations on the extent of work the Trust can undertake, and it is not able to meet demand from private landowners seeking to place a conservation covenant on their properties.

FINDING 35: Trust for Nature undertakes important work in biodiversity conservation, restoration and protection on private land through the use of conservation covenants. However, limitations in relation to its funding mechanisms has meant that it is unable to meet demand for covenants.

¹³² Goulburn Valley Environment Group, *Submission 789*, p. 7.

¹³³ Bellarine Landcare Group, *Submission 453*, p. 2.

¹³⁴ Dr Andrea Lindsay, Member, Bellarine Landcare Group, Public hearing, Via videoconference, 16 June 2021, *Transcript of evidence*, p. 10.

¹³⁵ Department of Environment, Land, Water and Planning, *Submission 927*, p. 26.

RECOMMENDATION 39: That the Victorian Government consider enhanced support for Trust for Nature in permanently protecting important conservation values on private land, including:

- continuing to increase funding allocations to the Trust to enable it to pursue identified strategic goals and to increase its capacity to support additional conservation covenants, including through its Revolving Fund
- engaging with pastoralists who may want to sell their property in order to purchase land with high conservation value for conservation and restoration purposes
- supporting local government authorities to offer rate rebates and other incentives to landowners who include a conservation covenant on their property
- investigating mechanisms to encourage new landowners to retain conservation covenants
- working with Trust for Nature to increase the ways in which First Nations peoples are involved in conservation and restoration activities on private land.

In addition, the Committee considers that additional options are needed to work collaboratively with private landowners to undertake conservation and restoration work on their property outside of the use of conservation covenants. This could include collaborative approaches with local government authorities and First Nations groups in promoting the conservation and restoration of habitat and other biodiversity values alongside existing agricultural practices.

RECOMMENDATION 40: That the Victorian Government explore other options to assist private landowners in land conservation efforts outside of the use of conservation covenants, that includes, but is not limited to, working with local government authorities and First Nations peoples to promote broader conservation and restoration activities on private land alongside existing agricultural practices.

BushTender

The BushTender program, which first commenced in 2001, is the second Victorian covenanting program approved by the Commonwealth Government for the purposes of offering tax incentives.¹³⁶ The program operated from 2001 to 2012 before being discontinued.¹³⁷ It offered a different type of formal contractual arrangement, through which landholders and the Victorian Government enter into an agreement to manage and improve native vegetation on private land.

¹³⁶ Commonwealth Department of Agriculture, Water and the Environment, *Approved programs*, <<https://www.environment.gov.au/biodiversity/conservation/covenants/approved-programs>> accessed 4 October 2021.

¹³⁷ John Rolfe, Stuart Whitten and Jill Windle, 'The Australian experience in using tenders for conservation: 11-620', *Land Use Policy*, vol. 63, 2017, p. 611.

Unlike other government conservation programs that rely on volunteers, conservation tenders operate as a market-based scheme, providing financial incentives for landowners to better protect and manage their properties. BushTender invited landholders to submit proposals and set their own price on the management services they were prepared to offer to protect native vegetation on their land. The Victorian Government evaluated proposals received to identify those with the highest biodiversity benefits and which are the most cost-effective, before selecting bids with the highest environmental benefit per unit cost. Under these management agreements, successful landholders received periodic payments for their work over a five-year basis.¹³⁸ Of all the states and territories, Victoria has provided the largest number of conservation tenders, accounting for more than half of the tenders held nationally.¹³⁹

BushTender was the first conservation tender scheme established in Australia. While it is no longer in operation, Biodiversity 2037 flagged it as a successful example of the use of innovative approaches to conserve private land.¹⁴⁰

The Victorian Government has previously noted the popularity of market-based competitive auctions with landholders, which translate biodiversity conservation from an 'abstract idea to practical actions' with local results.¹⁴¹

A recent assessment of lessons learned from Australian experiences of the use of tenders for conservation purposes found that their use has declined since 2010, despite being 'robust, relatively simple to apply and deliver[ing] more cost-effective allocations of public funding than other grant mechanisms'. This assessment attributed limited use to political and bureaucratic factors.¹⁴²

The Nature Conservancy submitted that while BushTender was 'successful in purchasing conservation outcomes for targeted ecosystems, the mid-term nature of the agreements and lack of clear strategy for realising these gains after ending these agreements is an opportunity lost'. It stated that there are lessons to be learnt from the program and that any future tenders would need clarity around what happens following the end of the agreement period.¹⁴³

At a public hearing, Dr James Fitzsimons, Director of Conservation and Science and Director, Protect Oceans, Lands and Waters at The Nature Conservancy, asserted that while Victoria 'has been a leader in conservation policies and mechanisms', including through the use of market-based tender approaches such as BushTender, it had taken its 'foot off the pedal', with programs ending despite interest from landowners.¹⁴⁴

¹³⁸ Department of Environment, Land, Water and Planning, *BushTender*, 2019, <<https://www.environment.vic.gov.au/innovative-market-approaches/bush tender>> accessed 4 October 2021.

¹³⁹ John Rolfe, Stuart Whitten and Jill Windle, 'The Australian experience in using tenders for conservation', p. 617.

¹⁴⁰ Department of Environment, Land, Water and Planning, *Protecting Victoria's Environment – Biodiversity 2037*, p. 37.

¹⁴¹ Department of Sustainability and Environment, *Bush Tender Program*, <<https://webcache.googleusercontent.com/search?q=cache:AeUqIHAdvkEJ:https://www.cbd.int/financial/pes/australia-pesbush.pdf&cd=1&hl=en&ct=clnk&gl=au>> accessed 11 November 2021.

¹⁴² John Rolfe, Stuart Whitten and Jill Windle, 'The Australian experience in using tenders for conservation', p. 611.

¹⁴³ The Nature Conservancy Australia, *Submission 743*, p. 3.

¹⁴⁴ Dr James Fitzsimons, Director of Conservation and Science, and Director, Protect Oceans, Lands and Waters, The Nature Conservancy, Public hearing, Melbourne, 11 May 2021, *Transcript of evidence*, p. 40.

Similar conservation auction processes have also taken place through other subsequent initiatives, such as EcoTender (which has similarly ended).¹⁴⁵

8.3.3 Other initiatives

There are various other initiatives that support conservation on private land. For example, one recent program which is being developed is the *Nature restoration for carbon storage – BushBank program*. This program has been allocated \$76.98 million to support revegetation and restoration activities on both private and public land over 16 years. At a public hearing, Carolyn Jackson from DELWP provided an update on the progress of this program:

The design and delivery of the \$77 million BushBank program has commenced, with public land managers currently identifying suitable sites for revegetation that provide good biodiversity and carbon outcomes. The BushBank program will also support revegetation and restoration of native vegetation on private land and will deliver increased habitat and improved connectivity for threatened species. This program is also providing significant opportunities for Traditional Owners, consistent with principles of self-determination. The private land component of BushBank is being run in partnership with Trust for Nature, given its long track record and established role in private land conservation.¹⁴⁶

The following sections highlight other programs and initiatives aimed at increasing conservation on private land.

Victorian Landcare

In 1986, the Victorian Government launched the Landcare program—a multi-disciplinary, community-based program which focuses on establishing a network of community groups to address environmental degradation. Originally focused on farms, the network now has a much broader focus on natural resource assets across the whole landscape.¹⁴⁷ Landcare groups determine their own priorities and projects and undertake a wide variety of on-ground activities, including habitat rejuvenation and repair, waterways restoration, improvements to farmland, and addressing land management issues such as erosion and invasive species.¹⁴⁸ Groups are often supported through regional networks, formed to provide regional coordination of activities and to support collaborative outcomes.¹⁴⁹

¹⁴⁵ Department of Environment, Land, Water and Planning, *EcoTender*, 2019, <<https://www.environment.vic.gov.au/innovative-market-approaches/ecotender>> accessed 4 October 2021.

¹⁴⁶ Carolyn Jackson, *Transcript of evidence*, p. 2.

¹⁴⁷ Victorian Landcare Gateway, *What is Landcare?*, <<https://www.landcarevic.org.au/home/what-is-landcare>> accessed 4 October 2021.

¹⁴⁸ Office of the Commissioner for Environmental Sustainability, *Victorian State of the Environment 2018 Summary Report: Land (L) Scientific Assessments Part III*, p. 29.

¹⁴⁹ Victorian Landcare Gateway, *What is Landcare?*

SoE 2018 reports that there are approximately 600 Victorian Landcare groups and 64 networks, covering 65% of the state (82% of private land and 32% of public land). In 2016–17, Landcare volunteers contributed approximately 375,000 hours to land, water and biodiversity protection with an approximate value of \$11.2 million.¹⁵⁰

Victorian Landcare's *2017–18 Achievements Report* stated that Landcare and other environmental volunteers contributed more than 400,000 hours to improve the environment in this period, equating to an economic contribution of nearly \$12 million.¹⁵¹

In addition to the work of Victoria's volunteer-based Landcare groups, the Victorian Landcare program has 79 part-time facilitators (employed by the volunteer groups and networks) which are funded through the Victorian Landcare Facilitator Program (VLFP). In addition, the Victorian Landcare Support Program currently provides five DELWP staff based in Melbourne and 10 Regional Landcare Coordinators based in catchment management authorities. DELWP also funds a statewide Aboriginal Landcare Facilitator position.¹⁵²

A 2019 review found that support provided to Landcare groups through the VLFP has contributed to increased community capacity to effectively deliver on-ground projects. It highlighted the important role of facilitators in 'building partnerships, securing grants and supporting project delivery'.¹⁵³

A number of individual Landcare groups made contributions to the Inquiry, as well as Victorian Landcare.¹⁵⁴

In evidence to the Committee, Andrew Maclean, Chief Executive Officer of Landcare Victoria, described how Landcare has 'grown and developed over the years, and it has a capacity to continue to grow and develop'. He provided examples of the diversity of Landcare projects:

Landcare involves itself in quite a diverse range of activities in support of ecosystem values and ecosystem restoration.. we have got fox and rabbit control projects down at Venus Bay. Bass Coast Landcare Network is leading a climate change adaptation project. South Gippsland Landcare Network has a project addressing threatened invertebrates in the western Strzeleckis. Yarram Yarram Landcare Network are looking at coastal saltmarsh protection and wetlands revival. There is a large Project Platypus organisation up in north-west Victoria, in the headwaters of the Wimmera River, that

¹⁵⁰ Office of the Commissioner for Environmental Sustainability, *Victorian State of the Environment 2018 Summary Report: Land (L) Scientific Assessments Part III*, pp. 29–30.

¹⁵¹ Department of Environment, Land, Water and Planning, *Victorian Landcare 2017–18 Achievements Report*, report for Victorian Landcare Program, Victorian Government, Melbourne, 2018, p. 1.

¹⁵² Victorian Landcare Gateway, *Victorian Landcare Program*, <<https://www.landcarevic.org.au/home/victorian-landcare-program>> accessed 4 October 2021.

¹⁵³ RMCG, *The Victorian Landcare Facilitator Program: Review*, report prepared by RM Consulting Group Pty Ltd trading as RMCG, report for Department of Environment, Land, Water and Planning, Camberwell, 2019, p. 10.

¹⁵⁴ See, Landcare Victoria Inc., *Submission 622*; Christmas Hills Landcare Group, *Submission 559*; South Beach Wetlands and Landcare Group, *Submission 586*; Gunbower Landcare Group, *Submission 704*; Upper Goulburn Landcare Network, *Submission 671*; Southern Dandenongs Landcare Group, *Submission 718*; Newham District Landcare Group, *Submission 517*; Bellarine Landcare Group, *Submission 453*; Batesford Fyansford Stonehaven Landcare Group, *Submission 530*.

takes a really big, landscape-scale view of that part of the world. There is perhaps a broadly similar concept, the Lungs of the Lake project, supporting ecosystem resilience in the catchments of the Gippsland Lakes. Landcare has really risen to the challenge of bushfire recovery. We have got projects in far east Gippsland restoring she-oaks as feed trees for the glossy black cockatoo, fox control in the King Parrot Creek in the Upper Goulburn and roadside management ... The Goulburn Broken Landcare network is involved in monitoring the bush stone-curlew, which is an iconic species in that part of the world.¹⁵⁵

Mr Maclean emphasised the pivotal role that conservation activities on private land play in preserving Victoria's landscape:

the decline in ecosystems in Victorian private land can only be reversed with the voluntary cooperation of private land managers. For as long as we have freehold land title, people who own parcels of land and are responsible for the management of that land make decisions for better or worse about the condition of that land and the ecosystems on it. They are choices that they make in the context that often they are farm businesses, and it is important that we recognise that that context is an important driver in the decisions that they make.¹⁵⁶

At a public hearing, James Todd from DELWP gave an overview of recent funding for Landcare's activities:

The Victorian government has continued to invest in, for example, Landcare and environmental volunteers through the recent state budget announcement, with a large commitment—some \$27 million over the next four years for environmental volunteers and Landcare—that continues to support those really important programs. So there are opportunities for people to participate.¹⁵⁷

The importance of volunteers for Victoria's environmental protection is discussed further in Chapter 9.

FINDING 36: Victorian Landcare groups undertake critical biodiversity protection, conservation and restoration activities that provide significant value to Victoria, including on private land.

Land for Wildlife

First established in 1981, Land for Wildlife is a voluntary wildlife conservation program that supports landholders to provide habitat on their properties for native wildlife.

In order to participate in the program, landholders must demonstrate that they will incorporate conservation into management of the property and enter into a

¹⁵⁵ Andrew Maclean, *Transcript of evidence*, p. 2.

¹⁵⁶ *Ibid.*

¹⁵⁷ James Todd, Executive Director, Biodiversity Division, Department of Environment, Land, Water and Planning, Public hearing, Via videoconference, 10 August 2021, *Transcript of evidence*, p. 11.

conservation agreement with the Victorian Government. Unlike conservation covenants, these agreements do not affect the legal status of the property in any way and participants can withdraw their participation at any time.¹⁵⁸

Land for Wildlife currently supports 5,000 properties across 530,000 hectares of private land. Habitat featured in these properties includes forests, woodlands, heaths, grasslands and wetland environments.¹⁵⁹

DELWP submitted that the Land for Wildlife program ‘encourages voluntary conservation efforts on both private and public land’.¹⁶⁰ James Todd from DELWP stated that it had ‘many, many thousands of landowners who are managing their properties for improved habitat’.¹⁶¹

The Nature Conservancy noted in its submission that Land for Wildlife is a ‘highly recognised’ program but that it experienced resourcing issues:

However, funding and stewardship support for this program has been run down over time and growth in new properties joining the program has flattened, whereas in many other states that growth is increasing. Considering the brand and interest in this voluntary conservation program, restoring funding for this program is likely to be a logical entry point for many landholders into private land conservation.¹⁶²

Financial and other incentives

As noted above, approximately two thirds of Victoria is privately owned, including important ecosystems and habitat for threatened species. However, the Committee received evidence that only a small proportion of private land is managed in accordance with biodiversity values or is part of conservation activities. For example, according to the Victorian National Parks Association, only 0.5% of agricultural land in Victoria is managed under a conservation agreement.¹⁶³

Biodiversity 2037 states that in order to increase landholder participation in biodiversity protection, the provision of incentives and other market mechanisms are needed to ‘offer alternative management options suited to different landholder groups, motivations and biodiversity outcomes’.¹⁶⁴

The Committee received evidence around the need for additional incentives to encourage landholders to participate in conservation activities on their land. Voluntary action for biodiversity can be expensive and time-consuming, or require

¹⁵⁸ Department of Environment, Land, Water and Planning, *Land for Wildlife*, 2021, <<https://www.wildlife.vic.gov.au/protecting-wildlife/land-for-wildlife>> accessed 4 October 2021.

¹⁵⁹ Ibid.

¹⁶⁰ Department of Environment, Land, Water and Planning, *Submission 927*, p. 26.

¹⁶¹ James Todd, *Transcript of evidence*, p. 11.

¹⁶² The Nature Conservancy Australia, *Submission 743*, p. 3.

¹⁶³ Victorian National Parks Association, *Private land conservation*, <<https://vnpa.org.au/future-parks/private-land-conservation>> accessed 4 October 2021.

¹⁶⁴ Department of Environment, Land, Water and Planning, *Protecting Victoria's Environment – Biodiversity 2037*, p. 36.

specialist knowledge and skill. For these reasons, previously identified barriers to greater participation in this space include a lack of financial resources, lack of time, lack of government incentives, age and/or ill health, and conflicting or insufficient information.¹⁶⁵

At a public hearing, Dr Bruce Lindsay, Senior Lawyer at Environmental Justice Australia, told the Committee that farmers needed proper support to undertake conservation activities:

I do think that there is a real need to make sure that farmers are properly compensated for that kind of work and that there are properly organised and systemic programs that allow farmers, non-landowners and other actors who are interested—community groups, the government itself—to undertake the work of invasive species management and to reduce the pressure on landscapes.¹⁶⁶

In addition to funding an increased number of covenants, several stakeholders advocated for ‘meaningful financial incentives’ to reward landowners who support biodiversity protection on their properties. Financial payments, as well as rate rebates and taxation concessions, were among the types of incentives suggested to the Committee.¹⁶⁷ While some municipalities offer reduced property rates where covenants are present, Bellarine Landcare Group submitted that this should be a statewide initiative and involve an automatic process.¹⁶⁸

In a response to a question taken on notice, the Ecological Consultants Association of Victoria provided information on potential incentives, and in particular, increasing the use of rate reductions:

Stewardship incentives we have witnessed be effective levers for effective conservation on private land most notably includes rate reductions for landholders who undertake prescribed conservation actions on their properties. Mornington Peninsula Shire’s program is an excellent example. Rate reduction incentives can include greater reductions for activities such as adding a Trust for Nature Conservation Covenant; Macedon Ranges Council provides an excellent example of this approach.

The Victorian Government could implement a program to support local government across the state to run similar programs. The program would need to be underpinned by sound knowledge of biodiversity values across the LGA – this is important, as some vegetation types are considered ‘Least Concern’ across the State but may be Critically Endangered within a municipality.¹⁶⁹

¹⁶⁵ Sarah Ryan, et al., *Australia’s NRM Governance System*, pp. 22–23.

¹⁶⁶ Dr Bruce Lindsay, Senior Lawyer, Environmental Justice Australia, Public hearing, Melbourne, 11 March 2021, *Transcript of evidence*, p. 25.

¹⁶⁷ See, for example, Bellarine Landcare Group, *Submission 453*, p. 2; Dr James Fitzsimons, *Transcript of evidence*, p. 41.

¹⁶⁸ Bellarine Landcare Group, *Submission 453*, p. 9.

¹⁶⁹ Ecological Consultants Association Victoria, hearing, response to questions on notice received 26 March 2021, p. 2.

In its submission to the Inquiry, DEWLP acknowledged that the application of municipal rates and land tax in some areas could act as a disincentive for landowners to undertake biodiversity activities:

Currently there are limited tax and other financial incentives available to landholders entering into covenants under the *Victorian Conservation Trust Act 1972*. Covenanted land is generally subject to municipal rates and land tax. This poses a substantial disincentive to protect and conserve natural capital. In contrast primary production land is exempt from land tax. An alternative approach may be to introduce greater incentives for landowners to change land use and enter into covenants to protect biodiversity values on their property.¹⁷⁰

The submission asserted that there should be greater focus on protecting native grasslands on private land, including through appropriate use of regulations, education and incentives.¹⁷¹ The need for an appropriate balance between incentives and compliance and enforcement in relation to unauthorised conduct on private land is discussed further in Chapter 10.

Other identified financial incentives included direct funding for conservation works. The Ecological Consultants Association of Victoria described the Beyond Yellingbo project as a 'highly effective model of this approach', which connects landholders to funding and pays contractors directly (avoiding having to provide funding to landowners). It cited the Local Environment Assistance Fund (LEAF) project at Manningham City Council as another example of this approach. The LEAF project, which has operated for over 10 years, also supports landowners to create a Land Management Plan and take on a more in-depth custodial role in managing their property. However, the response from the Association noted that LEAF sometimes requires a co-contribution from landowners, which can present a barrier for some landholders with limited financial resourcing.¹⁷²

Michelle Wyatt from Macedon Ranges Shire Council told the Committee that 'landowners really do want to revegetate their property' but that they 'do not necessarily know which species to use or how to do it, and they often do not have discretionary money to invest in revegetation projects'. She described how broader programs, such as localised educational sessions, could support greater take-up of conservation activities:

We have had a really successful private land conservation program in our shire where we provide one-on-one advice to landowners to help them not only with their grazing management but also understand how they can protect and restore their properties. It is a grant-funded program and it is a short-term grant, so without long-term funding that service will probably finish soon. So long-term programs like that, where you are providing one-on-one advice to landowners, I find are really critical. That is the feedback

¹⁷⁰ Department of Environment, Land, Water and Planning, *Submission 927*, p. 35.

¹⁷¹ *Ibid.*

¹⁷² Ecological Consultants Association Victoria, response to questions on notice, pp. 2-3.

we have got from landowners in our shire—that it is the individual advice, not just workshops and website information, on their property that makes a difference, and that has actually seen almost everybody that has engaged with that program change their practices.¹⁷³

At a public hearing, Rowan Reid from the Otway Agroforestry Network provided an example of how education and training in relation to the potential benefits and environmental services of a conservation-focused family farm could encourage greater biodiversity protection on private land:

A little case study from both of us: my property, which I purchased in 1987, as a forest scientist, was expressly about trying to adapt forest science to suit the family farming landscape ... 30 years later we are now harvesting Australian indigenous and native plant species for timber ... We dry the timber in a solar kiln, and we sold that tree—\$2,000 worth of wood from that single tree got converted into \$25,000 worth of furniture ... That is really proof of concept.

We also grow bush foods such as mountain pepper here, which is another native species. We also provide habitat. That is a sugar glider on an introduced New South Wales tree species that I grow for timber. We have sugar gliders prolifically now, and they feed on the silky oak for winter feed that carries them over.

I would argue that a lot of my work is orientated towards exploring and demonstrating how the active management of trees for timber production on farms can actually enhance biodiversity through improving waterways and cycling nutrients and providing light for understorey. There is a lot of opportunity for production to promote conservation ...¹⁷⁴

DELWP described some actions underway to improve biodiversity actions on private land, including in relation to ‘provision of incentives for private land conservation as a business model’. It stated that this could lead to shared investment and improved outcomes for biodiversity, at ‘relatively low cost to government’.¹⁷⁵

The Committee welcomes Biodiversity 2037’s commitment to investigating effective incentives for private landholders to conserve biodiversity in collaboration with relevant stakeholders.¹⁷⁶ However, there is little available information on the types and scope of options being explored.

¹⁷³ Michelle Wyatt, *Transcript of evidence*, p. 10.

¹⁷⁴ Rowan Reid, *Transcript of evidence*, p. 66.

¹⁷⁵ Department of Environment, Land, Water and Planning, *Submission 927*, p. 26.

¹⁷⁶ Department of Environment, Land, Water and Planning, *Protecting Victoria’s Environment – Biodiversity 2037*, p. 37.

RECOMMENDATION 41: That the Victorian Government establish a scheme that offers a suite of incentives to support private landowners to undertake conservation and/or restoration activities on their land, including:

- support for local government authorities to offer property rate reductions for landholders who undertake prescribed conservation and/or restoration activities on their properties that improve biodiversity outcomes
- consideration of various approaches and options to reflect the differing needs, means and motivations of different landowners.

Biodiversity-friendly farming

As noted, Victoria's history of land clearing has enabled widespread agricultural production in conjunction with biodiversity degradation and habitat fragmentation.¹⁷⁷ DELWP's submission states that 'agricultural industries rely on the health of the environment and its ecosystem services'.¹⁷⁸ As such, these industries have much to lose from continuing ecosystem decline.

Professor Brendan Wintle from the University of Melbourne noted at a public hearing that 'there is a lot we can do in agricultural lands that is better for biodiversity that still allows us to produce food and feed a population'. He stated that a 'top priority for the UN Convention on Biological Diversity now is biodiversity-friendly farming'.¹⁷⁹ Further, Professor Wintle highlighted the need for further demonstrations around these types of practices:

we need more demonstrations, stimulated probably by government support initially, of how that works well and where that works well and what kinds of activities both augment biodiversity outcomes on farms as well as both the lifestyle and the livelihoods of the people who own those farms.¹⁸⁰

At a public hearing, Rowan Reid highlighted the importance of working collaboratively with landowners to conserve biodiversity, in the context of a discussion around how current regulations regarding native trees act as a disincentive for conservation activities:

I think we should first of all acknowledge that the most degradation, the biggest conservation issue in the landscape of Victoria, is happening on family farms. The loss of vegetation, the biodiversity loss and everything has actually happened. We are dealing with a highly degraded landscape with highly degraded forests ... There is not much more we can do to make it worse, but if we provide the motivation and confidence to

¹⁷⁷ Ibid., p. 10.

¹⁷⁸ Department of Environment, Land, Water and Planning, *Submission 927*, p. 9.

¹⁷⁹ Professor Brendan Wintle, *Transcript of evidence*, p. 54.

¹⁸⁰ Ibid., p. 58.

landholders to act, we will have the sort of innovation you have seen in our area in the Otways.¹⁸¹

Andrew Stewart from the Otway Agroforestry Network similarly stated that ‘we need to come up with a system which actually encourages farmers to participate in innovative and creative ways of managing their landscapes’.¹⁸² Emma Germano from the Victorian Farmers Federation advocated for an attitudinal shift in recognition of the connection between farmers and their land:

I just think that if we could acknowledge that custodianship and that stewardship in a manner that is maybe not to the same spiritual level of the First Nations people but an understanding that farmers really care about that land and rewarding them, rather than ... coming up with a bunch of rules that sometimes are arbitrary that we have to follow ... I think first and foremost would be the attitude, and it is incumbent upon us as farmers to extend those stories and make sure that the community understand that is the way we feel about our land and make the community understand that when we create monocultures and we do not rotate our crops properly and we do not utilise both livestock and crops in good balance with each other we end up having productivity issues and it costs us money, so it is in the farmer’s best interests at all times to take care of that environment.¹⁸³

Some stakeholders submitted that regenerative agriculture offered opportunities for enhanced environmental protection.¹⁸⁴ For example, Dr Jim Radford from the Research Centre for Future Landscapes stated that ‘regenerative agriculture is an area of emerging and interesting research and development’.¹⁸⁵ Dr Radford advocated for adoption of innovative funding and resourcing initiatives to support farmers to undertake sustainable management:

The largest constituency, if you like, of landowners or land managers that we work with are farmers... In the development of whole-farm plans ... one of the key principles that I would love to see us shift to as a community is that not all of the cost burden for that stays with the farmer. We cannot expect the farmer, who is trying to make a living and feed us and clothe us and do all that, to carry the costs, because there are some costs involved with that. The services that they are providing in doing that, which are public benefit services often, are shared by the community. Those farms that are being managed sustainably should be recognised, accredited, and there should be a monetary benefit, either through access to markets or price premiums or stewardship payments—there are lots of different mechanisms that it could come about by—so that that cost is shared across the community and is not purely carried by the farmer.¹⁸⁶

¹⁸¹ Rowan Reid, *Transcript of evidence*, p. 68.

¹⁸² Andrew Stewart, Otway Agroforestry Network, Public hearing, Melbourne, 11 May 2021, *Transcript of evidence*, p. 68.

¹⁸³ Emma Germano, *Transcript of evidence*, p. 34.

¹⁸⁴ See, for example, Jane Hildebrandt, *Submission 709*, p. 4.

¹⁸⁵ Dr Jim Radford, *Transcript of evidence*, p. 63.

¹⁸⁶ *Ibid.*, p. 60.

Professor Andrew Bennett, Director and Professor of Ecology at the Research Centre for Future Landscapes, noted the work of the former Potter Farmland Plan, which established demonstration projects on farms in Victoria in the mid-1980s. He stated that a statewide program of this type ‘could have enormous benefits for the State, for production, for rural landscapes, rural wellbeing and biodiversity’.¹⁸⁷

Dr John Morgan, Co-chair of the Policy Working Group at the Ecological Society of Australia, told the Committee that there are ‘great opportunities in ... marginal landscapes for agriculture to be improved for their biodiversity’.¹⁸⁸ He similarly noted the work of the Ian Potter Foundation demonstration farms in advocating for a shift towards ‘smart farming’:

how do you affect landscape changes ... by working with farmers to improve biodiversity on their farms, whether that is for the purposes of connectivity or just habitat area. There are some really good initiatives. I am not sure if you are aware, but there is a new one called smart farming, which is actually saying the two are not, again, dichotomous here; they actually integrate. There have been some great demonstration farms ... the Potter Foundation farms and things. How do you actually get that but roll it out at a much bigger scale? What we need to do is work with farmers and show the benefits of doing that, because the benefits can be, depending on what sort of enterprise we are talking about, improved pasture growth, because you change the microclimate and create more shading and less wind and things like that, and improved fattening of lambs, because they are not stressed out by cold winds and all those kinds of things. There are a lot of improvements that we can actually understand.¹⁸⁹

Agriculture Victoria provides advice on native pasture management, stating that: ‘Striving towards ecologically healthy and diverse farming systems provides more resilience to climate change and can improve both profitability and biodiversity values.’¹⁹⁰

However, Biodiversity 2037 does not include any targets or actions aimed at agricultural practices, and there is limited available public information from Victorian Government bodies on emerging research regarding productivity and other opportunities through biodiversity-friendly farming practices.

RECOMMENDATION 42: That the Victorian Government undertake to improve education and other supports for landholders to realise financial and ecological benefits through biodiversity-friendly farming activities.

¹⁸⁷ Professor Andrew Bennett, Director and Professor of Ecology, Research Centre for Future Landscapes, La Trobe University, Public hearing, Melbourne, 21 April 2021, *Transcript of evidence*, pp. 58–59.

¹⁸⁸ Dr John Morgan, Co-chair, Policy Working Group, Ecological Society of Australia, Public hearing, Melbourne, 21 April 2021, *Transcript of evidence*, p. 65.

¹⁸⁹ *Ibid.*, p. 72.

¹⁹⁰ Agriculture Victoria, *Managing for biodiversity*, 2021, <<https://agriculture.vic.gov.au/farm-management/land-and-pasture-management/native-pasture-management/managing-for-biodiversity>> accessed 4 October 2021.

8.3.4 Native vegetation

The *Guidelines for the removal, destruction or lopping of native vegetation* set out the application of Victoria's statewide policy in relation to assessing and compensating the removal of native vegetation. Compliance with the Guidelines is a requirement of all planning schemes in Victoria. Responsible authorities (primarily local government authorities) are required to ensure compliance with the relevant planning scheme. The Guidelines, which aim to prevent net loss of biodiversity, set out a three-step approach: avoid, minimise and provide offsets to compensate for biodiversity impacts.¹⁹¹

The 2017 review of the native vegetation clearing regulations, led by DELWP, made a number of recommendations around the use of regulations to protect sensitive vegetation. Subsequently, the regulations were revised, with changes coming into effect in December 2017.

The native vegetation clearing regulations, planning and development were discussed in detail in Chapter 6. Compliance and enforcement in relation to the regulations is considered in Chapter 10.

8.3.5 Land and soil health

Land and soil health are important for ecosystem functioning and central to productive agricultural systems. Dr Andrea Lindsay from the Bellarine Landcare Group described soils as 'important ecosystems in their own right'.¹⁹² However, Biodiversity 2037 does not contain any particular actions or initiatives in relation to soil health or land condition.

In its submission, the Port Phillip EcoCentre explained the importance of healthy soils:

A healthy soil is its own living ecosystem, and the base of many others. Life below ground is critical to life above ground yet soil ecology is under-researched. In every handful of healthy soil, billions of microbes, fungi and microorganisms support plant life, which in turn store carbon dioxide, clean and cool our air and water, and enable our [human] food chain. We are losing the critical ingredients of healthy soil faster than they are replaced, and this has implications for climate change, food security and human health.¹⁹³

SoE 2018 recommended that Agriculture Victoria 'lead the design and delivery of a state soil and land condition monitoring program' to improve decision-making across sectors such as agriculture, planning and water management, which includes 'analysis of the

¹⁹¹ Department of Environment, Land, Water and Planning, *Guidelines for the removal, destruction or lopping of native vegetation*, <https://www.environment.vic.gov.au/_data/assets/pdf_file/0021/91146/Guidelines-for-the-removal,-destruction-or-lopping-of-native-vegetation.-2017.pdf>, 2017, p. 4.

¹⁹² Dr Andrea Lindsay, *Transcript of evidence*, p. 14.

¹⁹³ Port Phillip EcoCentre, *Submission 852*, p. 5.

threats and impacts of land use and land-use change'.¹⁹⁴ It argued that a long-term plan is essential in the context of climate change:

To manage Victoria's land health during a time of climate change, it is essential that a long-term plan is created for the collection, consolidation, reporting and assessment of land data across the state. It may be a decade before the benefits of this plan are realised, but it is critical that responsible agencies commence work now so that adequate assessments of land health can be used to drive statewide improvements in land-health condition across Victoria.¹⁹⁵

Further, the report noted challenges to soil monitoring, including the 'inherently high variability of soils' with changes that 'are minor and occur over decades', as well as that 'measuring soil characteristics can be expensive'. However, it noted that new partnerships and funding models which link public and private data, as well as data from other jurisdictions, could provide new opportunities in this space.¹⁹⁶

At a public hearing, Dr Gillian Sparkes stated that currently, 'there is only a basic understanding of the effect of land use and land use change on soil and land in Victoria'.¹⁹⁷ Dr Scott Rawlings, Director of Science and Reporting at the Office of the Commissioner for Environmental Sustainability, outlined additional work the office was undertaking in relation to soil health:

this is something which we hit the ground running with after the report and continue to work in this space, working with the soil science network, which is a national network, but we are obviously working with the Victorian cohort more directly to begin to address some of those gaps and see if we can improve reporting around soil health and the importance of soil health not just for land health and agriculture but also for biodiversity as well.

We are working with partners including [Federation University Australia] and other institutions and importantly looking at the importance of spatial information and earth observation in improving our knowledge of soil health.¹⁹⁸

In the Victorian Government's response to SoE 2018, it stated that it 'recognises that improved soil conditioning and monitoring systems could allow private land managers to understand the impacts of a more variable climate', such as in relation to extreme temperatures, rainfall and wind, and 'improve the decision-making processes used by farmers, other land managers and policy makers'. It outlined work being undertaken by Agriculture Victoria through its long-term strategy aimed at enhancing agricultural competitiveness, which includes objectives relating to soil health and land condition.¹⁹⁹

¹⁹⁴ Office of the Commissioner for Environmental Sustainability, *Victorian State of the Environment 2018 Report: Summary Report*, p. 60.

¹⁹⁵ Ibid.

¹⁹⁶ Ibid.

¹⁹⁷ Dr Gillian Sparkes, *Transcript of evidence*, p. 3.

¹⁹⁸ Dr Scott Rawlings, Director of Science and Reporting, Commissioner for Environmental Sustainability Victoria, Public hearing, Melbourne, 3 December 2020, *Transcript of evidence*, p. 10.

¹⁹⁹ Victorian Government, *Victorian Government response to the State of the Environment 2018 report*, p. 15.

In relation to a specific monitoring program, the response noted that this would be resource-intensive:

The design of a national or state-wide monitoring system is a complex task that would require research partners from across governments, industry, universities, CSIRO and the Cooperative Research Centre for High Performing Soils to allocate and prioritise significant resources over a long period of time ... While Agriculture Victoria recognises the potential future benefit of a new soil and land condition monitoring system, delivery of such a monitoring program would need to be cost-effective, adequately resourced and not duplicate existing activity.²⁰⁰

The Committee notes the Victorian Government's initiatives in this space. However, it considers that more work needs to be done to monitor soil health and land condition, particularly in light of the critical role these play in supporting native species and functioning ecosystems, as well as agricultural industries. In light of the potential impacts of climate change on soil health and land condition, the Committee considers that further work must be undertaken in partnership with key stakeholders to progress the development of more comprehensive monitoring, in line with the recommendation in SoE 2018.

RECOMMENDATION 43: That the Victorian Government continue to investigate research and other partnerships to support a more comprehensive statewide system of soil health and land condition monitoring, noting that soil health is not only critical to the survival of our ecosystems, but also impacts air quality.

8.4 Fire management

Fire is a natural part of the Victorian environment and has shaped the State's ecosystems over tens of thousands of years. Many Victorian plants rely on bushfire to trigger regeneration and to maintain their health.

First Nations peoples across Australia have used fire as a tool to manage landscapes across generations. Traditional Owners have communicated the importance of fire in maintaining a balanced ecological environment and asserted that departure from cultural burning practices following colonisation has resulted in detrimental changes to biodiversity.²⁰¹

Since European records began in the mid-1800s, Victoria has experienced several large, catastrophic bushfire events, including Black Thursday in 1851, Black Friday in 1939, Ash Wednesday in 1983, Black Saturday in 2009 and the recent 2019–20 Black Summer bushfire season. Frequent and intense bushfires are now recognised as a key driver of ecosystem decline across Australia.²⁰²

²⁰⁰ Ibid.

²⁰¹ See Section 8.4.2.

²⁰² Forest Fire Management, *Past bushfires: A chronology of major bushfires in Victoria from 2013 back to 1851*, 2019, <<https://www.ffm.vic.gov.au/history-and-incidents/past-bushfires>> accessed 7 October 2021.

Today, climate projections show that weather conditions that underpin bushfires (a function of temperature, humidity and wind) are likely to occur more frequently throughout Australia in the future due to a warming climate. There has been a long-term increase in dangerous fire weather and the length of the fire season across Australia, and catastrophic bushfire events are becoming more common. As reported by the Royal Commission into National Natural Disaster Arrangements, the fire weather season now begins more than three months earlier in some parts of Australia than in the mid-twentieth century and this is likely to get worse.²⁰³

Bushfires can have significant impacts on biodiversity, particularly major bushfire events. Impacts can be compounded where ecosystems are unable to recover in the time between extreme fire events, threatening the long-term survival of some species or ecosystems, such as alpine and mountain ash forests.²⁰⁴ Climate change and the impacts of more frequent and intense bushfires on Victoria's ecosystems, including in relation to biodiversity values, was discussed in detail in Chapter 5. The impacts of bushfire on species and habitat was considered in Chapter 7.

8.4.1 Managing bushfire risk

In Victoria, fire is managed to minimise the impact of major bushfires on human life, communities, infrastructure, economies and the environment.²⁰⁵ Managing bushfire risk is a responsibility shared between various agencies across different levels of government, communities and landowners.

DELWP is primarily responsible for fire prevention and management in public lands, including state forests, national parks and other public lands, under the Forests Act. The Forests Act allows for the use of fire for land and resource management within state forests, parks managed under the National Parks Act and protected public land. This includes fuel management activities for the purpose of carrying out 'proper and sufficient work' in these areas.

DELWP is assisted by Parks Victoria, Melbourne Water and VicForests and works with these agencies under the name Forest Fire Management Victoria (FFMVic). FFMVic also partners with the Country Fire Authority (CFA), councils and communities to plan for, respond to and recover from bushfires on both private and public lands.²⁰⁶

Landowners are primarily responsible for managing bushfire risk on private land with support from the CFA and local councils.²⁰⁷

²⁰³ Royal Commission into National Natural Disaster Arrangements, *Royal Commission into National Natural Disaster Arrangements Report*, 2020, pp. 63–64.

²⁰⁴ World Wildlife Fund Australia, *Australia's 2019–2020 Bushfires: The Wildlife Toll: Interim Report*, 2020, p. 2; Institute of Foresters of Australia and Australian Forest Growers, *Submission 660*, pp. 15–17.

²⁰⁵ Parks Victoria, *Greater Alpine National Parks: Management Plan August 2016*, Victorian Government, Melbourne, 2016.

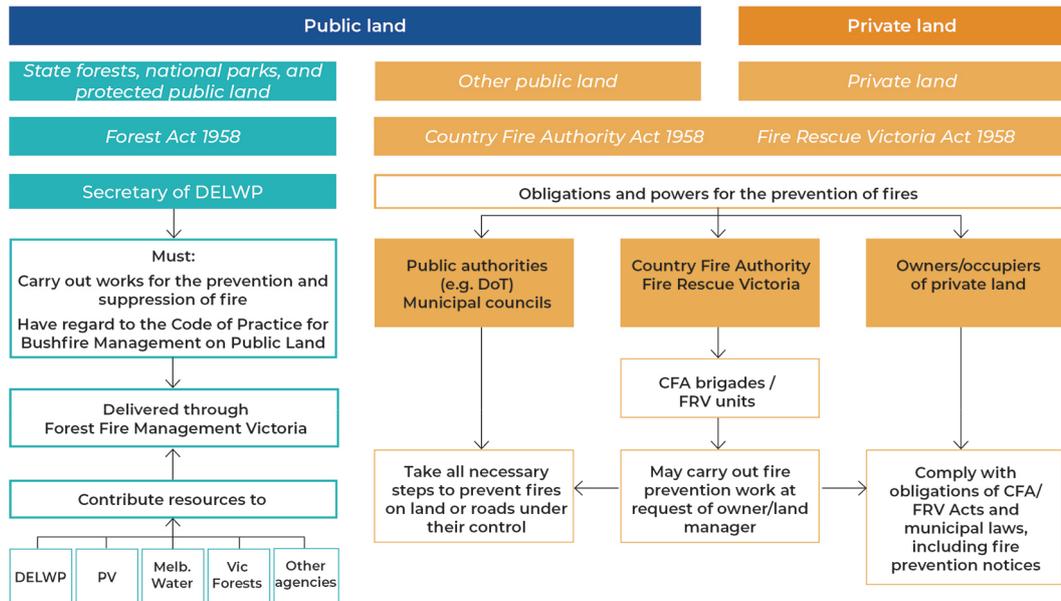
²⁰⁶ Forest Fire Management Victoria, *Who we are*, 2021, <<https://www.ffm.vic.gov.au/who-we-are/forest-fire-management-victoria>> accessed 7 October 2021; Victorian Auditor-General's Office, *Reducing Bushfire Risks: Independent assurance report to Parliament 2020–21:4*, 2020, p. 24.

²⁰⁷ Country Fire Authority, *Who Does What*, <<https://www.cfa.vic.gov.au/about/who-does-what#:~:text=Section%2043%20of%20the%20Country,in%20it%20or%20under%20its>> accessed 7 October 2021.

On 1 July 2020, Fire Rescue Victoria was established to bring paid career firefighters from the Metropolitan Fire Brigade and CFA together. Fire Rescue Victoria supports FFMVic and the CFA—which is now a volunteer fire service, supported by paid administrative and operational staff—to manage bushfire risk.²⁰⁸

The regulatory framework establishing roles and responsibilities for managing bushfire risk on public and private land is shown in Figure 8.3.

Figure 8.3 Roles and responsibilities for managing bushfire risk on public and private land



Note: DoT is the Department of Transport.

Source: Victorian Auditor-General's Office, *Reducing Bushfire Risks: Independent assurance report to Parliament 2020–21:4*, 2020, p. 25.

The fire management activities of FFMVic are governed by the *Code of Practice for Bushfire Management on Public Land*. The Code is the primary tool for managing fire on areas of public land, and sets out two objectives:

- To minimise the impact of major bushfires on human life, communities, essential and community infrastructure, industries, the economy and the environment. Human life will be afforded priority over all other considerations.
- To maintain or improve the resilience of natural ecosystems and their ability to deliver services such as biodiversity, water, carbon storage and forest products.²⁰⁹

The code identifies mechanisms for achieving these objectives, which include the implementation of bushfire management strategies, planning for and undertaking bushfire management actions, and monitoring, evaluating and reporting on progress towards delivering outcomes.²¹⁰

²⁰⁸ Victorian Auditor-General's Office, *Reducing Bushfire Risks*, p. 24.

²⁰⁹ Victorian Government, *Code of Practice for Bushfire Management on Public Land*, Melbourne, 2012, p. 1.

²¹⁰ *Ibid.*, pp. 2, 20.

In Biodiversity 2037, the Victorian Government highlighted the need for fire management to take into consideration biodiversity values:

Victoria's risk-based and community-focused approach to fire planning aims to find an appropriate balance between the risk to humans and infrastructure, and to environmental values. It also creates opportunities to align measures for biodiversity and fire that provide better understanding and reporting of biodiversity responses to the total fire regime. This approach will be further developed as part of the implementation of this Plan.²¹¹

The strategy does not set any specific targets or actions relating to fire management and biodiversity, other than a broad initiative to improve understanding of, and responses to, key threats and opportunities for biodiversity conservation, including weeds and pest animals, disease, climate change, the role of apex predators and fire regimes.²¹²

Safer Together: A new approach to reducing the risk of bushfire in Victoria

Safer Together: A new approach to reducing the risk of bushfire in Victoria (Safer Together) is the Victorian Government's policy, and program of the same name, which aims to bring responsible agencies together to improve bushfire preparedness and reduce bushfire risks across private and public land. It is delivered by FFMVic and the CFA with support from Emergency Management Victoria, which oversees emergency management plans.

Safer Together prescribes the use of planned burning and other actions to reduce the risk that bushfires pose to life and property in Victoria to 70% (or less) of what it would have been without mitigation actions.

DELWP calculates bushfire risk by modelling the number of houses that would be destroyed in extreme fire conditions and also uses this as a proxy for modelling risk to human life. The policy divides Victoria into six Bushfire Risk Regions by grouping together locations where bushfires typically behave in a similar manner. The bushfire risk profile of each region varies according to how populated it is and the characteristics of its ecosystems. FFMVic and its partners tailor bushfire risk mitigation actions specifically to these characteristics.²¹³

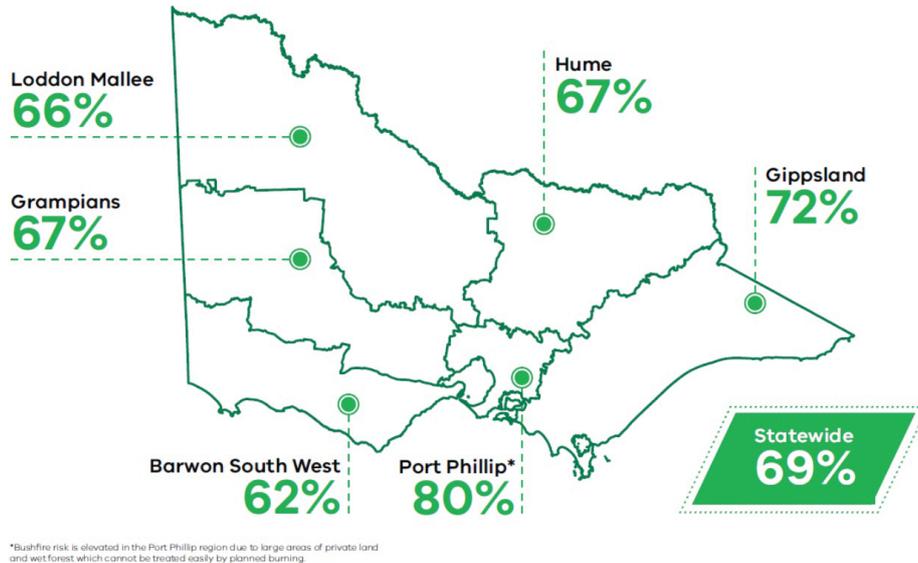
Figure 8.4 shows the residual risk in each Bushfire Risk Region. For example, the risk bushfires pose to life and property in the Loddon Mallee region is currently 66% of what it would have been without the risk mitigation actions taken under the Safer Together program.

211 Department of Environment, Land, Water and Planning, *Protecting Victoria's Environment – Biodiversity 2037*, p. 47.

212 Ibid., p. 61.

213 Victorian Government, *Safer Together: Understanding risk*, 2020, <<https://www.safertogether.vic.gov.au/understanding-risk>> accessed 2 October 2021.

Figure 8.4 Risk profile of Safer Together Bushfire Risk Regions



Source: Victorian Government, *Safer Together: Understanding risk*, 2020, <<https://www.safertogether.vic.gov.au/understanding-risk>> accessed 3 October 2021.

Bushfire risk mitigation actions taken under the Safer Together program include:

- planned burning
- slashing and mowing
- creating fuel breaks around towns and assets
- maintaining infrastructure such as fire dams and lookout towers in forests and parks
- preparing and positioning firefighters and aircraft across Victoria for rapid response to bushfires when they start
- building standards for new housing
- developing neighbourhood shelters
- issuing community warnings
- coordinating evacuations.²¹⁴

The Safer Together program received \$23.4 million of funding in its first two years of operation (2017–19) and a further \$25.7 million to fund a further two years in the 2019–20 Victorian Budget.²¹⁵

In October 2020, the Victorian Auditor-General's Office released its report, *Reducing Bushfire Risks*. The report found that Victoria's residual risk level was meeting the target set by the Victorian Government, but that the target 'does not give government

²¹⁴ Ibid.

²¹⁵ Victorian Auditor-General's Office, *Reducing Bushfire Risks*, p. 29.

agencies, government or the public a complete understanding of the impact of DELWP’s fuel management activities on public land’.²¹⁶

Joint Fuel Management Program

The Joint Fuel Management Program is the statewide program which establishes how fuel (such as leaves, twigs, bark and shrubs) on public and private land will be managed. It is a component of the Safer Together program and was developed by FFMVic and the CFA in consultation with various stakeholders, including councils, tourism businesses, flora and fauna experts and Traditional Owners. FFMVic’s website states that the program commits FFMVic and the CFA to ‘work as one sector by sharing resources, vehicles, and other equipment’. The current three-year program runs until 2022–23, and is updated annually.²¹⁷

Fuel management activities conducted under the program are undertaken across four Fire Management Zones, outlined below.

Table 8.3 Fire Management Zones

Zone	Purpose
Asset Protection Zone	To reduce fuel loads through planning burning or other methods in order to protect assets. Management is undertaken approximately every five to seven years.
Bushfire Moderation Zone	To reduce fuel loads through planned burning or other methods. Management is undertaken every eight to 15 years, with intervals between burns varying in conjunction with ecological considerations.
Landscape Management Zone	To maintain and improve ecosystem resilience through planned burning, or other fuel management activities to reduce risks.
Prescribed Burning Exclusion Zone	To protect particular areas that cannot tolerate fire, and for other purposes, planned burning does not take place in this zone.

Source: Forest Fire Management Victoria, *Planned Burns: Managing Bushfire Risk*, <<https://www.ffm.vic.gov.au/bushfire-fuel-and-risk-management/managing-bushfire-risk>> accessed 3 October 2021.

The primary fuel reduction action taken under the Joint Fuel Management Program is planned burning, which is discussed further below. However, other initiatives included in the first year of the current Joint Fuel Management Program across Victoria include:

- 70 cultural burns, nominated and led by Traditional Owners
- ecosystem resilience monitoring at 800 sites to inform ecological modelling
- over 19,000 hectares of slashing, mowing and mulching of vegetation close to towns and along important bushfire access roads

²¹⁶ Ibid., p. 3.

²¹⁷ Forest Fire Management Victoria, *Joint Fuel Management Program*, 2021, <<https://www.ffm.vic.gov.au/bushfire-fuel-and-risk-management/joint-fuel-management-program>> accessed 3 October 2021.

- installation of 25 automated fuel moisture meters to inform decision-making around when planned burns should proceed.²¹⁸

Plans are developed for the different DELWP regions, informed by regional needs and risk levels.

Statewide and regional plans do not include all planned burns that take place on private land. The CFA is often approached by private landowners or other land managers, including VicRoads, VicTrack and water authorities, to help them conduct planned burns to reduce bushfire risks.²¹⁹ As the CFA aims to be responsive to these requests, it cannot include all planned burns on forwards plans.

Planned burning

Planned burning, also referred to as prescribed burning, occurs across both private and public land. There are four main types of planned burns:

- fuel reduction—to reduce fuel loads
- ecological—to achieve ecological outcomes
- regeneration—to assist particular species of vegetation types to regenerate
- catchment protection—to restrict bushfire spread in forested water catchments.²²⁰

As outlined above, it is the primary fuel reduction action taken under the Joint Fuel Management Program and is the prescribed burning method under the Safer Together policy plan. The first year of the current Joint Fuel Management Program includes a number of statewide actions relating to planned burns:

- planned burning to take place on over 220,000 hectares
- reintroduction of fire into landscapes which have experienced large-scale bushfires in recent years, in order to reduce the scale, severity and impact of future landscape fires
- fuel hazard assessment of 20% of all planned burns, both before and after treatment, to determine the level of fuel reduction.²²¹

In its 2017 report on the reduction of bushfire risks, VAGO noted a number of issues in relation to planned burns under the Joint Fuel Management Program. This included a limited focus on planned burning on private land:

The comparative lack of focus on risks present on private land is evident in the joint fuel management plan. This is seen in the comparatively limited number of planned treatments on private land compared with public land. This creates a gap in

²¹⁸ Victorian Government, *Statewide - Year 1: 2020/21–2022/23 Joint Fuel Management Program*, 2020, p. 1.

²¹⁹ Victorian Auditor-General's Office, *Reducing Bushfire Risks*, p. 59.

²²⁰ Forest Fire Management Victoria, *Planned Burns: Managing Bushfire Risk*, <<https://www.ffm.vic.gov.au/bushfire-fuel-and-risk-management/managing-bushfire-risk>> accessed 3 October 2021.

²²¹ Victorian Government, *Statewide - Year 1: 2020/21–2022/23 Joint Fuel Management Program*, p. 1.

understanding risk across the state, and may mean that risk-reduction efforts are not always directed to the areas of highest need.²²²

The report also noted that statewide strategic planning has a high emphasis on planned burning, and to a lesser extent, on non-burn treatments. It stated that limited holistic strategic planning could mean that other risk reduction options are missed, and that 'As bushfire seasons extend and windows for planned burning reduce, there is a greater need to strategically plan alternate fuel-reduction methods'.²²³

In its submission to the Inquiry, DELWP acknowledged that planned burning 'impact[s] the health of the environment in different ways', sometimes negatively:

The need to undertake fuel management to reduce bushfire risk, support economic development and invest in activities to redress, or compensate for, climate change impacts, sometimes conflicts with the sustainable management of biodiversity, land and water.²²⁴

DELWP suggested that its approach to fuel management balances the negative impacts of planned burns against the potential impact of bushfires on biodiversity:

Consideration of risk of major bushfires and their potential impact on biodiversity, including the impact of our response, needs to be weighed up against the effectiveness of our applied management regime to reduce this risk and its impact on biodiversity. Understanding and quantifying the net impact and risks to biodiversity of "with / without management" is fundamental to transparent decision-making and determining trade-offs across competing policy and land use objectives.²²⁵

DELWP explained all planned burning activities aimed at reducing bushfire risk by managing forest fuel loads are informed by the Victorian Bushfire Monitoring Program. This program monitors fuel levels and ecosystem resilience to fire. It measures and monitors the timing and prevalence of fires in different vegetation types, as well as the ages of different vegetation types, to estimate their tolerable fire interval (the minimal interval between fires that vegetation can tolerate).

DELWP said it minimises planned burns in areas below the minimum tolerable fire interval:

Fuel reduction burning is minimised in areas that are below the minimum [tolerable fire interval] because it can be detrimental to ecosystem resilience. However, planned burning may be needed in some areas already below minimum [tolerable fire interval] to reduce bushfire risk to life, property or priority ecosystems.²²⁶

222 Victorian Auditor-General's Office, *Reducing Bushfire Risks*, p. 5.

223 Ibid.

224 Department of Environment, Land, Water and Planning, *Submission 927*, p. 10..

225 Ibid.

226 Ibid., p. 33.

At a public hearing, Hamish Webb, Director Knowledge, Planning and Risk in Forest, Fire and Regions at DELWP, highlighted the importance of ‘understanding planned burns are not without impact’. He noted that this included the impacts of smoke on communities and industries. Mr Webb also noted that previous approaches of setting a percentage target of land which should be subject to prescribed burning each year ‘drives burning into areas where it may not be as effective for any of the values we are trying to protect’, with potential outcomes that burning is carried out without achieving any of the identified objectives.²²⁷

Stakeholder views on fuel management activities

The management of fuel in Victorian forests to reduce bushfire risk has long been controversial. The issue has been examined as part of subsequent reviews, including the 2009 Victorian Bushfires Royal Commission; 2015 Inspector-General for Emergency Management *Review of Performance Targets for Bushfire Fuel Management on Public Land*; 2020 VAGO Report, *Reducing Bushfire Risks*; and 2020 Inspector-General for Emergency Management *Inquiry into the 2019–20 Victorian Fire Season*.

Inquiry stakeholders have expressed a range of viewpoints on fuel management. There is broad agreement that the fuel load of Victorian forests could be more effectively managed to mitigate bushfire risk. However, opinions of how best to achieve this diverged.

In its submission, the Institute of Foresters of Australia and Australian Forest Growers asserted that the Victorian Government’s fire management program is ‘far from adequate’. It advocated for ‘more broadscale prescribed burning for fuel reduction’ and the expansion of the prescribed burning season into the months either side of winter. It asserted that mechanical fuel reduction (such as mulching and collection of fallen timber) should be conducted around community and private assets. The submission also recommended an expanded role for Traditional Owners and cultural burning.²²⁸

Similarly, Forest and Wood Communities Australia supported low intensity fuel reduction burning as a bushfire prevention measure and argued that the practice aligns with Traditional Owner approaches to forestry.²²⁹

The Victorian Association of Forest Industries called for ‘greater emphasis on fuel reduction’ actions in bushfire risk mitigation. It felt that fuel loads should be primarily managed through ‘planned burning across the whole landscape’ but also recognised that this approach is not appropriate for some ecosystems.²³⁰ The Victorian Association of Forest Industries also contended that forestry operations should be allowed to contribute to fuel management through ‘forest thinning’, whereby trees are selectively

²²⁷ Hamish Webb, Director, Knowledge, Planning and Risk, Forest, Fire and Regions, Department of Environment, Land, Water and Planning, Public hearing, Via videoconference, 10 August 2021, *Transcript of evidence*, pp. 13–14.

²²⁸ Institute of Foresters of Australia and Australian Forest Growers, *Submission 660*, pp. 13, 24.

²²⁹ Forest and Wood Communities Australia, *Submission 619*, p. 2.

²³⁰ Victorian Association of Forest Industries, *Submission 630*, pp. 8–9.

removed to reduce strand density. The Association asserted that forest thinning reduces bushfire risk by slowing the spread rate of fires and lowering flame heights.²³¹

Other submitters suggested that planned burning can make forests more vulnerable to fire. For example, the Victorian National Parks Association argued that while planned burning reduces undergrowth in a forest initially, it can also trigger forest regrowth that is more extensive, more flammable and which makes a forest more vulnerable to fire for decades. The Association suggested that the prevalence of juvenile trees in places like Gippsland contributed to the Black Summer bushfires. It noted that older growth, longer unburnt forests—like the Australian Alps, the high rainfall eucalypt forests in eastern Victoria and the box-ironbark forests of central Victoria—are less flammable. The Association observed that post-fire regrowth from the Black Summer bushfires is therefore likely to increase the risk of further fire in these areas in the future.²³²

Community Fire Watch Gippsland similarly noted research indicating that fuel reduction burns (especially too frequent or high intensity burns) increase forest flammability. It warned that fuel reduction burning is exacerbating ecosystem decline:

Frequent burning promotes thick and rapid vegetation growth as a response, whilst also drying out the landscape, vegetation, soils, and reducing humidity. Frequent burning carried out by the Victorian government is often below the ‘tolerable fire interval’ (TFI) of many ecological vegetation classes (EVCs), causing the permanent decline and loss of forest diversity and health. The term ‘fuel’ is problematic in management cultures. ‘Habitat’ is the ecologically correct and appropriate term to describe dynamic native vegetation ...

The process of planning a burn allows for threatened and endangered species to be within a burn footprint, with inadequate or no provisions for buffers.²³³

In relation to other non-burn fuel management methods, Dale Tonkinson, Biodiversity Advisor at the CFA, told the Committee at a public hearing that these can ‘pose particular problems for ecosystems because they are pretty much not mimicking any natural process that has gone before’.²³⁴

On the issue of climate change, the Hamilton Field Naturalists Club suggested that the operational criteria for prescribed burns is outdated and should be reviewed to reflect safe conditions for prescribed burns in a warmer climate:

Damaging fires, including escapes, are added to by adherence to weather and fuel condition criteria for prescribed burning that relate to a past era, before the drying of our climate. Thus, the standards applied regularly allow the burns to reach flame height of 10 m or more, severely damaging even Brown Stringybark forests in far [south-west] Victoria. That would not have happened when Aborigines burned the dry country

²³¹ Ibid., p. 7.

²³² Victorian National Parks Association, *Submission 102*, p. 43.

²³³ Gippsland Community Fire Watch, *Submission 870*, pp. 2–3.

²³⁴ Dale Tonkinson, Biodiversity Advisor, Country Fire Authority Public hearing, Melbourne, 11 March 2021, *Transcript of evidence*, p. 12.

forests and woodlands. There is a need to re-calibrate the indicators that are followed today, to determine when a control burn may be safely conducted that will not create extensive damage to the forest and/or allow escapes onto private land.²³⁵

The Hamilton Field Naturalists Club suggested that Traditional Owner approaches to planned burning are more suitable for Victorian habitats. It noted that ‘damaging fires’ are started each year as a result of fuel reduction burns, in light of public authorities with ‘limited time and a lot of work to do in a small window of time’.²³⁶

The Victorian National Parks Association advocated for a more nuanced approach to fuel reduction burning and a shift towards other techniques for reducing bushfire risk. It suggested that forest regrowth and fuel loads should be monitored following fuel reduction burning. This would enable an understanding of how fires affect different forests’ composition and fuel loads to support more nuanced management of fire risk.²³⁷

The Victorian National Parks Association was also critical of ‘blackout burning’ which is the practice of deliberately burning patches of forest that have been left untouched but surrounded by bushfire-impacted forest. It suggested that this type of burning destroys undamaged habitat and flora and impedes forest recovery.²³⁸

In addition, Community Fire Watch Gippsland was critical of FFMVic fuel reduction measures which saw native vegetation cleared along major roads, such as the Princess Highway, as well as fire management roads and tracks. It argued that this resulted in the unnecessary destruction of habitat such as healthy and hollow-bearing trees.²³⁹

At a public hearing in August 2021, representatives of DELWP responded to some of the concerns raised throughout the Inquiry relating to fire management. Hamish Webb asserted that in the 10-year period to 2019, planned burning contributed to 67% risk reduction to life and property. He stated that recent changes to fire management have included ensuring that modelling is tailored to different regions so that regional approaches are informed by local needs.²⁴⁰ He also noted that recent work had focused on identifying new measures and metrics to prevent large-scale fires:

The other thing we are now looking at and we have done a lot of work on is: what are some of the other measures and metrics we can put in place? So we are looking at how we break up the landscape to prevent the large-scale fires that we saw in 2019–20. But it is not just those ones. You go back to the Grampians fires that we had in 2000–80 or 90-odd per cent of the park burnt in that period of time. I mean, 10 000 hectares, if it occurred in the Little Desert, would be significant in terms of its impact on values. So we

²³⁵ Hamilton Field Naturalists Club, *Submission 111*, p. 1.

²³⁶ *Ibid.*, p. 2.

²³⁷ Victorian National Parks Association, *Submission 102*, p. 44.

²³⁸ *Ibid.*, p. 53.

²³⁹ Gippsland Community Fire Watch, *Submission 870*, p. 4.

²⁴⁰ Hamish Webb, *Transcript of evidence*, p. 12.

are now able to identify where in the landscape there is a predisposition to large-scale landscape fires and tailor our fuel management program to support that.²⁴¹

In relation to fuel management on private land, Mr Webb stated that this had been a focus of the 2020 Inspector-General for Emergency Management's *Inquiry into the 2019–20 Victorian Fire Season*. He told the Committee that recent budgets had supported an increase in mechanical fuel treatments around areas of private land.

In relation to fuel management more broadly, Mr Webb stated that it is 'not a panacea—it cannot solve and save the bushfire side of things', and asserted that a more 'blended approach' recognises that there are a variety of different actions that are useful. He noted that climate change necessitated new approaches and strategies, and that the Victorian Government was focusing on ensuring a greater understanding of the 'different impacts that the different fire regimes have on species and the environment'.²⁴²

The Committee welcomes recent work undertaken by Victorian Government agencies to ensure that environmental values are given appropriate consideration during fuel management activities, and bushfire management policy more broadly. It notes, however, that Biodiversity 2037 does not identify any targets or actions relating to bushfires and the impacts on biodiversity, despite acknowledging that climate change is resulting in increased frequency and intensity of bushfires and drought.²⁴³ As noted above, Biodiversity 2037 also acknowledges that 'fires, including planned burning, can have significant positive or negative effects on biodiversity', including when they are too frequent, intensive or extensive.

RECOMMENDATION 44: That the Victorian Government ensure that *Protecting Victoria's Environment – Biodiversity 2037* contains specific targets or actions relating to the impacts of bushfires and fire management activities on biodiversity values. In conjunction with a whole-of-government approach to implementation of the plan, this would ensure that work being undertaken under the *Safer Together: A new approach to reducing the risk of bushfire in Victoria* program occurs in collaboration with the goals identified in the State's biodiversity strategy. This could include, for example, targets in relation to ecosystem resilience monitoring as part of current bushfire management initiatives. In addition, where possible, such work should also be responsive to the vision articulated in the *Victorian Traditional Owner Cultural Fire Strategy*.

8.4.2 Bushfire suppression strategies

Submitters to the Inquiry suggested that emergency bushfire suppression activities could be refined to limit the damage to Victoria's forest ecosystems and biodiversity.

²⁴¹ Ibid., p. 13.

²⁴² Ibid.

²⁴³ Department of Environment, Land, Water and Planning, *Protecting Victoria's Environment – Biodiversity 2037*, p. 11.

The Ecological Society of Australia asserted that bushfire suppression activities are not adequately informed by spatial information on the location and importance of biodiversity values. It advocated for more informed fire suppression activities to enable the strategic protection of threatened species, ecosystems and iconic places.²⁴⁴

Similarly, the Wilderness Society felt that legislative reform is required to ‘ensure decision-makers in disaster response have appropriate access to information (including mapping) of fire sensitive values’.²⁴⁵

The Victorian National Parks Association suggested that the Commonwealth’s Disaster Recovery Funding Arrangements provide greater financial support to cover the costs of Victoria’s bushfire suppression activities when the fires being fought pose ‘imminent risks to lives and property’. The Association suggested that this discourages emergency responder agencies from suppressing fires at the point of ignition in remote areas, and that as a result, bushfires are left to burn until they are larger, more difficult to manage and pose a greater risk to lives and properties. It advocated for better funding arrangements between the Commonwealth and State Governments to enable firefighting agencies to combat fires at the point of ignition before larger swathes of forest are damaged. For the same reason, the Association also recommended the expansion of Victoria’s aerial firefighting capabilities.²⁴⁶

8.4.3 Cultural burning

Cultural burning is a Traditional Owner-led land management practice. Cultural fire, which has many interconnected objectives, does not have a fixed definition. While the practice maintains the health of landscapes and builds resilience against bushfires, the Committee heard that it is less so about the ‘technique on the ground’ as it is about the ‘motivation and the links, the connection’.²⁴⁷

As part of its evidence-gathering process, the Committee was fortunate to attend a demonstration of a cultural burn in Mooroopna in northern Victoria, which was facilitated by Yorta Yorta Nation Aboriginal Corporation and Dr Victor Steffensen, Co-founder of the Firesticks Alliance Indigenous Corporation. This burn was held on Yorta Yorta Country. This experience informed the Committee’s considerations in this report.

As discussed in Chapter 3, Traditional Owners led the development of the *Victorian Traditional Owner Cultural Fire Strategy* (Cultural Fire Strategy), which articulates the aspirations of Traditional Owners to practice cultural burning and ensure knowledge about fire is sustained through generations. It establishes a policy directive across

²⁴⁴ Ecological Society of Australia, *Submission 575*, pp. 7–8.

²⁴⁵ The Wilderness Society, *Submission 899*, p. 13.

²⁴⁶ Victorian National Parks Association, *Submission 102*, pp. 56–57.

²⁴⁷ Jodie Honan, Ecologist, Gunditj Mirring Traditional Owners Aboriginal Corporation, Public hearing, Via videoconference, 16 June 2021, *Transcript of evidence*, p. 7.

Victoria's fire and land management agencies to support Traditional Owners to undertake cultural burning in accordance with six underpinning principles:

- Cultural burning is right fire, right time, right way and for the right (cultural) reasons, according to Lore.
- Burning is a cultural responsibility.
- Cultural fire is living knowledge.
- Monitoring, evaluation and research support cultural fire objectives and enable adaptive learning.
- Country is managed holistically.
- Cultural fire is healing.²⁴⁸

The Cultural Fire Strategy informs FFMVic's approach to arranging cultural burns as part of the Safer Together and Joint Fuel Management Programs.

The Committee received substantial evidence in support of cultural burning as a way of managing and maintaining the health of Victoria's ecological landscapes and building resilience against bushfires.²⁴⁹ Erin Rose, Budj Bim World Heritage Executive Officer at Gunditj Mirring Traditional Owners Aboriginal Corporation, explained some of the benefits of cultural burning at a public hearing:

it helps a lot of things. It helps build a healthier and stronger habitat for our species, but it also helps with that fuel reduction, that longer term fire management. It mitigates that risk around, you know, big bushfires and stuff like that that we do not want to rip through our property, but it also helps with regeneration. It is a great technique for us to be able to use out on country to support a healthier ecosystem.²⁵⁰

Dr Victor Steffensen of the Firesticks Alliance Indigenous Corporation, an experienced practitioner in cultural fire practices, outlined the diverse benefits of cultural burning at a public hearing:

Indigenous fire management is not just about burning. It is about many layered benefits that come from land. So, traditional knowledge is structured on a number of knowledge categories, which evolves every living thing on the landscape, including people. And when we apply certain practice to landscapes, through Indigenous management, there are seven-fold benefits that come from that. So, for example, when we burn, we are looking after trees. We are looking after the animals. It is creating employment. It is creating education for people. It is building the bridge of reconciliation between black and white people of Australia. It is just to name a few. So, I know and understand

²⁴⁸ Victorian Traditional Owner Cultural Fire Knowledge Group, *Victorian Traditional Owner Cultural Fire Strategy*, 2019, p. 7.

²⁴⁹ See, for example, Cam Walker, *Transcript of evidence*, pp. 25–26; Erin Rose, Budj Bim World Heritage Executive Officer, Gunditj Mirring Traditional Owners Aboriginal Corporation, Public hearing, Via videoconference, 16 June 2021, *Transcript of evidence*, p. 2.

²⁵⁰ Erin Rose, *Transcript of evidence*, p. 5.

and also seen evidence that young people improve their lives when we get them on Country.²⁵¹

Dale Tonkinson, Biodiversity Advisor at the CFA, described how traditional fire management was ‘undertaken by local people at local scales’, noting that ‘we could probably learn an awful lot from that’.²⁵²

Sharon Terry from Greater Shepparton City Council attributed the decline in use of traditional land management practices, such as cultural burning, to biodiversity loss:

The removal of traditional management practices from Country is a major source of biodiversity loss and continues to be. And we think it will increase until that management is put back onto Country.²⁵³

A number of stakeholders advocated for greater self-determination in the use of cultural fire practices, including by increasing First Nations’ capacity and control. For example, Ms Rose explained:

the longer-term goal is to step away from even needing to have, I guess, the DELWP involvement or CFA involvement, where we can manage that ourselves. But we need to increase capacity within our own organisation, and also too we need resources to be able to manage that. We have got lots of surrounding assets and stuff like that too, so safety is the utmost important thing. You need insurances and all sorts of things.²⁵⁴

Some stakeholders emphasised the importance of ensuring traditional knowledge continues to be overseen by Traditional Owner groups. For example, Monica Morgan from Yorta Yorta Aboriginal Corporation stated:

Unfortunately, we put a whole array of strategies on the table, but non-Indigenous people seem to be very, very keen on Indigenous property and knowledge. And we are very, very keen in not imparting it too much because it belongs to us. And when you talk about knowledge you have got to talk about the people who hold it.²⁵⁵

Dr Steffensen explained that for traditional custodians, when it comes to matters such as cultural burning, the interference of external agencies can potentially undermine or even jeopardise important cultural knowledge:

It is all based on not understanding the land. So, that is why the training programs are so important. That they are learning this, because it is very complex. But what we see as agencies are jumping the gun and running off and without the – without any of the knowledge and calling it cultural burning, which jeopardises that knowledge. And so, yes, so that is a big risk for our knowledge and to demonstrate it incorrectly will

²⁵¹ Dr Victor Steffensen, Co-founder, Firesticks Alliance Indigenous Corporation Public hearing, Shepparton, 27 April 2021, *Transcript of evidence*, p. 2.

²⁵² Dale Tonkinson, *Transcript of evidence*, p. 12.

²⁵³ Sharon Terry, *Transcript of evidence*, p. 24.

²⁵⁴ Erin Rose, *Transcript of evidence*, p. 6.

²⁵⁵ Monica Morgan, *Transcript of evidence*, p. 4.

undermine our knowledge and opportunities for Aboriginal people. And disrespectful knowledge holders, as well.²⁵⁶

Dr Jack Pascoe from the Conservation Ecology Centre highlighted the interruption of practice in traditional land management techniques such as cultural burning, noting that these cannot be expected to now reverse the trajectory of decline:

I think it is becoming embraced now. It is no secret that the traditional ecological knowledge of Aboriginal people was not valued for a very long time. I think it is becoming so now, but in that process it has not been practised for a long time. In many situations it has, but in your landscape, for instance, it has not been practised for a long time. I do not think you will have to ask too many Traditional Owners if they have ever had one of their elders locked up for starting fires, for instance. Those stories are legion ... So there is that interruption of practice. So why hasn't it been taken up wholeheartedly previously? Probably because it was not seen for a generation, so what was there to take up? I think it is now. I think we have to be careful expecting a practice that was developed over a very long time in a climate and a landscape that were very different to come in and save the day now. It absolutely has a role to play, and it will have a role to play, but it cannot be expected to undo the damage of generations of neglect.²⁵⁷

In terms of coordination between Traditional Owners and government agencies in relation to cultural fire, the Committee heard that this can differ depending on the agency and available resourcing. Michael Sherwen, Cultural Heritage Advisor at the CFA, highlighted the importance of 'walking together and celebrating all of our heritage', and stated that the CFA 'has got the appetite to work with the Indigenous communities, but ... it is about resourcing and allocation'.²⁵⁸

In the 2021-22 Victorian Budget, \$22.5 million was allocated to implementation of the Cultural Fire Strategy. This included for the establishment of a Cultural Fire Leadership Group to facilitate partnerships between Traditional Owners and land managers in delivering localised cultural fire plans.²⁵⁹ At a public hearing in August 2021, Carolyn Jackson from DELWP described this funding and the Cultural Fire Strategy's implementation:

Dedicated funding will see The Victorian Traditional Owner Cultural Fire Strategy implemented, supporting Traditional Owners to undertake cultural burning and ensure this knowledge is sustained through generations. This investment will be delivered in partnership with Victorian Traditional Owner corporations, DELWP, Parks Victoria and the CFA, and will create new employment opportunities for Aboriginal people.²⁶⁰

256 Dr Victor Steffensen, *Transcript of evidence*, p. 5.

257 Dr Jack Pascoe, *Transcript of evidence*, p. 53.

258 Michael Sherwen, Cultural Heritage Advisor, Country Fire Authority Public hearing, Melbourne, 11 March 2021, *Transcript of evidence*, p. 17.

259 Victorian Government, *Supporting Traditional Owners To Care For Country*, media release, 9 May 2021.

260 Carolyn Jackson, *Transcript of evidence*, p. 2.

Hamish Webb from DELWP outlined the importance of self-determination in relation to cultural practices and the Victorian Government's position in playing a supporting role:

One of the key things around cultural fire is that it is a Traditional Owner practice and it needs to be delivered by Traditional Owners in line with the principles of self-determination, so as a government we will not be telling the Traditional Owners what to do and how to manage with cultural fire. We will be there to support them.²⁶¹

However, the Committee heard that there are legislative barriers to progressing self-determination in relation to cultural fire practices. In particular, Mr Webb outlined barriers regarding bushfire management and the responsibilities of the Chief Fire Officer under the Forests Act to maintain and suppress bushfire.²⁶²

Self-determination in biodiversity governance arrangements is discussed further in Chapter 9.

In further written information provided to the Committee, DELWP noted that in addition to its commitment to implement the Cultural Fire Strategy, it has also committed to:

- reviewing and reporting on procedural, policy and legislative barriers to cultural fire practice
- establishing Traditional Owner-led leadership and governance arrangements to lead the implementation of cultural fire practices.²⁶³

The Committee welcomes the Victorian Government's commitment to ensuring Traditional Owners lead the strategy for, and implementation of, cultural fire practices on Country.

FINDING 37: Cultural fire is an important component of management of Country for Traditional Owner groups. The vision for the future of cultural fire in Victoria, as articulated by Traditional Owners in the *Victorian Traditional Owner Cultural Fire Strategy*, must be supported and implemented by the Victorian Government.

RECOMMENDATION 45: That the Victorian Government continue to work with local government authorities and other relevant land managers to promote and enable partnerships between these bodies and Traditional Owner groups, in order to realise the vision articulated in the *Victorian Traditional Owner Cultural Fire Strategy*, and achieve greater use of cultural fire on Country.

²⁶¹ Hamish Webb, *Transcript of evidence*, p. 11.

²⁶² *Ibid.*, p. 5.

²⁶³ Department of Environment, Land, Water and Planning, hearing, response to questions on notice received 30 August 2021, pp. 1-2.

At a public hearing, Daniel Miller from Gunaikurnai Land and Waters Aboriginal Corporation spoke of the need for cultural burning educational accreditation, with a particular focus on the Gippsland environment:

We already do it in an unaccredited way, I guess, for people as part of their cultural education. But we are also looking at not being the keeper of all this knowledge but helping to facilitate that, again, in an accredited way. So we have strategic partnerships with several universities for outcomes that are similar to what we are talking about, and then the next step would be to help that to realise that level of training. Again, it is not about us being the keeper and deliverer of all of it; it is often about a place where it can be shared together.²⁶⁴

Uncle Russell Mullett, Registered Aboriginal Party Manager at Gunaikurnai Land and Waters Aboriginal Corporation, told the Committee of the importance of cultural burns:

one of the things about it is we know what bushfires raging do and how deep into the soils those fires penetrate, and we know the effects. I think it takes at least 10 or 15 years for it to come back. But that coming back—the bush is resilient; it comes back thicker than previously. But it also nukes a lot of the animals in it. With cool burning regimes, it trickles around. You know, people want to question it. It is about not scorching yourself and not scorching the animals.²⁶⁵

RECOMMENDATION 46: That the Victorian Government work in collaboration with Traditional Owners to offer accredited qualifications in conservation and Indigenous land management, such as, for example, the Certificate III in Indigenous Land Management offered in NSW.

²⁶⁴ Daniel Miller, *Transcript of evidence*, p. 48.

²⁶⁵ Uncle Russell Mullett, Registered Aboriginal Party Manager, Gunaikurnai Land and Waters Aboriginal Corporation, Public hearing, Via videoconference, 26 August 2021, *Transcript of evidence*, p. 49.

PART D: GOVERNANCE, COMPLIANCE AND MONITORING

9 Governance and implementation

This Chapter discusses the framework for environmental governance in Victoria, including in relation to the role of the Department of Environment, Land, Water and Planning (DELWP) and in terms of scientific governance. It also considers issues relating to governance for Traditional Owners and local government authorities, as well as the broad implementation of *Protecting Victoria's Environment – Biodiversity 2037* (Biodiversity 2037). In addition, the Chapter outlines the importance of public awareness and engagement in relation to biodiversity.

9.1 Victorian environmental governance

As discussed throughout this report, Victorian ecosystems and biodiversity are experiencing significant and, in some circumstances, irreversible decline. In responding to these challenges, transformative change is needed to prevent these impacts from worsening. Governance mechanisms therefore need to be capable of rising to this challenge. As highlighted by Dr Brian Coffey, Vice-Chancellor's Research Fellow at the Centre for Urban Research at RMIT University, who has undertaken research into Victoria's environmental governance for the past 20 years, these mechanisms must maintain, and enhance, ecosystem integrity:

If the profound economic, social and ecological consequences of ecosystem decline are to be avoided or mitigated, Victoria's governance systems must be designed to maintain (and enhance) the integrity of ecosystems.¹

In light of the critical role that biodiversity and environmental services play more broadly, such as for health, wellbeing and economic outcomes, there is a need to ensure a whole-of-government approach to recognising and protecting environmental values.

In its submission, the Ecological Consultants Association of Victoria asserted that the environment has been 'a low priority in government positions and policies' and that this has contributed to 'current (and future) ecosystem declines', including through poor regulation, inadequate funding for management, undervaluing of professional services and advice and the over-simplification of complex processes resulting in poor management implementation.²

¹ Dr Brian Coffey, *Submission 781*, p. 3.

² Ecological Consultants Association of Victoria, *Submission 499*, p. 9.

Dr Coffey outlined a number of potential opportunities for improvement for environmental governance in Victoria, including:

- governance mindsets can be narrow—for example, in relation to views of nature as a resource or asset rather than acknowledging its crucial role in supporting human life and wellbeing
- policy frameworks may not be fit for purpose and could benefit from an overarching sense of direction and urgency
- there is space for more purposeful resourcing and implementation of policies and legislation
- there is a need for greater focus on community awareness and understanding of the importance of healthy ecosystems
- existing knowledge is not being used to inform policy, planning and decision making
- there are opportunities for a more systemic approach to auditing public authorities' environmental performance.³

The following sections address particular elements of Victoria's environmental governance arrangements.

9.1.1 Department of Environment, Land, Water and Planning

As outlined in Chapter 2, DELWP is the primary department for environmental matters, with functions relating to climate change, energy, environment, water, forests, planning and emergency management. DELWP's website states that the amalgamation of these functions in one department maximises 'connections between the environment, community, industry and economy'.⁴ In its submission, DELWP expressed its commitment to ensuring thriving natural environments:

DELWP is committed to creating a liveable, inclusive and sustainable Victoria with thriving natural environments - where the community is at the centre of everything we do. DELWP works in partnership with government departments, agencies and stakeholders to protect and preserve Victoria's richly diverse, unique and precious natural environment.⁵

However, submitters to the Inquiry raised several concerns about DELWP's role in environmental protection. One of these is that the department is too large, and focuses on too many policy areas, to be effective. For example, John Cameron, a forestry and business consultant, described the complex nature of the department's structure:

Over the last couple of decades, mega departments have been created with too many unrelated functions combined into one large department headed by a Secretary

³ Dr Brian Coffey, *Submission 781*, p. 4.

⁴ Department of Environment, Land, Water and Planning, *Our department: What we do*, 2021, <<https://www.delwp.vic.gov.au/our-department/what-we-do>> accessed 20 September 2021.

⁵ Department of Environment, Land, Water and Planning, *Submission 927*, p. 6.

unlikely to have a deep understanding of all functions and who reports to four Ministers defusing accountability ... Under DELWP for example, the functions are headed by seven Assistant Secretaries who report to one Departmental Secretary who then reports to four Ministers two of which head two Ministries ...⁶

Another critique relates to the frequent restructuring of the department and susceptibility to policy and funding changes. Mark Feltrin, an individual submitter with a background in natural resource management, stated that: ‘DELWP is colloquially known as [the] department of name change’. He added that despite the changing policy cycle, ‘on ground needs remain’.⁷

In addition, various submitters raised the issue of a conflict between DELWP’s policy areas—in particular, conflicting priorities between environmental and planning issues. For example, the Murrindindi Climate Network stated that ‘multiple often conflicting policy objectives within the same agency’ are the ‘intrinsic problem of DELWP’, which are ‘undermining and hampering effective compliance control and law enforcement’.⁸ Atholie Harden, a wildlife shelter operator, asserted that DELWP ‘cannot be expected to operate effectively in regard to the environment while the department is wearing so many hats’.⁹

In its submission, Environment Victoria provided the results of a survey of its supporter base relating to the decline of Victoria’s ecosystems. On the issue of environmental governance, respondents were asked to provide their opinion on whether government bodies had enough power/authority, funding and willingness to address environmental issues, in managing the decline in Victoria’s ecosystems. The results of this question are shown in Table 9.1, with respondents ranking DELWP and Parks Victoria as having relatively low levels of each of these components.

Table 9.1 Perceptions of government bodies in addressing environmental issues

Perception of whether key agencies have... (scored out of 5)	DELWP	Parks Victoria
...Enough power/authority	2.1	2.0
...Enough funding	1.7	1.7
...Enough willingness	2.2	2.6

Source: Environment Victoria, *Submission 906*, p. 21.

Environment Victoria submitted that there is a ‘clear perception that neither DELWP nor Parks Victoria have the funding necessary to protect and restore the state’s ecosystems’, nor the necessary powers or authority. It also stated that these results indicate that ‘there is also some pessimism about the extent to which these agencies are doing everything they could’.¹⁰

⁶ Cameron Consulting, *Submission 471*, p. 37.

⁷ Emerald Plan Foundation, *Submission 215*, p. 4.

⁸ Murrindindi Climate Network Inc., *Submission 759*, p. 11.

⁹ Atholie Harden, *Submission 764*, p. 2.

¹⁰ Environment Victoria, *Submission 906*, p. 21.

Stakeholders also noted findings of previous inquiries and audits relating to DELWP's management of the environment. For example, the report of the Victorian Auditor-General's Office (VAGO) on protecting critically endangered grasslands concluded there were gaps in governance arrangements which prevented the effective future delivery of the Melbourne Strategic Assessment (MSA) program.¹¹

Various suggestions were made by stakeholders to address perceived deficits in DELWP's governance of environmental issues. The Ecological Consultants Association of Victoria recommended more resourcing for scientists (including mathematical modellers) in both DELWP and Parks Victoria, with greater transparency from DELWP in relation to their work.¹² Friends of Crusoe Reservoir and No. 7 Park suggested DELWP employ more ecologists, including embedding staff in regional areas and 'at all levels of decision-making processes'.¹³

Two further suggestions put forward by stakeholders for addressing environmental governance challenges are discussed in Section 9.1.2

9.1.2 Scientific governance

One theme that was raised by stakeholders to the Inquiry was the ways in which scientific leadership informed, and contributed to, environmental governance in Victoria.

As outlined in Chapter 2, there are a number of government bodies or officeholders that seek to ensure evidence-based environmental policies.

The Arthur Rylah Institute for Environmental Research is DELWP's biodiversity research centre and provides strategic research and management advice on policy relating to ecologically sustainable land and water management and resource use.¹⁴ The Centre undertakes science aimed at 'high-quality evidence-based decision-making by governments and the communities' and has associations with Australian and international universities.¹⁵ Dr Kim Lowe, Research Director at the Arthur Rylah Institute, stated that the Institute's location within DELWP's biodiversity policy division means it has 'very strong links to policy and management' and is 'unique in understanding the context of providing science within a government institution'.¹⁶

The Commissioner for Environmental Sustainability undertakes independent and objective scientific reporting in relation to Victoria's natural environment and encourages ecologically sustainable development in decision-making. This includes through:

11 Victorian Auditor-General's Office, *Protecting Critically Endangered Grasslands: Independent assurance report to Parliament*, June 2020, p. 8.

12 Ecological Consultants Association of Victoria, *Submission 499*, p. 27.

13 Friends of Crusoe Reservoir & No. 7 Park, *Submission 336*, p. 4.

14 Victorian Government, *About ARI*, 2021, <<https://www.ari.vic.gov.au/about-us/about-ari>> accessed 20 September 2021.

15 Dr Kim Lowe, Research Director, Arthur Rylah Institute for Environmental Research Public hearing, Melbourne, 21 April 2021, *Transcript of evidence*, p. 11.

16 *Ibid.*, p. 12.

- the five-yearly State of the Environment report, as well as five-yearly reports on the State of the Marine and Coasts, State of the Yarra and its Parklands and State of the Forests¹⁷
- strategic audit reports of the implementation of environmental management systems by certain Victorian Government agencies.¹⁸

There are a number of related individual science leadership roles. Established in 2017, the Chief Environmental Scientist is appointed to the Environment Protection Authority Victoria (EPA) and has functions to advise the EPA leadership team, Minister for Energy, Environment and Climate Change and Chief Health Officer on matters relating to the EPA's duties, functions and objectives.¹⁹ This includes on environmental quality and risks of harm to human health and the environment. It does not include any functions specifically relating to biodiversity or changes to ecosystems. Further, Parks Victoria's Chief Conservation Scientist, established in 2016, has functions to improve the use of science and knowledge in driving innovation in Parks Victoria's work.²⁰

Victoria's Lead Scientist, supported by the Department of Jobs, Precincts and Regions, has broad responsibilities relating to science, technology, engineering and mathematics. The priorities of the role include to advocate for the importance of these fields to Victoria's economic future, enhance university and business engagement opportunities, and identify new technologies. It does not have any specific functions relating to environmental science.²¹

In addition, various Victorian Government departments and agencies incorporate science programs and divisions.

The below sections discuss two proposals for governance reform raised by stakeholders: a chief biodiversity scientist and an independent environment authority or departmental restructure.

Chief Biodiversity Scientist

As noted above, some stakeholders raised concerns regarding DELWP's many policy responsibilities and the need for further scientific resourcing. One proposal made was to implement the recommendation of the *State of the Environment 2018* (SoE 2018) to establish a Chief Biodiversity Scientist. As envisaged by SoE 2018, this role would:

- oversee the governance and coordination of investment in the science and data capability of all government biodiversity programs

¹⁷ In accordance with the *Marine and Coastal Act 2018* (Vic), *Yarra River Protection (Wilip-gin Birrarung murron) Act 2017* (Vic) and *Sustainable Forests (Timber) Act 2004* (Vic).

¹⁸ Commissioner for Environmental Sustainability Victoria, *About*, 2021, <<https://www.ces.vic.gov.au/about>> accessed 15 November 2021.

¹⁹ See, *Environment Protection Act 2017* (Vic) s 374.

²⁰ Victorian Government, *Distinguished Scientist Appointed To Parks Victoria*, media release, 31 March 2016.

²¹ Department of Jobs, Precincts and Regions, *Victoria's Lead Scientist*, 2021, <<https://djpr.vic.gov.au/victorias-lead-scientist>> accessed 21 September 2021.

- provide advice to the Secretary of DELWP and Minister for Environment in order to improve the impact of investment in biodiversity research across the Victorian environment portfolio.²²

SoE 2018 asserted that this role could extend to providing advice on the delivery of biodiversity targets contained in Biodiversity 2037.²³

Dr Gillian Sparkes, Victoria's Commissioner for Environmental Sustainability, explained the need for this role at a public hearing:

A major recommendation is that we need science leadership across the portfolio in how we are managing our science program, because there is a lot of investment. There is a heap of work going on. Making sure it is well coordinated across the various departmental divisions as well as across the portfolio more generally would help. So what we are saying is that a strategic science leader, a chief biodiversity scientist, would be a very good starting point for having a view about the capability of our science and where the investment is and how we can improve them. Sometimes with these things you do not need new money, you just need better coordination and higher impact ...²⁴

The Victorian Government responded to SoE 2018 in December 2020. In its response, the Victorian Government acknowledged the importance of 'continual improvement in the way data and knowledge are used' across the portfolio but considered that the intent of establishing a Chief Biodiversity Scientist had been achieved through other mechanisms. It stated that it would instead ensure 'cohesive, interdependent and collaborative' use of existing scientific committees, groups and forums:

DELWP has implemented a range of activities since the State of the Environment 2018 report was prepared, that respond to the requirement to establish a Chief Biodiversity Scientist.

The opportunity for the Victorian Government of achieving the intent of the Chief Biodiversity Scientist recommendation is through the recent establishment of a new mix of key entities, including the newly formed DELWP Science Reference Panel, the recently formed DELWP Science Leadership Group, the VicEnvironments Forum (VEF) and supporting VEF Science Committee, as well as more targeted use of the existing Flora and Fauna Guarantee Act Scientific Advisory Committee and DELWP's biodiversity research centre of excellence, the Arthur Rylah Institute.

Improved oversight of this coordinated effort can be realised by using these entities in a more cohesive, interdependent and collaborative manner than was previously possible. These arrangements are now in place and this will provide esteemed counsel to the DELWP Secretary and the Minister for Environment to improve the impact of investment in biodiversity research across the Victorian environment portfolio.

22 Office of the Commissioner for Environmental Sustainability, *Victorian State of the Environment 2018 Summary Report*, 2018, p. 59.

23 Ibid.

24 Dr Gillian Sparkes, Commissioner, Commissioner for Environmental Sustainability Victoria, Public hearing, Melbourne, 3 December 2020, *Transcript of evidence*, p. 3.

Implementation of this approach and its effectiveness in meeting the intent of the recommendation will be reviewed and evaluated within 12 months of establishment of the Science Reference Panel to inform future implementation.²⁵

While this review and revised focus on scientific governance is welcome, it is important to note that the Science Reference Panel is a departmental advisory panel without statutory functions. This means that the panel has no statutorily mandated responsibilities and can be abolished or reoriented at any time. It is also unlikely to have the same level of external-facing accountability or transparency, and there is little public information currently available on the work of the panel. Noting the concerns communicated to this Committee and discussed above, the public and community component of this type of scientific leadership function is clearly important.

In addition, despite the Victorian Government's assurance that there are arrangements in place to ensure effective coordination of the various entities, it is unclear how such arrangements will operate or which mechanism has overarching leadership of biodiversity science and data capability.

Following the release of the Victorian Government's response to SoE 2018, the Victorian National Parks Association noted the 'benefits and opportunities' of establishing such a role, arguing that there was 'very little to lose if we do – but a highly diverse and cherished natural heritage to lose if we don't'.²⁶ In an article responding to the release of SoE 2018, Associate Professor Geoffrey Wescott, Honorary Research Fellow, School of Life and Environmental Sciences at Deakin University, argued that appointment of a Chief Biodiversity Scientist was a 'good starting point' but 'must be only the first step in raising the lowly position of biodiversity conservation, not only in the environment department but across the entire government'.²⁷

Stakeholders to the Inquiry similarly supported the introduction of this position and its potential contribution to scientific leadership on biodiversity. The Wilderness Society advocated for implementation of the SoE 2018 recommendation,²⁸ and Climate Action Moreland stated that the position could 'improve investment impact and coordination across biodiversity science and research'.²⁹ An individual submission from Elissa Ashton-Smith, provided prior to the Victorian Government's response to the report, explained the importance of the public-facing aspect of scientific leadership:

There is a need for people in leadership roles to focus much more on explaining the interconnections and processes of ecological systems – telling the story of nature that is not just about individual species, but about the connections and inter-dependencies. In the absence of this, many people struggle to make sense of why removing seaweed

²⁵ Victorian Government, *Victorian Government response to the State of the Environment 2018 report*, 10 December 2020, p. 13.

²⁶ Victorian National Parks Association, 'Victoria needs leadership for biodiversity', *Park Watch*, 18 March 2021, <<https://vnpa.org.au/park-watch-article-victoria-needs-leadership-for-biodiversity>> accessed 10 September 2021.

²⁷ Geoffrey Wescott, 'What Australia can learn from Victoria's shocking biodiversity record', *The Conversation*, 21 March 2019, <<https://theconversation.com/what-australia-can-learn-from-victorias-shocking-biodiversity-record-113757>> accessed 10 September 2021.

²⁸ The Wilderness Society, *Submission 899*, p. 3.

²⁹ Climate Action Moreland, *Submission 855*, p. 5.

from a beach might affect shorebirds that breed in the Northern Hemisphere, for example. We need voices of leadership to tell a narrative that explains the connections in terms of the bigger ecological picture. It is disappointing that the Government has delayed their response to the recommendation by the Commissioner for Environmental Sustainability for the appointment of a Chief Biodiversity Scientist as this is the sort of thing that may assist in raising ecoliteracy.³⁰

The Committee considers that there is a need for scientific leadership across the environment portfolio to ensure a well-coordinated, targeted science program. However, it is unclear as to whether the complex assortment of groups and panels outlined by DELWP in its response to SoE 2018 as a substitute for the role, is capable of providing the strong scientific leadership that is needed in relation to biodiversity science and research. A statutory Chief Biodiversity Scientist with mandated responsibilities and functions has the potential to provide overarching leadership in relation to existing mechanisms and improve public transparency and engagement with the research program. The role would work closely with other key scientific leadership roles, such as the Chief Environmental Scientist, Chief Conservation Scientist and Victoria's Lead Scientist.

RECOMMENDATION 47: That the Victorian Government consider the establishment of a Chief Biodiversity Scientist to provide scientific leadership and coordination of publicly-funded biodiversity research across the environment portfolio, and to promote the use of biodiversity science and data within government policy, programs and initiatives.

Independent environment authority or departmental restructure

DELWP has described its existing departmental framework as one which strengthens 'connections between the environment, community, industry and economy' in bringing together 'Victoria's planning, local government authorities, environment, forests, emergency management, energy, climate change and water functions into a single department'.³¹ However, a number of stakeholders advocated for the creation of an independent environmental agency or departmental restructure to address perceived conflicts in terms of policy areas within DELWP. As discussed above, these conflicts include in relation to how planning and development is balanced with environmental protection.

For example, the Australian Wildlife Protection Council advocated for a departmental restructure to better prioritise environmental issues:

A long and deteriorating history of government conduct in relation to wildlife conservation clearly indicates that action is now required. In Victoria, that action is a restructuring of DELWP with the precise goal of extracting any responsibility for the

³⁰ Elissa Ashton-Smith, *Submission 909*, p. 5.

³¹ Department of Environment, Land, Water and Planning, *Regulatory framework*, 2019, p. 6.

care of biodiversity from this department and placing this vital task into the hands of a new department with the sole purpose of protecting Victoria's environment and the plants and animals that live in it.³²

The South Gippsland Conservation Society asserted that 'an independent authority must administer and enforce our environmental laws at arm's length from government'.³³

Professor Lee Godden, Director of the Centre for Resources, Energy and Environmental Law at the University of Melbourne, suggested the establishment of an independent authority to undertake ecosystem protection and restoration. She argued that the formation of a separate agency to oversee this work would help ensure that the cumulative impacts of climate change are considered and addressed strategically:

It helps with that cumulative impacts problem. Because your regulation or your regulator is typically geared to enforcing your existing laws and compliance and so on on an incident or a project-by-project basis. When we are thinking about climate change impacts, when we are thinking about the loss of biodiversity due to bushfires, we are thinking of broadscale effects that add up over a wide scale, over time, and our current processes do not capture that very well. Therefore I am suggesting an independent agency—and there would need to be significant resourcing of such an agency—would be better placed to deal with those cumulative impacts.³⁴

The Committee recognises the concerns of stakeholders in relation to perceived conflicts in policy areas within DELWP and partnering agencies. The Victorian Government's focus at this time should remain on effective funding and implementation of Biodiversity 2037 as well as ensuring strong partnerships between agencies.

FINDING 38: Some stakeholders have concerns regarding perceived conflicts in policy areas within the Department of Environment, Land, Water and Planning and partnering agencies.

RECOMMENDATION 48: That the Victorian Government establish a standalone Department of the Environment, with its own Minister, that has the sole purpose of protecting the environment and, in particular, native species.

Discussion of advocacy for an independent conservation regulator is contained in Chapter 10. Issues relating to planning and development were considered in Chapter 6.

³² Australian Wildlife Protection Council, *Submission 73*, p. 3.

³³ South Gippsland Conservation Society Inc, *Submission 646*, p. 12.

³⁴ Professor Lee Godden, Director, Centre for Resources, Energy and Environmental Law, University of Melbourne Public hearing, Melbourne, 20 April 2021, *Transcript of evidence*, pp. 24–25.

9.1.3 Whole-of-government approach and accountability

One theme that emerged throughout the Inquiry was the need for a whole-of-government commitment to environmental outcomes. The Victorian Government has acknowledged the importance of this in Biodiversity 2037 and includes a priority action for embedding the consideration of natural capital into decision-making across government. Some of the initiatives identified to carry out this action include:

- In the short term, prepare and publish a set of environmental accounts for the Department and portfolio partners and contribute to relevant national initiatives.
- In the longer term, integrate the System of Environmental-Economic Accounting into reporting across the whole-of-government, and into decision making and evaluation of social, economic and environmental outcomes and trade-offs.
- Partner with the broader business community and industry leaders to promote the increased adoption of environmental-economic accounting.³⁵

Biodiversity 2037 also includes a priority for the adoption of a whole-of-government approach to implementing the strategy.³⁶

The following sections discuss a number of issues relating to a whole-of-government approach to biodiversity conservation and effective accountability.

Public authority duty

The *Flora and Fauna Guarantee Amendment Act 2019* (Vic) (FFG Amendment Act) introduced a public authority duty—a mandatory, non-discretionary requirement—for public authorities to ‘give proper consideration to’ the objectives of the *Flora and Fauna Guarantee Act 1988* (Vic) (FFG Act) in carrying out their functions.³⁷ Those objectives relate to the conservation of native flora and fauna species and the protection of Victoria’s biodiversity.³⁸ Prior to this amendment, public authorities were required only to ‘have regard to’ the objectives of the FFG Act. In addition, public authorities must also give proper consideration to other instruments made under the FFG Act, including action statements, critical habitat determinations and the State’s Biodiversity Strategy—Biodiversity 2037.

This requirement ensures that public authorities consider the potential impacts of their actions on biodiversity, including:

- long- and short-term impacts
- beneficial and detrimental impacts

³⁵ Department of Environment, Land, Water and Planning, *Protecting Victoria’s Environment – Biodiversity 2037*, 2017, p. 58.

³⁶ *Ibid.*, p. 62.

³⁷ See, *Flora and Fauna Guarantee Act 1988* (Vic) s 4B.

³⁸ *Ibid.*, s. 4.

- direct and indirect impacts
- cumulative impacts
- impacts of potentially threatening processes.³⁹

Further, the Minister may issue guidelines in relation to the proper consideration of these objectives and can request a public authority to provide information that shows that they are complying with the requirement.⁴⁰

The duty, along with the other provisions of the FFG Amendment Act, came into effect on 1 June 2020.

In its submission to the Inquiry, Environmental Justice Australia highlighted the power of this type of duty in ensuring that public authorities must give biodiversity matters serious attention:

While at first glance the obligation to ‘give proper consideration’ to these objectives sounds may appear weak, it is important to appreciate that this language and the obligation on public authorities that it creates is drawn from Victoria’s *Charter of Human Rights and Responsibilities Act 2006*. In that context, the Victorian Supreme Court has made it very clear that the language means that while public authorities are not required to be overzealous or legalistic in their approach, they must demonstrably give human rights obligations serious attention, including adapting and updating their conduct and practices in accordance with them.⁴¹

Environmental Justice Australia’s submission described the new requirement as a ‘welcome reform which could make an important contribution to embedding consideration of biodiversity conservation across government departments, agencies and local government if it is thoroughly implemented’. Environmental Justice Australia stated that this would require:

- education for public authorities in relation to the new obligations
- development of ministerial guidelines for priority areas or authorities
- demonstration of how public authorities have responded to these obligations, such as through policies that address biodiversity considerations and principles where an authority’s functions impact on biodiversity
- ministerial and departmental willingness to use the power to call for an explanation where required.⁴²

Other stakeholders similarly welcomed the new duty as a form of whole-of-government accountability in relation to decision-making that impacts biodiversity. The Bendigo and District Environment Council, Doctors for the Environment Australia and the Victorian

³⁹ Ibid., s. 4B(3).

⁴⁰ Ibid., ss 4B(4), 4C.

⁴¹ Environmental Justice Australia, *Submission 760*, p. 7.

⁴² Ibid., pp. 7–8.

National Parks Association submitted that public authorities must be made aware of the new duty to consider biodiversity conservation in carrying out their duties.⁴³

The Victorian National Parks Association stated that implementation must ensure that public consultation processes occur regarding the making of any ministerial guidelines:

It is important to ensure that the Flora and Fauna Guarantee Act 1988 is adequately implemented. This includes ... ensuring that public authorities are aware of their new duty to consider biodiversity conservation and the objectives of the *Flora and Fauna Guarantee Act 1988* and ensuring that any making of guidelines relating to duty includes a vigorous public consultation.⁴⁴

Doctors for the Environment Australia also advocated for further strengthening of the duty, so that 'public authorities are required to comply with the provisions of the FFG Act, rather than simply consider them'.⁴⁵

DELWP has prepared a fact sheet on the public authority duty, which sets out what public authorities must consider in carrying out the duty and how the duty interacts with other obligations. It also explains the purpose of ministerial guidelines which, upon its release in 2020, were stated to be 'under development':

Ministerial guidelines will provide practical steps to support public authorities and ensure biodiversity is given proper consideration. These are being developed and will involve a consultation process.⁴⁶

In addition, DELWP's website provides that 'further guidance will be prepared to support public authorities to fulfill their obligations under the FFG Act'.⁴⁷

The Committee welcomes the new duty for public authorities to consider biodiversity in exercising their functions. As noted by Environmental Justice Australia, the provision acknowledges that a broad range of government decisions and functions can impact biodiversity, and as such, a whole-of-government responsibility is needed to ensure that implementation of the objectives of the FFG Act is not solely the remit of the Minister for Environment and DELWP.⁴⁸

However, it is imperative that the duty is properly implemented to ensure that it is as effective as it can be in decision-making processes. The Committee notes that although the duty came into effect on 1 June 2020, there is limited public information on the obligation and its requirements, and ministerial guidelines are yet to be introduced.

43 See, Bendigo and District Environment Council, *Submission 265*, p. 1; Doctors for the Environment Australia, *Submission 725*, p. 4.

44 Victorian National Parks Association, *Submission 102*, p. 4.

45 Doctors for the Environment Australia, *Submission 725*, p. 10.

46 Department of Environment, Land, Water and Planning, *Flora and Fauna Guarantee Act 1988: Public authority duty 2020*, p. 1.

47 Department of Environment, Land, Water and Planning, *Conserving threatened species: Victoria's Framework for Conserving Threatened Species*, 2021, <<https://www.environment.vic.gov.au/conserving-threatened-species/victorias-framework-for-conserving-threatened-species>> accessed 22 September 2021.

48 Environmental Justice Australia, *Submission 760*, p. 6.

In light of the rapid nature of ecosystem decline, implementation must be fast-tracked and include a well-resourced education program for public authorities and the community on the duty as well as the development of ministerial guidelines.

RECOMMENDATION 49: That the Victorian Government ensure that the new public authority duty introduced by the *Flora and Fauna Guarantee Amendment Act 2019* (Vic) be effectively implemented, including through:

- information and education for public authorities and the broader community on the new requirements of the Act
- development of ministerial guidelines which provide practical advice to support the implementation of the duty, with a public consultation process
- demonstration of how the Victorian Government will ensure that public authorities are responsive to their obligations in relation to the duty.

Ecological literacy

Whole-of-government ecological literacy was raised by some stakeholders as an area for potential improvement.

Dr Coffey from the Centre for Urban Research at RMIT University defined ecological literacy as ‘basic functional education for all people which provides them with the necessary knowledge, skills, and motives to cope with environmental needs and contribute to sustainable development’. Dr Coffey, who has undertaken extensive research into environmental governance models, argued that this concept is important in relation to the public sector as ‘public servants advise on and implement decisions which can have major implications for the environment, and so they need to be ecologically literate if they are to be capable of advising and acting in ecologically responsible ways’.⁴⁹ However, Dr Coffey submitted that this knowledge is currently lacking in Victoria:

it is far from clear that Victoria’s public service have such knowledge and skills ... Improving the ecological literacy of the public sector is therefore critical if public servants are to have the knowledge and know how required to provide meaningful advice to government.⁵⁰

At a public hearing, Dr Coffey described how the need for broad-based education stretched across government agencies, providing an example of the Department of Treasury and Finance:

One of the things that seems to come through is the ecological literacy of our public servants: many in the environment department are probably ecologically literate; in other parts of government they are probably less so because they are just not exposed

⁴⁹ Dr Brian Coffey, *Submission 781*, pp. 9–10.

⁵⁰ *Ibid.*, p. 10.

to this kind of background of thinking ... One of the things would be to think about the people in Treasury. What are their backgrounds? They would most likely be trained as economists. Not to disparage economists, but there has been research done about the way in which economists are trained, and they are trained in a really narrow way; they conceptualise the relationship between the economy and the environment in terms of the environment being just an input to the economy. There is this whole range of economic thinking now which is challenging that, but our mainstream economics schools have not caught up with that, so it is hard to expect then that our treasury officials would understand that if they have received that same narrow training.

... It is a basic, fundamental understanding of what it takes to govern, and if we do not understand that we are reliant on the planet and the ecosystems which support our economies and our societies then the advice they are giving to their managers is going to be misleading.⁵¹

In its submission, the Ecological Consultants Association of Victoria similarly highlighted an absence of environmental understanding. It advocated for decision-makers to 'increase their knowledge and care for the environment', including by ensuring that individuals in executive or management positions have environmental science backgrounds.⁵²

Dr Coffey asserted that tailored training may be helpful to enhance ecological literacy for public sector employees. He provided recommendations for action in this space:

- Inserting a clause in Public Sector Codes of Conduct, that give effect to an environmental charter/ environmental duty of care/ commitment to environmental stewardship; and,
- Establish (potentially compulsory) training short courses for public sector leaders, managers, and officials that cover the foundations of ecological literacy.⁵³

Further, Dr Coffey suggested that the Victorian Public Sector Commission could undertake an assessment of the capacity of the Victorian public sector to practise good environmental governance.⁵⁴

The Committee agrees that an understanding of how government decision-making impacts the environment is important for public sector employees. It notes the principle of decision-making enshrined in Biodiversity 2037, which seeks to ensure that decision-making takes into account all interventions and changes made to the environment and is informed by broader context. The Victorian Government should therefore ensure that staff of government agencies are well-equipped to consider the interaction of environmental issues with their work.

51 Dr Brian Coffey, Vice-Chancellor's Research Fellow, Centre for Urban Research, RMIT University Public hearing, Melbourne, 21 April 2021, *Transcript of evidence*, pp. 35–36.

52 Ecological Consultants Association of Victoria, *Submission 499*, p. 25.

53 Dr Brian Coffey, *Submission 781*, p. 10.

54 Dr Brian Coffey, *Transcript of evidence*, p. 36.

RECOMMENDATION 50: That the Victorian Government investigate and implement whole-of-government training on ecological literacy for all Victorian public servants.

Environmental effects of public bodies and services

A further issue raised throughout the course of the Inquiry relates to how the environmental effects of public bodies and services are monitored and assessed. This links to implementation of the public authority duty under the FFG Act to consider biodiversity impacts, discussed above.

Dr Coffey suggested that one mechanism to ensure further accountability in this space, which has been implemented in international jurisdictions, is to include environmental auditing functions within the remit of the VAGO:

Broadening the charter of ... VAGO to encompass the 'environment'. VAGO could be responsible for auditing the effectiveness, efficiency, economy and environmental effects of government agencies, programs and services. In Canada, there is a statutory position of Commissioner for Environment and Sustainable Development, that sits within the office of the Auditor General. A similar approach could be adopted in Victoria by transferring the office of the Commissioner for Environmental Sustainability from the environment portfolio to the VAGO.⁵⁵

Dr Coffey expanded on this idea at a public hearing, suggesting that the Commissioner for Environmental Sustainability's powers are currently 'quite weak' and could be strengthened:

While we have a Commissioner for Environmental Sustainability in Victoria—it reports through the environment portfolio—the profile is really low. It has been around for 20 years; I do not think anybody really knows about it. Their powers are quite weak. When the office was originally proposed, they were going to have a strategic audit function—that they would systematically assess compliance with environmental legislation. That seemed to not get picked up. So I think there is a lot of room to strengthen the Commissioner's role. You could potentially transfer the office of the Commissioner for Environmental Sustainability into the Auditor-General's office to fulfil that more central public accountability operation.⁵⁶

Dr Coffey stated that 'having these kinds of roles structurally embedded in ... important public accountability offices is a really key achievement' and asserted that 'having these strong foundations for public environmental accountability really contributes to the public accountability of government decision-making at the very centre of government'.⁵⁷

⁵⁵ Dr Brian Coffey, *Submission 781*, p. 8.

⁵⁶ Dr Brian Coffey, *Transcript of evidence*, p. 31.

⁵⁷ *Ibid.*

In a response to questions taken on notice, La Trobe University's Research Centre for Future Landscapes similarly noted the limitations in the Commissioner for Environmental Sustainability's role:

Victoria currently has a Commissioner for Sustainability, whose role is to provide "independent and objective scientific reporting to inform policy-makers, scientists and the wider Victorian public on the state's natural environment" ... The Commissioner's function is restricted to reporting on the condition of Victoria's environment through the 'State of Environment' reports and to "encourage" decision-making that facilitates ecologically sustainable development and sound environmental practices, and "enhance knowledge and understanding" of sustainability issues. In 2017, the powers of the Commissioner were extended to "conduct annual strategic audits of, and prepare reports on, the implementation of environmental management systems by Agencies and public authorities" ... These reports are public reviews but not performance audits. They contain advice and recommendations but do not compel the Government of the day to act.⁵⁸

The Centre's response notes that VAGO's role as an independent office is to conduct financial and performance audits of public sector entities. Performance audits 'provide independent assurance that public sector agencies or programs are achieving their objectives effectively, economically, efficiently and/or in compliance with all relevant legislation'. The response stated that while there is no requirement for agencies to accept or implement the recommendations of these audits, the 'vast majority' are accepted and eventually implemented. The Research Centre for Future Landscapes supported a greater role for environmental auditing:

we recommend that either an independent auditor or a specific branch within VAGO is dedicated to environmental and sustainability audits. In effect, this would merge the responsibilities of the Commissioner for Sustainability - who has a specific remit for the environment and sustainability - with those of VAGO to undertake performance audits, ideally with strengthened powers to implement recommendations.⁵⁹

The Committee recognises the need for strong public accountability in relation to environmental outcomes. In line with the new public authority duty established under the FFG Act for public authorities to give proper consideration to biodiversity when carrying out their functions, it is important that additional checks and balances are in place.

RECOMMENDATION 51: That the Victorian Government consider expanding the powers of the Commissioner for Environmental Sustainability, under the *Commissioner for Environmental Sustainability Act 2003 (Vic)*, to include functions to undertake performance audits in relation to environmental outcomes on a regular basis, and for key programs or agencies, at least every four years. This role could potentially be facilitated through the Victorian Auditor-General's Office.

⁵⁸ La Trobe University Research Centre for Future Landscapes, hearing, response to questions on notice received 14 May 2021, p. 2.

⁵⁹ Ibid., pp. 2-3.

9.1.4 Program cost recovery

The Victorian Government's *Cost Recovery Guidelines* set out its policy principles underpinning cost recovery arrangements. Cost recovery is a direct means of recovering the financial costs of a particular activity, rather than through more general means such as taxation. The Guidelines establish principles of cost recovery, including that fees and charges should generally be set on a full cost recovery basis in order to ensure that objectives of efficiency and equity are met. Other principles of well-designed cost recovery arrangements, according to the Guidelines, include that cost recovery is:

- consistent with, and supportive of, the policy objectives of cost recovery (efficiency, equity and fiscal sustainability)
- imposed directly, where possible
- cost effective and practical
- feasible and legal, including that there are no insurmountable impediments to implementation of the arrangements
- consistent with other policy objectives.⁶⁰

Cost recovery arrangements are in place for various environmental programs and services. However, recent reports and evaluations have noted issues in how some of these arrangements have been implemented.

In VAGO's audit report, *Protecting Critically Endangered Grasslands*, the nature of the cost recovery processes which fund the implementation of the MSA program were explored. Fees are collected in line with the habitat compensation fee model, based on full cost recovery, with a view to achieving cost recovery over the life of the MSA program (to 2062). Fees from land developers are therefore intended to fund the program's delivery, including administration. However, VAGO's report found constraints in the delivery of the fee collection process:

current habitat compensation fees will not achieve full cost recovery, as they have not been indexed or raised since 2013, during which time land value has increased. DELWP has therefore not had enough funds to purchase land in the [Western Grassland Reserve].⁶¹

The audit report highlighted legal and financial risks of the habitat compensation fee model:

In 2013, DELWP identified the need for legal clarity about its powers to increase fees through the habitat compensation model. Under this model, fees were established under Australian government legislation and there was a risk that DELWP was not able to independently impose or control them.

⁶⁰ Department of Treasury and Finance, *Cost Recovery Guidelines*, Victorian Government, January 2013, pp. 5–9.

⁶¹ Victorian Auditor-General's Office, *Protecting Critically Endangered Grasslands*, p. 10.

For the last seven years, DELWP has not increased fees because of these limitations. As a result, revenue generated has not kept pace with increasing land and maintenance costs. DELWP estimates the current fees only cover approximately 43 per cent of the estimated MSA program delivery costs.⁶²

To rectify these funding constraints, the Victorian Government introduced legislation to ensure that full cost recovery is achieved over the life of the MSA, through the *Melbourne Strategic Assessment (Environment Protection Mitigation Levy) Act 2020* (Vic). The Act, which came into effect on 1 July 2020, includes rolling fee adjustment measures and levy increases to ensure cost recovery. However, this time delay in securing funding certainty for the MSA program has had implications for the purchasing of land in the Western Grassland Reserves, and negative impacts for Victorian biodiversity. These issues are discussed further in Section 6.2.3.

As part of the *Independent Review of the Wildlife Act 1975*, the Independent Review Panel released an issues paper in April 2021. This paper highlighted that fees imposed by the *Wildlife Act 1975* (Vic) do not fully recover costs, and outlined the existing process:

Various provisions in the Act provide for charging a fee. Licence and permit fees are typically based on the costs associated with administering and managing the licensing system and the costs of compliance and enforcement. However, the Act does not explicitly state that fees are charged to recover costs; nor does it limit fees to this purpose. Any monies collected do not have to be reinvested in administering the Act or funding wildlife-related activities; they are directed to central revenue.⁶³

The issues paper states that wildlife regulatory agencies need to be sufficiently resourced to undertake their functions, and that adequate funding allows them to access qualified staff, undertake monitoring and compliance activities, adopt new technologies and pursue prosecutions where required. It notes that regulators should 'be clear about who pays for regulatory services, how much and why', and that information should be transparent and facilitate accountability.⁶⁴

It is crucial that government programs with impacts on the environment are appropriately funded, and that, where used, cost recovery principles are effectively implemented. As highlighted in relation to the MSA program's implementation, inefficient cost recovery mechanisms can have significant impacts for biodiversity values.

The Committee considers that review of the funding mechanisms for policies and programs with significant impacts on Victoria's biodiversity is needed to ensure that cost recovery mechanisms are appropriate and capable of adequately funding their objectives.

⁶² Ibid., p. 11.

⁶³ Wildlife Act Review Expert Advisory Panel, *Independent Review of the Wildlife Act 1975: Issues paper*, Department of Environment, Land, Water and Planning, 2021, p. 25.

⁶⁴ Ibid.

RECOMMENDATION 52: That the Victorian Government undertake a review of funding mechanisms for programs or policies that have significant impacts on Victoria’s biodiversity, with a view to ensuring that cost recovery mechanisms are appropriate and capable of adequately funding their objectives.

9.1.5 Building on existing work

The Committee is cognisant of the broad number of environmental inquiries, audits and other reports relating to Victoria’s environment that have been undertaken in recent years. These reports have been an important evidence base for this Inquiry. They include, among others:

- Commissioner for Environmental Sustainability’s SoE 2018
- VAGO reports:
 - *Protecting Victoria’s biodiversity* (2021)
 - *Protecting Critically Endangered Grasslands* (2020)
 - *Reducing Bushfire Risks* (2020)
 - *Protecting Victoria’s Coastal Assets* (2018)
 - *Effectiveness of the Environmental Effects Statement Process* (2017)
 - *Meeting Obligations to Protect Ramsar Wetlands* (2016)
- Legislative Assembly Environment and Planning Committee’s *Inquiry into tackling climate change in Victorian communities* (2020).

In relation to SoE 2018, the Victorian Government published its response in December 2020. It supported—in full, in part or in principle—19 of the report’s 20 recommendations. The only recommendation not supported was for establishment of a contemporary pollen-monitoring network to improve community access to information on pollen levels, which the Victorian Government considered had already been met through existing initiatives.⁶⁵

The Committee considers that these reports make significant contributions to environmental assessment and accountability in Victoria, and more broadly, to the prevention of further ecosystem decline. It encourages the Victorian Government to continue to review their findings and recommendations to ensure progress is made on their implementation.

⁶⁵ Victorian Government, *Victorian Government response to the State of the Environment 2018 report*, pp. 2, 12.

RECOMMENDATION 53: That the Victorian Government ensure continued support for, and implementation of, the findings and recommendations of key audits and inquiry reports, including recent reports of the Commissioner for Environmental Sustainability and Victorian Auditor-General's Office.

9.2 Biodiversity 2037

As outlined in Chapter 2, Biodiversity 2037 establishes Victoria's 20-year strategy for stopping the decline of native species and improving the state of the environment. It sets a number of targets and actions and seeks to ensure decision-making and funding is based on innovative and science-based modelling and evidence.

At a public hearing, Dr Kim Lowe, Research Director of the Arthur Rylah Institute for Environmental Research at DELWP, described the plan as 'quite radical' and highlighted how it promotes more strategic decision-making:

I have seen both of the biodiversity strategies produced for Victoria. The first one was revolutionary in its own way, and that was 20 or 30 years ago. This one that was released five years ... is again quite radical. It takes an approach which is really trying to be better at providing government with good advice so that government can decide its priorities. Through that process lots of innovative approaches have been tried ...

It is really a measure of how effective the science has become and how good the policy advice has become. It has moved away from 'We don't have enough money; let's do everything, let's throw lots of money at it' to 'How do we use money more wisely?'. Because we are very well aware of the incredible amount of investment required of government and other institutions. It is not particular to government; it is equally about citizens. How do they best invest our money? Lots and lots of that information that has come out of the bio plan is quite world leading and is actually being supported by a variety of institutions, government and non-government.⁶⁶

The following sections discuss public funding for Biodiversity 2037, partnerships and the Biodiversity Response Planning Program.

9.2.1 Public funding

At the time of its release, \$86.3 million was allocated to Biodiversity 2037 over four years, with a further \$20 million per year on an ongoing basis for implementation. DELWP stated in its submission that this 'represented the greatest ever single investment in biodiversity conservation by a Victorian government'.⁶⁷ Other ad hoc funding has been allocated to related programs or initiatives, such as to species recovery efforts in the wake of the devastating 2019–20 bushfires.⁶⁸

⁶⁶ Dr Kim Lowe, *Transcript of evidence*, p. 16.

⁶⁷ Department of Environment, Land, Water and Planning, *Submission 927*, p. 4.

⁶⁸ *Ibid.*

Importantly, Biodiversity 2037 acknowledges the need to establish various funding mechanisms in order to ensure sustained funding for the plan, including through private sector investment.⁶⁹ Private sector funding and partnerships are discussed further in Section 9.2.2.

Stakeholders to the Inquiry welcomed Biodiversity 2037's initiatives but raised concerns as to whether allocated funding would be sufficient to carry out its objectives.

In its submission, Doctors for the Environment Australia stated that it supported the investment accompanying the policy's announcement but noted that it came 'on the backdrop of substantial cuts to environmental funding in 2010 that were never reinstated' and that 'despite this investment, budget papers demonstrate that environmental funding in Victoria is currently near its lowest level ever'.⁷⁰ It outlined the economic benefits of increased investment in the environment:

As outlined in the Victorian Government's Biodiversity Strategy to 2037, the benefits that Victoria's national parks and conservation reserves provide to Victorians are valued at well in excess of one billion dollars every year. From a health perspective, visits to parks are estimated to save Victoria between \$80 million and \$200 million from avoidance of disease, mortality and lost productivity annually. Victoria's Biodiversity Strategy quotes a Future Economy Group report that has estimated that by 2028, healthier natural capital could provide between \$15 and \$36 billion in economic benefits for Victoria, while on the other hand, continuing decline of natural capital could result in an economic loss of between \$16 and \$78 billion. It is vitally important that the Government and all Victorians recognise that investment in protecting biodiversity and addressing threats is money well spent.⁷¹

Yasmin Kelsall, Events Coordinator at the Ecological Consultants Association of Victoria, told the Committee at a public hearing that Biodiversity 2037 has 'some good aims, and some of its goals and objectives are some of the best that we have seen for a long time', but that funding allocated to date is lacking and it will 'take some serious investment to start to turn things around'.⁷² Dr Jim Radford, Principal Research Fellow at the Research Centre for Future Landscapes, La Trobe University, stated that there is a need to 'get serious about the environment and stop funding it like it is an optional extra'.⁷³ Professor Brendan Wintle, Professor of Conservation Ecology at the University of Melbourne, stated that: 'funding for the plan, as I have just said, is about one-tenth of what we really actually need to fund, maybe a twentieth'.⁷⁴

⁶⁹ Department of Environment, Land, Water and Planning, *Protecting Victoria's Environment – Biodiversity 2037*, p. 35.

⁷⁰ Doctors for the Environment Australia, *Submission 725*, pp. 16–17.

⁷¹ Ibid.

⁷² Yasmin Kelsall, Events Coordinator, Ecological Consultants Association of Victoria, Public hearing, Via videoconference, 24 February 2021, *Transcript of evidence*, p. 33.

⁷³ Dr Jim Radford, Principal Research Fellow, Research Centre for Future Landscapes, La Trobe University, Public hearing, Melbourne, 21 Tuesday 2021, *Transcript of evidence*, p. 57.

⁷⁴ Professor Brendan Wintle, Professor of Conservation Ecology, University of Melbourne, Public hearing, Melbourne, 23 February 2021, *Transcript of evidence*, p. 56.

Dr Jack Pascoe, Conservation and Research Manager at the Conservation Ecology Centre, told the Committee that there needs to be more people on land looking after Country:

But I guess there are not that many of us doing this, so the more we tell the story: who is on Country looking after it today in my patch of the world?—it just comes down to resourcing. There are just not enough people, black, white or brindle, looking after Country. I cannot reiterate that point enough. We have to look after Country and we have to be prepared to pay for it.⁷⁵

Dr John Morgan, Co-chair, Policy Working Group at the Ecological Society of Australia, described current funding for Biodiversity 2037 as ‘modest’ and identified upscaling existing initiatives and investments as a key opportunity:

It is a pretty modest investment given the magnitude of the problem that has been identified in this inquiry. Importantly there are relatively few hard targets to be delivered upon in the strategy, and where there are targets it is probably unlikely they will be able to be delivered because the budget has been earmarked. Upscaling existing initiatives and investments is clearly one of the biggest opportunities to arrest the consistent decline in Victoria.⁷⁶

In addition to the overall funding available, Fiona Sutton, President of the Ecological Consultants Association of Victoria, stated that on-ground programs needed to receive long-term funding in order to improve outcomes:

The investment in on-ground works also needs a lot of improvement. The investments need to be long-term, so not short-term, one or two years. We are talking about threats that have been around for decades and will continue and increase in severity for decades to come, so having long-term funding over decades rather than sort of one or two years is definitely required. Also improving the funding that is available so that contractors that are engaged are actually trained and skilled in natural resource management so that it is not the cheapest contractor that goes out to do weed control. For example, it might be an agricultural weed contractor—they do not understand the details of actually doing proper natural resource management and end up with perverse outcomes worse than what the actual weed they were controlling could be.⁷⁷

Dr Lowe of the Arthur Rylah Institute for Environmental Research described how increased funding would allow work to be ‘scaled up’:

If we had more money, I think my honest answer would be: we are doing just about everything we can do. It is just a matter of scale. If we had more funding, we would scale up our activities. We would have more data collection from scientists travelling to the bush, but also we would have bigger citizen science programs. We would have better

75 Dr Jack Pascoe, Conservation and Research Manager, Conservation Ecology Centre Public hearing, Melbourne, 21 April 2021, *Transcript of evidence*, p. 49.

76 Dr John Morgan, Co-chair, Policy Working Group, Ecological Society of Australia, Public hearing, Melbourne, 21 April 2021, *Transcript of evidence*, p. 65.

77 Fiona Sutton, President, Ecological Consultants Association of Victoria, Public hearing, Melbourne, 24 February 2021, *Transcript of evidence*, pp. 27–28.

ways to collect data, store it in databases, analyse it and use it for decision-making. We would have more money for activity to do the management of threats, which is clearly the approach that the biodiversity plan has taken as well. And we would try to continually use decision-making tools like the strategic management prospects to focus effort to get the best return on investment. I think everyone in the community wants the best bang for their buck for the effort.⁷⁸

Dr Sparkes noted that Biodiversity 2037 was still in the early stages of implementation and that the 2023 State of the Environment reporting would assess whether actions are reversing ecosystem decline. She stated that there has been ‘a lot of investment in the pillars and planks we need to implement’ the policy and that there is confidence in its ability to achieve its targets ‘if everyone continues to stay committed’.⁷⁹

The Committee welcomes the far-reaching and significant commitments made to protecting and restoring Victoria’s biodiversity under Biodiversity 2037. However, it is concerned that current funding allocations are not enough to reverse the trajectory of ecosystem and species decline in conjunction with the priorities and actions established in the plan. In order to make meaningful change, funding must be significant, secure and long-term. This will help to ensure that initiatives can be effectively implemented, monitored and evaluated, and will build on previous work.

RECOMMENDATION 54: That the Victorian Government increase future funding allocations for *Protecting Victoria’s Environment – Biodiversity 2037* to ensure that the targets identified in the plan are able to be achieved.

9.2.2 Partnerships

Biodiversity 2037 states that an ‘essential element’ of the plan is the ‘development of a Victorian Government-backed funding model that leverages government investment to create more significant investment in biodiversity conservation’. This includes investigating different approaches to securing sustained funding, such as co-investment with the private sector, crowd funding, urban development, and ‘other emerging tools and mechanisms’.⁸⁰ In terms of private sector partnerships, Biodiversity 2037 states that the Victorian Government will publish an ‘Investment Prospectus’ to communicate to potential investors project priorities under the strategy. It also provides for establishment of a biodiversity investment roundtable, creation of dialogue channels between investor groups, and adoption of principles for ‘facilitating good-practice private environmental investment’. Successful partnerships will be promoted as examples of investment opportunities.⁸¹

⁷⁸ Dr Kim Lowe, *Transcript of evidence*, p. 14.

⁷⁹ Dr Gillian Sparkes, *Transcript of evidence*, p. 5.

⁸⁰ Department of Environment, Land, Water and Planning, *Protecting Victoria’s Environment – Biodiversity 2037*, p. 35.

⁸¹ *Ibid.*, p. 36.

Carolyn Jackson, Acting Deputy Secretary of Environment and Climate Change at DELWP, highlighted the need for co-investment at a public hearing:

we also know that there is significantly more to do to achieve the transformative change necessary to halt and reverse biodiversity decline in Victoria, particularly under the impacts of climate change. As Biodiversity 2037 identifies, this cannot be achieved by the government alone and instead we need the support of Traditional Owners, non-government organisations, business and the broader community to better collaborate and target our collective efforts to achieve the best possible outcomes. Building this collaborative and joined-up approach takes time, and as part of next steps DELWP will be looking to use this significant Victorian Government biodiversity investment over the next period to leverage co-investment opportunities to help bridge the gap—for example, through emerging carbon investment or through strategic partnerships with a range of organisations.⁸²

In an October 2018 progress report, DELWP advised that it had begun to investigate a ‘web-based investment prospectus and other actions that would effectively leverage private investment in biodiversity’.⁸³ However, at the time of writing this report nearly three years later, the Investment Prospectus was not publicly available and nor was any other information regarding private investment opportunities in relation to Biodiversity 2037. Noting the importance of ensuring adequate funding for the realisation of Biodiversity 2037’s targets, as outlined in Section 9.2.1, this information gap urgently needs to be addressed.

As noted in earlier Chapters, VAGO recently tabled its audit of the Victorian Government’s protection of biodiversity. The report noted broad issues around funding levels and whether these would be adequate to achieve the plan’s objectives. In relation to private investment, it stated that DELWP began work in 2019 to develop sustained funding models and finalise its draft investment strategy. However, a deadline has not been set for completion of this work:

DELWP’s delays in completing and implementing its investment strategy, and thereby attracting non-government investment funds, further hinders the implementation of Biodiversity 2037 and the work needed to protect Victoria’s threatened species.⁸⁴

As stated by the Ecological Consultants Association of Victoria in its submission, ‘Persistence, commitment and big funding investment are the drivers of change, and these come only when government, corporate and community spheres are united’.⁸⁵ The Committee agrees and hopes that the Victorian Government will urgently seek to leverage private sector investment to progress Biodiversity 2037’s important targets

⁸² Carolyn Jackson, Acting Deputy Secretary, Environment and Climate Change, Department of Environment, Land, Water and Planning, Public hearing, Via videoconference, 10 August 2021, *Transcript of evidence*, p. 4.

⁸³ Department of Environment, Land, Water and Planning, *Biodiversity 2037 Implementation Framework Progress Report*, Victorian Government, October 2018.

⁸⁴ Victorian Auditor-General’s Office, *Protecting Victoria’s Biodiversity Independent assurance report to Parliament 2021–22:07*, 2021, p. 13.

⁸⁵ Ecological Consultants Association of Victoria, *Submission 499*, p. 11.

and actions. In addition, the Victorian Government should ensure that the impacts of private investment in biodiversity initiatives are monitored to ascertain whether the prospectus is facilitating meaningful outcomes.

FINDING 39: Partnerships for co-investment in *Protecting Victoria's Environment – Biodiversity 2037's* actions are crucial in the successful delivery of the strategy. This includes in terms of maximising investment and facilitating broader community momentum on biodiversity conservation.

RECOMMENDATION 55: That the Victorian Government expedite the completion and release of a Biodiversity Investment Prospectus in order to facilitate and attract opportunities for co-investment in biodiversity conservation. This Prospectus should identify appropriate investment models, incorporate checks and balances for conservation and restoration activities, and specify how the economic viability and scientific rigour of co-investment proposals will be assessed.

9.2.3 Biodiversity Response Planning Program

The Biodiversity Response Planning Program is a 'long term, area-based planning approach' to biodiversity protection which is designed to ensure effective collaboration with Traditional Owners, non-government organisations and the community in the progressive implementation of Biodiversity 2037.⁸⁶ DELWP coordinates this process, which takes place across each of the six DELWP regions: Barwon South West, Gippsland, Grampians, Hume, Loddon Mallee and Port Phillip.

In 2018, as part of this process, stakeholder groups identified a number of on-ground project priorities, with 85 projects subsequently developed and funded for a period of three years. Each project will be evaluated for its contribution to targets under Biodiversity 2037. Across 2019 and 2020, DELWP facilitated the prioritisation of action through 'Focus Landscapes'—landscapes that have been selected as likely to have high biodiversity benefits from future on-ground biodiversity action.⁸⁷

In its submission, DELWP outlined the benefits of this type of planning approach:

BRP [Biodiversity Response Planning] aims to progressively deliver a collective area-based response to the statewide targets in Biodiversity 2037. BRP has already committed funding for on-ground biodiversity action worth \$33.67 million and \$1.1 million for marine biodiversity outcomes and BRP Phase 2 is focussed on identifying priorities for complementary actions and potential projects to address gaps. Biodiversity 2037 sets out Victoria's shift in conservation planning and management towards considering whole ecosystems and landscapes (and the multiple species that make

⁸⁶ Department of Environment, Land, Water and Planning, *Biodiversity Response Planning - Working together for biodiversity*, 2021, <<https://www.environment.vic.gov.au/biodiversity/working-together-for-biodiversity>> accessed 27 September 2021.

⁸⁷ Department of Environment, Land, Water and Planning, *Biodiversity Response Planning: Frequently Asked Questions*, 2021, p. 3.

them up), rather than focussing on a species by species approach. DELWP supports this approach by taking a collaborative, landscape level approach to biodiversity response planning that provides a mechanism for all stakeholders within a landscape to work together to identify priority outcomes for biodiversity – including actions on private land.⁸⁸

Stakeholders to the Inquiry commented on the implementation of the Biodiversity Response Planning Program to date. Doctors for the Environment Australia stated that it is ‘supportive of the collaborative approach to biodiversity conservation that underpins this program’ but that ‘stakeholder perceptions of the quality and extent of collaboration that actually occurred during its first phase varied widely’.⁸⁹

Macedon Ranges Shire Council submitted that it was involved in the first phase of the program, and highlighted perceived issues in terms of how projects were chosen and the funding available:

Council was involved in the State Government’s Biodiversity Response Planning process in 2018. The allocation of funds relied heavily on the Strategic Management Prospects modelling which, from Council’s experience, does not adequately identify the issues and opportunities applicable to local areas. The pool of funding available was also insufficient to enable a full suite of high priority projects to be funded. For future programs, Council encourages the State Government to increase the quantum of funding available and reconsider the criteria for projects to ensure they align to on-ground priorities.⁹⁰

BEAM Mitchell Environment Group noted its disappointment in the first phase of the Biodiversity Response Planning Program, which ‘seemed to revolve around a scramble for the small amount of money up for grabs ... and only projects with shovel-ready projects that ticked some ridiculous priority boxes got the money’. The Group outlined feedback it had submitted on the process:

- Groups need funding to develop plans ahead of funding bids. It takes time and money and this was not on offer.
- Priorities need to identify the real issues facing local environments.

The whole process, although ostensibly community driven, was dominated by agencies and by a DELWP agenda ... it was a frustrating waste of time and effort.⁹¹

An independent panel undertook an evaluation of phase 1 of the Biodiversity Response Planning Program, with outcomes informing the planning processes undertaken in 2019 and 2020.⁹²

88 Department of Environment, Land, Water and Planning, *Submission 927*, p. 23.

89 Doctors for the Environment Australia, *Submission 725*, p. 11.

90 Macedon Ranges Shire Council, *Submission 412*, p. 10.

91 BEAM Mitchell Environment Group, *Submission 690*, p. 24.

92 Department of Environment, Land, Water and Planning, *Biodiversity Response Planning: Frequently Asked Questions*.

The Committee welcomes the community-driven, area-focused approach to planning on-ground projects that has been adopted by the Victorian Government for the implementation of Biodiversity 2037. While there are evidently early critiques of how this process has been carried out, independent evaluation is ensuring that feedback is taken into consideration in subsequent iterations of the program.

FINDING 40: The Biodiversity Response Planning Program is an innovative, area-based planning approach for on-ground actions that will support the implementation of *Protecting Victoria's Environment – Biodiversity 2037*.

9.3 Traditional Owners

As outlined in Chapter 3, there are a number of different ways through which Traditional Owners access rights to land and water in Victoria, and various mechanisms through which they care for Country.⁹³ However, importantly, the principle of self-determination is becoming increasingly recognised by the Victorian Government and other bodies as a crucial focus for moving forward in biodiversity management and conservation.

Biodiversity 2037 acknowledges the importance of working with Traditional Owners and Aboriginal Victorians in relation to biodiversity access, planning and management. One of the plan's priorities is to engage with Traditional Owners and Aboriginal Victorians to include Aboriginal values and traditional ecological knowledge in biodiversity planning and management. Initiatives to deliver this priority include:

- Incorporate Aboriginal customary knowledge into biodiversity management, and assist Traditional Owners to plan for and adapt to the impacts of climate change.
- Partner with Traditional Owners and Aboriginal Victorians to include Aboriginal values and knowledge in biodiversity response planning.
- Develop methods to ensure Traditional Owners and Aboriginal Victorians can maintain intellectual property rights over their knowledge.⁹⁴

The following sections discuss issues relating to improving self-determination in biodiversity governance and the role of cultural heritage.

9.3.1 Improving self-determination and roles in broader biodiversity governance

The Victorian Government has established a policy commitment to self-determination across government, and various bodies, including DELWP, have outlined their commitments in this space.

⁹³ As noted in Chapter 3, the term Traditional Owners is used throughout this report to refer to First Nations groups who hold traditional rights and interests over particular Country.

⁹⁴ Department of Environment, Land, Water and Planning, *Protecting Victoria's Environment – Biodiversity 2037*, pp. 42, 44.

However, the Committee heard that there are several legislative and other barriers to realising self-determination in biodiversity management. As highlighted in Chapter 8, one legislative barrier was outlined by Hamish Webb, Director Knowledge, Planning and Risk in Forest, Fire and Regions at DELWP, in relation to cultural burning and fire management practices:

In terms of bushfire management, there are some legislative barriers. So the chief fire officer for DELWP has accountability under the Forests Act to maintain and suppress bushfire. He cannot pass that off at this stage; that is something that he needs to acquit. So that is a legislative barrier in terms of some of the fire practices ... As part of [funding to implement the cultural fire strategy] is a project and program to look at what are those legislative barriers and things like that. To give you an example, there are barriers if there is a fire permit required to undertake cultural fire practices. They require that no matter what Country they are on; if it is public land or private land, they need permits to do those sorts of work.⁹⁵

Other stakeholders also noted the ways in which cultural burning practices were limited. For example, the Biodiversity Planning Network explained that legal barriers prevented positive biodiversity outcomes:

Legal barriers around burning make it difficult to carry out the types of burning which benefit biodiversity, e.g. smaller scale, at specific times of year, dependent upon making decisions to burns within short timeframes.⁹⁶

In its submission to the Inquiry, DELWP also outlined barriers in relation to the *Traditional Owner Settlement Act 2010* (Vic) (TOS Act) and the ability to appoint Traditional Owners to directly manage land:

The current TOS Act legislation contains barriers that limit the ability to appoint Traditional Owners to directly manage public land. Public land management functions on Aboriginal title land can be delegated to a Traditional Owner Land Management Board (TOLMB), at the discretion of the Minister for Energy, Environment and Climate Change, but cannot be delegated to a Traditional Owner Corporation. The existing model is not designed to align with culturally appropriate planning and decision-making structures, protocols and information needs. Therefore, the TOLMB can inadvertently inhibit the development of the strategic joint management partnership between the Traditional Owner Corporation and the State, as there is an underlying imbalance in 'power', preventing equality in the partnership. There is an opportunity to address these barriers through the proposed modernisation of Victoria's public land legislation.⁹⁷

Traditional Owner groups, as well as other stakeholders, advocated for legislative frameworks to be amended to improve agency in how traditional practices are carried out. For example, Dja Dja Wurrung Clans Aboriginal Corporation advocated for greater decision-making power in order to heal Country:

⁹⁵ Hamish Webb, Director, Knowledge, Planning and Risk, Forest, Fire and Regions, Department of Environment, Land, Water and Planning, Public hearing, Via videoconference, 10 August 2021, *Transcript of evidence*, p. 5.

⁹⁶ Biodiversity Planning Network, *Submission 523*, p. 23.

⁹⁷ Department of Environment, Land, Water and Planning, *Submission 927*, p. 35.

Allow Bunjil’s creations to heal, by empowering Dja Dja Wurrung to be accountable for decisions through either a relaxing of permitting and approvals or through delegation of accountability to Djaara to manage, move and support change in ecosystems will enable change at an appropriate time scale.⁹⁸

Professor Lee Godden highlighted that consultation processes needed to be more proactive, as opposed to solely consulting in relation to the impacts of particular activities on those groups:

Often where we have environmental law—let us take the Planning and Environment Act as an example—basically where First Nations and Indigenous peoples are consulted they are consulted in terms of the impacts upon them. I think that we need to have principles and requirements that do not just see our environmental laws as impacting on First Nations but that there are opportunities for proactive involvement and engagement. Working in the water space over the last five years I have developed in association with colleagues a range of models, from representational models—where, for example, First Nations are sitting on committees—to a pathway to longer term engagement in decision-making, and I think that that is where we need to be integrating those types of models into our environmental laws, because they just really do not exist at the moment.⁹⁹

The Wilderness Society recommended that ‘legislation, institutional arrangements, policies and arrangements are in place’ to meaningfully engage Traditional Owners ‘in all aspects of land and water management’.¹⁰⁰ The Ecological Consultants Association of Victoria advocated for environmental legislation to mandate ‘engagement with our First Nations peoples and [provide] them with the ability to input, veto and appeal decisions’.¹⁰¹

A further barrier to greater self-determination relates to resourcing. Traditional Owner groups expressed a desire to increase their capacity to manage Country but outlined significant resource constraints.

Rodney Carter, Chief Executive Officer of the Dja Dja Wurrung Group at Dja Dja Wurrung Clans Aboriginal Corporation, described the issue as one of capacity, rather than capability:

we really wanted to impress upon the state, and this committee, our capability. Where we are lacking is the capacity, and that can always be an argument, not just for Traditional Owner group entities, but I think this idea of shifting resources from bureaucracies and government towards community controlled entities such as ours for the Dja Dja Wurrung people ... we would like to reiterate the commitment of the state itself toward self-determination of Traditional Owners. Throughout the statement, it says

⁹⁸ Dja Dja Wurrung Clans Aboriginal Corporation, *Submission 635*, p. 12.

⁹⁹ Professor Lee Godden, *Transcript of evidence*, p. 21.

¹⁰⁰ The Wilderness Society, *Submission 899*, p. 5.

¹⁰¹ Ecological Consultants Association of Victoria, *Submission 499*, p. 30.

nothing for us without us, and we would like to believe that there is truth that sits behind that statement.¹⁰²

In its submission, Dja Dja Wurrung Clans Aboriginal Corporation questioned the methodology for determining funding allocations ‘through the application of empirical approaches to weigh up the best outcome and the highest return on investment’. It noted that this approach is ‘worthy and considerable’, but asserted that there needed to be consideration of how these programs ‘fit in the broader understanding of djandak (Country) and how they are able to ensure that Traditional Owners are not only informed of the programs but actively included and empowered in these programs’. It stated:

In programs that are focused on the species or system in isolation of its connection or place in djandak there is a lack of meaning. This results in an ability to rationalise loss or lack of investment in a lower priority ecosystem or species. This lack of investment is able to be achieved because of a lack of consideration of each species and systems place and value to the health of djandak. As a result, considerable investment goes into areas of high empirical value to biodiversity whilst rationalising away the need, desire and opportunity for species to move between and across landscapes freely and without hinderance ... As long as investment in ecosystems is driven by empirical evidence and decision making there will continue to be decline in ecosystems and species.¹⁰³

The submission recommended a ‘more appropriate investment model’ as one based on:

- initially resourcing Traditional Owners to return to their landscapes;
- ensuring that every block of public land has at least one Traditional Owner (may talk for multiple areas) adequately resourced to talk to and for that place; and
- that investment levels are based on need of the spirits of Country rather than a predefined investment pool.¹⁰⁴

Matthew Shanks, Strategic Advisor of Cultural and Natural Resource Management at Taungurung Land and Waters Council Aboriginal Corporation, told the Committee that traditional knowledge needs to be valued:

If Victoria and the rest of the country wants Traditional Owner knowledge and embedded those practices into contemporary land management and all the rest of it, it needs to be paid for.¹⁰⁵

DELWP acknowledged funding barriers for First Nations groups in its submission to the Inquiry, outlining in particular how those groups that had not negotiated a settlement had to source other forms of funding for their activities, impacting their ability to exercise self-determination:

¹⁰² Rodney Carter, Group Chief Executive Officer, Dja Dja Wurrung Group, Public hearing, Shepparton, 27 April 2021, *Transcript of evidence*, pp. 17–18.

¹⁰³ Dja Dja Wurrung Clans Aboriginal Corporation, *Submission 635*, pp. 7–8.

¹⁰⁴ *Ibid.*

¹⁰⁵ Matthew Shanks, Strategic Advisor, Cultural & Natural Resource Management, Taungurung Land and Waters Council Aboriginal Corporation, Public hearing, Shepparton, 27 April 2021, *Transcript of evidence*, p. 27.

TOS Act agreements include funding that is designed to provide sustainable resourcing to a Traditional Owner corporation. This enables corporations to employ staff (for example an NRM [natural resource management] coordinator) and meet the other business costs that arise as their Traditional Owner members exercise their rights and functions under an TOS Act agreement, such as leading group consultation and education initiatives. These agreements also include funding for the development of business enterprises and to participate in and respond to State-led NRM projects and strategies.

Traditional Owner groups that have not entered into to a TOS Act agreement must necessarily seek other forms of recognition and ad hoc funding. This greatly inhibits those groups' ability to exercise self-determination.¹⁰⁶

Other stakeholders similarly supported evaluation of funding and resourcing models to better support Traditional Owners to increase their capacity in biodiversity management. For example, the Wilderness Society advocated for increased resourcing for 'existing and expanded traditional management and cultural burning, particularly the development of longer term, secure program funding for stable employment'.¹⁰⁷ Michelle Wyatt, Environment Coordinator at Macedon Ranges Shire Council, expressed support for 'consideration of different mechanisms to increase core funding for Traditional Owner groups to enable them to grow their organisations, which would then enable them to meet the demand on their services'.¹⁰⁸

In addition, in relation to broader social and cultural barriers, Matthew Shanks from Taungurung Land and Waters Council Aboriginal Corporation described the importance of breaking down these barriers between Traditional Owners and government agencies, as well as within communities:

I think just by engaging sort of with open hearts and genuinely - and asking genuine questions without assumptions and that sort of thing, like I think you have just done and certainly we see more often as time goes on. I think that is part of the way to do it. A lot of that work I think needs to happen internally within nations, within families, within communities ...¹⁰⁹

Environmental Justice Australia acknowledged that greater self-determination for Traditional Owner groups would require the ceding of authority to these groups:

Giving a greater effective voice to First Nations communities in managing Victoria's ecosystems will, however, require forms of ceding authority (power sharing in partnerships) to Traditional Owners, not merely soliciting and acquiring the knowledge and techniques.¹¹⁰

¹⁰⁶ Department of Environment, Land, Water and Planning, *Submission 927*, pp. 17–18.

¹⁰⁷ The Wilderness Society, *Submission 899*, p. 5.

¹⁰⁸ Michelle Wyatt, Environment Coordinator, Macedon Ranges Shire Council, Public hearing, Melbourne, 12 May 2021, *Transcript of evidence*, p. 10.

¹⁰⁹ Matthew Shanks, *Transcript of evidence*, p. 29.

¹¹⁰ Environmental Justice Australia, *Submission 760*, pp. 28–29.

The Committee notes that Traditional Owners have expressed a vision for management of Country through Traditional Owner-led strategies such as the *Victorian Traditional Owner Cultural Fire Strategy* and *Victorian Traditional Owner Cultural Landscapes Strategy*. It welcomes the Victorian Government's support for the development and implementation of these strategies in line with the principle of self-determination.

However, legislative and resourcing barriers prevent Traditional Owner groups from exercising greater agency in biodiversity protection, conservation and restoration. The Committee considers that it is important for these barriers to be comprehensively evaluated and addressed. While some of these legislative barriers may be explored through other review and consultation processes, such as through the development of a new Public Land Act, as discussed in Chapter 8, a more fulsome assessment is needed to empower Traditional Owners to care for Country.

Further, the Committee considers that the Victorian Government should continue to ensure whole-of-government support for Traditional Owner-led strategies, including through recognition of the fundamental connection of First Nations peoples to Country and facilitation of meaningful partnerships.

RECOMMENDATION 56: That the Victorian Government review, assess and identify legislative or other barriers which prevent greater Traditional Owner leadership in biodiversity protection, restoration and broader management. This should be undertaken with a view to increasing Traditional Owner involvement in land and water management in Victoria, including in relation to sole management of Country as a matter of priority.

RECOMMENDATION 57: That the Victorian Government continue to support First Nations-led strategies, plans and other initiatives in biodiversity management, in line with the principle of self-determination. This work should also include:

- recognising the fundamental connection of First Nations peoples to Country across government and ensuring that staff of government bodies have appropriate cultural knowledge
- continuing to strengthen whole-of-government partnerships with First Nations groups
- ensuring Traditional Owners are able to speak for Country in relation to decision-making that impacts the environment, including regarding biodiversity protection, conservation and restoration activities
- supporting the development of partnerships between Traditional Owners and public and private land managers to ensure meaningful and collaborative relationships in order to best protect biodiversity.

9.4 Local government authorities

Local government authorities play a key role in ecosystem protection, conservation and restoration. As outlined by Nillumbik Shire Council, councils are ‘uniquely positioned to witness firsthand some of the direct impacts of human activity and climate change on native biodiversity and ecosystems’, as well as ‘how these impacts can reduce cultural values, ecosystem values, the productivity of the landscape, and enjoyment by residents’.¹¹¹

In its submission, Macedon Ranges Shire Council outlined the varied roles that councils undertake in relation to ecosystem protection:

Local government manages large public reserves with significant conservation values as well as roadside vegetation which plays a critical role in supporting habitat connectivity. Local government also has the ability to influence conservation outcomes on private land through implementation of planning regulations, provision of advice to landowners, delivery of citizen science programs and support for community groups and community led action. The role of local government should be recognised and reflected in the design of government programs.¹¹²

The management of sites and ecosystems at the local level can be complex. This was highlighted by Wyndham City Council in its submission, who outlined the varied sites, species and ecological communities within its municipality:

- 1 National Heritage Place
- 1 Wetland of International Significance
- 7 Threatened Ecological Communities
- 65 Threatened Species, and
- 64 Migratory Species.¹¹³

The Committee received evidence regarding diverse programs and initiatives being undertaken by local government authorities to protect, restore and monitor local biodiversity values. These examples highlight the importance of coordinated, community-based action. See, for example, Box 9.1 in relation to Nillumbik Shire Council and conservation of the Eltham copper butterfly.

¹¹¹ Nillumbik Shire Council, *Submission 392*, p. 6.

¹¹² Macedon Ranges Shire Council, *Submission 412*, p. 1.

¹¹³ Wyndham City Council, *Submission 528*, p. 1.

BOX 9.1: Nillumbik Shire Council and the Eltham copper butterfly

The Eltham copper butterfly is a small, bright butterfly with visible copper colouring on the tops of its wings. It prefers open flight paths and direct sunlight, and the adult butterfly lays its eggs on the roots and stems of sweet bursaria. It was discovered near Eltham in 1938 and thought to be extinct in the 1950s, before being sighted again in 1987. The butterfly is listed as endangered under the EPBC Act.

Nillumbik Shire Council has approximately 13 hectares of reserves that it manages for the protection of the Eltham copper butterfly, which contain a large proportion of the existing populations. Council runs an annual citizen science project to undertake larval counts and has created trails to connect butterfly habitat. Education on the butterfly and its conservation takes place within the community, including in schools.

Council also manages these reserves in accordance with its obligations regarding community safety and potential bushfire risk. It achieves 'a responsible balance' between conservation and safety objectives by having a bushfire management plan for these reserves. The plan identifies mitigation measures, with conservation work also assisting in mitigating potential impacts through, for example, modification of habitat structure. Bushfire management strategies also serve to protect the habitat of the Eltham copper butterfly in this area. Nillumbik Shire Council stated that this provides an 'example where actions to protect human life and property can also benefit endangered species'.

Source: Nillumbik Shire Council, *Submission 392*, p. 16; Lisa Pittle, Manager of Environment, Nillumbik Shire Council, Public hearing, Melbourne, 12 May 2021, *Transcript of evidence*, p. 3, Nillumbik Shire Council, *Eltham Copper Butterfly*, 2021, <Eltham Copper Butterfly> accessed 19 September 2021.

9.4.1 Environmental projects and other initiatives

As highlighted, local government authorities undertake varied environmental programs and initiatives that provide important contributions to biodiversity. However, the Committee received evidence around funding and other resourcing challenges councils face in carrying out this role.

Michelle Wyatt from Macedon Ranges Shire Council emphasised that councils are well-placed to coordinate environmental work:

I think local government is well-placed to do the on-ground work and deliver programs, and with state government funding and support that is a good relationship, where state government can allocate resources across the state to areas where they are going to be effective and flow that funding through state government and communities.¹¹⁴

However, Dr Melanie Birtchnell, a member of the Ecological Consultants Association of Victoria, told the Committee that in relation to Biodiversity 2037, 'a lot of the

¹¹⁴ Michelle Wyatt, *Transcript of evidence*, p. 16.

implementation part of it has been pushed out of state government and down into, for example, local government without funding associated with it'.¹¹⁵

The Committee heard that resourcing for environmental activities is particularly challenging for rural councils. Goulburn Broken Local Government Biodiversity Reference Group outlined how rural councils often have large geographical areas combined with small rate bases:

Rural councils need continued financial support from State Government in order to undertake weed control on council managed land. Some rural councils have large areas to manage and a small rate base, resulting in various council departments competing for base funding from the council budget.¹¹⁶

Further, Brimbank City Council submitted that available funding is often short-term and does not allow for effective, long-term implementation, oversight and monitoring of on-ground works:

While funding for programs has the benefit of creating partnerships, and can focus on priority actions there can be significant shortcomings in relying on funding for ongoing biodiversity protection. Long term strategies and actions are necessary for sustainable, ongoing and effective protection and management of biodiversity. Funding is often short term with no certainty of future resourcing, creating a risk of losing any gains should ongoing work not be resourced. Funding cycles of financial years does not consider the seasonality and long term requirements of ecosystem management. Lead in times between applying and securing funding is often insufficient for effective delivery of programs. For example, a restoration program may require up to 18 months lead in time to adequately source the correct species and genetics for revegetation. Funding is often subject to the political climate of the time. It is not uncommon for a program to lose funding, only to be reformulated at a later date, losing consistency, governance and partnerships in the meantime (e.g. Green Corps and Green Army programs).¹¹⁷

Councils advocated for greater support from the Victorian Government in undertaking critical ecosystem protection, conservation and restoration activities. For example, Nillumbik Shire Council suggested that more funding support could be provided to 'help understand and quantify local biodiversity values (including assets and threats)' and protect biodiversity into the future.¹¹⁸

The Committee recognises and supports the important work local government authorities undertake in protecting, conserving and restoring biodiversity values, and in connecting communities to their local environment. However, resourcing challenges for many councils restrict their capacity to undertake this work.

¹¹⁵ Dr Melanie Birtchnell, Member, Ecological Consultants Association of Victoria, public hearing, Melbourne, 24 February 2021, *Transcript of evidence*, p. 33.

¹¹⁶ Goulburn Broken Local Government Biodiversity Reference Group, *Submission 450*, p. 5.

¹¹⁷ Brimbank City Council, *Submission 926*, p. 12.

¹¹⁸ Nillumbik Shire Council, *Submission 392*, p. 26.

FINDING 41: Local government authorities play a key role in biodiversity protection, conservation and restoration. However, they often face significant resourcing challenges in managing local biodiversity values.

RECOMMENDATION 58: That the Victorian Government work with local government authorities to improve financial and other supports available for councils to specifically undertake localised biodiversity initiatives, including in relation to activities contributing to the targets identified in *Protecting Victoria's Environment – Biodiversity 2037*.

Resourcing for local government authorities in undertaking compliance and enforcement activities is also discussed in Chapter 10.

9.4.2 Working with Traditional Owners in land management

Councils identified various ways in which they are working with Traditional Owner and First Nations groups to pursue biodiversity outcomes.

Hume City Council outlined in its submission how it is establishing a 'formal land management partnership' with Wurundjeri Woi-wurrung Cultural Heritage Aboriginal Corporation. It stated that this partnership would allow it to 'continue building relationships with the Wurundjeri Narrap Team (conducting on-ground conservation works) for the management of Council-owned land, particularly sites with high cultural and ecological values'. The submission also highlighted how Council is working with Wurundjeri people to facilitate a greater role in land management:

The Wurundjeri have expressed a desire to have a formal and ongoing role in the management [of] different land types. This could help achieve a broader range of ecological improvements across the landscape, in particular for grassland and grassy woodland ecosystems.¹¹⁹

Brimbank City Council stated that it is working with 'local Aboriginal parties to draw upon their knowledge and skills as the custodians and voice of Country'. It advocated for regional knowledge-sharing initiatives and further support for Aboriginal land management organisations.¹²⁰

At a public hearing, Michelle Wyatt from Macedon Ranges Shire Council outlined the partnerships that the Council had with Traditional Owner groups in its municipality:

We engage with the three Traditional Owner groups in our shire, Taungurung, Dja Dja Wurrung and Wurundjeri, and we have programs to enable them to expand their knowledge of Country in our shire. We are at the edges of the extent of their Country,

¹¹⁹ Hume City Council, *Submission 736*, p. 4.

¹²⁰ Brimbank City Council, *Submission 926*, p. 7.

so we find that some of the Traditional Owner groups do not know our shire so well, so we have just started that process of inviting them to get to know, I guess, the shire. We also, similarly to Nillumbik, do engage Traditional Owner groups for on-ground works as appropriate, including for cool burns where we can. As I mentioned, we have a great desire to continue to work with Traditional Owner groups and to do more with them, including with their on-ground teams, such as the Narrap Team. They are very stretched for what they can actually do and how many services they can actually provide across their Country, hence why I feel that expanding core funding for those groups would really help them grow their teams and grow their service capacity to enable them to meet the demands on their services. If they had greater ability to work across their Country, we would certainly engage them more.¹²¹

The Committee welcomes the ways in which local government authorities are working towards collaborative relationships with Traditional Owners and First Nations groups and supports further partnerships to promote and protect biodiversity values. This work should continue as a priority and is to be encouraged. The importance of effective partnerships was also highlighted in Section 9.3.1. Traditional Owners and land management were discussed further in Chapter 8.

9.5 Public awareness and engagement

In making the case for the need to ensure that all Victorians value nature, Biodiversity 2037 states that 'As a society, we tend to under-value the benefits of biodiversity, and fail to acknowledge the risks posed by our collective actions'.¹²² As a result, biodiversity continues to decline.

Biodiversity 2037 sets as one of its core goals that Victorians value nature, and 'understand that their personal wellbeing and the economic wellbeing of the state are dependent on the health of the natural environment'.¹²³ It outlines a number of priorities related to this goal:

- Raise the awareness of all Victorians about the importance of the State's natural environment.
- Increase opportunities for all Victorians to have daily connections with nature.
- Increase opportunities for all Victorians to act to protect biodiversity.

The strategy also states that the goal will be supported through the adoption of environmental economic accounting, where Victorian organisations report their performance against measures that support the environment.¹²⁴

¹²¹ Michelle Wyatt, *Transcript of evidence*, p. 11.

¹²² Department of Environment, Land, Water and Planning, *Protecting Victoria's Environment – Biodiversity 2037*, p. 10.

¹²³ *Ibid.*, p. 13.

¹²⁴ *Ibid.*

In its submission, DELWP stated that it is well-placed to facilitate environmental connections:

Biodiversity 2037 describes a range of actions including raising the awareness of the natural environment in the community and creating opportunities for people to connect with and protect nature, with the aim of enhancing people's connection with nature, increasing the frequency with which people act to protect the environment and therefore improving the future of Victoria's unique biodiversity ... DELWP and its partners are well placed to use a diverse range of approaches to help connect people with nature. These approaches could include improving opportunities to experience nature, addressing perceived barriers to connect, awareness raising and focussing on place and the values of local natural areas.¹²⁵

Dr Lowe of the Arthur Rylah Institute for Environmental Research explained at a public hearing that a science-based approach was being used to understand 'what motivates people and how to get more people to act for biodiversity', using innovative social science methods.¹²⁶ He echoed the importance of having more citizens supporting biodiversity conservation, stating that, 'Activity that every one of us does every day of the week has an impact on biodiversity one way or another'.¹²⁷

However, some stakeholders told the Committee that Biodiversity 2037's goals regarding community value of nature were not broadly known. BEAM Mitchell Environment Group stated its support for this vision but asserted that 'it is just not happening' and 'is still not being backed with any real funding'.¹²⁸ Goulburn Broken Local Government Biodiversity Reference Group argued that it 'can be confidently assumed that most Victorians have not heard of' Biodiversity 2037.¹²⁹

Further, the Committee heard that broad environmental or ecological literacy across the Community is relatively low. For example, the Ecological Consultants Association of Victoria submitted that there is a 'general lack of ecological literacy and respect for environmental values by the community, industry and governments'.¹³⁰ Jesuit Social Services advocated for investment in 'increasing ecological literacy in Victorian communities to further understanding of the intimate connection between ecosystem and human health'.¹³¹

Dr Pascoe from the Conservation Ecology Centre described the importance of ensuring the Victorian community has the ability to observe and read the natural environment that they are on:

And the ability to learn to read Country—and once again that is not an Aboriginal thing, although I think our old people are extraordinarily good at it. I love listening to elders

¹²⁵ Department of Environment, Land, Water and Planning, *Submission 927*, p. 8.

¹²⁶ Dr Kim Lowe, *Transcript of evidence*, p. 14.

¹²⁷ *Ibid.*, p. 13.

¹²⁸ BEAM Mitchell Environment Group, *Submission 690*, p. 24.

¹²⁹ Goulburn Broken Local Government Biodiversity Reference Group, *Submission 450*, p. 5.

¹³⁰ Ecological Consultants Association of Victoria, *Submission 499*, p. 10.

¹³¹ Jesuit Social Services, *Submission 657*, p. 7.

who really—that is what they do. They just sit and they know exactly what is going on and the groups of plants that are there and should be there. It is a pretty extraordinary power that they have that is practised observation, really. But it is just coming down to people ... being in a place and being present in a place for long enough to really understand it. And I do not necessarily think the way our institutions and agencies work really supports people to work in a place for a long period of time and really understand it.¹³²

The Committee considers that in light of the COVID-19 pandemic, there is a unique opportunity in recovery phases to build on the ways in which individuals and communities are valuing nature.

The Victorian Scientific Advisory Committee described 2020 as having ‘provided a “wake-up call” for Victoria in relation to how people live and work in this environment’. It stated that ‘this new perspective has the potential to change our relationship with the environment’, and that ‘we have an opportunity to change the way we, as humans, relate to the environment, to be less exploitative and more nurturing’.¹³³ Further, the Committee suggested that First Nations ways of caring for Country ‘can be used as an example in how to move forward’.¹³⁴

Similarly, Sharon Terry, Manager Environment at Greater Shepparton City Council, told the Committee at a public hearing that ‘COVID has given us an opportunity to have a bit of a window into when our other freedoms are removed ... that connection with the natural environment – it showed us that we were yearning for that’.¹³⁵

FINDING 42: The COVID-19 pandemic has highlighted the importance of Victoria’s environment and biodiversity values for many within the community. The post-pandemic phase presents a critical opportunity for building on the ways in which individuals and communities value and connect with nature.

9.5.1 General environmental duty

Recent amendments to the *Environment Protection Act 2017* (Vic) introduced a general environmental duty that places a proactive obligation on persons undertaking activities that may impact the environment. It provides that a person engaging in an activity that has the potential to cause harm to human health or the environment, from pollution or waste, must minimise risks of that harm happening as much as reasonably practicable. Contravention of the duty is an offence, with fines of 2,000 penalty units for an individual and 10,000 penalty units for a business.¹³⁶

¹³² Dr Jack Pascoe, *Transcript of evidence*, p. 51.

¹³³ Victorian Scientific Advisory Committee, *Submission 439*, pp. 2, 4.

¹³⁴ *Ibid.*, pp. 4–5.

¹³⁵ Sharon Terry, Manager Environment, Greater Shepparton City Council Public hearing, Shepparton, 28 April 2021, *Transcript of evidence*, p. 26.

¹³⁶ *Environment Protection Act 2017* (Vic) s 25.

Importantly, the general environmental duty applies to the whole Victorian community. This acknowledges the role that all individuals play in preventing and minimising environmental harm.

Stakeholders broadly welcomed the introduction of this duty. For example, Dr Matthew Edmunds, Principal Ecologist at Australian Marine Ecology, described it as a ‘massive change in our capability to manage the environment’.¹³⁷ The Minerals Council of Australia noted its support for the duty, as a measure which is ‘outcomes based and prevention focused’.¹³⁸

Environmental Justice Australia noted that a duties-based approach could similarly be developed for other areas of environmental regulation, such as biodiversity protection, restoration and enhancement. It submitted that a ‘further step’ would be to use positive legal duties to promote the restoration and enhancement of ecosystems, particularly by public authorities:

A further step would be to move to greater use of positive legal duties to restore and enhance ecosystems, especially on the part of public authorities.

We would not accept that a school was fulfilling its obligations if it simply avoided taking actions that might damage school buildings – its clear that both maintenance and where necessary improvement or enhancement are also naturally seen as part of the schools functions.

Section 20 of the Catchment and Land Protection Act 1994 already provides for general duties of landowners ... This general duty could be updated or extended to include restoration and enhancement of biodiversity, or a similar provision could be developed to achieve this in the *Flora and Fauna Guarantee Act 1988*.¹³⁹

The Committee welcomes the introduction of the new general environmental duty, which came into effect on 1 July 2021. This represents an important step forward in acknowledging the responsibility of all members of the Victorian community in protecting the environment. This duty could be expanded, or replicated, to encompass a broader range of environmental harms. Discussion of a general duty for public and private land managers in relation to biodiversity was discussed in Chapter 5.

FINDING 43: The general environmental duty, introduced by the *Environment Protection Amendment Act 2018* (Vic), is an important step forward in environmental protection and recognises the responsibility of all members of the Victorian community in preventing environmental harms.

¹³⁷ Dr Matthew Edmunds, Principal Ecologist, Australian Marine Ecology, Public hearing, Melbourne, 20 April 2021, *Transcript of evidence*, p. 2.

¹³⁸ Mineral Council of Australia, *Submission 783*, p. 8.

¹³⁹ Environmental Justice Australia, *Submission 760*, p. 30.

RECOMMENDATION 59: That the Victorian Government explore the feasibility of the further introduction and use of general duties that can be connected to conservation and ecosystem restoration in Victoria.

9.5.2 Education and awareness-raising

Biodiversity 2037 describes various mechanisms for increasing awareness and understanding of the environment, including ‘education, marketing, community engagement and citizen science initiatives, as well as interpretative material and smartphone apps’. Awareness-raising activities can take place for children and young people in schools, and for the broader community at environmental sites such as parks, reserves, zoos and gardens. In terms of school-based education, the strategy states that *ResourceSmart Schools*, a program run by the Victorian Government, supports schools to embed sustainability principles into their day to day activities.¹⁴⁰

Biodiversity 2037 commits the Victorian Government to undertaking research on community awareness levels, the development and delivery of community education campaigns on biodiversity, and the development of information and products to increase awareness across government, business and community sectors.¹⁴¹

Various stakeholders advocated for more work to be done in terms of school-based and community education regarding the environment.

The Ecological Consultants Association of Victoria stated that ‘Education is the key, from primary school to adulthood’, and acknowledged local government authorities as the most appropriate for on-ground community projects.¹⁴² Krista Patterson-Majoor, Biodiversity Projects Officer at Macedon Ranges Shire Council, similarly supported the role of councils in this space, arguing that their role cannot be overestimated in terms of building connections with community.¹⁴³

The Royal Botanic Gardens Victoria highlighted the results of the *Victorians Value Nature Foundation Survey*—which was undertaken by DELWP in collaboration with BehaviourWorks Australia—and advocated for investment in behavioural modification and social marketing approaches:

The Victorians Value Nature Survey in 2019 underscored that when Victorians value nature they are more likely to “act for nature”. Therefore, it is timely to consider how social marketing and behavioural modification approaches such as those used in the health sector - to, for example, reduce smoking or alcohol consumption - might be adapted to the environment to modify behaviours toward nature. For example, we might

¹⁴⁰ Department of Environment, Land, Water and Planning, *Protecting Victoria’s Environment – Biodiversity 2037*, p. 24.

¹⁴¹ Ibid.

¹⁴² Ecological Consultants Association of Victoria, *Submission 499*, p. 24.

¹⁴³ Krista Patterson-Majoor, Biodiversity Projects Officer, Macedon Ranges Shire Council, Public hearing, Melbourne, 12 May 2021, *Transcript of evidence*, p. 16.

encourage gardens for wildlife and the planting of native rather than introduced grasses. Simple initiatives such as this require a reasonable level of investment, but nothing compared to the impact of a complete loss of our state's greatest, most treasured assets: our flora, fauna and landscapes.¹⁴⁴

Nillumbik Shire Council advocated for a 'greater emphasis on public education' to build environmental knowledge and expertise to protect ecosystems.¹⁴⁵ Fiona Sutton from the Ecological Consultants Association of Victoria outlined the need for 'political will' to make sure that environmental education is driven within school-based and community education.¹⁴⁶

Dr Coffey described the current approach as 'business as usual':

And part of the issue—one of the really laudable things—is they want to connect people with nature, but how do they propose to do so? It seems like it is just business as usual. There is no sense of actually driving the education of the community that we actually rely on the ecosystems in which we live in order to survive. The ways in which it is measured and the baseline data seems to be quantitative: how many people have visited a national park. It is kind of all 'out there'; it is not actually connecting people with nature. So I think there is much more work to be done there.¹⁴⁷

At a public hearing, Dr Mark Norman, Chief Conservation Scientist and Executive Director of Environment and Science at Parks Victoria, outlined a useful message for communities in thinking about their interactions with the environment:

I think there is a message there of 'What you do—does it help or hurt nature?' for people to put that lens on things, and I think there is a message around 'Nature needs us more than ever, and we need nature'. It has been demonstrated—the value of nature in massively burnt areas for regional economies and tourism and economic development. It is more important than ever, so I think that filter of 'What you do every day—does that help or hurt nature?' is a good angle ...¹⁴⁸

The Committee notes feedback received from stakeholders that investment in school-based and community education is crucial to supporting Biodiversity 2037's goal of Victorians valuing nature. The *Victorians Value Nature Foundation Survey*, which was undertaken from late 2018 with results published in 2019, provided valuable insights into public levels of connection to nature, awareness of biodiversity and activities undertaken to protect the environment. This included that 64% of the 3,090 Victorians surveyed feel connected, or very connected, to nature and 86% support pro-environmental values. A total of 91% of respondents who are parents agreed with the importance of their children spending time in nature.¹⁴⁹

¹⁴⁴ Royal Botanic Gardens Victoria, *Submission 803*, p. 5.

¹⁴⁵ Nillumbik Shire Council, *Submission 392*, p. 1.

¹⁴⁶ Fiona Sutton, *Transcript of evidence*, p. 29.

¹⁴⁷ Dr Brian Coffey, *Transcript of evidence*, p. 32.

¹⁴⁸ Dr Mark Norman, Chief Conservation Scientist and Executive Director of Environment and Science, Parks Victoria, Public hearing, Via videoconference, 10 August 2021, *Transcript of evidence*, p. 12.

¹⁴⁹ J Meis-Harris, et al., *Biodiversity 2037 Victorians Value Nature: Foundations Survey Summary*, BehaviourWorks Australia, Monash University, Melbourne, 2019, p. 4.

Figure 9.1 Key results of the *Victorians Value Nature Foundation Survey*

We surveyed 3090 Victorians from all walks of life and found;



Source: Meis-Harris, J, A Saeri, M Boulet, K Borg, N Faulkner and B Jorgensen, *Biodiversity 2037 Victorians Value Nature: Foundations Survey Summary*, BehaviourWorks Australia, Monash University, Melbourne, 2019, p. 4.

The survey also identified barriers to further connection with nature that can inform future resource investment, including in relation to behaviour change programs and awareness-raising campaigns. For example, the survey highlighted that one key barrier to action such as environmental volunteering, participation in citizen science and advocacy, is ‘the belief that the action will have little impact (self-efficacy)’.¹⁵⁰

This information is a welcome and important first step in developing effective and meaningful education and awareness-raising initiatives for the Victorian community. The Committee supports this work and encourages the Victorian Government to urgently progress the development and implementation of further school-based and community education programs and other supporting mechanisms, such as behavioural modification approaches.

FINDING 44: The Victorian community generally feels connected to nature. However, there are opportunities to address identified barriers to improve environmental knowledge and connection through more targeted education campaigns for the broader community and specific campaigns for school children using age appropriate approaches, materials and experiences. This will ensure that opportunities to learn about the importance of protecting Victoria’s biodiversity are maximised.

¹⁵⁰ Ibid., p. 5.

RECOMMENDATION 60: That the Victorian Government review current educational initiatives, programs and curriculum in Victorian schools to ensure the facilitation of comprehensive education on the important of healthy ecosystems and functioning biodiversity.

9.5.3 Volunteering

Environmental volunteering plays a crucial role in protecting and conserving our natural environment.

According to DELWP, 2019 survey data found that 134,244 people across more than 2,000 groups undertook environmental volunteering, totalling more than 1.5 million hours of volunteer work and a combined economic contribution of \$50.7 million.¹⁵¹

In its submission, DELWP highlighted the long history of environmental volunteering in Victoria and some of the contributions it makes:

Environmental volunteering in Victoria has a long and rich history, from the grassroots Landcare movement in the 1980s through to today's diverse mix of volunteers dedicating time and effort to a range of activities aimed at both connecting people with nature and improving the natural environment. Grants programs are designed to both capture local community values but also directed to deliver activities within priority locations to deliver biodiversity and natural environment outcomes ...

Trust for Nature's skilled volunteers program offers professional ecologists and amateur naturalists the opportunity to visit private landowners and provide advice on conservation management, offering the chance to significantly improve private land biodiversity outcomes ...

Citizen science provides opportunities for the community to participate and collaborate in scientific research with the aim to increase scientific knowledge. Citizen science is growing rapidly around the world and many projects are helping us learn more about biodiversity and how we can better protect nature. The extraordinary advances in technology in recent years have vastly increased the potential for people everywhere to collect, manage, share and analyse data.¹⁵²

The *Victorians Value Nature Foundation Survey* supported greater understanding of the Victorian community's participation in environmental volunteering. Of those surveyed, 48% had volunteered at least once in the past year—however, only 7% had done so regularly.

¹⁵¹ Department of Environment, Land, Water and Planning, *Submission 927*, p. 8.

¹⁵² *Ibid.*, p. 25.

Figure 9.2 Results of the *Victorians Value Nature Foundation Survey*—environmental volunteering



Source: Meis-Harris, J, A Saeri, M Boulet, K Borg, N Faulkner and B Jorgensen, *Biodiversity 2037 Victorians Value Nature: Foundations Survey Summary*, BehaviourWorks Australia, Monash University, Melbourne, 2019, p. 6.

Identified barriers to further participation in environmental volunteering include:

- 68% of participants reported capability barriers to take up volunteering, such as not having enough time
- 12% of participants reported opportunity barriers to take up volunteering, such as being unaware of where to volunteer.¹⁵³

The report outlined options to address these barriers, including the promotion of alternative, less time-intensive volunteering opportunities, and improvement of the visibility of opportunities.¹⁵⁴

Victoria released its statewide volunteering plan, *Victorians Volunteering for Nature*, in October 2018. This plan sets out a ‘coordinated and revitalised approach’ to supporting environmental volunteers and improving the health of the natural environment.¹⁵⁵ It notes that volunteering has expanded beyond traditional conservation activities such as planting and weeding, to encompass broader concerns such as climate change and sustainability and activities including advocacy, virtual volunteering and citizen science.¹⁵⁶

The plan sets out four focus areas for overcoming barriers to environmental volunteering:

- sustaining existing environmental volunteering programs and networks

¹⁵³ Meis-Harris, et al., *Biodiversity 2037 Victorians Value Nature*, p. 6.

¹⁵⁴ Ibid.

¹⁵⁵ Department of Environment, Land, Water and Planning, *Victorians Volunteering for Nature: Environmental Volunteering Plan*, October 2018, p. 2.

¹⁵⁶ Ibid., p. 4.

- regenerating environmental volunteering and encouraging more Victorians to act for nature
- valuing and recognising the contributions of environmental volunteers
- understanding the diverse needs of the environmental volunteering sector.¹⁵⁷

The Committee received a large amount of evidence on the importance of volunteering activities in protecting and conserving Victorian biodiversity.

In a submission to the Inquiry, Emily Kinghorn described her personal experience with volunteering at a wildlife shelter:

I have volunteered at our local wildlife shelter over the years. One of the greatest experiences of my life was helping to take care and learning so much about our precious koalas and other native wildlife species. But also heartbreaking as well, when you see the damage and condition when they come into the shelter.¹⁵⁸

Friends of Warrandyte State Park outlined how volunteer groups such as its own have ‘worked very hard over decades to push back against the damage done’, but that many people experienced feelings of frustration, anger and powerlessness in relation to continuing ecosystem decline.¹⁵⁹

Port Phillip EcoCentre outlined challenges and opportunities in the volunteering sector:

The environmental citizenship and volunteering sector is innovative, effective and delivers a high return in terms of environmental improvement and community satisfaction and health for every dollar invested. Yet it can be ad hoc and participants can face significant challenges through overwhelming workloads, lack of resources, changing environmental conditions, and perceived political and societal disengagement that lead to burnout and a sense of powerlessness. The incredible volunteer-based knowledge and skill base for waterways, wildlife and ecosystem protection currently faces significant risks as current leadership ages without succession planning and knowledge sharing.¹⁶⁰

The Australian Wildlife Society advocated for the promotion and encouragement of community action in wildlife conservation activities.¹⁶¹

James Todd, Executive Director of the Biodiversity Division at DELWP, told the Committee at a public hearing that volunteering has continued to increase throughout the COVID-19 pandemic:

the number of volunteers in Victoria, even while we have been under COVID and maybe because of, has increased ... In 2020 there were some 186,000 Victorian

¹⁵⁷ Ibid., p. 11.

¹⁵⁸ Emily and Rex Kinghorn, *Submission 680*, p. 1.

¹⁵⁹ Friends Of Warrandyte State Park, *Submission 620*, p. 3.

¹⁶⁰ Port Phillip EcoCentre, *Submission 852*, p. 8.

¹⁶¹ Australian Wildlife Society, *Submission 900*, p. 2.

volunteers across over 2,000 groups giving their time to support the environment. That represented a 39% increase in terms of environmental volunteer participation from 2019, so that is quite significant.¹⁶²

Sharon Terry from Greater Shepparton City Council similarly noted increased participation in community activities during the pandemic:

during COVID, where we were not able to have those community days, planting days, the community were probably more engaged in some ways than they ever were before. The amount of positive feedback we had of people being able to go to those sites where we had done plantings in the past, comment on their health, on their growth, comment on the birds—it was the most feedback we had ever received. So again, the connection was really obvious to us.¹⁶³

The work of volunteers through Landcare groups was also discussed in Chapter 8.

The Committee is strongly supportive of the critical work that Victoria’s volunteers undertake to protect, conserve and restore our ecosystems. This contribution reflects the role that the whole Victorian community has in ensuring a healthy environment.

FINDING 45: Volunteers play a vital role in protecting, conserving and restoring Victoria’s ecosystems.

¹⁶² James Todd, Executive Director, Biodiversity Division, Department of Environment, Land, Water and Planning, Public hearing, Via videoconference, 10 August 2021, *Transcript of evidence*, p. 11.

¹⁶³ Sharon Terry, *Transcript of evidence*, pp. 27–28.

10 Compliance and enforcement

This Chapter outlines compliance and enforcement mechanisms in relation to environmental law in Victoria. It considers:

- the role of the Office of the Conservation Regulator (OCR)
- challenges in relation to compliance and enforcement, including the complex regulatory framework and available penalties
- the role of local government authorities in this space, including in terms of their powers, communication and engagement activities and resourcing.

10.1 Overview

While the OCR, within the Department of Environment, Land, Water and Planning (DELWP), is the main body undertaking compliance activities in relation to biodiversity, there are a range of other bodies that also undertake compliance and enforcement for environmental offences in Victoria. This includes Parks Victoria, Environment Protection Authority, Game Management Authority, water corporations, catchment management authorities and local government authorities.

Table 10.1 shows main areas of responsibility for some of the key regulators in relation to laws that impact on the environment.¹ Some legislation has multiple regulators, depending on the area of responsibility. For example, the OCR has primary regulatory responsibility in relation to the *Wildlife Act 1975* (Vic) (Wildlife Act), while the Game Management Authority has responsibility for provisions of the Wildlife Act relating to game licensing.

¹ This list is not exhaustive and there are various bodies with regulatory powers and functions that intersect with the environment.

Table 10.1 Areas of environmental regulatory responsibility

Body	Areas of responsibility
Office of the Conservation Regulator	<ul style="list-style-type: none"> • timber harvesting • public land • wildlife/biodiversity • fire prevention
Parks Victoria	<ul style="list-style-type: none"> • national and state parks
Environment Protection Authority	<ul style="list-style-type: none"> • protection of the environment from pollution and waste
Local government authorities	<ul style="list-style-type: none"> • land use and development through planning schemes, including in relation to native vegetation
Game Management Authority	<ul style="list-style-type: none"> • game hunting • Kangaroo Harvesting Program
Agriculture Victoria	<ul style="list-style-type: none"> • Agriculture and biosecurity

Source: Victorian Government, *Conservation Regulator laws*, 2021, <<https://www.vic.gov.au/conservation-regulator-laws>> accessed 23 September 2021; *Parks Victoria Act 2018* (Vic); Environment Protection Authority Victoria, *Laws and regulations*, 2021, <<https://www.epa.vic.gov.au/about-epa/laws>> accessed 24 August 2021. Game Management Authority, *Responsibilities for game management and hunting in Victoria*, 2021, <<https://www.gma.vic.gov.au/environment/laws/responsibilities-wildifor-game-management-and-hunting-in-victoria>> accessed 24 September 2021.

Some stakeholders raised concerns around the effectiveness of compliance and enforcement activities for environmental laws. For example, Environmental Justice Australia submitted that there were systemic implementation, compliance and enforcement failures:

There is accumulating evidence of the extent of failures in implementation, compliance and enforcement in environmental and NRM [natural resource management] regulation both within Victoria and across Australia. The problem is systemic and ultimately one of failures in environmental administration, which are growing to the point of threatening the legitimacy of public administration in this area.²

The Ecological Consultants Association of Victoria asserted that there was often a limited willingness to pursue offences due to resourcing issues and a lack of understanding of the implications:

a lack of legal action against ecological-impact perpetrators (e.g. illegal removal of native vegetation, killing of indigenous wildlife, firewood collection) as it often is considered too costly to prosecute, particularly because the implications of these actions are not clearly understood or visible by decision-makers ...³

Specific issues in relation to compliance and enforcement are discussed in the following sections.

² Environmental Justice Australia, *Submission 760*, p. 15.

³ Ecological Consultants Association of Victoria, *Submission 499*, p. 10.

10.2 Office of the Conservation Regulator

As outlined in Chapter 2, the OCR was established in early 2019 within DELWP. This followed an independent review of timber harvesting regulation, undertaken in response to DELWP's failed prosecution of VicForests for an alleged breach of the *Sustainable Forests (Timber) Act 2004* (Vic).⁴ In the independent panel's report, the importance of an effective regulator was set out:

It is critical that the public has confidence in the operations and conduct of Victoria's timber harvesting regulator. Importantly, the community's expectations of regulators change over time. In relation to timber harvesting in Victorian native forests, there has been a shift in recent years that has resulted in an expectation that DELWP will place greater emphasis on conservation values. The community expects that when a breach of the regulatory framework occurs it will be competently and thoroughly investigated and prosecuted as required. It is also important that DELWP takes up all opportunities to be a proactive and outward facing regulator, engaging in preventative activities earlier in the regulatory process and learning, as part of a continuous improvement approach, how to enhance its regulatory capability.⁵

Establishment of the OCR brought together regulatory functions within one office of DELWP, rather than split across a number of departmental areas. It also provided for appointment of a Chief Conservation Regulator who is responsible for the Department's environmental regulation functions.

The OCR has regulatory responsibility in relation to timber harvesting, public land, wildlife and biodiversity and fire prevention. The relevant legislation for each of these areas of responsibility is shown in Table 10.2.

⁴ Independent Review of Timber Harvesting Regulation, *Panel Report to the Secretary of the Department of Environment, Land Water and Planning*, 28 October 2018.

⁵ *Ibid.*, p. 5.

Table 10.2 The OCR's areas of regulatory responsibility

Area of responsibility	Legislation
Timber harvesting	<ul style="list-style-type: none"> • <i>Conservation, Forests and Lands Act 1987</i> (Vic) • <i>Flora and Fauna Guarantee Act 1988</i> (Vic) • <i>Forests Act 1958</i> (Vic) • <i>Sustainable Forests (Timber) Act 2004</i> (Vic) • <i>Wildlife Act 1975</i> (Vic)
Public land	<ul style="list-style-type: none"> • <i>Conservation, Forests and Lands Act 1987</i> (Vic) • <i>Crown Land (Reserves) Act 1978</i> (Vic) • <i>Flora and Fauna Guarantee Act 1988</i> (Vic) • <i>Forests Act 1958</i> (Vic) • <i>Land Act 1958</i> (Vic) • <i>Land Conservation (Vehicle Control) Act 1972</i> (Vic) • <i>Marine and Coastal Act 2018</i> (Vic) • <i>National Parks Act 1975</i> (Vic) • <i>Safety on Public Land Act 2004</i> (Vic) • <i>Wildlife Act 1975</i> (Vic)
Wildlife/biodiversity	<ul style="list-style-type: none"> • <i>Conservation, Forests and Lands Act 1987</i> (Vic) • <i>Crown Land (Reserves) Act 1978</i> (Vic) • <i>Flora and Fauna Guarantee Act 1988</i> (Vic) • <i>Forests Act 1958</i> (Vic) • <i>National Parks Act 1975</i> (Vic) • <i>Wildlife Act 1975</i> (Vic)
Fire prevention	<ul style="list-style-type: none"> • <i>Forests Act 1958</i> (Vic) • <i>National Parks Act 1975</i> (Vic)

Source: Victorian Government, *Conservation Regulator laws*, 2021, <<https://www.vic.gov.au/conservation-regulator-laws>> accessed 23 September 2021.

The OCR's *Compliance and Enforcement Policy*, released in June 2019, outlines the risk-based approach taken in relation to circumstances of non-compliance. This approach considers:

- the level of risk non-compliance poses to the regulatory outcomes (protecting natural and heritage values, ensuring equitable and safe access to public land and use of natural resources, and building sustainable communities)
- the ability to reduce risk to the regulatory outcomes
- the most effective use of regulatory resources.⁶

Compliance and enforcement measures will seek to ensure at least one of the stipulated enforcement objectives:

- stop the non-compliant activity
- remedy or prevent the harm

⁶ Office of the Conservation Regulator, *Compliance and Enforcement Policy*, Department of Environment, Land, Water and Planning, June 2019, pp. 4–5.

- punish non-compliance
- deter future non-compliance (both specific and general)
- stop the unlawful conduct
- raise awareness of the law.⁷

The Policy acknowledges that ‘it is not practical or appropriate to take compliance and enforcement action in response to every alleged or suspected breach’, and as a result, actions are focused where there is the greatest risk and where that risk can be reduced by compliance measures. In order to support greater levels of compliance, the Policy outlines other activities that the OCR undertakes, including in relation to public information and education, setting standards and clarifying application of the law, and providing tailored support.⁸

The OCR is supported by an Independent Regulation Advisory Panel, which provides advice on best practice approaches to regulating, as well as a Stakeholder Reference Group, which provides advice on drivers of offending, the design of regulatory activities and communication and engagement activities.⁹

The OCR is in the early stages of its development. While stakeholders to the Inquiry welcomed the streamlining of regulatory activities, many raised concerns regarding the nature of the office being part of DELWP rather than an independent body.¹⁰ For example, Warburton Environment stated that the OCR’s establishment was ‘welcome recognition that the implementation and enforcement of our nature protection laws needs to be improved’ but that it did ‘not go far enough’.¹¹ Environment Victoria noted that its structure meant that it could ‘potentially be abolished at the stroke of a pen’ and noted that it does not report to ‘either the Minister or Parliament’.¹² Environmental Justice Australia noted that the OCR lacked a legislative basis and was susceptible to future policy change:

The OCR has begun developing policies and guidelines to improve the administration of Victorian environmental regulations, including wildlife protection regulators.

This is a positive development that should improve the transparency and effectiveness of the administration of Victorian environmental regulations. However, a significant shortcoming of the OCR is that unlike the Game Management Authority, it lacks a legislative basis, meaning that it is an administrative unit within the Department. This undermines perceptions of the OCR’s independence, and means that the OCR is vulnerable to future changes in policy.

⁷ Ibid., p. 12.

⁸ Ibid., pp. 5, 9.

⁹ Victorian Government, *About the Conservation Regulator*, 2021, <<https://www.vic.gov.au/about-us-conservation-regulator>> accessed 25 September 2021.

¹⁰ See, for example, Environment Victoria, *Submission 906*, p. 22; Friends of the Koalas, *Submission 825*, p. 1; The Wilderness Society, *Submission 899*, p. 14.

¹¹ Warburton Environment, *Submission 554*, p. 6.

¹² Environment Victoria, *Submission 906*, p. 22.

Public trust and confidence in the administration of Victoria's wildlife protection laws requires a well-resourced regulator that is independent of government.¹³

East Gippsland Conservation Management Network stated that an independent body was required, with 'clear legislative foundations and the legal power required to incentivise sustainable outcomes and deliver severe penalties for non-compliance'.¹⁴ Dr Clive Carlyle noted that other areas had an 'independent watchdog', such as the Environment Protection Authority in relation to pollution.¹⁵

In its submission, Environmental Justice Australia described how the often contentious nature of conservation regulation necessitates the creation of a regulator free from political influence:

Victorian conservation regulation is complex and covers matters that can be contentious. It is important that the community has confidence that it is administered in a manner that is independent of political interference, well-resourced and in accordance with best regulatory practice. Extending the recent initiative to create the Office of the Conservation Regulator to create a clear legislative foundation for the Regulator will help secure these objectives. This is the approach taken in NSW as a consequence of failings in the administration of water resources laws.¹⁶

The Ecological Society of Australia stated that having an independent environmental regulator is an 'absolutely critical advance that is essential for effective biodiversity conservation', using environmental impact assessments as an example of this need:

The need for an independent environmental watchdog is especially important for managing all aspects of environmental impact assessments. The proponent of developments directly employ consultants to make environmental assessments, which risks a potential (but major) conflict of interest that can mean environmental impacts are not adequately reported or addressed. These conflicts of interest lead directly to corruption, as reported in the Australian mining industry (TIA 2017), and in water management (Grafton & Williams 2020). This obvious conflict of interest and reported corruption must be avoided via an independent environmental watchdog, otherwise biodiversity conservation legislation in Victoria will fail to achieve its goals.¹⁷

Professor Lee Godden, Director of the Centre for Resources, Energy and Environmental Law at the University of Melbourne, asserted her support for an independent agency at a public hearing. Professor Godden described how accountability and transparency could be built into this type of agency to enable it to carry out its work, while still working closely with government:

I would certainly strongly support an independent agency and I think, as I said, if the regulator is an institutional first step I see that there is a need for further pathways. In terms of thinking about whether you would need compliance and enforcement,

¹³ Environmental Justice Australia, *Submission 760*, pp. 16–17.

¹⁴ East Gippsland Conservation Management Network, *Submission 831*, p. 5.

¹⁵ Dr Clive Carlyle, *Submission S621*, p. 2.

¹⁶ Environmental Justice Australia, *Submission 760*, p. 17.

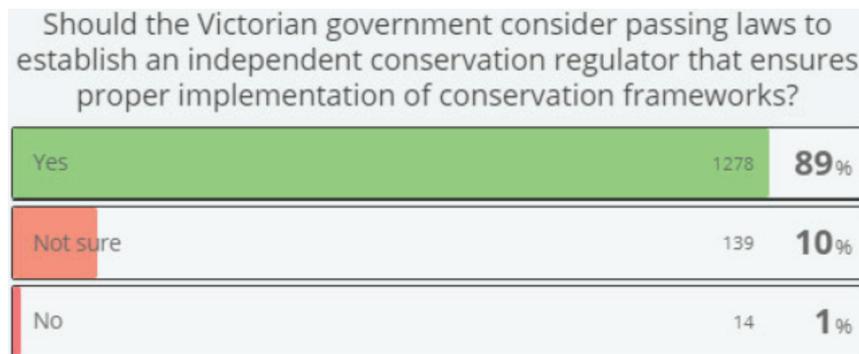
¹⁷ Ecological Society of Australia, *Submission 575*, p. 8.

I think these would be things that would need to be worked out in terms of the powers that are accorded to the regulator or indeed to any independent agency. You also have to have safeguards. You have to ensure that there is the accountability and the transparency around those positions if you are going to give, for example, compliance powers to any independent agency, and also again to ensure accountability through reporting networks and so on. So the idea perhaps is not complete independence from your government department but certainly a degree of independence in relation to, for example, achieving outcomes, so there might be a designated set of outcomes that could be ascribed to the regulator and there would be independence in the way in which those were achieved. That is one model we could think of.¹⁸

Murrindindi Climate Network was supportive of the appointment of the OCR but asserted that it did not resolve the tensions within DELWP that arise from having responsibility for multiple conflicting policy areas. It submitted that tensions between conflicting policy areas is undermining and hampering DELWP’s ability to effectively enforce compliance with environmental legislation as it is ‘missing checks and balances’. Murrindindi Climate Network said that the appointment of the OCR did not resolve this as it lacks independence from DELWP and may therefore be ‘affected by conflicting internal policy objectives’.¹⁹

In a survey of its supporter base, Environment Victoria canvassed opinions on whether legislative reform should enable establishment of an independent regulator for conservation which ‘ensures proper implementation of conservation frameworks’. A total of 1,278 responses, or 89% of respondents, supported the creation of an independent regulator, as shown in Figure 10.1.

Figure 10.1 Survey of views regarding an independent conservation regulator



Source: Environment Victoria, *Submission 906*, p. 21.

During the 2018 *Independent Review into Timber Harvesting Regulation*, the panel considered the potential structure of reformed conservation regulation arrangements, including whether this should take place through an independent standalone authority. It noted that this approach had been undertaken in other jurisdictions, but

¹⁸ Professor Lee Godden, Director, Centre for Resources, Energy and Environmental Law, University of Melbourne Public hearing, Melbourne, 20 April 2021, *Transcript of evidence*, pp. 23–24.

¹⁹ Murrindindi Climate Network Inc., *Submission 759*, p. 11.

did not recommend a similar structure for Victoria as the office dealt with ‘only one state-owned corporation operating in state forests’. It noted that if this were to change, ‘there may be merit in further investigation of the ... model and its application in Victoria’.²⁰

Since its establishment, the OCR has undertaken a wide range of regulatory functions across different areas of environmental conservation, not restricted solely to VicForests’ operations. The Victorian Government has described the OCR’s work as providing ‘a central point of coordination and oversight for DELWP’s regulatory functions including the natural environment, timber harvesting, public land use, fire prevention, wildlife and biodiversity’.²¹

The independent review of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) considered issues relating to environmental compliance and enforcement, including the importance of an independent regulator. Among the key recommendations contained in the interim report was the establishment of a ‘modern, independent regulator responsible for monitoring, compliance, enforcement and assurance’.²² The concerns raised in the EPBC Act review have similarities to those raised in relation to the operation of the OCR. This includes regarding potential conflicts of interest:

An independent monitoring, compliance, enforcement and assurance regulator that is not subject to actual or implied direction from the Environment Minister should be established. This is important to address significant community concern about perceived conflict of interest, which is undermining their trust in the EPBC Act.²³

Professor David Lindenmayer AO, from the Fenner School of Environment and Society at the Australian National University, also advocated for legislative reform to properly empower the OCR. He suggested that the OCR is currently highly ineffective as it has no power to proactively regulate VicForests’ native logging operations and can only highlight breaches after they have occurred.²⁴

At a public hearing, Kate Gavens, Victoria’s Chief Conservation Regulator, responded to suggestions that the OCR may be better able to perform its functions if it were independent from DELWP:

there are many different ways that regulators are established under the law. Some are established as separate statutory authorities, some are administrative offices of departments. The Office of the Conservation Regulator is an administrative office of the Department of Environment, Land, Water and Planning. That is consistent with the recommendations that were made out of the 2018 independent review of timber harvesting. That independent review and DELWP’s response committed to establishing

20 Independent Review of Timber Harvesting Regulation, *Panel Report to the Secretary of the Department of Environment, Land Water and Planning*, p. 34.

21 Department of Environment, Land, Water and Planning, *About the Office of the Conservation Regulator* Factsheet, 2019, p. 1.

22 Professor Graeme Samuel AC, *Independent Review of the EPBC Act – Interim Report*, report for Commonwealth Department of Agriculture, Water and the Environment, Canberra, June 2020, p. 92.

23 *Ibid.*, p. 95.

24 Professor David Lindenmayer AO, *Submission 353*, pp. 2–3.

the office and establishing a senior executive responsible for regulatory decision-making within the department, so that is what the department has done—and ensured the relevant powers, functions and duties stick with myself and with my officers to be able to effectively undertake that task. From my point of view the discussion about whether you need a statutory authority or whether it is enough to have an administrative office does not really come into it for me. I have got the powers and duties and functions under law to do what I need to do.²⁵

The Committee notes the Chief Conservation Regulator’s advice that the OCR has the powers needed to carry out its regulatory responsibilities and commends the important work it has undertaken to date to ensure compliance with environmental laws across the state. The OCR has clearly improved the ways in which environmental regulatory functions are carried out, including in relation to public engagement and communication.

However, the Committee considers that there are strong reasons to support the establishment of an independent authority responsible for conservation regulation in Victoria. This includes to ensure public faith in environmental compliance and enforcement activities and to prevent perceptions of political influence or bias. The Committee notes the advice of the 2018 *Independent Review into Timber Harvesting Regulation*, that the institutional structure of the office could be further investigated if its role were to change, as well as the finding of the independent review of the EPBC Act regarding the importance of an independent regulator.

RECOMMENDATION 61: That the Victorian Government, in light of the evidence received by this Committee, considers the establishment of an independent agency with responsibility for regulatory activities in relation to conservation and the environment. Regulatory responsibilities of this agency should include, at a minimum, those currently overseen by the Office of the Conservation Regulator within the Department of Environment, Land, Water and Planning. As part of this process, the Victorian Government should seek to streamline regulatory activities. Further, additional resourcing should be provided to the newly-formed regulator to ensure that it is able to continue to effectively carry out its compliance and enforcement functions.

10.3 Challenges

10.3.1 Complex regulatory environment

One of the concerns raised in relation to compliance and enforcement is the complex and often confusing regulatory environment. As noted in the previous sections, there is a broad range of legislation and regulators undertaking compliance and enforcement regarding activities that impact the environment.

²⁵ Kate Gavens, Chief Conservation Regulator, Office of the Conservation Regulator, Public hearing, Via videoconference, 10 March 2021, *Transcript of evidence*, p. 17.

For example, David Bennett, a forester and lawyer, described at a public hearing the need for a more streamlined regulatory framework:

The other thing I would like to just talk about is whether we can simplify and make the regulatory framework more streamlined, so potentially having a single statute with a really well resourced and singularly focused regulator rather than the split approach like we have now.²⁶

The Research Centre for Future Landscapes advocated for an ‘overhaul of environmental laws’ to ensure they are ‘rigorous and enforceable, and designate accountability for implementation, compliance and enforcement’.²⁷

In its submission, DELWP outlined some legislative barriers to effective compliance and enforcement on public land, which have the potential to be addressed through establishment of a new Public Land Act:

Many areas of public land remain largely unregulated from a land management perspective due to administrative barriers to formal reservation of many relevant government-accepted VEAC recommendations. The compliance and enforcement provisions in the current Crown Land Acts are generally outdated and inconsistent. There is an opportunity through the renewal of the public land legislation to ensure all public land is subject to a more effective compliance and enforcement framework that will better protect public land values, including biodiversity.²⁸

Stakeholders also highlighted how it was often difficult to know which regulator was responsible for different matters. For example, Dr Clive Carlyle provided the example of illegal firewood:

the issue of illegal firewood collection falls across at least four State organisations (Councils, Parks Victoria, DELWP, and Vic Roads) making it very difficult for individuals to report illegal activity. There is no facility to report illegal activity outside normal office hours.²⁹

At a public hearing, Parks Victoria and the OCR outlined the partnerships and coordination in place to ensure a cohesive regulatory framework. Kate Gavens outlined the importance of these partnerships for biodiversity outcomes:

we have got a really stronger partnership with Parks Victoria and with other regulators such as the Game Management Authority and the Victorian Fisheries Authority. So we work really closely as natural resource management regulators to ensure that we are, again, looking at what are our key priorities. If we take, for example, the take of firewood, that is an issue that is prevalent in national parks and in state forests. We run joint operations and we combine our intelligence to make sure that we are targeting where this illegal activity is happening, and often Victoria Police will be involved in that

²⁶ David Bennett, Public hearing, Melbourne, 12 May 2021, *Transcript of evidence*, p. 38.

²⁷ La Trobe University Research Centre for Future Landscapes, *Submission 682*, p. 2.

²⁸ Department of Environment, Land, Water and Planning, *Submission 927*, p. 35.

²⁹ Dr Clive Carlyle, *Submission S621*, p. 3.

as well. We will run these joint operations to be able to work across those land tenures to target that illegal activity. So that is a really critical part of our role as a regulator, those partnerships with other regulators to get the best outcomes in relation to areas like biodiversity.³⁰

Similarly, Dr Mark Norman, Chief Conservation Scientist and Executive Director of Environment and Science at Parks Victoria, stated that Parks Victoria was expanding its capability for joint compliance work:

In relation to compliance, we are very active at the moment with the new Office of the Conservation Regulator, and we are building an expanded program and additional resources for compliance as a joint exercise. And we have received some funding for increased authorised officers in the recent budgets, but it is certainly an area that we recognise the increasing need in and increasing issues. Even under COVID we have had much higher dumping of asbestos and other forms of industrial waste across the landscape, lots of illegal firewood harvesting, lots of illegal activities, so it is a very strong focus. And our executive director of commercial, planning and economic recovery ... is in charge of a major review of compliance and our authorised officer teams, and to work with that Office of the Conservation Regulator on really ramping that up is very front of mind, and it is very actively being pursued at the moment.³¹

The OCR and other regulators also undertake public communications and engagement work to support the community to comply with environmental laws. For example, the OCR's *Engagement Strategy* sets out the approach to engagement, including in relation to Victorian communities and Traditional Owner groups.³² As outlined by Kate Gavens, 'regulation is not just about compliance enforcement. It is about getting out there and educating the public on what they can do and how to do it safely.'³³

The Committee welcomes the collaborative relationships between Victoria's regulators and the positive impacts this will have for biodiversity outcomes. It also notes the Victorian Government's intention to investigate means of addressing compliance issues in relation to public land through development of a new Public Land Act. However, it nevertheless notes stakeholder concerns regarding the complexity of the regulatory framework. In line with recommendation 61 above, the Committee considers that a new independent agency with responsibility for conservation and environmental regulation could play a key public-facing role in streamlining regulatory activities and acting as a point of contact for environmental regulation. This could include, for example, increasing public engagement and communications around how compliance and enforcement takes place in relation to environmental laws, and providing an information and advice service to individuals and organisations.

³⁰ Kate Gavens, *Transcript of evidence*, p. 14.

³¹ Dr Mark Norman, Chief Conservation Scientist and Executive Director of Environment and Science, Parks Victoria, Public hearing, Melbourne, 3 December 2020, *Transcript of evidence*, p. 21.

³² Office of the Conservation Regulator, *Engagement strategy*, Melbourne, 2019, p. 7.

³³ Kate Gavens, *Transcript of evidence*, p. 15.

RECOMMENDATION 62: That the Victorian Government streamline environmental regulatory activities in Victoria by considering the establishment of a single office to act as a first point of contact for environmental regulation, with functions to undertake broad-based public communication and engagement activities and provide information and advice on environmental issues that fall across the various regulators. Guidance and communication should be widely distributed and appropriate for differing accessibility needs. This office should ideally be situated in a new independent agency with responsibility for environmental and conservation regulation.

10.3.2 Penalties

Another theme raised throughout the Inquiry was that many penalties for offences related to biodiversity and environmental harm are an ineffective deterrent and do not meet community expectations. An example of this is provided in relation to wildlife crime in Box 10.1.

BOX 10.1: Wildlife crime

Under the Wildlife Act, there are over 40 offences relating to wildlife, with fines of between 20 and 1,000 penalty units and up to two years' imprisonment. This includes offences of hunting, taking or destroying threatened or protected wildlife and killing wildlife by poison.

Poisoning of wedge-tailed eagles in East Gippsland

In 2018, a total of 134 wedge-tailed eagles were found dead on an agricultural property in East Gippsland. It was determined that many had been killed between October 2016 and April 2018 using poisoned bait.

Charges were laid against two individuals, the farm manager and landholder. The farm manager was found guilty of the destruction of protected wildlife under the Wildlife Act, which carries a maximum penalty of 240 penalty units (\$43,618) and/or 24 months imprisonment, with additional penalty units depending on the number of wildlife involved. He was fined \$2,500 and imprisoned for 14 days. This was the first time a custodial sentence had been imposed for destruction of wildlife under the Act.

As noted in an issues paper as part of a review of the Wildlife Act, there was significant outrage in the Victorian community regarding the punishment imposed, which was viewed as 'inadequate and disproportionate given the large number of deaths of an iconic protected species'.

Source: *Wildlife Act 1975* (Vic) ss 41, 43, 54; Wildlife Act Review Expert Advisory Panel, *Independent Review of the Wildlife Act 1975: Issues paper*, Department of Environment, Land, Water and Planning, 2021, pp. 3, 30.

Stakeholders cited this case as an example of how the penalties in the Wildlife Act, and compliance and enforcement mechanisms more broadly, are not fit for purpose.

For example, the Biodiversity Planning Network argued that this case ‘demonstrated a significant failure’ in the ways in which the Act is implemented, ‘particularly with regard to providing a suitable deterrent and environmental remediation for biodiversity-related offences’.³⁴ The Ecological Consultants Association of Victoria agreed about the weakness of the penalty and added that it demonstrated ‘a lack of understanding of the ecological implications of the action and the ways in which such actions contribute to ecosystem decline in Victoria and further afield’.³⁵ The City of Darebin advocated for stronger penalties for those guilty of offences under the Wildlife Act, including for the removal of habitat.³⁶

Stakeholders also provided other examples of cases where compliance and enforcement measures were not seen to be in line with community expectations and the seriousness of the offences. For example, Wildlife Victoria described the case of an individual convicted for deliberately causing harm to emus in Cowangie, in Victoria’s north-west:

In another case that shocked the community, Jacob Scott MacDonald was sentenced to 42 days jail, reduced on appeal, and served no custodial sentence, after being convicted of deliberately running over emus in Cowangie in 2019.³⁷

The OCR has responsibilities for enforcing provisions of the Wildlife Act, although its establishment followed the case study in Box 10.1. At a public hearing, Kate Gavens described the most common offences and conflicts:

A big challenge for us is the human wildlife conflicts, and we see a range of those issues, from one-to-one issues—we see quite a lot of illegal shooting of wildlife, which might be an individual, through to baiting of wildlife, through to the illegal trade and traffic of wildlife, which has been a really critical focus for us. We are really focusing on how do we ensure we can eliminate the illegal trade in wildlife in Victoria, and we have had significant operations to support that. We are also focusing on making sure we can investigate wildlife crime in a timely way to be able to bring offenders to account and to send a really clear message to the community that this behaviour is inappropriate.

There is certainly a really strong demand for Victorian wildlife on the international market, and individual species can fetch up to \$12,000 on the black market internationally. Where wildlife is taken from the wild it does not just impact on those individual species, but often we see what is left behind is significant habitat destruction as well ... Just this week we have had a successful court case with a person who was smuggling wildlife from both Victoria and New South Wales, with over a three-year

³⁴ Biodiversity Planning Network, *Submission 523*, p. 11.

³⁵ Ecological Consultants Association of Victoria, *Submission 499*, pp. 14–15.

³⁶ City of Darebin, *Submission 452*, pp. 16–17.

³⁷ Wildlife Victoria, *Submission 712*, p. 7.

custodial sentence being handed down this week. So we are really pleased to see that, and we hope that is going to be a real deterrent to this type of crime.³⁸

As noted elsewhere in this report, the Wildlife Act is currently being reviewed by an independent panel. It has not been reviewed since it was introduced over 45 years ago. In an issues paper, the panel notes a number of key issues relating to offences and penalties, including:

- whether the most appropriate offences are included in the Act
- whether maximum penalties deter or sufficiently reflect the seriousness of offences
- whether continuing offences (ongoing failures to perform a duty required by law) and additional penalties (imposed for each day the offence continues) should be strengthened
- the sentencing process does not provide sufficient guidance for judges
- other sanctions and remedies could be incorporated into the Act to help achieve its objectives, such as civil penalty provisions, infringement notices, enforceable undertakings and compensation orders
- authorised officers may not have the necessary powers to enforce the Act.³⁹

The report notes that similar legislation in other jurisdictions includes offences not included in Victoria's Wildlife Act, such as taking native wildlife from critical habitats and disturbing dangerous native animals.⁴⁰ In relation to the current maximum penalties, the paper states:

The maximum penalties under the Act have been considered too low to either deter or punish offenders. They do not reflect the gravity of the offences committed against wildlife and are lower than the maximum penalties in other jurisdictions.⁴¹

More broadly, stakeholders raised concerns regarding penalties under other Acts, including under the *Planning and Environment Act 1987* (Vic) (Planning and Environment Act).

Division 2 of the Planning and Environment Act sets out offences and penalties that apply for contravention of a planning scheme, permit or agreement. This includes clearing native vegetation without adhering to the native vegetation clearing regulations. General penalties are established under s 127 of the Act, which provides for a maximum penalty of 1,200 penalty units (\$218,088),⁴² plus additional penalty units if an offence is of a continuing nature. In addition, s 130 of the Planning and

³⁸ Kate Gavens, *Transcript of evidence*, pp. 12–13.

³⁹ Wildlife Act Review Expert Advisory Panel, *Independent Review of the Wildlife Act 1975: Issues paper*, Department of Environment, Land, Water and Planning, 2021, Part 5, pp. 29–34.

⁴⁰ *Ibid.*, p. 29.

⁴¹ *Ibid.*, p. 30.

⁴² For the period 1 July 2021 to 30 June 2022, one penalty unit equates to \$181.74. See, Sentencing Advisory Council, *Fine*, 2021, <<https://www.sentencingcouncil.vic.gov.au/about-sentencing/fine>> accessed 23 September 2021.

Environment Act provides for authorised officers to issue planning infringement notices for a contravention of a planning scheme, permit or agreement. A planning infringement notice carries a maximum penalty of five penalty units (\$909) for an individual and 10 penalty units (\$1,817) for a body corporate. A notice can require, in relation to the use of land which constitutes an offence:

- that the use is stopped, modified or removed
- the prevention or minimisation of any adverse impact of the use
- entering into an agreement under s 173 of the Planning and Environment Act, which deals with agreements between landowners and relevant authorities.⁴³

The Biodiversity Planning Network noted in its submission that ‘actual penalties are generally much lower than the maximum penalty’ and that the ‘financial input, time and effort required to obtain successful prosecution often exceeds the penalty, if prosecution is successful and a penalty is issued’. In relation to planning infringement notices, it argued that these are not effective deterrents in light of the low penalties:

Offsets alone for the removal of one large tree are approximately \$5,000 while the minimum offset for remnant patch removal is around \$1,500. Adding permit application fees and costs associated with time delays to obtain a planning permit makes environmental planning contraventions a viable business. Although Planning Infringement Notices can include rectification requirements, these are rarely adequate to restore the biodiversity or habitat losses. Large trees, herbaceous understorey vegetation, soil profile and natural rocky habitats are very difficult and often not practicably replaceable. This makes adequate deterrence through substantial maximum penalties more important.⁴⁴

Similarly, Hume City Council stated in its submission that the system as it stands ‘encourages deliberate breaches’:

Where non-permitted (illegal) clearing costs and outcomes are less onerous for the landholder than having a permit granted and offsetting through legal mechanisms, the system encourages deliberate breaches of the planning scheme. In many cases the time and financial cost of gaining approval and offsets is more burdensome than the financial cost of illegally impacting on native vegetation ...⁴⁵

The Council argued that maximum penalties should be increased under the Planning and Environment Act to recognise rising land values and risk/benefit ratios of illegal activity. It also suggested that protocols should be established to ensure the reestablishment and long-term management of native vegetation on land that has been subject to illegal clearing.⁴⁶

⁴³ *Planning and Environment Act 1987* (Vic) s 130.

⁴⁴ Biodiversity Planning Network, *Submission 523*, p. 10.

⁴⁵ Hume City Council, *Submission 736*, p. 6.

⁴⁶ *Ibid.*

In advocating for an increase in penalties in order to provide an incentive to landowners to comply with the requirements of planning schemes, the Biodiversity Planning Network stated that:

Environmental laws which are suitable and adequate to support effective environmental law enforcement will ... provide adequate penalties to deter people or companies from committing offences. This includes penalties which outweigh:

- the cost of complying with environmental laws.
- average financial gains from contravening environmental laws, when considering the risks of being caught.⁴⁷

As noted in the previous sections, local government authorities often have to balance roles of engagement and support for landowners with enforcement. Nillumbik Shire Council noted in its submission that punitive measures are not always the most effective:

The provision/delivery of private landholder engagement that encourages the protection of significant species and habitats through education, support and incentives tends to be more effective than pursuing regulation and enforcement penalties after the event. Greater government effort and resources should focus on increasing the opportunities for and willingness of landowners to restore and protect biodiversity on private lands.⁴⁸

The Committee notes that the independent panel undertaking a review of the Wildlife Act is examining the adequacy of current enforcement and compliance mechanisms under the Act, including whether penalties act as sufficient deterrents for wildlife crime. It welcomes this review and hopes that amendments to the Act will ensure a fairer system of penalties that reflects modern needs and community expectations, and acts as an effective deterrent to wildlife crime.

However, the Committee considers that penalties for offences that impact biodiversity and ecosystems, across Victoria's suite of environmental legislation, would benefit from review to ensure that they act as effective deterrents, meet community expectations and are appropriately balanced with the costs of compliance with the regulatory framework.

FINDING 46: Penalties for crimes that harm Victoria's ecosystems and biodiversity must act as an effective deterrent and be balanced with the costs of complying with relevant regulations.

⁴⁷ Biodiversity Planning Network, *Submission 523*, pp. 13-14.

⁴⁸ Nillumbik Shire Council, *Submission 392*, p. 23.

RECOMMENDATION 63: That the Victorian Government undertake a review of penalties for offences that threaten Victoria’s ecosystems and biodiversity in order to ensure that they act as an appropriate deterrent, including in relation to penalties for offences under the *Planning and Environment Act 1987* (Vic).

10.4 Local government

As outlined above, local government authorities play a key role in compliance and enforcement in relation to Victorian planning schemes. A number of issues were raised by Inquiry stakeholders as presenting challenges to how these activities are carried out and are discussed in the following sections.

10.4.1 Native vegetation

One key challenge raised by councils relates to the unauthorised clearing of native vegetation. As discussed in Chapter 6, compliance with the native vegetation clearing regulations is a requirement of the Victoria Planning Provisions and all planning schemes in Victoria. However, the Victorian Government has acknowledged that enforcement of the regulations varies.⁴⁹

Victoria’s history of land clearing has led to changed landscapes with major challenges for land managers. DELWP has recently reported that land clearing has slowed since the introduction of the native vegetation clearing regulations in 1989. Nevertheless, the extent and quality of native vegetation continues to decline by approximately 4,000 habitat hectares per year.⁵⁰

Importantly, some of this decline results from non-compliance with the native vegetation clearing regulations. Illegal clearing of native vegetation in Victoria is outlined in Box 10.2.

⁴⁹ Victorian Government, *Victorian Government response to the State of the Environment 2018 report*, 10 December 2020, p. 14.

⁵⁰ Department of Environment, Land, Water and Planning, *Submission 927*, p. 9.

BOX 10.2: Illegal clearing of native vegetation

Native vegetation refers to flora that are indigenous to Victoria, including plants, trees, herbs, shrubs and grasses. A patch of native vegetation is an area with at least a quarter of the perennial understorey plant cover being native, or where there is a certain number of native canopy trees or mapped wetlands. A scattered tree that doesn't form part of a patch of native vegetation can also be protected.

The *Guidelines for the removal, destruction or lopping of native vegetation* set out a three-step approach to achieve the goal of no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation—avoid, mitigate and offset. This requires land managers to:

- avoid the removal, destruction or lopping of native vegetation
- minimise impacts from the removal, destruction or lopping of native vegetation that cannot be avoided
- provide an offset to compensate for the biodiversity impact from the removal, destruction or lopping of native vegetation.

However, clearing of native vegetation outside of what is permitted under the native vegetation clearing regulations continues to take place on private land. This contributes to biodiversity decline through, for example, impacts on species habitat and changes to ecosystems.

Challenges in relation to compliance and enforcement for unauthorised clearing include difficulties in monitoring the extent and quality of native vegetation on private land as well as any changes that have occurred. This currently relies largely on councils having appropriate resourcing, receipt of tip-offs on potential unauthorised activity, and the existence of appropriate powers to investigate any suspected illegal activity.

Successful outcomes of enforcement activities can include the issuing of Planning Infringement Notices (with fines and replanting requirements), charges being laid under the Planning and Environment Act at the Magistrates' Court of Victoria, or Victorian Civil and Administrative Tribunal Enforcement Orders with remediation requirements.

Source: Department of Environment, Land, Water and Planning, *Guidelines for the removal, destruction or lopping of native vegetation*, Melbourne, 2017, pp. 6, 12; Department of Environment, Land, Water and Planning, *Annual Report 2019–2020: A report on the operations of the native vegetation removal regulations*, December 2020, p. 18.

Local government authorities have primary responsibility for ensuring compliance with the native vegetation clearing regulations. DELWP works with the Department of Jobs, Precincts and Regions and Local Government Victoria to 'improve council capability to more effectively administer compliance and enforcement of native vegetation regulations'.⁵¹

⁵¹ Ibid., p. 34.

The Committee received evidence regarding the ongoing loss of native vegetation despite the ‘no net loss’ objective under the native vegetation clearing regulations, including through unauthorised means. Sharon Terry, Manager Environment at Greater Shepparton City Council, stated at a public hearing that: ‘we are seeing net loss in our municipality and in our ... neighbouring municipalities’.⁵² She provided an overview of illegal removal of native vegetation in the Shepparton region, noting that penalties are not acting as an effective deterrent (as discussed at 10.3.2):

on average, Greater Shepparton City Council is notified of between 12 and 15 illegal removals per year and we know that there is many more going on out there that we are not notified of. Under the current regime, the ... financial incentive, is to go down that path. So as an example, an average permit fee is \$1,200 to apply for a native vegetation removal permit. And then there are offsets on top of that and the value of the offsets vary according to the amount of native vegetation that is lost. In comparison, an infringement notice for an individual is \$826 and for a company it is \$1,600. So the incentive very clearly is for people— ... to remove native vegetation illegally ...⁵³

The Victorian Farmers Federation asserted that the current controls are counterproductive and do not achieve net gain:

Clause 52.17 [requirement for a planning permit to remove, destroy or lop native vegetation] demonstrates the effectiveness of a ‘protect’ tool that does not enable the revegetation required to achieve the ‘net gain’ position it seeks – a common problem where the focus is on a regulatory control only. The system in 30 years of operation is now further away from achieving gain as each ‘tightening’ has failed to acknowledge natural systems where only existing vegetation is maintained then the health of the environment must decline with age ... the regulatory approach of the State to use the Planning and Environment Act alone to manage native vegetation will only continue to ensure that although existing vegetation is protected decline of biodiversity will continue to be the outcome.⁵⁴

The Federation stated that there ‘may be a role for regulation’ but that it ‘should be a baseline to minimise certain behaviours’ and not restrict activities which will improve environmental outcomes. It recommended the removal of Clause 52.17 of the Victoria Planning Provisions—the requirement for a planning permit for native vegetation clearing—from farming areas, and the use of incentives for land management outcomes.⁵⁵ Incentives were discussed further in Chapter 8.

Brimbank City Council stated in its submission that the extent of native vegetation loss was not known and cases of illegal removal often relied on individuals reporting it:

The extent of illegal clearance of native vegetation is highly unknown, and is almost solely reliant on individuals with a good understanding and knowledge of local environmental values reporting this through. Understanding the extent of loss or

⁵² Sharon Terry, Manager Environment, Greater Shepparton City Council Public hearing, Shepparton, 28 April 2021, *Transcript of evidence*, p. 23.

⁵³ *Ibid.*, p. 24.

⁵⁴ Victorian Farmers Federation, *Submission 882*, pp. 8–9.

⁵⁵ *Ibid.*, pp. 11–12.

indeed proving that loss has occurred is difficult, and often enforcement actions are not commensurate to the loss, nor sufficient to act as a deterrent.⁵⁶

The Goulburn Broken Local Government Biodiversity Reference Group similarly described the role of members of the community in reporting unauthorised removal and the challenges this raises, as well as the limited benefits for biodiversity even if enforcement measures are pursued:

Illegal clearing occurs often and when it is reported or discovered; it is very difficult to get neighbours to report offences for fear of reprisal in a small community. These witness statements are required to establish guilt, particularly if the clearing occurred on public land.⁵⁷

The submission stated that illegal removal is 'rife' in rural areas and that councils are poorly resourced to respond to reports of non-compliance:

Anecdotal evidence from members of our group is that illegal clearing of native vegetation is poorly monitored, insufficiently regulated and rife in rural areas. Education programs associated with the Native Vegetation Regulations are insufficient and little to no training is given to planners or council staff, particularly in regional areas where most remnant vegetation is located and at the highest risk of illegal or accidental clearing. Once illegal clearing has occurred, enforcement of the native vegetation regulations is incredibly difficult under the *Planning and Environment Act 1987*, it is also very challenging for small rural councils to resource and fund this compliance work. Many requests for compliance help has been met with the response that there is no resourcing for this through state government.⁵⁸

In addition, the Committee heard that despite safeguards put in place as part of the Melbourne Strategic Assessment's Biodiversity Conservation Strategy, illegal clearing in these areas is continuing. For example, Hume City Council described how this was happening in its municipality and in neighbouring areas:

The timestamping process established in 2011 was developed to provide security against illegal clearing of BCS [Biodiversity Conservation Strategy] areas. However, this has not been the case in practice.

Hume City Council is currently involved in four cases involving illegal vegetation removal or illegal soil disturbance within these conservation areas. Discussions by Council officers with colleagues from neighbouring Councils has revealed that this is something that is happening across the Biodiversity Conservation Strategy.

It is unclear why landholders and occupiers are undertaking this clearing. However, it indicates that the processes established by the state government to deliver its obligations under the Melbourne Strategic Assessment Bilateral Agreement to protect land, is not working.⁵⁹

⁵⁶ Brimbank City Council, *Submission 926*, p. 5.

⁵⁷ Goulburn Broken Local Government Biodiversity Reference Group, *Submission 450*, p. 4.

⁵⁸ Ibid.

⁵⁹ Hume City Council, *Submission 736*, p. 8.

Michelle Wyatt, Environment Coordinator at Macedon Ranges Shire Council, explained that reasons for non-compliance with the native vegetation clearing regulations include limited knowledge of obligations and financial disincentives through the costs of compliance:

For some people it might be ignorance—that they do not know they needed a permit. That might be some people. For a lot of people I can only speculate that they take the mentality of, I guess, a ‘do now, apologise later’ kind of approach because the disincentives are not really there. The penalties are quite low for removing vegetation illegally, and more often than not they want to pursue an activity on their property and would rather accept the fine than not.⁶⁰

In terms of the consequences of unauthorised removal, a successful case may result in a fine or a requirement to restore or revegetate an area. However, the Goulburn Broken Local Government Biodiversity Reference Group stated that even if a case proceeds to court, ‘offenders often dispute the case and receive very little penalty’. If requested to restore native vegetation, it asserted that ‘this could be years after the initial discovery and as such the ecosystem has been destroyed’.⁶¹

In addition, the Ecological Consultants Association of Victoria submitted that the consequences for illegal removal are ‘miniscule compared to the degradation they cause’. It asserted that ‘many other known examples of illegal vegetation removal’ have resulted in small fines or no conviction, however, these examples ‘are tied with confidentiality which also protects the perpetrator’s personal and business reputation’.⁶²

Hume City Council asserted that reform is needed in relation to compliance and enforcement activities under the Planning and Environment Act:

There is a fundamental need to reform the way compliance and enforcement is undertaken under the *Planning and Environment Act 1987*, in relation to biodiversity losses. Without an efficient and functioning compliance and environment framework, the native vegetation regulations are unable to function as desired to prevent biodiversity decline, nor are they taken seriously by the community ... Given the extent of non-compliance with the *Planning and Environment Act 1987* Council can conclude that the Act does not contain the most appropriate tools and penalties to adequately deter illegal removal of native vegetation.⁶³

Brimbank City Council welcomed DELWP’s annual reporting on the native vegetation clearing regulations, but noted some limitations, including that cases of illegal removal are not included:

The DELWP Annual reporting on the operations of the native vegetation removal regulations is a welcome document. This report, however, has limitations in several

⁶⁰ Michelle Wyatt, Environment Coordinator, Macedon Ranges Shire Council, Public hearing, Melbourne, 12 May 2021, *Transcript of evidence*, p. 12.

⁶¹ Goulburn Broken Local Government Biodiversity Reference Group, *Submission 450*, p. 4.

⁶² Ecological Consultants Association of Victoria, *Submission 499*, pp. 34–35.

⁶³ Hume City Council, *Submission 736*, p. 5.

respects; information is reliant on the timely submission and accuracy of data provided by LGAs; it does not record cases of illegal native vegetation or enforcement actions and; is limited to annual data and as such does not give an indication of cumulative removal.⁶⁴

In its *Annual Report 2019–2020 on the operations of the native vegetation removal regulations*, DELWP noted that there is ‘no statewide system for councils and DELWP to report or record cases of illegal native vegetation removal and any associated enforcement actions.’ The report states:

With limited recording of unauthorised removal, it is not possible to provide statistics or to verify the full extent and impact of unauthorised removal on biodiversity. DELWP will work with [responsible authorities] to establish a method for recording and reporting known illegal removal cases.⁶⁵

The annual report provided that DELWP’s Senior Executive Team has initiated a departmental working group to develop an action plan to address illegal clearing. This initiative was also flagged in the Victorian Government’s response to the *State of the Environment 2018*, in response to a recommendation to invest in local government capability to undertake compliance and enforcement in relation to unauthorised removal of native vegetation.⁶⁶ The action plan addresses four key areas:

- education and awareness of landowners to ensure they are aware of the requirements of the native vegetation clearing regulations
- improving capability and capacity of local councils, who are the responsible compliance body
- improving knowledge and establishing networks to support compliance action
- identifying relevant legislative considerations including the effectiveness of enforcement orders and planning infringement notices.⁶⁷

Goulburn Broken Local Government Biodiversity Reference Group advocated for data collection and monitoring around native vegetation, including unauthorised removal or the use of exemptions from the operation of the native vegetation clearing regulations:

The state government must ensure that data is collected and monitored to capture the total extent of losses and gains that include illegal clearing and exemptions, but currently this data is not captured and exemptions can be used with no council or state approval needed (e.g. no requirement to prove the exemption applies prior to removal of vegetation). Without monitoring loss at a state level, we fail to consider the total picture ... It is critical at this time that the State take a landscape approach to managing native vegetation, with priority areas of ecological, landscape and social values

⁶⁴ Brimbank City Council, *Submission 926*, p. 5.

⁶⁵ Department of Environment, Land, Water and Planning, *Annual Report 2019–2020: A report on the operations of the native vegetation removal regulations*, Victorian Government, December 2020, p. 18.

⁶⁶ Victorian Government, *Victorian Government response to the State of the Environment 2018 report*, p. 14.

⁶⁷ Department of Environment, *Annual Report 2019–2020: A report on the operations of the native vegetation removal regulations*, p. 18.

identified for permanent protection, monitored, and enforced by the state. Council are individually trying to implement ways e.g. overlays to protect significant vegetation, at a cost to Council and ratepayers.⁶⁸

Brimbank City Council advocated for landscape-level mapping of native vegetation, approved removals and offsets to help inform decision-making:

A centralised, and easily accessible mapped version of all approved removals and offsets would help inform decisions when determining approval of vegetation and habitat removal, particularly in local and regional context. This needs to be regularly updated and current, such that it can be used as a tool for decision making regarding applications for removal. This is particularly important in an urban context, where biodiversity connectivity can be degraded at an alarming rate.⁶⁹

As noted in Chapter 6, Native Vegetation Information Management provides online mapping of native vegetation as part of the application process for a permit to remove vegetation.⁷⁰ In addition, the Arthur Rylah Institute for Environmental Research has undertaken work in recent years to map native vegetation extent and condition across Victoria. The Institute's website states that monitoring the change in coverage and condition of native vegetation supports the calculation of net gain. Currently available datasets include maps that detail types of vegetation across Victoria, however, the website notes that these do not fully capture the 'extent of non-woody or grassy types of native vegetation'. The Institute has used GIS data and custom-developed software to rectify this gap as well as assess the rates of native vegetation loss and gain over a 10-year period. It has also produced a 'first-ever model/map of native vegetation condition across Victoria' to display ecological condition over most of the state, provide a baseline for future monitoring and assist decision-making.⁷¹

The Committee is disappointed to hear about the ongoing unauthorised removal of native vegetation, and the largely unknown extent to which this is taking place across the state. In order to protect important biodiversity values on private land, compliance and enforcement activities must ensure the prevention of further illegal clearing of native vegetation and investigation where it does take place.

Continuing research into improving mapping of the changing extent and condition of native vegetation will be an important tool for councils in monitoring native vegetation in their municipalities and ensuring informed decision-making processes. This data collection and mapping should continue to be updated and improved, including in relation to the diverse priority areas for ecological protection, such as areas for

⁶⁸ Goulburn Broken Local Government Biodiversity Reference Group, *Submission 450*, p. 4.

⁶⁹ Brimbank City Council, *Submission 926*, p. 5.

⁷⁰ Department of Environment, Land, Water and Planning, *Guidelines for the removal, destruction or lopping of native vegetation*, Victorian Government, Melbourne, 2017, pp. 13–16; Department of Environment, Land, Water and Planning, *Annual Report 2019–2020: A report on the operations of the native vegetation removal regulations*, p. 12; Department of Environment, Land, Water and Planning, *Applicant's guide: Applications to remove, destroy or lop native vegetation*, 2018, <https://www.environment.vic.gov.au/_data/assets/pdf_file/0024/90762/Applicants-guide-applications-to-remove-destroy-or-lop-native-vegetation-v1.1-August2018.pdf> accessed 12 November 2021.

⁷¹ Department of Environment, Land, Water and Planning, *Mapping vegetation extent and condition*, 2019, <<https://www.ari.vic.gov.au/research/modelling/mapping-vegetation-extent-and-condition>> accessed 12 November 2021.

preserving habitat corridors. The Victorian Government should also investigate means to ensure this mapping can support the inclusion or overlaying of approved native vegetation removals and offsets to support decision-making that can take into account the cumulative impacts of removal.

In addition, the Committee considers that if implemented, other recommendations around the native vegetation clearing regulations and related processes in Chapter 6, as well as those made in relation to penalties discussed at 10.3.2, will assist with the extent of unauthorised removal of native vegetation across Victoria.

FINDING 47: Comprehensive, up-to-date data and modelling on the condition and extent of native vegetation across the State is an important tool for decision-makers in the application and enforcement of the native vegetation clearing regulations.

RECOMMENDATION 64: That the Victorian Government continue to support the development of data and mapping on the coverage and condition of native vegetation across the State, and investigate mechanisms for ensuring this can support the inclusion or overlaying of approved native vegetation removals and offsets to support decision-making.

10.4.2 Powers

Another concern raised in relation to compliance and enforcement activities by local government authorities is whether existing powers are adequate to effectively investigate illegal activity. For example, the Biodiversity Planning Network outlined issues in relation to how authorised officers and those assisting them are able to enter private property to investigate a suspected offence:

The current requirement under Section 134 of the *Planning and Environment Act 1987* to give land occupiers two clear days' notice of entry provides offenders with time to destroy evidence of environmental offences (e.g. time to burn off felled native trees).

Section 133c of the Act allows for persons other than an Authorised Officer to enter land under notice, but only if authorised by the Minister. This presents a significant potential legal and time barrier where an Authorised Officer requires the assistance of a specialty expert and needs to act quickly.

It is recommended that an additional point is added to Section 133 of the Act, specifically stating that a person with specific technical expertise relevant to an investigation may enter land to assist an Authorised Officer with their investigation.⁷²

In addition, the submission outlined how a quick response is important following an environmental offence in order to prevent further environmental impacts, undertake an investigation before evidence is lost or destroyed, and resolve issues within the relevant

⁷² Biodiversity Planning Network, *Submission 523*, p. 14.

timeframe. However, it noted that the current one-year statute of limitations presents a challenging timeframe for resolving breaches, particularly in light of limited resourcing for many councils.⁷³

The Network outlined a number of recommendations to address these issues, including that the Planning and Environment Act be amended to:

- allow authorised officers to enter land immediately to investigate potential offences involving the removal, destruction or lopping of native vegetation
- explicitly allow a person with specific technical expertise relevant to an investigation to enter land to assist an authorised officer with their investigation
- allow enforcement orders to require actions to be taken on land other than that where the offence took place, to address any environmental deficit following all onsite options being exhausted (particularly in relation to offsite offsets and enhancements to the established public conservation estate)
- establish a minimum 24-month statute of limitations for environmental contraventions.⁷⁴

In light of the serious implications of the continuing illegal removal of native vegetation on biodiversity values, the Committee agrees that councils require additional powers to effectively investigate potential contraventions of planning schemes.

RECOMMENDATION 65: That the Victorian Government consider amending the *Planning and Environment Act 1987* (Vic) to ensure that local government authorities are able to effectively investigate suspected offences, including:

- minimising the notice required to be provided to the occupier of the land subject to investigation
- allowing a person with particular technical expertise who is supporting an investigation to accompany an authorised officer without the specific authorisation of the Minister
- ensuring the statute of limitations allows adequate time for responsible authorities to effectively investigate and finalise a suspected offence
- allowing enforcement orders to require actions be taken on land other than where an offence took place where all other onsite options have been exhausted.

10.4.3 Communication and engagement

Communication and engagement activities can play an important role in preventing unauthorised conduct in relation to environmental laws. Nillumbik Shire Council identified the importance of ensuring these activities take place alongside compliance

⁷³ Ibid., p. 15.

⁷⁴ Ibid., pp. 14–15.

and enforcement measures, acknowledging the importance of ‘balancing the interface between engagement and support for private landowners vs enforcement’.⁷⁵

Michelle Wyatt from Macedon Ranges Shire Council told the Committee at a public hearing that communication was needed around environmental planning requirements and the value of native vegetation:

I think it is partly around landowner knowledge of what they need permits for and landowners valuing the native vegetation that they have got on their properties so that they understand what they have purchased before they embark on a development proposal.⁷⁶

The Biodiversity Planning Network outlined in its submission the key elements of clear, prompt and effective communication in this space. This includes that legal requirements are adequately conveyed to the community, direction to cease unauthorised activity is communicated in a timely manner, and property owners and occupiers are able to easily understand their legal requirements. The Network’s submission advocated for important information regarding native vegetation to be included on Planning Property Reports produced through VicPlan, the Victorian Government’s public property reporting tool. It stated that this information should include:

- avoid, minimise and offset requirements of Clause 52.16 and 52.17
- mapping showing the likelihood of native vegetation being present on the property
- a caveat advising that native vegetation may be present even if modelled mapping indicates it is unlikely
- recommendation to contact Council to confirm the presence or absence of native vegetation on the property.⁷⁷

As noted above, DELWP’s *Annual Report 2019–2020 on the operations of the native vegetation removal regulations* notes that an action plan is being developed to address illegal removal of native vegetation. Specific actions include the need for education and awareness activities for landowners to ensure they are aware of the requirements of the regulations, and the report states that information sheets have been finalised and provided for circulation to regional areas.⁷⁸

Ensuring that private landowners and occupiers are aware of their obligations under environmental laws, including the native vegetation clearing regulations, is an important component of environmental compliance and enforcement activities. The Committee welcomes efforts undertaken to date—by DELWP and councils, among other bodies—to improve how environmental regulation is communicated to private landowners and occupiers. However, these activities could be complemented by further resourcing, as

⁷⁵ Nillumbik Shire Council, *Submission 392*, p. 6.

⁷⁶ Michelle Wyatt, *Transcript of evidence*, p. 13.

⁷⁷ Biodiversity Planning Network, *Submission 523*, pp. 16–17.

⁷⁸ Department of Environment, Land, Water and Planning, *Annual Report 2019–2020: A report on the operations of the native vegetation removal regulations*, p. 18.

discussed below, as well as the inclusion of relevant information on native vegetation on Planning Property Reports produced through VicPlan.

RECOMMENDATION 66: That the Victorian Government consider including information regarding native vegetation and the requirements of the native vegetation clearing regulations as part of Planning Property Reports produced through VicPlan.

10.4.4 Resourcing

A further challenge raised throughout the Inquiry is the availability of resourcing for councils to undertake compliance and enforcement activities. The Committee heard that many councils do not have capacity to monitor or investigate suspected illegal activity, resulting in impacts on local biodiversity and limited ability for compliance activities to act as an effective deterrent. For example, Claire Coulson, an ecologist and environmental planner, stated in her submission that resources are particularly limited in regional areas:

Resources for compliance activities in regional Victoria are limited, with small regional councils being largely responsible. This is a well known issue in regional communities, meaning there is very little incentive for compliance with the regulations. In my experience as a regional planner there will be no support [from] DELWP if a council wishes [to] undertake enforcement action.⁷⁹

Goulburn Broken Local Government Biodiversity Reference Group noted that small rural councils are not adequately resourced to effectively manage requirements around native vegetation, and planners may not necessarily have ecological expertise to make informed decisions on the impacts of its removal.⁸⁰ Krista Patterson-Majoor, Biodiversity Projects Officer at Macedon Ranges Shire Council, similarly noted the limited capacity of rural councils, which is ‘where big damages are going on’. She stated that:

I think there are land management plans that people do as part of their planning permits. Who actually goes out and checks that that is actually happening? There are so many ways that we could support people to do the right thing, but the resources are not there to follow up.⁸¹

Hume City Council outlined in its submission its commitment to investigating suspected breaches, but noted the significant financial costs involved:

Hume City Council is committed to ensuring the Hume Planning Scheme is complied with and Council has prosecuted breaches of the Hume Planning Scheme in both the Magistrate’s Court and the Victorian Civil and Administrative Tribunal at its own expense. Hume currently has over 20 cases of illegal native vegetation removal which have

⁷⁹ Claire Coulson, *Submission 799*, p. 4.

⁸⁰ Goulburn Broken Local Government Biodiversity Reference Group, *Submission 450*, p. 4.

⁸¹ Krista Patterson-Majoor, Biodiversity Projects Officer, Macedon Ranges Shire Council, Public hearing, Melbourne, 12 May 2021, *Transcript of evidence*, p. 12.

occurred within the municipality in the past 12 months; the financial impact to undertake compliance action on all of these cases is significant.⁸²

Fiona Sutton, President of the Ecological Consultants Association of Victoria, told the Committee at a public hearing that councils often do not have funding to prosecute breaches, and as a result there 'have been many instances' where they 'have not been able to pursue non-permitted clearing incidents and take it to court'.⁸³

The Biodiversity Planning Network argued that the limited capacity of councils to undertake enforcement activities is well known by the community:

Many smaller regional councils do not have the resources to employ compliance officers. This limits their ability to enforce relevant regulations and the cost and complexity of pursuing major environmental breaches is prohibitive. This limitation is generally well understood in regional communities, where there is often little expectation that there will be consequences for undertaking unauthorised activities.

In this resource limited regional context if any enforcement action is initiated it is often by technical experts (i.e. environmental planners) who have little or no compliance/enforcement qualifications.

Where action is initiated without the support of experienced compliance officers, networks such as the BPN [Biodiversity Planning Network] and the Planning Enforcement Officers Association are a vital source of information and support. Support from government authorities, such as DELWP in the instance of native vegetation breaches, is rarely forthcoming. Access to training to support environmental regulation is very limited.⁸⁴

Macedon Ranges Shire Council argued that, 'additional resources are required to support enforcement of native vegetation regulations'.⁸⁵ The Goulburn Broken Local Government Biodiversity Reference Group advocated for 'effective education and compliance programs with well trained on-ground officers that can bring infringements to court':

Measuring the effectiveness of legislation is key, as is funding effective education and compliance programs with well trained on-ground officers that can bring infringements to court. The absence of state government compliance officers, once employed in places like [the former Department of Sustainability and Environment], has had a profound impact on regional areas. The loss of these key roles has resulted in a cavalier attitude towards environmental management from land owners (illegal removal native vegetation, failure to undertake weed and pest animal control) and the knowledge that many of these "environmental laws" are not enforced. This leads to a lack of trust and confidence in government and disengagement of the community.⁸⁶

⁸² Hume City Council, *Submission 736*, p. 5.

⁸³ Fiona Sutton, President, Ecological Consultants Association of Victoria, Public hearing, Melbourne, 24 February 2021, *Transcript of evidence*, p. 28.

⁸⁴ Biodiversity Planning Network, *Submission 523*, p. 16.

⁸⁵ Macedon Ranges Shire Council, *Submission 412*, p. 2.

⁸⁶ Goulburn Broken Local Government Biodiversity Reference Group, *Submission 450*, p. 4.

The Biodiversity Planning Network advocated for greater support for councils to undertake compliance and enforcement, including that the Victorian Government:

- Support and facilitate peer to peer networks such as BPN [Biodiversity Planning Network] and [Planning Enforcement Officers Association]
- Support and facilitate compliance and enforcement training for environmental regulators
- Provide government resources to support enforcement of environmental regulations, particularly for resource limited organisations such as small/regional councils.
- Regulator is able to recoup or otherwise replenish resources for future enforcement matters.⁸⁷

As noted above, DELWP's submission stated that it is collaborating with the Department of Jobs, Precincts and Regions and Local Government Victoria to improve council capability to undertake compliance and enforcement activities relating to the native vegetation clearing regulations.⁸⁸ This includes through the departmental working group discussed in section 10.4.1. However, the submission does not provide any specific details around how it is working to improve capability.

Further, as discussed above, DELWP's *Annual Report 2019–2020 on the operations of the native vegetation removal regulations* explains that the new action plan for targeting illegal removal of native vegetation includes a focus on improving the capability and capacity of councils as the responsible authority for compliance under the Planning and Environment Act. Specific actions include development of a training course of best practice administration and enforcement of native vegetation removal, and an enforcement toolkit for councils. In addition, the plan identifies the need to establish networks to support compliance action.⁸⁹

The Committee welcomes the work undertaken by the Victorian Government to support local government authorities but notes that there are significant resourcing challenges for councils in undertaking compliance and enforcement activities. This work is crucial and has wide-ranging environmental implications. In order to prevent further ecosystem decline, councils must be supported and adequately resourced to ensure compliance with the Planning and Environment Act.

FINDING 48: Many councils do not have adequate resourcing to effectively undertake compliance and enforcement activities in relation to environmental laws within their municipalities, with significant and ongoing impacts on biodiversity in Victoria.

⁸⁷ Biodiversity Planning Network, *Submission 523*, p. 16.

⁸⁸ Department of Environment, Land, Water and Planning, *Submission 927*, p. 34.

⁸⁹ Department of Environment, Land, Water and Planning, *Annual Report 2019–2020: A report on the operations of the native vegetation removal regulations*, p. 18.

RECOMMENDATION 67: That the Victorian Government provide greater support to local government authorities to undertake compliance and enforcement activities in order to protect biodiversity, including through:

- providing specific resources to enable important compliance and enforcement activities with a focus on protecting biodiversity values, in conjunction with the goals identified in *Protecting Victoria's Environment – Biodiversity 2037*
- increasing opportunities for education and training in undertaking best practice compliance and enforcement
- supporting and facilitating peer networks and working groups to promote information-sharing
- providing additional resourcing to ensure that they have suitably qualified staff available to undertake compliance and enforcement.

11 Monitoring and data

11.1 Why is environmental monitoring and data collection important?

Throughout the inquiry, the Committee heard about the importance of high quality, comprehensive environmental monitoring and data collection to inform initiatives to reverse ecosystem decline. Stakeholders reported that good quality, long-term environmental monitoring can:

- support the development of policies and programs to protect or restore the environment which more accurately identify:
 - threats to biodiversity values
 - where interventions are needed¹
 - which management actions are most likely to be effective²
- provide a baseline against which the success of environmental policies and programs can be assessed, enabling the management of biodiversity values to be adapted and refined as impacts are understood³
- identify how biodiversity values may be impacted by development or industry, enabling more informed decision-making and environmental management where potentially damaging projects proceed.⁴

However, stakeholders noted that these benefits only flow from environmental monitoring and data collection which is accurate,⁵ consistent and regular,⁶ and longterm.⁷ Many suggested that environmental monitoring and data collection in Victoria could be improved to better deliver these benefits.⁸

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- 1 Professor Brendan Wintle, Professor of Conservation Ecology, University of Melbourne, Public hearing, Melbourne, 23 February 2021, *Transcript of evidence*, p. 56; Dr John Morgan, Co-chair, Policy Working Group, Ecological Society of Australia, Public hearing, Melbourne, 21 April 2021, *Transcript of evidence*, p. 66.
 - 2 Professor Brendan Wintle, *Transcript of evidence*, p. 56; Dr John Morgan, *Transcript of evidence*, p. 66; Anna Murphy, Director and Head of Flora Ecology, Threatened Species Conservancy, Public hearing, Melbourne 23 February 2021, *Transcript of evidence*, p. 11.
 - 3 Southern Dandenongs Landcare Group, *Submission 718*, p. 5; Professor Brendan Wintle, *Transcript of evidence*, p. 56; Australian Marine Ecology, *Submission 815*, p. 18.
 - 4 Australian Marine Ecology, *Submission 815*, pp. 24–25.
 - 5 Australasian Native Orchid Society (Victorian Group), *Submission 913*, p. 2; Jordan Crook, Member, Grassy Plains Network, Public hearing, Melbourne, 12 May 2021, *Transcript of evidence*, p. 24; La Trobe University Research Centre for Future Landscapes, *Submission 682*, p. 8; Department of Environment, Land, Water and Planning, *Submission 927*, p. 27.
 - 6 Australian Marine Ecology, *Submission 815*, p. 23; Southern Dandenongs Landcare Group, *Submission 718*, p. 5.
 - 7 Associate Professor Craig Nitschke, Landscape Dynamics, School of Ecosystem and Forest Sciences, Melbourne University, Public hearing, Melbourne, 20 April 2021, *Transcript of evidence*, pp. 31–32; Upper Goulburn Landcare Network, *Submission 671*, p. 3.
 - 8 For example, see: Australian Marine Ecology, *Submission 815*, pp. 23–24; Professor Brendan Wintle, *Transcript of evidence*, pp. 53–56; Research Centre for Future Landscapes, *Submission 682*, pp. 2, 7–8.

This Chapter examines these issues. It outlines:

- the Victorian Government’s approach to environmental monitoring and data collection under *Protecting Victoria’s Environment – Biodiversity 2037* (Biodiversity 2037)
- consideration by the Victorian Auditor-General’s Office (VAGO) of environmental monitoring and data collection, as part of its audit of the implementation of Biodiversity 2037 by the Department of Environment, Land, Water and Planning (DELWP)
- the Commissioner for Environmental Sustainability’s finding that environmental monitoring and data collection can be improved
- how inadequate data collection is undermining efforts to reverse ecosystem decline
- how barriers to comprehensive environmental monitoring may be overcome.

11.2 Biodiversity 2037 and environmental monitoring

As described in Chapter 2, Biodiversity 2037 is the Victorian Government’s plan to reverse ecosystem decline. It aims to support land managers to balance the management of ecological processes for the benefit of all species, with targeted interventions to support threatened species.⁹

Biodiversity 2037 seeks to achieve this balance by assisting land managers to use environmental data to identify ‘strategic management actions’. Strategic management actions are environmental interventions which benefit multiple species—preventing vulnerable and common species from becoming endangered and providing co-benefits to endangered and threatened species.¹⁰

Biodiversity 2037 supports land managers to adopt a strategic management approach through the following resources:

- NaturePrint—a suite of decision-making tools, developed by DELWP, which are ‘designed to help make effective investment and management decisions’ in relation to biodiversity conservation.¹¹
- Victorian Biodiversity Atlas—‘a foundation dataset that feeds into some of the many biodiversity tools used in decision making’, including NaturePrint.¹²
- *Biodiversity 2037 Monitoring, Evaluation, Reporting and Improvements Framework* (Biodiversity 2037 MERF) and the *Biodiversity Monitoring Framework*—these documents aim to guide environmental monitoring and the collection of new data to support the implementation of Biodiversity 2037.

⁹ Department of Environment, Land, Water and Planning, *Protecting Victoria’s Environment – Biodiversity 2037*, 2017, p. 17.

¹⁰ *Ibid.*, pp. 18–19.

¹¹ *Ibid.*

¹² *Ibid.*, pp. 19–22; Department of Environment, Land, Water and Planning, *Victorian Biodiversity Atlas*, 2021, <<https://www.environment.vic.gov.au/biodiversity/victorian-biodiversity-atlas>> accessed 25 November 2021.

These environmental management tools, datasets and data collection frameworks are outlined in the following Sections.

11.2.1 NaturePrint

NaturePrint provides DELWP, as well as other government agencies and groups involved in the implementation of Biodiversity 2037, with science-based guidance for decision-making. It encompasses the Strategic Management Prospects tool, which identifies which management interventions can deliver the broadest benefits to biodiversity at any given location.¹³

The Strategic Management Prospects tool uses spatially specific environmental data on species distribution, landscape scale threats, and the benefits and costs of different management actions to identify the best management approach to improving biodiversity values:

The Strategic Management Prospects approach incorporates a set of spatially explicit ingredients that each focus on different aspects of biodiversity management. These are:

1. Species ... A view of where species occur across Victoria, represented through habitat distribution models.
2. Threats ... A view of where key landscape-scale threats are likely to occur across Victoria, represented through spatial models of threat likelihood.
3. Benefit of Action ... A view of which management actions have the greatest benefit for individual species, as well as all biodiversity at a place, and how this varies across Victoria. This can be represented spatially through models of the benefit of acting for single species, or all species.
4. Costs of Management Actions ... A view of how much different management actions cost, and how this varies across Victoria due to travel, terrain and other factors. This is also represented spatially.

These ingredients are then integrated using a ranking analysis, which ranks specific actions at specific places based on their contribution, per unit cost, toward state-wide conservation objectives. This process identifies actions that should deliver relatively large benefits to multiple species, or to species of particular conservation concern.¹⁴

NaturePrint, including the Strategic Management Prospects tool, draws on environmental data contained in the Victorian Biodiversity Atlas. The Atlas is discussed further below.

¹³ Dr Kim Lowe, Research Director, Arthur Rylah Institute for Environmental Research, Public hearing, Melbourne, 21 April 2021, *Transcript of evidence*, p. 11; Department of Environment, Land, Water and Planning, *NaturePrint and Strategic Management Prospects (SMP)*, 2019, <<https://www.environment.vic.gov.au/biodiversity/natureprint>> accessed 25 November 2021.

¹⁴ Department of Environment, Land, Water and Planning, *Strategic Management Prospects: Overview: Ingredients of Strategic Management Prospects*, <<https://delwp.maps.arcgis.com/apps/MapJournal/index.html?appid=e0289e3fe12f436490ef63d4444a05df>> accessed 25 November 2021.

11.2.2 Victorian Biodiversity Atlas

The Victorian Biodiversity Atlas is a public dataset of biodiversity values. Government agencies, non-government organisations, researchers and the public can contribute to and use the information in the Atlas to understand the distribution of introduced and native plants and animals in Victoria.

The Victorian Biodiversity Atlas currently contains more than seven million records of species distribution and abundance, mostly collected through structured surveys and data collection projects aimed at assessing the abundance of species. The Atlas also contains data from now defunct datasets, such as the Victorian Rare and Threatened Plant Population monitoring database.¹⁵

In addition, the Atlas collates environmental data provided by the general public, including through a 'VBA Go' application for mobile phones. VBA Go enables individuals to use a mobile phone to upload a photograph of a species they have observed and any other relevant information, such as breeding behaviours or the number of animals or plants observed. The application automatically saves location and date data provided by the photograph (if location services are enabled on the phone) and uploads the observation to the Atlas.¹⁶

Victorian Biodiversity Atlas data informs the Strategic Management Prospects tool, native vegetation clearing regulations and DELWP's public land management, research activities and State of the Environment reporting.¹⁷

Stakeholder concerns regarding the useability and operation of the Victorian Biodiversity Atlas are discussed in Section 11.8.4.

11.2.3 ***Biodiversity 2037 Monitoring, Evaluation, Reporting and Improvements Framework and Biodiversity Monitoring Framework***

Biodiversity 2037 acknowledges that additional data collection and environmental monitoring is needed to reverse ecosystem decline in Victoria. Indeed, the second priority identified in the plan is 'increas[ing] the collection of targeted data for evidence-based decision making and mak[ing] all data more accessible'.¹⁸

Biodiversity 2037 conceptualises environmental data collection and monitoring as a responsibility shared by stakeholders involved in its implementation. This includes, for example, DELWP, Parks Victoria, other Victorian government agencies, local

15 Department of Environment, Land, Water and Planning, *Victorian Biodiversity Atlas*.

16 Department of Environment, Land, Water and Planning, *VBA Go: What is VBA Go?*, 2020, <<https://www.environment.vic.gov.au/biodiversity/victorian-biodiversity-atlas/vba-go>> accessed 3 August 2021.

17 Department of Environment, Land, Water and Planning, *Victorian Biodiversity Atlas*.

18 Department of Environment, Land, Water and Planning, *Protecting Victoria's Environment – Biodiversity 2037*, p. 22.

government authorities and environmental groups.¹⁹ However, it also commits DELWP to working with delivery partners to identify and fill knowledge gaps through targeted data gathering, coordinating and sharing datasets, and ensuring that information is integrated across different environments.²⁰

Dr Kim Lowe, Research Director of the Arthur Rylah Institute for Environmental Research, which leads environmental monitoring and data collection within DELWP, provided evidence at a public hearing. Dr Lowe explained that Biodiversity 2037 encompasses two frameworks which guide environmental monitoring and data collection undertaken to support its implementation:

- Biodiversity 2037 MERF
- *Biodiversity Knowledge Framework*.

Dr Lowe stated that these frameworks are about ‘trying to provide policy direction, systematic thinking and guidelines for how to go about collecting monitoring data, but also new knowledge’.²¹

Biodiversity 2037 Monitoring, Evaluation, Reporting and Improvements Framework

Biodiversity 2037 MERF informs the monitoring, evaluation and reporting on strategies, regulations and programs which aim to protect or enhance biodiversity values in Victoria, including Biodiversity 2037.²² It describes key performance indicators for Biodiversity 2037 and establishes how they should be monitored. It also aims to:

- Ensure that the management of Victoria’s environment is based on sound evidence and appropriate decision-support tools and processes.
- Collect knowledge on how the environment and Victoria’s plants and animals are changing through time, especially given the pressures of climate change, known threats to species, and the impact of an increasing human population.
- Embed continuous improvement into the tools used for modelling, mapping and making decisions.
- Implement adaptive management in complex and often unpredictable circumstances.
- Report on progress towards targets and adapt or improve approaches.²³

¹⁹ Ibid.

²⁰ Department of Environment, Land, Water and Planning, *Protecting Victoria’s Environment - Biodiversity 2037*, 2017, p. 22.

²¹ Dr Kim Lowe, *Transcript of evidence*, p. 16.

²² Department of Environment, Land, Water and Planning, *Biodiversity 2037 Monitoring, Evaluation and Reporting Framework Version 1.0: Protecting Victoria’s Environment - Biodiversity 2037*, 2018, p. 4.

²³ Department of Environment, Land, Water and Planning, *Protecting Victoria’s Environment - Biodiversity 2037*, pp. 21–22.

Biodiversity 2037 calls for at least 5% of the total budget of all government biodiversity programs to be spent on data gathering, monitoring and evaluation consistent with Biodiversity 2037 MERF.²⁴

Biodiversity 2037 MERF is supported by the Biodiversity Knowledge Framework which guides DELWP's identification of knowledge gaps, aiding it to better target investment in new research, monitoring and data collection.

Biodiversity Monitoring Framework

The *Biodiversity Monitoring Framework*, developed in 2020, aims to identify and prioritise what new biodiversity monitoring, data collection and research is needed to support decision-making in relation to the implementation of Biodiversity 2037.²⁵

The *Biodiversity Monitoring Framework* provides a consistent, quantifiable and systematic approach to identifying knowledge gaps and prioritising research investment. It aims to ensure that commissioned environmental research is relevant to, and supports, the delivery of Biodiversity 2037 objectives. Specifically, the framework:

- describes the relationship between biodiversity values and management actions in different scenarios
- identifies what isn't known about the relationships between biodiversity values and different management actions (knowledge gaps) and, given the level of uncertainty, suggests the best and worst-case results which might be achieved through different management actions
- indicates which knowledge gaps, when filled, have the greatest potential to support biodiversity management that achieves the vision of Biodiversity 2037.²⁶

The *Biodiversity Monitoring Framework* has already identified several knowledge gaps in biodiversity management, and Biodiversity Knowledge Acquisition Grants have been awarded to research projects aimed at addressing these gaps.²⁷ For example, the University of Melbourne has been tasked with researching the most effective means of measuring changes in deer abundance and impacts on native vegetation arising from measures to control deer populations.²⁸ Deakin University is working with DELWP and other industry partners in the Wimmera-Mallee region to collect ecological data to

24 Ibid., p. 22.

25 Department of Environment, Land, Water and Planning, *Biodiversity Knowledge Framework: Summary*, 2020, p. 1.

26 Department of Environment, Land, Water and Planning, *Biodiversity Knowledge Framework: A supporting document for Protecting Victoria's Environment - Biodiversity 2037*, 2020, <<https://www.environment.vic.gov.au/biodiversity/knowledge-framework>> accessed 25 November 2021.

27 Ibid.

28 Department of Environment, Land, Water and Planning, *Biodiversity Knowledge Acquisition: Are deer control programs effectively reducing deer densities and impacts on native vegetation*, 2019, <<https://delwp.maps.arcgis.com/apps/MapTour/index.html?appid=40575a7dd09a4dd58335afc11eedfcf2>> accessed 25 November 2021.

support the assessment of fox, dingo and wild dog management actions in semi-arid ecosystems.²⁹

DELWP also facilitates other environmental monitoring and data collection projects such as the Victorian Coastal Monitoring Program,³⁰ Riparian Intervention Monitoring Program and Wetland Intervention Monitoring Program.³¹

The method of environmental monitoring and data collection deployed to address knowledge gaps varies depending on the research question. However, approaches used by DELWP and its research partners include:

- adaptive management studies, which seek to measure how management actions change or improve biodiversity values
- remote sensing, which can detect biodiversity values at the landscape scale
- long-term site monitoring, which can indicate gradual changes to biodiversity values
- citizen science, which engages the public through contribution of observational data in relation to seasonal movements of fauna, climate variations, large shifts in species populations due to stressors such as droughts, and local extinction due to habitat loss.³²

DELWP released an interactive online portal called the 'Knowledge Portal' in May 2021. This portal is intended to 'enable all Victorians to view and interact with the Biodiversity Knowledge Framework and the conceptual models'.³³

11.3 Victorian Auditor-General's Office audit of Biodiversity 2037

As acknowledged in Chapter 1 of this report, in October 2021 VAGO audited DELWP's acquittal of its responsibility to protect threatened species under the *Flora and Fauna Guarantee Act 1988* (Vic) (FFG Act) and, in particular, under Biodiversity 2037.³⁴ While the focus of this audit was significantly narrower than the terms of reference for this Inquiry, VAGO made several findings in relation to environmental monitoring and data collection to support the implementation of Biodiversity 2037, including that these activities are currently inadequate.

²⁹ Department of Environment, Land, Water and Planning, *Biodiversity Knowledge Acquisition: Assessing fox, dingo and wild dog management and its ecosystem consequences, in semi-arid Victoria*, 2019, <<https://delwp.maps.arcgis.com/apps/MapTour/index.html?appid=40575a7dd09a4dd58335afc11eedfcf2>> accessed 25 November 2021

³⁰ Department of Environment, Land, Water and Planning, *Submission 927*, p. 27.

³¹ Victorian National Parks Association, *Submission 102*, pp. 73,81.

³² Department of Environment, Land, Water and Planning, *Biodiversity Knowledge Framework*.

³³ Ibid.

³⁴ Victorian Auditor-General's Office, *Protecting Victoria's Biodiversity: Independent assurance report to Parliament 2021–22:07*, 2021.

VAGO identified ‘critical gaps in the data and knowledge inputs’ informing DELWP’s Strategic Management Prospects tool and other decision-making tools used in biodiversity management. It asserted that a lack of environmental data is undermining the reliability and accuracy of these tools. For example:

- The Strategic Management Prospects tool is limited to decision-making in relation to common land-based threats, such as invasive weeds and pest animals. It cannot be used to make decisions regarding threats to freshwater and marine species.
- Where DELWP lacks data from on-ground studies, it uses expert knowledge about species and how they respond to threats. However, there are critical gaps in this knowledge and expert judgements can vary significantly, meaning at times, DELWP uses best estimates to fill these gaps.
- DELWP has not developed habitat distribution models determining the location and extent of all threatened species. It has only undertaken this modelling for 1,420 out of the approximately 2,000 species listed as threatened under the FFG Act.
- The Victorian Biodiversity Atlas data informing DELWP’s Strategic Management Prospects tool and other decision-making tools is outdated for many threatened species.³⁵

VAGO acknowledged that DELWP has developed a *Biodiversity Knowledge Framework* to identify gaps in its environmental monitoring and data collection, and has prioritised research to address these shortcomings. It did not audit the effectiveness of this framework, as it has only recently been finalised. However, VAGO did express concern that DELWP’s resources may be inadequate to properly implement the framework:

While the Biodiversity Knowledge Framework identifies and prioritises gaps, the key hurdle we identified to fill these effectively is consistent and adequate allocation of resources to undertake the work.

DELWP is developing an investment strategy to support the identification and allocation of resources to undertake this work. This remains in draft, despite commencing in January 2019 and DELWP has not set a date for its finalisation. In the meantime, DELWP is working with stakeholders to identify and investigate models and funding options to improve biodiversity and threatened species knowledge and data. This includes formalising an agreement with the University of Melbourne to develop a centre that will coordinate the identification, collection, collation and analysis of biodiversity research and data and develop evidence-based policies and programs to improve biodiversity and threatened species protection.³⁶

VAGO recommended that DELWP ‘formalises a process and engages accordingly with key stakeholders to prioritise and fund critical knowledge and data gaps identified in the Biodiversity Knowledge Framework and Knowledge Portal’. DELWP accepted this recommendation.³⁷

³⁵ Ibid., p. 9.

³⁶ Ibid.

³⁷ Ibid., p. 11.

VAGO was also critical of the key performance indicators for Biodiversity 2037 established by DELWP under Biodiversity 2037 MERF, as well as how these indicators are being monitored and outcomes reported. It suggested that DELWP's performance reporting 'does not provide the required assurance to Parliament and the public about the state's progress in achieving the strategy's statewide target and expected outcomes for threatened species':

Ten of the 12 annual KPIs [key performance indicators] focus on the number of threat control activities, number of hectares treated for threats or revegetated, and the amount of private land protected. These KPIs ... do not address the quality of the activities and their effectiveness in delivering Biodiversity 2037's expected outcomes.

The MERF lists two further KPIs that could be used to measure short-term management outcomes of Biodiversity 2037 activities to improve species' habitats and persistence, but there is no requirement in the MERF to report against these.³⁸

The audit's findings in relation to DELWP's protection of threatened species more generally were considered in Chapter 7.

11.4 Victoria's *State of the Environment 2018*

Other government stakeholders to the Inquiry also acknowledged that additional environmental monitoring and data collection would support strategies to reverse ecosystem decline in Victoria.

Dr Gillian Sparkes, Victoria's Commissioner for Environmental Sustainability, pointed out that the *State of the Environment 2018* report (SoE 2018)—released by her office just one year after the launch of Biodiversity 2037—also found that environmental monitoring and data collection should be expanded.³⁹

The State of the Environment report is produced every five years and comprehensively evaluates and discloses the condition of Victoria's biodiversity values.⁴⁰ Dr Sparkes explained that, in so doing, the report provides an understanding of the adequacy of environmental data collection and monitoring of biodiversity values across the State:

The biodiversity chapter of the State of the Environment report assessed 35 indicators ... and we found that three-quarters were either deteriorating or their status was unclear. So only one-quarter were either stable or improving. So it is telling us about the decline as well as about our science.⁴¹

³⁸ Ibid., pp. 4–5.

³⁹ Dr Gillian Sparkes, Commissioner, Commissioner for Environmental Sustainability Victoria, Public hearing, Melbourne, 3 December 2020, *Transcript of evidence*, p. 2.

⁴⁰ Office of the Commissioner for Environmental Sustainability, *Victorian State of the Environment 2018 Report: Summary Report*, 2018, p. 3.

⁴¹ Dr Gillian Sparkes, *Transcript of evidence*, p. 2.

Dr Sparkes noted that across the 170 environmental indicators assessed in SoE 2018, many had ‘poor quality’ data, particularly biodiversity-related indicators:

We had 170 indicators assessed in the state of the environment report. Thirty-five were assessed directly in the biodiversity chapter of the State of the Environment report—a total of 52 if you take into account other biodiversity-related indicators across other chapters of the report, such as forest, fire and land. Twenty-nine per cent were assessed as low performing and 40 per cent had poor quality data.⁴²

Dr Scott Rawlings, Director of Science and Reporting at the Office of the Commissioner for Environmental Sustainability, said: ‘as our report clearly shows, biodiversity is an area in our reporting which does have overarchingly poor data, significant gaps in our data’.⁴³

Dr Sparkes suggested that SoE 2018 highlights the need for more comprehensive environmental monitoring and data collection and made recommendations to the Victorian Government to this effect:

The recommendations advocate for a shift in how we monitor and protect Victoria’s natural assets, including ... better investment and use of digital spatial capability and use of earth observation, data analytics and predictions, citizen science and environmental economic accounts. We are advocating for investment by all levels of government in these capabilities and workforce skills...

A key aspect to responding to and reversing ecosystem decline is knowing what we need to know when we need to know it, and so our recommendations aim to move the system forward, if you like, as a whole to reverse ecosystem decline.⁴⁴

The Committee is pleased to hear that there is broad acknowledgement amongst government agencies of the value of environmental monitoring and data collection to inform programs aimed at restoring Victorian ecosystems. It is apparent that DELWP recognises the need to collect new, and more complete, environmental data and has developed a comprehensive framework to guide strategic investment in this space.

The Committee recognises that these frameworks are already starting to steer investment in environmental monitoring and data collection capable of supporting the implementation of Biodiversity 2037.

FINDING 49: The *Biodiversity Monitoring Framework* and *Biodiversity 2037 Monitoring, Evaluation, Reporting and Improvements Framework* are beginning to steer strategic investment in environmental monitoring and data collection to support the implementation of *Protecting Victoria’s Environment – Biodiversity 2037*.

⁴² Ibid., p. 3.

⁴³ Dr Scott Rawlings, Director of Science and Reporting, Commissioner for Environmental Sustainability Victoria, Public hearing, Melbourne, 3 December 2020, *Transcript of evidence*, p. 7.

⁴⁴ Dr Gillian Sparkes, *Transcript of evidence*, p. 2.

However, the Committee also believes that more can be done to improve environmental monitoring and that better data collection will be key in assisting efforts to reverse ecosystem decline. Evidence to this effect is examined in the next Section.

11.5 Impacts of inadequate environmental monitoring and data collection

Environmental groups, ecologists and other environmental professionals who contributed to the Inquiry described how the lack of environmental data is impeding efforts to reverse ecosystem decline in Victoria.

Professor Brendan Wintle, Professor of Conservation Ecology at the University of Melbourne, suggested at a public hearing that a lack of environmental data is a national problem. He explained that without a good understanding of the state of the environment in Victoria, it is difficult to target interventions to reverse ecosystem decline and gauge whether they are effective:

This is national; this is definitely not just a problem in Victoria. We have got a significant gap in our data that means that it is very hard for us to (a) say what is going on and (b) prioritise where we need to spend our money for the most urgent cases and to get the biggest bang for our buck. Also, we are unable to say which kinds of actions work best where because we are not measuring.⁴⁵

In evidence presented to the Committee, Dr Matt Edmunds, Principal Ecologist at Australian Marine Ecology, claimed that Victoria's marine biodiversity values are being lost because they haven't been properly documented, and are therefore not being protected:

We are actually ... still on a discovery phase of determining what values we have. In other areas we know there are major values but we are actually not monitoring—for example, in Corner Inlet. Corner Inlet is a large area of dendritic channels and broadleaf seagrass. It is really valuable for both biodiversity and fisheries and society in many ways. But we are losing that seagrass at an amazing rate, and that does not grow back. It produces a lot of seeds every year, but it only reproduces by spreading its patch. And those patches spread so slowly that it takes hundreds to thousands of years to recolonise. So there are also areas that we are just not keeping eyes on and not managing properly.⁴⁶

The Committee heard that outdated and incomplete environmental data may be impacting local government planning decisions and excluding councils from accessing state-based environmental initiatives. For example, at a public hearing, Nillumbik Shire Council said it is not resourced to undertake environmental monitoring and, as such, relies on DELWP, other State Government agencies and joint council ventures to provide environmental data. Lisa Pittle, Manager of Environment at the Council, said that

⁴⁵ Professor Brendan Wintle, *Transcript of evidence*, p. 56.

⁴⁶ Dr Matthew Edmunds, Principal Ecologist, Australian Marine Ecology, Public hearing, Melbourne, 20 April 2021, *Transcript of evidence*, p. 3.

environmental planning overlays are only as strong as the environmental data they are based on. She noted that the Council's overlays are based on data from the 1990s and would benefit from being updated.⁴⁷

Macedon Ranges Shire Council said that much of the environmental data in the Victorian Biodiversity Atlas relevant to the Macedon Ranges is outdated—for example, mapping of local koala populations. It suggested that, as the Atlas informs decision-making by the Victorian Government, the Council may be passed over when environmental priorities are being set as their local biodiversity values are not being recognised:

A council area might not come up well because it is just not surveyed well and that information is not on a state government system, but that does not mean that those things do not exist.⁴⁸

The Australasian Native Orchid Society (Victorian Group) submitted that Victorian land managers and planning authorities rely on environmental monitoring data contained in the Victorian Biodiversity Atlas when making decisions about the environment or development. It asserted that while there is some good environmental data in this database, 'overall the information is patchy, dated and does not include the type of comprehensive information about the occurrence of native orchid populations in Victoria'. It noted that data quality informs modelling accuracy and the appropriateness of decision-making:

... the desktop assessment is only as good as the data it is based on.

Peanuts in, monkeys out ...⁴⁹

The challenges which arise from inadequate environmental data collection and monitoring were apparent to the Committee when it considered specific biodiversity management issues, such as efforts to reverse the decline of threatened native species and control the spread of invasive species.

The lack of environmental data and the ways in which this impacts efforts to restore threatened species, and control invasive species, are described below.

11.6 Monitoring and data collection informing threatened species management

The Committee heard that environmental monitoring is insufficient to accurately identify which native species are in decline, let alone which meet the threshold for classification as threatened or endangered under State or Commonwealth

⁴⁷ Lisa Pittle, Manager of Environment, Nillumbik Shire Council, Public hearing, Melbourne, 12 May 2021, *Transcript of evidence*, p. 3.

⁴⁸ Krista Patterson-Major, Biodiversity Projects Officer, Macedon Ranges Shire Council, Public hearing, Melbourne, 12 May 2021, *Transcript of evidence*, p. 16.

⁴⁹ Australasian Native Orchid Society (Victorian Group), *Submission 913*, p. 2.

environmental legislation. For example, the Research Centre for Future Landscapes at La Trobe University submitted that:

This disturbing downward trend in the health of Victoria’s ecosystems is clear, despite inadequate systematic scientific monitoring; a weakness highlighted in each successive State of the Environment report. However, the situation is even more dire than the limited available statistics indicate, with many more species in decline but yet to be formally listed as threatened (or even recognised as being in decline) due to administrative delay, lack of robust monitoring data, absence of an advocate to press their case, or because they have not yet crossed thresholds for listing (despite being in decline).⁵⁰

Similarly, in a presentation to the Committee, BirdLife Australia suggested that only 74 species of birds have been listed as threatened under the FFG Act and 18 bird taxa have been included in Victoria’s threatened bird index because ‘the data is too poor’ to assess the status of other bird taxa. Paul Sullivan, Chief Executive Officer of BirdLife Australia, reported that his organisation has environmental data demonstrating that many common bird species are also in decline. He anticipated that the rate at which bird species are listed as threatened under Commonwealth legislation will accelerate in coming years:

BirdLife also published data in 2015, which showed that many of Victoria’s common bird species are also in significant decline, and we actually anticipate that the rate of [*Environment Protection and Biodiversity Conservation Act 1999 (Cth)*] listings—that is new listings and up-listings—will only increase in volume and pace over the next 10 to 50 years.⁵¹

DELWP’s website notes the amalgamation of statutory and non-statutory lists of threatened species in accordance with the nationally-agreed Common Assessment Method stipulated by the FFG Act. This process has now been completed and the FFG Act Threatened List has increased from approximately 900 species to over 2,000 species.⁵² The Victorian National Parks Association submitted that it is likely that there are many more species of flora and fauna which merit inclusion on the list, but will be excluded due to insufficient environmental data on their abundance. It pointed out that, as a result, these vulnerable species will be excluded from the protections delivered through a listing under the Act.⁵³

Several witnesses noted that, typically, monitoring of Victorian native species doesn’t improve after a species is classified as threatened. During a public hearing, Professor Wintle characterised monitoring of threatened species in Victoria as ‘pitiful’ and suggested that some threatened species may already be extinct without our knowledge:

⁵⁰ Research Centre for Future Landscapes, *Submission 682*, p. 3.

⁵¹ Paul Sullivan, Chief Executive Officer, BirdLife Australia, Public hearing, Melbourne, 20 April 2021, *Transcript of evidence*, p. 37.

⁵² Department of Environment, Land, Water and Planning, *Flora and Fauna Guarantee Act Threatened List*, 2021, <<https://www.environment.vic.gov.au/conserving-threatened-species/threatened-list>> accessed 3 August 2021; Victorian National Parks Association, *Submission 102*, p. 14.

⁵³ Victorian National Parks Association, *Submission 102*, p. 14.

At the moment our monitoring is pitiful. We could be losing species and we do not even know because we do not actually bother to count.⁵⁴

Dr John Morgan, Co-chair of the Policy Working Group at the Ecological Society of Australia, suggested to the Committee that monitoring of ‘just about all’ of Victoria’s threatened species is insufficient and population trends are unknown.⁵⁵ Likewise, the Threatened Species Conservancy submitted that a lack of environmental monitoring has made it impossible to track the decline of threatened species in Victoria. However, it suggested that anecdotal evidence indicates that some populations—such as the holly-leaf grevillea—have declined substantially:

As population monitoring was discontinued years ago, few data exists that describes the current size and extent of threatened species populations. Consequently, survivorship of most of Victoria’s threatened species populations is almost impossible to track. However, some anecdotal information suggests that a number of species have undergone substantial declines in population health and size and some face imminent extinction. For example, a number of taxa within the Holly-leaf Grevillea complex have declined across their range ...⁵⁶

Dr Megan O’Shea, a grasslands ecologist and Honorary Research Fellow at Victoria University, shared an example illustrating how poorly some threatened species are monitored in Victoria. In her submission to the Inquiry, she detailed the management of striped legless lizard populations—which are listed as vulnerable under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act) and threatened under the FFG Act—by government agencies in the Derrimut Grassland Reserve:

As an example, the State-managed Derrimut Grassland Reserve is one of the first grasslands in Victoria that was protected for its flora and fauna values. Whilst it maintains areas with significant floristic values, there are large tracts that are infested with the invasive weed Chilean Needle Grass and very few resources for its management. Furthermore, there appears to be very little effort to understand the impacts of management. The reserve was once considered to support a significant population of Striped Legless Lizards but there was no monitoring/assessment of the population between 1995 and 2015. In 2015, a study recorded only 9 Striped Legless Lizard observations at an estimated density of 5 individuals per hectare. In contrast, similar surveys at nearby grasslands (various tenures) recorded up to 82 individuals at densities as high as 156 individuals per hectare ... It is unclear if there has actually been a decline in the Striped Legless Lizard population at Derrimut Grassland Reserve or what the potential causes of the suspected decline may be, however it is concerning that there are very few resources for the management and monitoring of this and similar-tenured grasslands.⁵⁷

54 Professor Brendan Wintle, *Transcript of evidence*, p. 53.

55 Dr John Morgan, *Transcript of evidence*, p. 66.

56 Threatened Species Conservancy, *Submission 749*, p. 2.

57 Dr Megan O’Shea, *Submission 873*, p. 3; Commonwealth Department of Agriculture, Water and the Environment, *Species Profile and Threats Database: Delma impar – Striped Legless Lizard, Striped Snake-lizard*, <http://www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=1649> accessed 24 May 2021.

A similar example was provided by Dr Barbara Wilson, Adjunct Associate Professor in Ecology in the School of Life and Environmental Sciences at Deakin University, during a public hearing. Dr Wilson noted that monitoring of the threatened New Holland mouse and swamp antechinus in the Eastern Otways was discontinued from approximately 2002 until 2013 because ‘no government department would continue it’. She noted that populations of both species have seriously declined in that period and now present ‘a real challenge to conserve’:

I returned to some of this study area in 2013 with a view to reviewing what was happening in the area, and I was alarmed. The New Holland mouse: we have had no new captures for that species since 2002. The swamp antechinus: only eight individuals during that period and none were captured in 2016. The woodlands, the low forest, the sandy heathlands and the headland scrubs all had very low mammal abundance, something I was not expecting, and 67 per cent of the sites had severe declines, and they were previously very rich.⁵⁸

At a public hearing, Associate Professor Craig Nitschke, Associate Professor in Landscape Dynamics, Ecosystem and Forest Sciences at the University of Melbourne, stated that data collection tends to focus on species of social significance or personal interest to researchers. Environmental monitoring of threatened species is not comprehensive:

we do not have a lot of data, and a lot of our data that we do have is focused on certain groups of species. It does not capture the overwhelming amount of biodiversity that is in these landscapes, and so we suffer from a bias. We target certain species—may they be social hooks, flagships, personal pets, whatever they may be. What I mean by personal pets is somebody loves that species ... And if you actually went through and looked to see, well, ‘What proportion of vertebrates do we have enough information to make good decisions on?’, it might be 20 to 30 per cent of plants. If you get down to insects and vertebrates, you are probably looking at 1 per cent or 2 per cent if you are lucky. If you look at plant diversity in Victoria and Australia, vascular plants, again, maybe it is 20 or 30 per cent. When you get down to bryophytes, there are two people, three people, in all of Australia that can identify bryophytes.⁵⁹

The Committee heard evidence that without effective monitoring of threatened species, the factors driving decline cannot be adequately identified or understood and it is difficult to design effective restoration activities. Professor Wintle said that the lack of environmental data on threatened species makes it difficult to prioritise and direct investment towards restoration:

We have got a significant gap in our data that means that it is very hard for us to (a) say what is going on and (b) prioritise where we need to spend our money for the most urgent cases and to get the biggest bang for our buck.⁶⁰

⁵⁸ Dr Barbara Wilson, Adjunct Associate Professor in Ecology, School of Life and Environmental Sciences, Deakin University, Public hearing, Melbourne, 21 April 2021, *Transcript of evidence*, pp. 40, 44.

⁵⁹ Associate Professor Craig Nitschke, *Transcript of evidence*, p. 32.

⁶⁰ Professor Brendan Wintle, *Transcript of evidence*, p. 56.

Dr Morgan stated that 'systematic monitoring of threatened species' is needed to foster a stronger evidence base for effective management:

we need a much stronger evidence base to understand what is going on and to inform our actions. We need systematic monitoring of threatened species in communities so we understand which need our attention.⁶¹

Anna Murphy, Director and Head of Flora Ecology at the Threatened Species Conservancy, also canvassed the importance of collecting environmental data to inform efforts to restore threatened species. In evidence to the Committee, she described how the Conservancy approaches environmental data collection to support species recovery:

We take a strategic approach to threatened species recovery, so we work through a number of steps to recover threatened species. One of the first steps we take is to assess all the known populations of that species. We go out, we relocate those populations, we count the numbers of plants or animals there and then we track that against previous records—so is that population increasing or decreasing? That gives us an understanding of whether that species is declining or stabilised or increasing. While we are out there we also collect a whole range of data about what threats are operating at that population, and that gives us really valuable information into what needs to happen to protect that species from further decline.⁶²

John Pettigrew, Chair of the Goulburn Valley Environmental Group, provided an example illustrating the importance of environmental data informing efforts to restore threatened species during a public hearing in Shepparton. He noted that his organisation surveyed threatened floral species in the Broken Creek system near Shepparton in 1994, and again 20 years later following protection works and the formation of a state park. John Pettigrew explained that the follow-up survey found threatened flora had declined despite management interventions:

the Goulburn Valley Environment Group in 1994 received a grant to conduct a survey of flora and fauna in the Broken Creek system, which is an amazing system just north of Shepparton, up near Numurkah. It was to identify threatened plants in that area at that time ... It led to the formation of the Broken-Boosey State Park in that area. So it had an immediate effect within years of being published and we are very proud of that role. More recently we had the opportunity to apply for funding to review those surveys, working from the base we had 20 years ago to now ... And the results were disturbing: 22 species had declined or disappeared in the last 20 years in spite of protection works and fencing, there had been a lot of work done because it was created, the state park, and not a lot of work done for many years, but initially there was. Only 18 of 54 threatened species had maintained or increased their numbers over that period of time.

61 Dr John Morgan, *Transcript of evidence*, p. 66.

62 Anna Murphy, *Transcript of evidence*, p. 11.

And I think it is an indication of what you are hearing from other areas as well. We are putting a lot of effort in. We are putting a lot of effort in. We are not making a difference much at all, we are still going backwards in most areas.⁶³

Professor Wintle told the Committee that without environmental data to evaluate the efficacy of interventions to conserve threatened species, adaptive management is impossible:

we are unable to say which kinds of actions work best where because we are not measuring ... measuring the outcomes of your actions is crucial for any future actions and so we have to invest in it.⁶⁴

The Committee was concerned by stakeholder claims regarding the patchiness of monitoring of threatened species populations. It is clear that a history of insufficient monitoring is undermining both the process for listing species in decline as threatened, and opportunities to intervene to restore populations of species that are already listed.

FINDING 50: Environmental monitoring and data collection in Victoria are insufficient, and too patchy and incomplete to accurately identify the extent of native species in decline. This is hampering efforts to effectively categorise native species as threatened under Victorian or Commonwealth environmental legislation.

As a result, vulnerable species are excluded from the protections delivered through a threatened species listing under the FFG Act or EPBC Act.

Moreover, the Committee is disappointed that even where a species has been identified as threatened and interventions aimed at restoration have occurred, a lack of ongoing monitoring has prevented these interventions from being assessed to ensure they are as effective as possible.

FINDING 51: Without adequate monitoring of threatened native species, the factors driving decline cannot be properly identified or assessed over time and it is difficult to design effective interventions to restore species.

The Committee believes that without comprehensive monitoring, including real time, responsive data analysis, threatened species will continue to be at risk of decline.

Threatened species management was discussed in detail in Chapter 7.

⁶³ John Pettigrew, Chair, Goulburn Valley Environment Group, Public hearing, Shepparton, 28 April 2021, *Transcript of evidence*, p. 14.

⁶⁴ Professor Brendan Wintle, *Transcript of evidence*, p. 56.

11.7 Monitoring and data collection informing the control of invasive species

The lack of environmental monitoring and data on the abundance, spread and impact of invasive species in Victoria is well documented and has been the subject of past parliamentary committee investigations. In 2016–17, the former Victorian Joint Statutory Committee on Environment, Natural Resources and Regional Development conducted an *Inquiry into the control of invasive animals on Crown land*. It found that accurate data on population prevalence of invasive animals in Victoria does not exist:

No accurate population numbers exist for invasive species in Victoria. Data relating to invasive species populations and densities are important to inform decisions on invasive animal control.⁶⁵

It acknowledged that determining the abundance of invasive animal populations is difficult and costly, but nonetheless suggested that invasive species management would benefit from more accurate data and monitoring:

This inquiry found that there is a lack of robust data about the extent of the invasive animal problem and the effectiveness of different control methods ... Further work in this area will be important for future policy development.⁶⁶

The Committee recommended that ‘the Government allocate resources to the appropriate authority to undertake work to quantify and measure the numbers and impact of invasive species populations’.⁶⁷ The Victorian Government responded with in principle support for this recommendation, recognising the ‘importance of targeted, evidence-based programs for managing the impact of invasive species’:

Allocation of resources to undertake work to quantify and measure the numbers and impact of invasive species populations will be considered as part of annual research and development investment processes. Land managers have responsibility to fund and oversee the implementation of research.

The relationship between the numbers of invasive species and their impacts is complex and multifaceted. Prioritisation is required to identify the most significant impacts that can feasibly be addressed.⁶⁸

The Committee also recommended that ‘the Government evaluate the effectiveness of existing control programs to manage invasive species’.⁶⁹ It further recommended that it ‘develop a monitoring framework that is designed to provide a better understanding of

⁶⁵ Parliament of Victoria, Joint Statutory Committee on Environment, Natural Resources and Regional Development, *Inquiry into the control of invasive animals on Crown land*, 2017, p. 16.

⁶⁶ Parliament of Victoria, Joint Statutory Committee on Environment, Natural Resources and Regional Development, *Inquiry into the control of invasive animals on Crown land—Summary Booklet*, 2017, p. 7.

⁶⁷ Parliament of Victoria, Joint Statutory Committee on Environment, Natural Resources and Regional Development, *Inquiry into the control of invasive animals on Crown land*, p. 16.

⁶⁸ Victorian Government, *Response to the Parliament of Victoria, Joint Statutory Committee on the Environment, Natural Resources and Regional Development Inquiry into the Control of Invasive Animals on Crown Land*, 14 December 2017, p. 8.

⁶⁹ Parliament of Victoria, Joint Statutory Committee on Environment, Natural Resources and Regional Development, *Inquiry into the control of invasive animals on Crown land*, p. 104.

the relative effectiveness of different control methods (and combinations of methods)’ which ‘can be used to assess whether or not funds for invasive animal control are providing the best value for money’.⁷⁰ The Victorian Government also supported these recommendations in principle:

The Government agrees that robust methods are required to develop effective and efficient programs for the control of invasive species at local, regional and state levels.

A rigorous and evidence-based approach allows for sound decision making, prioritisation to ensure return on investment, and the development of best management practices. The analysis of quality information also enables policy development, appropriate investment decisions, adaptive management and accurate reporting of the relative effectiveness of programs.⁷¹

This Committee received mixed evidence in relation to the current monitoring of invasive plants and animals in Victoria. Dr Scott Rawlings from the Office of the Commissioner for Environmental Sustainability suggested in evidence to the Committee that SoE 2018 indicated that the abundance of invasive flora is better documented than the abundance of invasive fauna:

What we found in our 2018 reporting was that the information on invasive plants was quite good, and we were able to report with confidence regarding that. The information on animals, however, was not so good, and it is obvious that plants are much more straightforward in terms of monitoring than the animals. Unfortunately, though, what we also found was that the status was poor.⁷²

SoE 2018 found that data quality for:

- invasive freshwater plants and animals was poor
- carp distribution was good
- invasive terrestrial plants was good
- invasive terrestrial animals was poor
- deer population and distribution was poor
- horse population and their distribution was fair.⁷³

In a submission to the Inquiry, the Victorian National Parks Association suggested that it is not enough to understand the spread of invasive flora; the impact of programs aimed at controlling weeds must also be monitored:

The need to adequately monitor the effectiveness of current weed management programs in achieving their proposed goals is also vital to understand what techniques

⁷⁰ Ibid., p. 164.

⁷¹ Victorian Government, *Response to the Parliament of Victoria, Joint Statutory Committee on the Environment, Natural Resources and Regional Development Inquiry into the Control of Invasive Animals on Crown Land*, pp. 9, 11.

⁷² Dr Scott Rawlings, *Transcript of evidence*, p. 7.

⁷³ Office of the Commissioner for Environmental Sustainability, *Victorian State of the Environment 2018 Report: Summary Report*, p. 30.

are working and if public money is being well spent on management or if different techniques and methods should be used.⁷⁴

The Invasive Species Council used a submission to highlight the importance in collecting environmental data on the abundance and distribution of all invasive species in terrestrial and marine Victorian habitats. It argued that a better understanding of invasive species populations and the efficacy of control measures can inform management practices. It also suggested that more accurate environmental monitoring is needed to inform the allocation of funding to the problem, ensuring that it is scaled up or down as required and remains commensurate.⁷⁵

In Victoria funding for environmentally focused invasive species management is largely directed by DELWP's Strategic Management Prospects (SMP) system. This system uses modelled data to layer ecological information, including threatened species data and impacts by invasive species. It then introduces a 'cost effectiveness' measure to determine which actions would provide the most cost effective outcome. While this method may be useful where good data exists to inform the models, we have already seen there is a lack of data for invasive species, meaning the system for determining funding is flawed.⁷⁶

The Invasive Species Council recommended that the Victorian Government introduce an invasive species monitoring and reporting program 'that measures against a set of meaningful indicators'.⁷⁷ It also called specifically for increased resources for the ongoing monitoring of deer populations to assess their distribution, the effectiveness of control measures, and the damage they cause to the environment and agriculture.⁷⁸

Dr Wilson from Deakin University spoke to the Committee about the importance of monitoring the spread of invasive pathogens. She suggested that efforts to contain the plant pathogen *Phytophthora cinnamomi* (listed as a threatening process under the EPBC Act in the eastern Otways) are being hampered by a lack of information about biodiversity values at risk and the pathogen's spread:

The extent of occurrence and location of significant uninfested areas are unknown in the eastern Otways. Increases in recreational use, favourable environmental conditions and (unexplained) movement of the pathogen between sites means that remaining pristine areas are under immediate threat of significant degradation from *Phytophthora* dieback ...

Currently, there are no proven methods to eradicate [*Phytophthora cinnamomi*] from a site or to prevent autonomous spread of the pathogen ...

Management approaches urgently recommended for the Otways include mapping the distribution of [*Phytophthora cinnamomi*] impacted vegetation and identifying floristically important non-diseased vegetation. It is imperative that quarantine of

⁷⁴ Victorian National Parks Association, *Submission 102*, p. 34.

⁷⁵ Invasive Species Council, *Submission 943*, pp. 12–16.

⁷⁶ *Ibid.*, p. 9.

⁷⁷ *Ibid.*, p. 17.

⁷⁸ *Ibid.*, p. 18.

non-infested areas, phosphite application, track closures and vehicle wash-downs be implemented to reduce disease extension and protect the significant biodiversity of the region.

These long-term research programs were not established as monitoring programs, so were without defined condition breakpoints that would trigger management responses. There is a need to implement consistent monitoring of mammals and vegetation that provides effective measures for management.⁷⁹

The Committee is disappointed that monitoring of invasive species continues to be limited, patchy and ad hoc despite multiple reports documenting its importance and recommending specific improvements.

FINDING 52: Despite the need for improved monitoring and data collection being well documented, the distribution and abundance of many invasive terrestrial and marine plant, animal and pathogen species remains poorly understood.

The Committee acknowledges that it is difficult and costly to collect data on the abundance and distribution of the many invasive species populations, particularly faunal species. However, it also recognises that this information is fundamental to designing effective control measures for these pest plants and animals. As such, the Committee considers that closer monitoring and robust and thorough data collection regarding invasive species is needed to identify the most effective methods of control and eradication.

Invasive species management was discussed further in Chapter 4.

11.8 Overcoming barriers to effective environmental monitoring and data collection

Stakeholders to the Inquiry canvassed several barriers to comprehensive environmental monitoring and data collection in Victoria, including:

- a lack of central coordination
- limited resources, such as funding and expertise
- an overreliance on citizen science
- environmental databases that are difficult to use
- land tenure issues.

These barriers, and possible solutions, are explored below.

⁷⁹ Dr Barbara Wilson, Honorary Associate Professor in Ecology, School of Life and Environmental Sciences, Deakin University, *Submission 449*, p. 4.

11.8.1 Coordinated environmental monitoring and data collection

As noted, Biodiversity 2037 envisions environmental monitoring and data collection as a responsibility shared amongst the stakeholders involved in its implementation. It commits DELWP to coordinating this effort by working with delivery partners to identify and fill knowledge gaps through targeted data gathering, coordinating and sharing datasets, and ensuring that information is integrated across different environments.⁸⁰ However, the Committee heard that, in practice, there is little central coordination of environmental monitoring and data collection in Victoria.

Dr Wilson told the Committee at a public hearing that, in the absence of government coordination, environmental monitoring is piecemeal and based on the interests of individual scientists. She called for strong government monitoring across all ecosystems:

I think it has been mentioned in many of the presentations—monitor, evaluate, report and audit. Unless we were present by chance in this system ... we would not have these long-term datasets. I certainly would encourage the development of strong monitoring in all of our ecosystems.⁸¹

In a submission to the Inquiry, the Ecological Society of Australia observed that ‘much of Victoria’s ecological monitoring data currently exists in institutional silos, and monitoring is done using disparate methods that are not standardised’. It suggested that government should shift to a more coordinated approach:

better understanding of the gaps in our science and ecological monitoring programs will enable a shift by government towards getting the science we need to inform policy, regulatory and management decisions. Ultimately, this will lead to better outcomes for Victoria’s environment in the face of the increasing pressures of population growth and a changing climate.⁸²

The Ecological Society of Australia acknowledged that DELWP has recently begun work to move in this direction by ‘rolling out standardised surveys for statewide biodiversity monitoring, and developing new methods using the latest technology’. It submitted:

To reverse ecosystem and biodiversity decline, it is critical that these approaches are further developed and implemented, with legislative backing for ongoing funding to ensure they continue over the long term.⁸³

The Research Centre for Future Landscapes also advocated for a ‘systematic, rigorously designed’ environmental monitoring program in its submission. It recommended that a ‘state monitoring office’ be established to coordinate efforts:

We recommend a state monitoring office is established to reflect the importance of monitoring biodiversity outcomes (as is afforded other areas such as financial reporting,

⁸⁰ Department of Environment, Land, Water and Planning, *Protecting Victoria’s Environment - Biodiversity 2037*, p. 22.

⁸¹ Dr Barbara Wilson, *Transcript of evidence*, pp. 40, 44.

⁸² Ecological Society of Australia, *Submission 575*, p. 7.

⁸³ *Ibid.*

agricultural resources or climate), and we advocate for a long-term, comprehensive and integrated program for biodiversity monitoring and evaluation. This would support an integrated and comprehensive statewide monitoring and evaluation program that measures indicators to track trajectories in threatened species and key threats, and is able to evaluate the effectiveness of management actions.⁸⁴

In discussing marine and coastal ecosystems, Australian Marine Ecology submitted that there ‘is presently no overarching program to provide consistent and comparable information from the key habitats and environments’.⁸⁵ It acknowledged that in recent years, DELWP has consolidated existing marine data and imagery into a central database, but suggested that there is limited new ongoing environmental monitoring:

In general, the existing information is sporadic and uneven, with many gaps. There has been an issue of churning over data from desk-top to desk-top ... with little refreshment from field studies. Most existing marine data for Victoria is 10–30 years out of date.⁸⁶

Australian Marine Ecology suggested that environmental monitoring and inspection of marine biodiversity values should occur regularly. It argued that a more ‘structured system’ involving professional scientists, rangers, citizen scientists and the general community could facilitate comprehensive environmental monitoring.⁸⁷

The Committee is encouraged by DELWP’s efforts to introduce a more coordinated approach to environmental monitoring and data collection, including through:

- developing the *Biodiversity Monitoring Framework* to prioritise new environmental monitoring and data collection to support decision-making in relation to the implementation of Biodiversity 2037
- standardising surveys, centralising data and deploying new technologies.

This work is foundational to addressing ecosystem decline and should be pursued as a priority.

Given the *Biodiversity Monitoring Framework* was introduced in 2020, it is too early to assess its impact on the coordination of environmental monitoring and data collection. However, the Committee notes that strong leadership will be critical to directing and supporting organisations involved in the delivery of Biodiversity 2037 to address priority knowledge gaps identified through the Framework.

RECOMMENDATION 68: That the Department of Environment, Land, Water and Planning adopt a leadership role and work proactively with its delivery partners to ensure that environmental monitoring and data collection are coordinated, comprehensive and made publicly available.

⁸⁴ Research Centre for Future Landscapes, *Submission 682*, pp. 7–8.

⁸⁵ Australian Marine Ecology, *Submission 815*, p. 23.

⁸⁶ *Ibid.*, p. 6.

⁸⁷ *Ibid.*, p. 23.

11.8.2 Resourcing environmental monitoring and data collection

An initial figure of \$86.3 million was allocated by the Victorian Government over four years for Biodiversity 2037, with an additional rolling \$20 million per year for implementation. In addition, the 2021–22 Victorian Budget allocated \$14.3 million to fund community-driven action to improve biodiversity and to ‘refresh’ Biodiversity 2037. However, it is unclear what proportion of this funding will support environmental monitoring and the evaluation of programs instigated under Biodiversity 2037.⁸⁸

Several stakeholders felt that comprehensive environmental monitoring in Victoria is inhibited by a lack of adequate resources.

Professor Wintle informed the Committee that he believed that organisations involved in reversing ecosystem decline in Victoria have the expertise to track biodiversity values. However, he acknowledged that comprehensive environmental monitoring is no small task and argued that it is not funded properly:

Look, it is simply that we just do not spend enough money on sophisticated programs to track changes in species abundance across the landscapes. We know more or less how to do it. It is not an easy task because animals and plants are not always where you think they might be ... Victoria is a big state. It is not easy to understand exactly what is happening with species and ecosystems across the State.⁸⁹

Professor Wintle pointed out that Biodiversity 2037 requires government environmental programs to include a monitoring and evaluation component in line with the Biodiversity 2037 MERF framework. He suggested that monitoring programs to evaluate the efficacy of government environmental initiatives are commonly ‘grossly underfunded’ and called for proper resourcing:

It is basically about accountability. A business does not invest a great big chunk of money and then not bother to see what that is doing for its business prospects ... it is monitored. So I think we have to think of the business of biodiversity in the same way. We have to be responsible for our assets. We have to know what is happening to them. That means we have got to have people out there on the ground counting the possums, counting the threatened plants, counting the bees ... we need a full renovation of our ecological monitoring programs, and that is going to require a significant extra investment in the on-ground stuff as well as the sort of sophisticated design processes.⁹⁰

The BEAM Mitchell Environment Group submitted that, in its experience, funding for environmental projects rarely includes allowances for the ongoing evaluation of management impacts. It called for grants that enable ongoing environmental monitoring.⁹¹

⁸⁸ Department of Environment, Land, Water and Planning, *Victorian Budget 2021–22 Paper No. 3: Creating Jobs, Caring for Victorians*, <<https://s3-ap-southeast-2.amazonaws.com/budgetfiles202122.budget.vic.gov.au/2021-22+State+Budget+-+Service+Delivery.pdf>> p. 36.

⁸⁹ Professor Brendan Wintle, *Transcript of evidence*, p. 57.

⁹⁰ *Ibid.*, pp. 56–57.

⁹¹ BEAM Mitchell Environment Group, *Submission 690*, p. 24.

The Research Centre for Future Landscapes suggested that ‘public investment in long-term ecological monitoring is extremely limited’. It observed that most environmental monitoring is undertaken by community organisations and hampered by insufficient funding:

public investment in long-term ecological monitoring is extremely limited. Most long-term monitoring programs are maintained by non-government or community organisations (e.g. BirdLife Australia Bird Atlas) or committed individuals often with support from research institutions ... In most cases, monitoring is hampered by lack of funding and institutional support rather than knowledge of how to monitor or what to monitor, as frameworks and methods for effective monitoring are well established ...⁹²

The Research Centre submitted that, for example, ‘threatened species monitoring and evaluation of management interventions is one area that often lacks sufficient funding, constrains the full implementation of adaptive management, and often leads to sub-optimal outcomes’.⁹³ It advocated for ‘increased investment and secure, long-term funding for monitoring biodiversity’ in Victoria.⁹⁴

Local government authorities that participated in the Inquiry told the Committee that they rely on DELWP and other government agencies to provide data about biodiversity values in their region because they lack the funding and expertise to undertake comprehensive monitoring independently. For example, Macedon Ranges Shire Council observed that it primarily relies on environmental data provided through the Victorian Biodiversity Atlas. The Council was critical of the breadth of information available through this source and noted that it has commenced a citizen science program to attempt to address knowledge gaps.⁹⁵ It advocated for expanded, long-term funding for biodiversity monitoring.⁹⁶

Nillumbik Shire Council made a similar observation. The Council said it receives no funding to monitor local biodiversity values and relies on government agencies to provide this data, such as DELWP for flora and fauna distribution and status and Melbourne Water for waterway health data.⁹⁷

It suggested that the data provided by government agencies ‘is not always comprehensive’ and, as a result, environmental trends in the region are largely unknown:

The health of the biodiversity and ecosystems of Nillumbik is improving or declining variously in different pockets of the Shire, at different points in time, but these respective trends tend to be largely unknown and undocumented.⁹⁸

⁹² Research Centre for Future Landscapes, *Submission 682*, pp. 7–8.

⁹³ *Ibid.*, p. 8.

⁹⁴ *Ibid.*, pp. 7–8.

⁹⁵ Krista Patterson-Majoor, *Transcript of evidence*, pp. 14–15.

⁹⁶ Macedon Ranges Shire Council, *Submission 412*, p. 11.

⁹⁷ Nillumbik Shire Council, *Submission 392*, p. 3.

⁹⁸ *Ibid.*

Nillumbik Shire Council asserted in its submission that 'evidence-based decision making is critical to improving outcomes for biodiversity' and said it would welcome 'greater focus on local and landscape scale biodiversity monitoring and data collection' as a result of the Inquiry:⁹⁹

Ongoing and comprehensive biodiversity data collection and monitoring is seldom eligible for government grant funding, despite its importance in evaluating management outcomes and in detecting long-term trends. This needs to change.¹⁰⁰

Kingston City Council submitted that much of the data provided by Victorian Government agencies is designed to be used at a scale larger than applicable in managing council areas. It called for investment in building environmental monitoring capabilities and knowledge across all levels of government and the community to support the implementation of Biodiversity 2037 and local on-ground management.¹⁰¹

Taungurung Land and Waters Council Aboriginal Corporation called for investment in Traditional Owner-led environmental monitoring through Reading Country programs.¹⁰² Matthew Shanks, Strategic Advisor for Cultural and Natural Resource Management at the Corporation, told the Committee at a public hearing in Shepparton that Reading Country programs enrich Traditional Owner understanding of the lands they are responsible for and inform management plans:

Reading Country programs ... include Indigenous methodologies and assistance for the capture, storage and analysis of data related to the health of Country from which Traditional Owners can formulate management actions for healing and caring for Country in the implementation of aforementioned strategies, acknowledgement of culturally valued species as flagships to guide healing of culture and Country.¹⁰³

Matthew Shanks said that the environmental knowledge acquired through Reading Country programs will support Taungurung Land and Waters Council Aboriginal Corporation to implement related strategies, such as in relation to cultural fire, cultural landscapes and game management.¹⁰⁴ He called for the Council to be properly resourced to undertake its Reading Country program:¹⁰⁵

At the moment, under our RSA [Recognition and Settlement Agreement] and our NRA [Natural Resource Agreement] we are able to access Crown land, so the Taungurung Aboriginal title parks sort of primarily, that sort of Crown land we have rights to take and use, and as part of that we are trying to build recording of values, so where species are located, what happens in different seasons, really sort of starting as simple as that and then building in more complex assessments that draw on some of the ... modern

99 Ibid.

100 Ibid., p. 23.

101 Kingston City Council, *Submission 755*, p. 2.

102 Matthew Shanks, Strategic Advisor, Cultural and Natural Resource Management, Taungurung Land and Waters Council Aboriginal Corporation, Public hearing, Shepparton, 27 April 2021, *Transcript of evidence*, pp. 22–23.

103 Ibid., p. 23.

104 Matthew Shanks, *Transcript of evidence*, p. 4.

105 Ibid., pp. 22–23.

scientific techniques and the ability to record and translate, analyse and translate that, that information into ... policy statements or goals and objectives, aspirational statements, all of those sorts of things.

It looks like ... resourcing for Traditional Owners to be on Country, just being on Country, looking at indicators...¹⁰⁶

While Dja Dja Wurrung Clans Aboriginal Corporation didn't specifically refer to Reading Country programs, it similarly highlighted the need to fund Traditional Owners to observe Country with a view to informing the ongoing healing and management of Country. Nate Perry, Program Manager Dhelkunya Dja Policy at the Corporation, said:

We seek reform of our place, and the state's place on Country, to place Djaara [our people] and murrup [our spirits] in Country, listening to Country, hearing Country, watching and learning from Country. So we can properly care for Country, and speak to and with Country.¹⁰⁷

In a presentation to the Committee, Nathan Wong, Program Manager of Land Strategy Djandak at the Corporation explained how scientific knowledge of Country can complement cultural knowledge to support the healing of Country:

But by understanding cultural knowledge, you can understand where these things should be. Science is an enabler to understand that well, if yam daisies should be here, why are they not here? How do we go through a process of understanding how much damage has been done to the soil, what are the weeds doing, how we have to change the fire regimes, or the grazing regimes? Are there problems with slugs, are there problems with snails, are there problems with fertilisers that have been put there, are there problems with chemicals that have been put there? Has the water regime changed? How do we – so science enables us to heal country, whilst the knowledge gives a direction and the objectives and the reasons behind why you do it. So science informs, the knowledge is the thing that guides and directs.¹⁰⁸

FINDING 53: Funding for ongoing, comprehensive environmental monitoring and data collection to inform and evaluate efforts to reverse ecosystem decline in Victoria is inadequate. Whilst an increase in resources is required to support this important task, work is also needed to develop an appropriate and fit for purpose framework to ensure data collection is consistent in order to inform responses to ecosystem decline.

In the Committee's view, there is a clear need for government funding to support comprehensive environmental monitoring and data collection.

¹⁰⁶ Ibid., p. 24.

¹⁰⁷ Nate Perry, Program Manager Dhelkunya Dja Policy, Dja Dja Wurrung Clans Aboriginal Corporation, Public hearing, Shepparton, 27 April 2021, *Transcript of evidence*, p. 17.

¹⁰⁸ Nathan Wong, Program Manager, Land Strategy Djandak, Dja Dja Wurrung Clans Aboriginal Corporation, Public hearing, Shepparton, 27 April 2021, *Transcript of evidence*, p. 18.

RECOMMENDATION 69: That the Victorian Government provide increased, ongoing funding to support comprehensive environmental monitoring and data collection addressing priority knowledge gaps that support the implementation of *Protecting Victoria's Environment – Biodiversity 2037*. Funding should be commensurate with the importance of reversing ecosystem decline in Victoria and the scale of this objective.

Moreover, the Committee acknowledges that the health and wellbeing of Traditional Owners is intrinsically linked to the health of Country. It also notes that opportunities for Traditional Owner organisations to take a larger role in the management of Country are increasing through agreements such as those reached under the *Traditional Owner Settlement Act 2010* (Vic). In this context, the Committee believes that Reading Country programs, which facilitate the collection and analysis of environmental data related to the health of Country, are an important component of reconciliation and empowerment. Reading Country programs can support Traditional Owners to develop management plans for healing and caring for Country and should be supported by the Victorian Government.

RECOMMENDATION 70: That the Victorian Government consider providing ongoing funding to Traditional Owner organisations to support the delivery of Reading Country programs, which will facilitate the collection and analysis of environmental data related to the health of Country.

RECOMMENDATION 71: That the Victorian Government continue its dialogue with First Nations peoples as custodians of the land to ensure that Traditional Owners play a significant role in informing Government responses to protecting native flora and fauna.

11.8.3 Overreliance of citizen science

Throughout the Inquiry, the Committee heard an array of opinions on the benefits and limitations of engaging the community in environmental monitoring and data collection through citizen science projects.

DELWP highlighted the advantages of citizen science in its submission. It noted that citizen science provides opportunities for the community to engage with, and collaborate in, scientific research aimed at addressing ecosystem decline. It suggested that citizen science projects examining biodiversity and protecting nature are becoming common around the world and are contributing useful environmental data:

The extraordinary advances in technology in recent years have vastly increased the potential for people everywhere to collect, manage, share and analyse data. This means

interested people can easily join in and collect valid, accurate, very useful information, and collaborate on scientific projects.¹⁰⁹

DELWP explained that citizen scientists are currently contributing to projects in terrestrial, freshwater and marine environments in Victoria. It noted that projects are initiated and planned by scientists, by citizens or co-designed, meaning participating community members do not need scientific qualifications.¹¹⁰

Friends of the Hooded Plover, Breamlea submitted an example of a citizen science project that has been successfully monitoring and protecting hooded plover beach habitat around the Bellarine Peninsula and Surf Coast. The Beach Nesting Bird Project has been running for more than ten years despite 'piecemeal funding'. The group explained that scientists set up the foundations of the project and provide management, analysis, reporting and training for members of the public who are interested in contributing:

[The scientists'] report "Ten years of Hooded Plover recovery on the Bellarine Peninsula and Surf Coast: An overview and future recommendations", published in July 2018 is testament to the outstanding work they have done in training a small army of dedicated and now skilled citizen scientist volunteers who monitor the birds, collect the data, warden chicks, talk to visitors to the beach, and provide education support through media interviews and community and school presentations. They have achieved this in a milieu of piecemeal funding where environmental work has been a low priority for both the Victorian and Commonwealth government bodies.¹¹¹

Friends of the Hooded Plover, Breamlea called for 'sustained funding' to continue and build on this work.¹¹²

At a public hearing in Melbourne, BirdLife Australia also informed the Committee that it manages ongoing citizen science projects. Paul Sullivan from BirdLife Australia explained that his organisation encourages volunteers to survey bird populations and use an app to contribute their findings to a database called Birdata. It uses this and other databases to identify trends in water bird populations.¹¹³

Likewise, the Macedon Ranges Shire Council reported that it relies on citizen scientists to support its environmental monitoring program. It stated that using citizen scientists in this way delivers the double benefit of providing environmental data and engaging the community in environmental issues:

we have got a range of monitoring sites across the shire, and we really do rely on citizen scientists to assist us, whether they are Landcare groups or individuals. We do spotlight nights, we have got a regular program of checking our nest boxes which we have installed and we do an annual bird blitz where we do bird surveys, and all of

¹⁰⁹ Department of Environment, Land, Water and Planning, *Submission 927*, p. 25.

¹¹⁰ Ibid.

¹¹¹ Friends of the Hooded Plover, Breamlea, *Submission 169*, p. 4.

¹¹² Ibid.

¹¹³ Paul Sullivan, *Transcript of evidence*, p. 41.

those involve the community. It is not just about collecting the data, because that is really important as well, but it is also about the community engagement and enabling community members to connect with nature and with wildlife.¹¹⁴

In its submission to the Inquiry, Australian Marine Ecology acknowledged that citizen science projects can undertake beneficial environmental monitoring and data collection but cautioned that these have their limitations and shouldn't replace professional scientific data collection:

There has been a considerable reduction in the involvement of professional field scientists in Victoria ... There has also been a much greater emphasis and funding for citizen scientists. There are many benefits in the citizen science programs, however some of their hard-sought data has been devalued through lack of professional scientific oversight. The movement of sites has limited detection of trends over time and spurious results have not been filtered from databases, rendering the good data not useable.¹¹⁵

Australian Marine Ecology argued that important decisions—informing the ongoing health of ecosystems—should instead be based on professional science:

There has been a general attitude among managing regulators and organisations that citizen science can be a replacement for professional scientific data. This is not the case as citizen science data is not contestable and is provided without accountability. Major management decisions for the protection of ecosystems involve considerable investments and compromises among stakeholders – the information basis should therefore be accountable and robust to challenge. This should be the purview of professional scientists and not a burden placed on citizen scientists.¹¹⁶

Dr Lowe from the Arthur Rylah Institute for Environmental Research responded to criticisms of citizen science during a presentation to the Committee. He stated that the Institute has been involved in citizen science projects for 10 years and has undertaken 'analysis about the veracity of citizen science data'. He felt that citizen science can be robust and continue to have a central place in environmental monitoring, as long as it is guided by strong partnerships between community members and scientists:

We think it has got a really central place and it will continue to have a central place. The way to manage this issue that you refer to is a strong partnership between the scientists and the citizens. We have run numerous workshops with lots of community members where we have examined that issue, we have talked it through and we have come up with a formula ... scientists need to be part of the initial design and establishment of the approach and methodology that guides citizens to go out and get the best data so it can have the best use, and then we partner with citizen scientists to do the analysis and publish the report and indeed feed it into the statewide databases.¹¹⁷

114 Michelle Wyatt, Environment Coordinator, Macedon Ranges Shire Council, Public hearing, Melbourne, 12 May 2021, *Transcript of evidence*, p. 14.

115 Australian Marine Ecology, *Submission 815*, p. 23.

116 Ibid.

117 Dr Kim Lowe, *Transcript of evidence*, p. 13.

Dr Lowe acknowledged that unreliable data is useless and stressed that a strong partnership between professional scientists and contributing members of the public is vital to obtaining useful data.¹¹⁸

Other organisations involved in citizen science projects also emphasised the importance of professional guidance in written evidence to the Committee. For example, BEAM Mitchell Environment Group asserted that community groups need support to ensure that environmental monitoring programs adhere to scientific methods, are repeatable and that results are comparable over time and across monitoring sites.¹¹⁹

Bellarine Landcare Group reflected on its own participation in citizen science projects linked to academic institutions. It explained that experienced researchers can support the design, ongoing management and dissemination of environmental data collection:

We are fortunate to have links with academic institutions to support us in this. Such citizen science provides substantial information and is often maintained over lengthy periods – the appropriate time frame for ecological studies. Programs to link this type of data collection with a research institution would ensure that the most is gained from community monitoring. Experienced researchers can help to design monitoring programs, analyse data and disseminate the knowledge gained. This requires that the research institutes are encouraged to provide such support and have tenured staff to do their part.¹²⁰

Dr Lowe also suggested that well-designed citizen science can amass useful data. However, he did concede that citizen science cannot replace professional environmental monitoring:

The thing with citizen science is it collects a particular type of data. It is not the only data we need. We do need other more intensive data about the impact of management interventions. But ... all parts of society could do more with citizen science.¹²¹

The Committee believes that citizen science can make an important and valuable contribution to environmental monitoring and data collection when it is used to complement professional projects.

FINDING 54: Citizen science projects, which are designed by professional scientists and involve volunteers, can engage the community in environmental issues and collect data vital to the management of Victoria's unique biodiversity values. Citizen science projects can complement professional scientific research projects.

However, the Committee notes that it is important to ensure that data collection from research projects involving citizen scientists is verifiable.

¹¹⁸ Ibid.

¹¹⁹ BEAM Mitchell Environment Group, *Submission 690*, p. 24.

¹²⁰ Bellarine Landcare Group, *Submission 453*, p. 11.

¹²¹ Dr Kim Lowe, *Transcript of evidence*, p. 14.

11.8.4 Refining environmental databases

Evidence presented to the Committee suggested that databases that store information about the State's biodiversity—such as the Victorian Biodiversity Atlas—could be improved and better utilised to support environmental monitoring.

Several stakeholders involved in the Inquiry suggested that the Victorian Biodiversity Atlas is difficult to use. The Committee notes that these comments are in light of the introduction of the VBA Go mobile application which was designed to simplify the process of contributing data. In its submission, the Australasian Native Orchid Society (Victorian Group) characterised the Atlas as 'a complicated system that is not user friendly'. It claimed that some of its staff and volunteers have 'given up' attempting to upload the environmental data they collect because it is too difficult:

the fact that data entry, to this database, is extremely difficult for staff and volunteers alike and many have chosen to avoid doing so. Most [Australasian Native Orchid Society (Victorian Group)] members who have contributed data in the past have given up trying to enter data into the VBA and even the most computer savvy of its members finds doing so difficult.¹²²

A similar criticism was submitted by BEAM Mitchell Environment Group. Further, the Group warned that information gleaned through citizen monitoring programs is 'not getting into the databases used by departments for planning' because there is some confusion as to which database data should be contributed to. It suggested that the Victorian Biodiversity Atlas should be linked to other databases, such as the Atlas of Living Australia (maintained by the Australia Museum), to ensure all data that is collected informs policy-making.¹²³

Macedon Ranges Shire Council submitted that data collected by citizen scientists often isn't added to the Atlas because it 'is not super user friendly'. It suggested that the community isn't well connected to the Atlas and that more support and education is needed to facilitate data sharing.¹²⁴ Lisa Pittle from Nillumbik Shire Council also observed that the Victorian Biodiversity Atlas is not very visible to the general public and would benefit from increased transparency.¹²⁵

Moreover, the Committee heard that the Victorian Biodiversity Atlas is too reliant on environmental data collected by citizen scientists. For example, the Australasian Native Orchid Society (Victorian Group) said a 'heavy reliance is placed on volunteers to carry out field work, supply and input data'.¹²⁶

Dr Edmunds from Australian Marine Ecology suggested that environmental data collected by land and biodiversity asset managers is not being publicly shared:

¹²² Australasian Native Orchid Society (Victorian Group), *Submission 913*, p. 2.

¹²³ BEAM Mitchell Environment Group, *Submission 690*, pp. 24–25.

¹²⁴ Macedon Ranges Shire Council, *Submission 412*, p. 11; Michelle Wyatt, *Transcript of evidence*, p. 15.

¹²⁵ Lisa Pittle, *Transcript of evidence*, pp. 6–8.

¹²⁶ Australasian Native Orchid Society (Victorian Group), *Submission 913*, p. 2.

At the moment a lot of the knowledge is behind closed doors. We do not know anything about the monitoring and environmental management in the oil and gas industry, and yet they are a big force in our marine environment. Even things like what Melbourne Water does in Port Phillip Bay is a blank—there is nothing in the public domain there.¹²⁷

Stakeholders proposed the introduction of measures to compel professionals involved in environmental monitoring to contribute their data to the Victorian Biodiversity Atlas. For example, the Local Government Professionals Biodiversity Planning Network recommended that the Victorian Government legislate to require ‘all biodiversity data obtained by professional assessors to be uploaded into central government databases within a prescribed period from the date of assessment’. It suggested in its submission to the Inquiry that this be accompanied by:

- Measures to ensure data submission requirements are being followed.
- Investment into and management of quality assurance for submitted biodiversity data.
- Publication of submitted data in a form which is easy to access and understand by the general public.¹²⁸

The Mineral Council of Australia also advocated for improving data sharing and accessibility. In written evidence to the Inquiry, it noted that the Western Australian Government has introduced a mandatory requirement that all biodiversity data collected under the *Environmental Protection Act 1986 (WA)* be added to an Index of Biodiversity Survey Assessments. The Council suggested that a similar approach could be adopted in Victoria.¹²⁹

The Index of Biodiversity Survey Assessments makes all land-based biodiversity surveys conducted in Western Australia publicly available. The Council noted that this mandate captures all baselined environmental surveys completed by the mining sector as part of environmental impact assessments:

In remote parts of Western Australia, much of the information available about the region’s unique biodiversity is understood because mining companies have surveyed an area. Mining companies regularly discover entirely new species in Western Australia.¹³⁰

The Council suggested that ‘Victoria could consider adopting a similar approach’ and better leverage the extensive environmental data collected and held by the mining sector:

Due to the scale of project baseline environmental assessments and site-based and regional environmental monitoring programs, the mining industry hosts extensive data relating to a range of environmental values, including water and air quality and flora and fauna.

¹²⁷ Dr Matthew Edmunds, *Transcript of evidence*, p. 4.

¹²⁸ Local Government Professionals, Biodiversity Planning Network, *Submission 523*, pp. 6–7.

¹²⁹ Mineral Council of Australia, *Submission 783*, p. 10.

¹³⁰ *Ibid.*

There is significant potential for this and other untapped baseline data to be more broadly captured and shared to enhance knowledge about nature. Steps to improve the availability and sharing of data should be developed in consultation with all land-based sectors, including mining, that collect and analyse environmental data.¹³¹

The environmental data stored in the Victorian Biodiversity Atlas informs important decisions spanning all elements of environmental management, for example: ecosystem restoration programs, planning and development decisions and the prioritisation of new research. It is critical that it encompasses as much good quality, current data as possible on Victoria's biodiversity values.

The Committee would like to see the Victorian Biodiversity Atlas refined and better utilised to support the collection of, and access to, environmental data.

RECOMMENDATION 72: That the Victorian Government investigate mechanisms to require biodiversity data obtained by professional assessors to be uploaded into a central, publicly available government database (such as the Victorian Biodiversity Atlas) within a prescribed period from the date of assessment. This could include environmental impact assessments undertaken as part of mining operations and planning and development projects.

RECOMMENDATION 73: That the Victorian Government refine the operation of the Victorian Biodiversity Atlas and the VBA Go mobile application to make these more user-friendly to upload environmental data. Refinement of the Victorian Biodiversity Atlas should be accompanied by an awareness campaign to encourage the Victorian community to contribute to the Atlas and expand data collection across the State.

11.8.5 Environmental monitoring across land tenures

Several stakeholders noted that land tenure can be a barrier to effective environmental monitoring without suggesting a solution to this challenge.

According to Professor Wintle, more monitoring of biodiversity assets occurs on public land than private land in Victoria.

I would say we probably do a better job of monitoring biodiversity on public land than we do on private land. We do not really know often what our biodiversity assets are on private land, and it is just because it is harder to send people out to people's private land to check it out and there are privacy issues and all sorts of things.¹³²

¹³¹ Ibid.

¹³² Professor Brendan Wintle, *Transcript of evidence*, p. 58.

Some stakeholders provided examples of this issue. For example, Kingston City Council submitted that it has a good understanding of the biodiversity values within its reserves but lacks knowledge of other areas.¹³³

Nillumbik Shire Council recommended a 'greater focus on local and landscape scale biodiversity monitoring and data collection'. It said that private 'landowners have a large role to play in monitoring biodiversity and should be part of a collaborative effort across the state'.¹³⁴

Macedon Ranges Shire Council suggested that better engagement with landowners could improve monitoring of threatened species.¹³⁵

It is clear to the Committee that consistent, comprehensive environmental monitoring and data collection across land tenures is challenging. Biodiversity values on private land are not well identified. Better government engagement with private landowners could help facilitate a greater understanding of biodiversity values on private land and support coordinated monitoring and data collection.

RECOMMENDATION 74: That the Victorian Government consider providing ongoing funding to local government authorities to support them to undertake robust data collection and environmental monitoring in areas with significant biodiversity values. The Department of Environment, Land, Water and Planning should auspice a rolling application process for the funding, and data collected should be added to the Victorian Biodiversity Atlas to ensure it informs Victorian Government environmental policy and program development and implementation.

**Adopted by the Legislative Council Environment and Planning Committee
Parliament of Victoria, East Melbourne
4 November 2021**

¹³³ Kingston City Council, *Submission 755*, p. 2.

¹³⁴ Nillumbik Shire Council, *Submission 392*, p. 25.

¹³⁵ Macedon Ranges Shire Council, *Submission 412*, p. 9.

Appendix A

About the Inquiry

A.1 Submissions

1	Laura Searle
2	Jonathon Ingram
3	Graeme Tyschen
4	Janet Moore
5	Susan Shore
6	Jennie Bremner
7	Brett Taylor
8	Ann Gillison Gray
9	Valerie Tepper
10	Robert Briggs
11	Confidential
12	Pam and James McDonald
13	Richard Barnes
14	Nathan Goble
15	Jonathan Hughes
16	Miles Elliot
17	Peter Stafford
18	Paul Leitinger
19	Shane Ellis
19A	Shane Ellis
20	Lachlan McKenna
21	Ron Dean
22	Suzette Rodoreda
23	Michael Williams
24	Lisa Sherif
25	Pamela Mattea
26	Jack Paul-Drevensek
27	Ian Whitford
28	David Lee
29	Christine Guthry
30	Chloe Currie
31	Jennifer Martin
32	Christian Socha
33	Jenni Baker
34	Kiri Pickering
35	Roma Cavanagh
36	Ann Shenfield
37	Linda Clark
38	Will Nash
39	Laura Kola
40	Scarlett Pearce
41	Craig Hinton
42	Jean Christie
43	Geraldine Bagwell
44	Friends of Bats and Bushcare
45	Rob Mancini
46	Bronwyn Lewis
47	Jan Kendall
48	Hilary Hughes
49	Leonard Fitzpatrick
50	Noelene Carr
51	Sabrina Gray-Viggiano
52	Joe Hinchliffe
53	Karl Williams
54	April Newton
55	Dr Norie Neumark
56	Michael McCormack
57	Susan Mary Pyke
58	Robynne Burchell
59	Charles Davis
60	Jacqueline Lang
61	Ann Jelinek

62	Francesca Nicol	100	Robert Bender
63	Nina Vettori	101	Sheryl Lewis
64	Bente Jørgensen	102	Victorian National Parks Association
65	Lucinda Willshire	103	Victorian Planning Authority
66	Reynolds Hafner Hofheins	104	Polly Valentine
67	Marcus Hill	105	Robert Gould
68	Maria Miranda	106	Rosemary Bates
69	Martine Holberton	107	Sarah Branton
70	Nicole Groch	108	John Bardsley
71	Emma Tkalcevic	109	Friends of the Barwon
72	Jane Wallace Mitchell	110	Diana Wolfe
73	Australian Wildlife Protection Council	111	Hamilton Field Naturalists Club
74	Elsa Mary Martin	112	Regional Victorians Opposed to Duck Shooting
75	Jo Rye	113	Dr Allan Rossiter
76	Anda Banikos	114	Olive Archibald
77	Confidential	115	Johnathan Starks
78	Alex Arbuthnot AM	116	Miranda Braakhuis
79	Joanne Gray Viggiano	117	Sue Guymer
80	MAD (Women Making a Difference)	118	Cartography Community Mapping
81	Pilar Garcia	119	Confidential
82	Daniela Bradley	120	Field Naturalists' Club of Ballarat
83	Michelle Fox	121	Angair
84	Russell Allardice	122	Barbara Hall
85	Angela and Jackie Turner	123	Dr Bruce Watson
86	Julia Burns	124	Simone Foong
87	Alex Bloom	125	Sylvia van der Peet
88	Confidential	126	John Neve
89	Wathaurung Aboriginal Corporation	127	Garland Simpson
90	Peter and Andrea Hylands	128	Robert Hart
91	Name Withheld	129	Robert Gunn
92	Wendy Branagan	130	Cornelius O'Brien
93	Michelle Baxter	131	Bonnie Gelman
94	Gemma Hocking	132	Marco Setiawan
95	Justine Singline	133	Barbara J Fraser
96	Tria Manley	134	Mary-Ann van Ballekom
97	Kim Bounds	135	Confidential
98	Jane Hart	136	Hannah Robert
99	Kym King	137	Mark Learmonth

138	Wendy Kurka	176	Barbie Wilson
139	Andrea Fitzgerald	177	Matthew Alexander Lloyd
140	Kristine Phillip	178	Friends of the Earth (Melbourne)
141	Sanne de Swart	179	Ben Dawson
142	Andrea Mayes	180	April Williams
143	Ann Williamson	181	Breamlea Coastcare
144	Linda Bradburn	182	Judy Cameron
145	Avigale Bischard	183	Erica Corr
146	Judy Medway	184	Charlotte Peche
147	Annie McCallum	185	Joan Spittle
148	Merrill Jusuf	186	Alison Clarke
149	Karen Bowley	187	Hilary Lovibond
150	Leda Ly	188	Dale Bradbury
151	Peter Roberts	189	Vivien Smith
152	Jane Cisera	190	Jayne Greer
153	Loloma Kannava	191	Jacquie Kelly
154	Alanna Burton	192	Robert Gordon
155	Mutullah Can Youlbulan	193	Kara Freedman
156	Dr Bob Rich	194	Imogen Clarke
157	Ciara O'Neill	195	Dr Sanja van Huet
158	Marion Ivanic	196	Trent Rebeiro
159	Jenn Spencer-Stewart	197	Surf Coast Energy Group
160	Sarah Brenan	198	Maria Bradley
161	Dorothea Kassell	199	Lewis Rattray
162	Highside Property	200	Bruce Hedge
163	Joan Lynn	201	Stephan Anatala
164	Marek Polgar	202	Susannah Bell
165	Jeannie Suttie	203	Emma Quartermaine
166	Kammy Cordner Hunt	204	Rebecca Sutton
167	Number not used	205	Sieta Beckwith
168	Monica Raphael	206	Eva Davis-Jones
169	Birdlife Australia's Friends of the Hooded Plover Breamlea	207	Tommy Clarke
170	Sheena Moore	208	Grace Reeves
171	Jonathan de Kock	209	Anthony Stephenson
172	Maurice Perry	210	Bree Dean
173	Ruth McClelland	211	Miriam Robinson
174	Angela Barnes	212	Erin Sleeth
175	Anna Thwaites	213	Anna Mezzetti

214	Diane Roberts	252	Number not used
215	Mark Feltrin	253	Number not used
216	Tom Knowles	254	Number not used
217	Bev Cowan	255	Anna McKenzie
218	Jenni Thompson	256	Sharon van Staden
219	Geoffrey Lambourn	257	Felicity Crombach
220	Judy Rees	258	Number not used
221	Jennifer Miller	259	Jo Whitehead
222	Juliette Hughes Norwood	260	Janet Fahie
223	Andrew Hine	261	Casey Dean
224	Melanie Attard	262	Rosemary Glaisher
225	Hans Paas	263	Judy and Nick Jans
226	Suzanne Dance	264	Dr Lea Jellinek
227	Janette Allison	265	Bendigo and District Environment Council
228	Robert Skappel	266	Goongerah Environment Centre (GECO)
229	Jack Nicholls	267	Number not used
230	Michael Durkin	268	Lois Whiteoak
231	Judy O'Donnell	269	Veida Somerville
232	Number not used	270	Adrian Brookes
233	Rohan Morris	271	Thomas Martin
234	Martha R Hills	272	Tim Berenyi
235	Stephen Wood	273	Anna Sublet
236	Nicole Humphreys	274	David Metzenthien
237	Robert Briggs	275	Don Owen
238	Tony Polack	276	John Godfrey
239	Katherine Modoo	277	Patricia Elmore
240	Catherine Foot	278	Gavin O'Loughlin
241	Judith and John Blyth	279	Dave Archer
242	John Neve	280	Kim McDonald
243	Marion Gray	281	Merryn Padgett
244	Traudy Glasencnik	282	Feili Zhang
245	Graeme Lindenmayer	283	Mark Cramond
246	Jose Truda Palazzo	284	Kerry Rainer
247	Bronwen Evans	285	Dr Joanna Harris
248	Carol Collins	286	Dereka Ogden
249	Sue-Ellen Kirby	287	Brian Donci
250	Elizabeth Enright	288	The Howitt Society
251	Bruce Sims	289	Jennifer Wilkinson

290	Cheryl Billingsmith	328	Heather Cooke
291	Katherine Addis	329	Neylan Lisa Akut
292	Abigail Humphreys	330	Tiana Wetzel
293	Andrew Coutts	331	Number not used
294	Susan Meyer	332	Number not used
295	Peter Flanagan	333	Denise Reitmer
296	Maggie Cowling	334	Susan Pratt
297	Deborah Hiller	335	Friends of Lake Knox Sanctuary
298	Animalia Wildlife Shelter and Rescue	336	Friends of Crusoe Reservoir and No. 7 Park
299	Janice Crosswhite	337	Joy Dahl
300	Lawrence Pope	338	Evelyn Feller
301	Alexander Bloem	339	Robert Mancini
302	Tara Lanzendorfer	340	Renaee Churches
303	South Western Woody Weeds Action Team	341	Number not used
304	Elspeth Ferguson	342	Rhona Rose
305	Charlie Schroeder	343	Alan Hewett
306	Carol Shelton	344	Lauren Prestas
307	David Miller	345	Number not used
308	Garry Squires	346	Christine Whalan
309	Sophia Dunn	347	Emily Alexandra
310	Geoffrey Bricknell	348	Elizabeth and Barry Charleson
311	Trevor Humphries	349	Paul Hellard
312	Bernadette Shingles	350	Number not used
313	Ross Bigelow	351	Janet Hall
314	Kate Simpson	352	Margaret Blair
315	Wombat Forestcare	353	Professor David Lindenmayer
316	Sara Eisner	353A	Professor David Lindenmayer
317	Lorraine Forrester	354	Judith Wakeman
318	Amanda Ma	355	Josina Metcalfe
319	Number not used	356	Peter Topma
320	Keven Gray	357	Ann Tulett
321	Lara Bickford	358	Keri James
322	W. Brewis Atkinson	359	Susan Hauswirth
323	Lorna Hobbs	360	Melanie Wiltshire
324	Josephine Jakobi	361	Eric Smith
325	Timothy Oseckas	362	Janet Limb
326	Stephanie Wang	363	Sean Morice
327	Number not used	364	Jessica Gerger

365	Craig Castree	402	Angela Grone
366	Jodie Williams	403	Leigh McLeod
367	Patrick Connor	404	Naomi Wang
368	Lucas Fay	405	Alan Miller
369	Lynn Sunderland	406	Bruce Campbell
370	Larisa McElhinney	407	Jessica Lucas
371	Amy Connolly	408	Anne Bridley
372	Cheree Anrep	409	Gareth Rego
373	Emily Wood Trounce	410	Kathryn Gray
374	Giselle Esparaon	411	Andrew Hossack
375	Charlene Murphy	412	Macedon Ranges Shire Council
376	Carolann Butler	413	Luke Barry
377	Yvonne-Elaine Avery	414	Heritage Bush Reserve Committee of Management
378	Stephen John Piggott	415	Anthony Bayley
379	Dave Austin	416	Melissa Hartmann
380	Lynne Donchi	417	Margaret Jacobs
381	Julie Franke	418	Anne Gibson
382	Ron and Barbara Woodward	419	Confidential
383	Linda Bradburn	420	East Gippsland Wildfire Taskforce
384	Daryl Cochrane	421	Julie Eagles
384A	Daryl Cochrane	422	Andrew Parsons
385	Michael O'Flynn	423	Number not used
386	Jill Shaw	424	Madeleine Cox
387	Robyn Hyde	425	Marie-Louise Drew
388	Marianne Kambouridis	426	Alan Noy
389	Thomas Melia	427	Alexander John Campbell
390	Vivian Bilu	428	Australian Brumby Alliance
391	Carl Rayner	429	Nicholas Barton
392	Nillumbik Shire Council	430	Paul Fielding
393	Dave Kelman	431	Dr Warwick Rose
394	Confidential	432	Rubicon Forest Protection Group
395	Janet Duncan	433	Marine Care Ricketts Point and others
396	Ellie Robertson	434	Janet Elizabeth Duncan
397	Angela Cox	435	Val Barrington
398	David Cummings	436	Michael Hardiker
399	Ila Taylor	437	Geoffrey Goode
400	Hugh McKinnon	438	Charles Street
401	Russel Bush		

439	Victorian Scientific Advisory Committee	475	Name Withheld
440	Margaret McCaffrey	476	Rosemary Race
441	Stewart Bisset	477	Environment East Gippsland
442	Roger Morris Gamble	478	Nicholas Rowlands
443	Greg Rowles	479	Dale Rattle
444	Alan Northey	480	Dr Ying Gu
445	Lesley Ann Dalziel	481	Dr Belinda van Heerwaarden
446	Timothy Boyle	482	Phoebe Burfield
447	Knox Environment Society	483	Wattle Flat Farm
448	Sonja Leon	484	Ric Pawsey
449	Associate Professor Barbara Wilson	485	Steve Callanan
450	Goulburn Broken Local Government Biodiversity Reference Group	486	Colin Smith
451	Heinz de Chelard	487	Jacinta Van Eede
452	Darebin City Council	488	Cate Young
453	Bellarine Landcare Group	489	Gai Woolhouse
454	Emma Downey	490	Extinction Rebellion Grey Power
455	John Worcester	491	Joanne and John Nairn
456	Rod Novak	492	Peter Lemon
457	Michelle March	493	Daniel Caffrey
458	Mountain Cattlemen's Association of Victoria	494	Samantha Sutherland
459	Julia Karas	495	Number not used
460	Ava Graham	496	Victorian Wildlife Shelters Coalition
461	Dr Sue Rosenhaine	496A	Victorian Wildlife Shelters Coalition
462	Australian Native Parrot Protection Authority	497	Giorgos Boutsakis
463	Noah Reade	498	Friends of Mallacoota
464	James Walker	499	Ecological Consultants Association of Victoria
465	Number not used	500	Susan Pepper
466	Gwyn Roberts	501	Kay Shields
467	Thomas Lock	502	Confidential
468	Dr David Barton	503	Janet Mattiske
469	Kay Schroer	504	Ruth Weston
470	Sylvia van der Peet	505	Dylan McDermott
471	John Cameron	506	Gerard McPhee
472	Robin Bowen	507	Number not used
473	Ann McGregor	508	Number not used
474	Joanna Cary	509	Kerryn Scanlan
		510	Christine Cook

511	South East Timber Association	548	Alan Farrar
512	Thomas McCutchan	549	Kerry Baker
513	Reynie Hafner	550	Emma Phillips
514	Mary Waterman	551	Neil Marriott
515	Jackson O'Neill	552	Teresa Hicks
516	Lyn Hovey	553	Kristen Wills
517	Newham and District Landcare Group	554	Warburton Environment
518	Kieran Martin	555	Zali Jestrinski
519	Pia Boutsakis	556	Dr Jenny Blackett-Smith
520	Kinglake Friends of the Forests	557	Jane Pammer
521	Number not used	558	Cherie Forrester
522	Dr Claire Weekley	559	Christmas Hills Landcare Group
523	Biodiversity Planning Network	560	Reverend Angela Lorrigan
524	Judith Durston	561	Bronwyn Hardisty
525	Julie Mason	562	Lesley Walker
526	Leslie Fraser	563	Rob Scott
527	Katherine Balson	564	Jennifer Petinatos
528	Wyndham City Council	565	Neal Smith
529	Stephanie Jones	566	Number not used
530	Batesford, Fyansford, Stonehaven Landcare Group	567	Bruce Hyatt
531	Clare McKenna	568	Susan Whelan
532	Juliet McLean	569	Number not used
533	Number not used	570	Don Wales
534	Stephen Lavender	571	Lisa Jenkins
535	Trish Stuart	572	Christiane Jaeger
536	Favel Parrett	573	Yolanda Avery
537	Veronica Hocking	574	John Curtis
538	Elliott Fraser	575	Ecological Society of Australia
539	Gippsland Apiarist Association	576	Sharon Mason
540	Anne Heath Mennell	577	Michelle Fischer
541	Anne Howitt	578	Dr Andrea Lindsay
542	Lynette MacQueen	579	Jodie Honan
543	Friends of Merri Creek	580	Grassy Plains Network
544	Coalition for the Protection of Kangaroos	581	Lucy Foley
545	Maria Miranda	582	Sandringham Foreshore Association
546	Michael Mann	583	Amanda Goodge
547	Number not used	584	David Smith
		585	Friends of the Glenfern Green Wedge

586	South Beach Wetlands and Landcare Group	622	Landcare Victoria
587	Peter Rigby	623	Dr Catherine Pye
588	Friends of Bannockburn Bush	624	Newlands Friends of the Forests
589	Yolanda Maxwell	625	Princetown Wetlands and Estuary Preservation
590	Rupert Veitch	626	Penelope Webb
591	Sally Faraday	627	Simon Cammell
592	Australian Conservation Foundation MacNamara Community Group	628	Name Withheld
593	Martha Curry	629	Mara Pacers
594	Peter Dunn	630	Victorian Association of Forest Industries
595	Confidential	631	Associate Professor Christopher Walsh and Dr Yung En Chee
596	Bayside Climate Crisis Action Group and Port Phillip Emergency Climate Action Network	632	John Laing
597	Phuong-Dung Hoang	633	David Redfearn
598	Number not used	634	First Friends of Dandenong Creek
599	Mick Fischer-Brunkow	635	Dja Dja Wurrung Clans Aboriginal Corporation
600	Paul Leitzke	636	Colleen Smith
601	John Iser	637	Abigail Benham-Bannon
602	Ann Bullen	638	Shennai Palermo
603	Chloe-Nicole Bignoux	639	Kevin Chacko
604	Confidential	640	Dr Holly Sitters
605	Australian Society for Kangaroos	641	Stephen Warne
606	Mark Cummings	642	Roger Gamble
607	Jacob Hoerner	643	Stella Savvas
608	Cassandra Godfrey	644	David Hill
609	Mark Keehn	645	Joan Mason
610	Dr Justine Philip	646	South Gippsland Conservation Society
611	Lou Baxter	647	Ella Plumans Pouton
612	Michael Fuery	648	Victoria Strutt
613	Rosalind Ellinger	649	Margules Groome Consulting
614	Mairi Anne Mackenzie	650	Ian Swyer
615	Ian Penna	651	Virginia Wallace
616	Jacqueline Edge	652	Professor Peter Gell
617	Sarah Mitchell	653	Nina Killham
618	Cameron Williams	654	Margaret Morrissey
619	Forest and Wood Communities Australia	655	Greenspace Therapy
620	Friends of Warrandyte State Park	656	Jasmine Barrett
621	Dr Clive Carlyle	657	Jesuit Social Services

658	Helen Seignor	694	Irene Wright
659	Kate Arnold	695	Mary Connor
660	Institute of Foresters of Australia and Australian Forest Growers	696	Vegan Australia
661	Victorian Rock Lobster Association	697	Suzan Muir
662	Joel Ellis	698	Friends of Nillumbik
663	Jacinta Plucinski	699	Dr Ian Mansergh
664	Debra McCoy	700	Joel Blacker
665	Wilmars Mikelsons	701	John and Jocelyn King
666	Ruth Graney	702	Debbie Carruthers
667	Australian Deer Association	703	Dr Bruce McGregor
668	Trentham Sustainability Group	704	Gunbower Landcare Group
669	Judy Gunson	705	Monique Parkes
670	Number not used	706	Jeanette Lobato
671	Upper Goulburn Landcare Network	707	Phillip Island Conservation Society
672	Friends of Pt. Addis and the Ironbark Basin	708	Melanie Thewlis
673	Gina Silis	709	Jane Hildebrant
674	Lyndall Rowley	710	Max Bradley
675	Dr Helen Jeges	711	Carli Reeve
676	John and Joan Young	712	Wildlife Victoria
677	Yarra Climate Action Now	713	Ann Birrell
678	Association for Conservation of Australian Dingoes	714	Dr Johanna Selleck
679	Diana Crombie	715	Judith Henderson
680	Emily and Rex Kinghorn	716	Leslie McLochlan
681	Friends of Bats and Habitat Gippsland	717	Goulburn Valley Environment Group
682	Research Centre for Future Landscapes, La Trobe University	718	Southern Dandenong's Landcare Group
683	Rex Niven	719	Kate Weir
684	Martin Gerard McAvoy	720	Jo Rye
685	Ramsar Wetlands	721	Tom Borthwick
686	Friends of Leadbeater's Possum	722	Alison Campbell Rate
687	Dr Maria-Pia Bernardi	723	Dr Julie Burbidge
688	Number not used	724	Alana Bacon
689	Australian Dingo Foundation	725	Doctors for the Environment Australia
690	BEAM Mitchell Environment Group	726	Wood Products Victoria
691	Australian Forest Products Association	727	Trish Haywood
692	Extinction Rebellion Darebin	728	Jennifer De Lacy
693	Food Frontier	729	Jonathan Robson
		730	Elizabeth Duggan
		731	Dr Elizabeth Bashford

732	Eva Reda	770	Marion Attwater
733	Catrina Sturmberg	771	Keep Original Route Supporters
734	JM Elliston	772	John Renowden
735	RSPCA Victoria	773	Dr Natalie Calatayud
736	Hume City Council	774	Ben Druitt
737	Paul Handley	775	Rosemary Cousin
738	Dr Tamsin Ramsey	776	Deborah Webby
739	Dianne Peace	777	Christine Morris
740	Dr Graeme Cross	778	Rob Youl
741	Merri Action for Forests	779	Susan Holberton
742	Australian Pet Welfare Foundation	780	Alexandra Mraz
743	The Nature Conservancy	781	Dr Brian Coffey
744	David Bentley	782	Envirocation
745	Tracy Neave	783	Minerals Council of Australia Victoria Division
746	Mary Styles	784	Graham Connell
747	Cindy Allen	785	Carol Campbell
748	Green Wedges Coalition	786	Dr Peter Turner
749	Threatened Species Conservancy	787	Confidential
750	Bill Blackburn	788	Sally Stead
751	Robert Bellchamber	789	Goulburn Valley Environment Group
752	Phillip Island Nature Parks	790	Mary Wilkinson
753	Phil Wright	791	Christine Ryan
754	Michael Watson	792	Karen Johnson
755	Kingston City Council	793	David Risstrom
756	Robyn Gillespie	794	Kimberly Croxford
757	Paul Mahony	795	Yarra Riverkeeper
758	Euroa Environment Group	796	Hugh Denton
759	Murrindindi Climate Network	797	Candida van Rood
760	Environmental Justice Australia	798	Ingrid Stead
761	Green Wedge Protection Group	799	Claire Coulson
762	Housing Industry Association	800	Number not used
763	Amy Kidd	801	Tamara Levy
764	Atholie Harden	802	Cicily Svikart
765	Anne Makhijani	803	Royal Botanic Gardens Victoria
766	Kathleen McCarthy	804	Natalie Kopas
767	Imogen Fowler Steen	805	Lindus Conlan
768	Pamela Hipwell	806	Ian Taylor
769	Christine Morris		

807	Leanne Chadwick	842	Mel Ellis
808	Dr Mike Forrester	843	Jodie Gregson
809	Kim Wormald	844	Nina Earl
810	Terence and Brigitte Nott	845	Number not used
811	Ballarat Dark Sky	846	Haley Millier-Gilich
812	Penny Bannon	847	Andrew Gilbert
813	Chris White	848	Chris Farell
814	Dr Irina Balenu-Mackinlay	849	Ian Morgans
815	Australian Marine Ecology	850	Susie Hearder
816	Tina Hollis	851	Charlie Vincent
817	Tilliah Brooks	852	Port Phillip EcoCentre
818	Nikki Gilbert	853	Emily McCarthy
819	Suzanne Shaw	854	Veganic Ecosystems
820	Pyrenees Timber	855	Climate Action Moreland
821	Joslyn Trait	856	David Bennett
822	Karen Connolly	857	Janet Wheeler
823	Humane Society International	858	Casey Lim
824	Frances McCarthy	859	Clare Patullo
825	Friends of the Koalas	860	Number not used
826	Margherita Ferraro	861	Helena Wong
827	Don Macrae	862	Lorraine Watt
828	Number not used	863	Rochelle Van Heerdan
829	Robert Pease	864	Save Our Strathbogie Forest
830	Dr Colin Hocking	865	Helen Kalajdzic
831	East Gippsland Conservation Management Network	866	Jason Wood
832	Ann Pammer	867	Christine Grayden
833	Dr Guy Dutson	868	Leonie Angela Schween
834	Karen Alexander	869	Angelique Stefanatos
835	Deborah Bernau	870	Gippsland Community Fire Watch
836	Dale Stohr	871	Belfast Coastal Reserve Action Group
837	Stephen Koci	872	Katrina Vincent
837A	Stephen Koci	873	Dr Megan O'Shea
838	Fern Cadman	874	Dante Michielin
839	Conrad Linder	875	Lisa Ryan
840	Jessica Osburn	876	Beyond Yellingbo
841	Beyond Bolac Catchment Action Group and the Upper Hopkins Land Management Group	877	Rosemary Lavin
		878	Dr Tanya Kelly
		879	Leon Zembekis

880	Raymond Gibson	916	Eve Stocker
881	Confidential	917	Elizabeth Jarman
882	Victorian Farmers Federation	918	Betty Russell
883	Zita Marks	919	Colleen Hackett
884	Phyllis Di Palma	920	Dr Linda Zibell
885	Gabriel Hattingh	921	Christina Hickie
886	BirdLife Australia	922	Lesley Rosochodski
887	Dingo CARE Network	923	Vanessa Richardson
888	Vicky Shukuroglou	924	Robert Ashworth
889	Geraldine Ryan	925	enRICHed Pursuits
890	Jill Redwood	926	Brimbank City Council
891	People for A Living Moorabool	927	Department of Environment, Land, Water and Planning
892	Silvina Moro	928	Nerida Thompson
893	Paul Harford	929	David Packham OAM
894	JJ Miller	929A	David Packham OAM
895	Elizabeth Hope	930	Law Institute of Victoria
896	Jenny Cook	931	Jaidev Soin
897	Tim Frazer	932	Kororoit Institute
898	Dr Julie Wetherbee	933	Animal Justice Party
899	The Wilderness Society Victoria	934	Surfrider Foundation Australia
900	Australian Wildlife Society	935	Kate Noble
901	Geelong Environment Council	936	Prospectors and Miners Association of Victoria
902	Sasha King	937	Mordialloc Beaumaris Conservation League
903	Andreas Bimba	938	Turk's Agricultural Services
904	Upper Maribyrnong Catchment Group	939	Pro Green Biofuels
905	Dr David Barton	940	Cauldron Energy
906	Environment Victoria	941	Christa Botsman
907	Nicola Rivers	942	Emma Shoemaker
908	Gunditj Mirring Traditional Owners Aboriginal Corporation	943	Invasive Species Council
909	Elissa Ashton-Smith	944	Estelle Butters
910	Woorndoo Land Protection Group	945	Ron Ramadge
911	Helen Eager	946	OzFish
912	Meredith Ramadan	947	Karen Thomas
913	Australasian Native Orchid Society (Victorian Group)	948	Rubicon Snobs Creek Reserve
914	Gariwerd Animal Protection (GAP) Alliance (Dunkeld)	949	Pro forma A
915	Bettina Terry	950	Pro forma B

Pro forma A signatories (submission 949):

Chrissie Hearn	Matilda Sutherland
Marg Vincent	Amtesh Waraich
Asanki Fernando	Maurice Beinat
Ivan Hexter	James Black
Deborah Atkins	Eliza Quinn
Ida Ghalebeigi	Di Diddle
Lauren Beanland	John Duggleby
Lucy Knutson	Fiona Colin
Kathryn Michie	Amaya Laucirica
Benita Joy	Luke Frizon
Natasha Zraikat	Rick Spencer
Tessa Petrides	Neil Fetting
Luke Smeaton	Sally Brakha
Russel Baader	Susy Barry
Lesley Letham	Virginia Kaufman Hall
Riccardo Lehmann	Laurence Mills
Jo Horsburgh	Marie-Louise Walker
Stomein Stojanov	Holly Caldwell
Jeanne Clynes	Frank Burke
Hayley Kerr	Shane Blight
Annie Raser-Rowland	Andrew Nielsen
Beau Driscoll	Marie Hatten
Annalisa Swan	Gemma Gordon
Emily Missen	Georgia Basist
Lucy Treloar	Mick Sirianni
Peter White	Theo Seery
Linda Dal Castello	Andrew Hopgood
Josephine Chandler	Jason Culverwell
Jordan Abela	Andrew Christianson
Jack Boddeke	Adam Barber
Amy Butcher	Mike Sharp
Frank Hytten	Yasseen Musa
Tracy Kyle	Caroline Jumpertz
Jennifer Kerr	Brynna Lowen
Martin Hengeveld	Diana Poolton
Honor Bradbeer	Sam Wilce
Richard Smart	Mark Boulet

Callum Crossing

Margaret Brennan

Martin Scerri

Ryan Prehn

Jo Stewart

Kim Salisbury

Joyce Jenkin

Sheena Worrall

Norbert Wichmann

Mark Szwadiak

Samdra Steel

Matthew Sutton

Subramaniam Sivasubramaniam

Corin Spencer

Brad Gibson

Marg Sutherland

Lili Clancy

Bill Fernhill

Joss Prindable

Beatrix Bayes Kennedy

Jennifer Peatfield

Jamie Whiteside

Melanie Ahkin

Sez Wilkinson

Amanda Gabrielle

Amanda Cosker

Catherine Knight

Veronique Murch

Jan Kerr

Calum Mitchell

Diana Ward

Una Stephenson

Nasser Mashni

John McKenzie

Alexander Isaac

Peter Miller

Marcus Coghlan

Margaret Tyson

Trish McGee

Rupert Steiner

Hunter Keble-Johnston

Janice McEwen

Clover Hart

Matt Pearce

Darryl Johnson

Anne Connor

Ian Bird

Sonya Clarke

Maxine Neville

Adam Archer

Suzanne D'Ombraïn-Allain

Adam Briggs

Kirsten Muzeen

Christina Hill

Ellen Kemp

Barbara Pelczynska

Georgia Symons

Elizabeth Pilven

Monica Lueckenhausen

Jamie Le Rossignol

Roger Thompson

Jana Kalebic

Laura Postlethwaite

Anastasia La Fey

Emily Swanson

Tanya Schneider

Dr Tholimpilo Masango

Victoria Morgan

Heather McGillivray

Emma Patridge

Mary-Louise Drew

Susan Ball

Cate Taylor

Kuon Lay

Adrian Dyson

Ben Robison

Kate Heffer	Roger Adams
Dan Price	Susan Tunnadine
Sue Kircher	Liz Rawnsley
Ian Raabe	Tim Berenyi
Julian Tovey	Dr Kristen Schneider
Anthony Morrissy	Paula Stevens
Ray Cowling	Jason Reading
Pam and James McDonald	Wendy Hosking
Louise Jennison	Sylvie Van
Julie Howard	Jemma Newcombe
Gracia Haby	Rodney Hall
Mara McSweeney	Angela Grigg
Pamela Watson	Sasha King
Vivek Nayak	Jean Christie
Rory McMaster	Maeve Scannell
Alice Bevens	Helen Hewitt
Linda Clark	Janice Atkins
Pam Fergie-Jackson	Michelle Ferreira
Vivienne Jackson	Beth Bridson
Nick Lester	Denny Meyer
Robyn Fletcher	Jodie Winnell
Kristen Chisholm	Emma Walkinshaw
Jeremy Du Vie	Janis Copping
Lorris Jones	Jade Berger
Cathy Mitchell	Bill Liston
Elizabeth Kersten	Louise Seymour
Karan Balfour	Susan Jane
Mona Grebing	Danuta Bieber
Ralf Thesing	Michael Hauswirth
Sharman Williamson	Ciara Gardiner
Helen Dall	Heather Martin
Jane Stewart	Carly Martyn
Mars Drum	Colin Shepherd
Lenore Scott	Richard Bayles
Katri Short	Emma Stewart
Bob Northey	Gerald McDonald
Isabel Robinson	Ryan Bird
Duncan Hillier	Steve Whittington

Rebecca Sather Jenkins

Koen Willis

Laurie Ransom

Andrew Humphries

Catherine Haugh

Anwar Al-Rawi

Laila Hugrass

Warren Davis

Hannah Veljanovska

Doug Flack

Jennie Bloom

Judith Baldacchino

Alison Duff

Jessica Welsh

Sue Theron

Gary Fawcus

Vicki Jaeger

Caroline Herring

Glenn Ruddle

Sue Parratt

Sandra Fuller

Dio Raven

Patrick Agresta

Susan Crisp

Jess Marnich

Kate Brimacombe

John Kodric

Julie Copeland

Emily Elst

Stephen Rowles

Joanne Fraser

Brooke Hays

Wilma Schouten

Tamara Konrad

Marilyn White

Kara Brussen

Mary-Faeth Chenery

Rob Jarvis

Kim Dutton

Hillary McAllister

Katherine Beringer

Nadine Hermann

Daniel Nguyen

Mick Fischer-Brunkow

Karen Rees

Lucinda Willshire

Bhavna Chandra

Ian Temby

Beatrice Naylor

Leah Misiurka

Jessie Thomson

Irene Openshaw

Manuela May

Monika Doeppen

Esther Craig

Pablo Bobe

Mike McEvoy

Kat Morrison

A. R. Polack

Kaye Proudley

Robert Nelson

Maria Jawor

Rhianna Wilson

Charlotte Munro

Cherie Turner

Traudy Glasencnik

Peter Hannaford

Deb Moerkerken

Ray Fillingham

Jo McMahon-Hide

Natalie Abboud

Shelley Stanek

Alison Wallace

Anne Bell

Chris Macmaster

Lewis Macmaster

 Nadia Macmaster

 Isabel Macmaster

 Paulette Weisenberger

 Eve Wasterval

 Ava Macmaster

 Tom Reynolds

 Cecilia Egan

 Gosia Suchorska

 Rachel Stratford

 Elizabeth Arnaud

 Lisa Timson

 Will Alderton

 Jill Thio

 Philippa Kelly

 Sue Travers

 Louise Molloy

 Paul Leitinger

 Beth Kilgour

 David Ball

 Amy Tobin

 Helen Bender

 Michelle Cox

 Helen Scully

 Sue Adams

 Benjamin Maher

 Heather-Maree Thompson

 Anne Boyd

 Adrienne Hearn

 Clare Bishop

 Eric van Bommel

 Patch Callahan

 Lauren Kaszubski

 Martina Povolni

 Antonia Everson

 Rosemary Baird

 Michael Camilleria

 Christine Weston

 Fiona McAlpine

 Hannah Hayman

 Simone Hardinge

 Anne Orman

 Nicole Hunter

 Jen Anderson

 Sarah King

 Laura Waters

 Rosemary Fawns

 Shona Cornwall

 Koshan Garad

 Valerie Deeth

 Doug Hagan

 Alexander Faulkner

 Indiana Wells

 Mary Cuffe

 Stella Radford

 Oliver Benjamin

 Anna Coffey

 Hugh Bruinier

 Michelle Connolly

 Reynie Hafner

 Xavier Henderson

 Nicole Ford

 David Dawson

 Jesse Gordon

 James Bristow

 Rose Press

 Jodie Hutchinson

 Romney Adams

 Sophie Martin

 Robert Blair

 Maria Zetti

 Rachael Riley

 Paloma White

 Sue McDonough

 Peter Evans

 Joanna Harvey

 Emma Williamson

Sophie Guerin

Roslyn Johnson

Sammi Wu

Blair Smith

Jake Clarke

Tamsyn Hogarth

Rob Noulton

Dianne Kannemeyer

Thomas Hennessy

Paul Finn

Lynn McCurdie

Paula Hendrikk

Maxine Van Zuylen

Eliza Turnbull

Jessica Mirabito

Sarah Hunter

Kate Yuncken

Madeleine Callas

Heather Kiley

Rachel Potter

Nathan Hart

Lauren Schoch

Anita Pike

Elsa Martin

Kate Mills

Adam Mills

Emma Dowler

Shane Ellis

Jade Hansper

Helen Shepherd

Kelly Bolton

Michaela Brown

Mandy Gange

Erin Sleeth

Noel Nicholls

Dawn Carmichael

Leanne Bennett

Catherine Money

Bruce McKelvie

Maureen Jackson

Joseph Pellone

Jon Wyatt

Kayla Neich-Wilson

David Fallick

Maurice Wilkinson

Debra Woods

Nicole Walsh

Lars Lindahl

Bessie Byrne

Greta Weiss

Chris Slatter

Robert Hart

Sallyann Doyle

Jane Gordon

Helen Seligman

Jenna Fisher

Thessalie Reeders

Ingrif Purnell

Anda Petrapsch

Avalon Todaro

Matthew Gouthro

Lilian McKenzie

Meghan Murdoch

Sam Marginson

Heidi Duell

David Pepper

Tess McCabe

Robyn Vincent

Nina DeVreeze

Jess Haynes

Martin Siegrist

Lynne Skate

Rhonda De Stefano

Margaret Blair

Emma Bathgate

Alison Jean

Robin Gregory
Margie McKay
Rebecca Edwards
Suzie Cockle
Carmel Cowan
Tessa Tadich
Ali Capp
Stephen North
Catherine McKay
Ron & Sibyl Hayton
Chloe Horner
Sophia Dunn
Rebecca Sweeney
Sharon Sibirich
E-K McDermott
Helen Lester
Suzanne Showers-Gay
Brenda James
Jaq Bryan
Louise Avery
Di Hill
Julie Thomas
Chiara Bold
Sarah Douglas
Prue Elmer
Mollie Morgan
Sam Allman
Ashlen Campbell
K Heiland
Elizabeth Ward
Marie Casanova
Peta Costello
Rayna Mishra
Anna Hartog
Louise Phillips
Eleanor Adams
Kevin Audley
David Massey

David Cooper
Lisa de Kok
Erin Russell
Lachlan Strover
Celia Bagshaw
Tracy Engwirda
Claire Pederson
Anna Langford
Phoebe Smithies
Caitlin Monnery-Korving
Mike Fitzgerald
Adam Porter
Hermoine Chester
Zosia Slifirski Duckett
Stephanie Clark
Edie Joy White
Chantel Fathers
Stephanie Can
Linda Ruff
Auriel Yeap
Brydie Nelson
Laura Portaro
Daisy Smith
Matt Brown
Janine Ravenwood
Rachel Mason
Curtis Wright
Finn Saurine
Georgia Kardaras
Dora Ardila
Emerald Dunn
Claudia Lyons
Timothy Sheehan
Hanne Bell
Ian Woff
Alex Comber-Sticca
June Keats
Isabelle Shen Bradford

Alexander Hipwell

Makeda Zucco

Emma Graham

Georgia Tappy

David McCoy

Rosa McKenna

Michael Hill

Deviani Segal

Eilysh Thompson

Jennifer Guthrie

Laura Nix

Cint Clare

Michael Harding

Rain White

Bev Cowan

Peter Ivanoff

Ben Dunne

Shaun Price

Richard Phillips

Emma Crew

Christine Hooper

Rob Hutchinson

Kat Cunningham

Rachimah Wilton

Craig Browne

Stella Barber

Marina De Rossi

Euan Morton

Sue Forrester

Liam Stephen

Gerry Drew

Len Monk

Kelly Chandler

Toby Eccles

Robert Follis

Kristian Puccio

Greg Lester

Hudson Whitlock

Marisa Crowe

Hayley McInerney

Sean-Maree Finnerty

Clea Morgan

Sean Flynn

Meagan Hinch

Chris Platt

Bob Fisher

Beverley Armstrong

Shyam Dasari

Siobhan Bourke

Suzanne Watts

Sarah Thomas

Robert Leslie

Andrea Sherko

Jason Kenna

Kim Lester

Fiona Jordan

Julia Coelli

Angela Panuccio

John Chadderton

Brigitte Smith

John Symons

Kerry O'Meara

Christine Judd

Raymond Whittle

Sue Ball

Viktoria Nagy

Hayley Kruse

Jack Burns

Elsie Carter

Jolie Boyd

Frederick Hill

Malcolm Ellenport Malcolm

Kathleen Ager

Michael Dale

Dylan Hewitt

Grace Chen

Fairlie Francis
Brad Haby
Barbara Kortlang
Margaret Rolfe
Chris Minifie
Alan Barlee
Richard Mondel-McCann
Maria Reed
Jennifer Walker
Marg Peacock
Mark Carter
Pia Om
Penny Sara
Eva Corifeo
Farid Abdul Hamid
Sue Aldred
Paul Nuttney
Barbara Fraser
Emily Rolfe
Shaye Harty
Alwyn Ruth Akie
Tara Kennaway
Rebecca Petit
Greg Scott
Alex Mungall
Dr Martin Pearse
Marieke van de Pieterman
Susan Carden
Jennifer Miller
Benedict Timmons Walta
Elise Buckley
Phil Jackson
Cathy Wood
Karen Magree
Alexis Clarke
Edith Martha Tratter
Rosemarie Engl
Julie Gibson

Evelyn Portek
Jessica Kafcaloudes
Yolanda Avery
Scarlett Pearce
Peter Gell
Beverley McIntyre
Rosie Ganino
Caroline Earley
Bronya Lebrun
Emma Townsend
Cathy Thesing
Donna Muntz
Rodger Davies
Jennifer Tilleard
Alexander Lugg
Marina Morton
Iris Ralph
Julian Bagnara
Julia Laskowski
Liz Charles
James Porich
Beth Drayton
Janice Withers
Justin Ormond
Sherridan Maxwell
Katharine Van Schalm
John Friend-Pereira
Carina Turner
Colin Brokenshire
Robyn Fisher
Richard Marks
Rosemary Tate
Chloe Houghton
Kate Gilmour
Rose Miras
Trish Wyeth
Rose Read
Ilse Jamonts

Kevin O'Connor

Vincent Mumford

Christopher King

Rebecca Gibbs

Therese Virtue OAM

Kylie Long

Robyn Lee

Lucy Renehan

Phil Barrett

Hanna Ashton-Lawson

Anna Read

Henry Storey

Carrin Perrins

Dr Fanny Franchini

Ian Clarke

Vivienne Schwarcz

Bec Rees

Robert Dawlings

Jo Hansen

Alison Smith

Andrew Boocock

Su Rule

Megan Rixon

Louise Sweeney

Fiona Connan

Loretta Leary

Geoffrey Brown

Eleanor Haydock

Diana Latchford

Clare Walker

Lou Hildyard

David Turnbull

Jack Ralph

Mick Donnelly

Vicki Harman

Luke Thompson

Jo Oppenheim

Lenore Taylor

Janelle Cross

Christopher Matthews

Tina Baldwin

Gail Willett

Lisa Juraga

Jan Clarke

Jennifer Gearing

Melissa Pope

Lisa Sutherland-Fraser

Linda Pickering

Rebecca Power

Chris Lloyd

Tessa Halliday

Graziela Cuoco

Ralph Horn

Abbas Ahmadi

Joanna Adamson

Andrew Smith

Elizabeth McRae

Deborah White

Sylvia Scott

Nikki Lupino

Peter Mewett

Tracey Takia

Antonia Pont

Vicki Tiernan

Dr Tess Tsindos

Jo Fraser

Natalie Davey

Kevin Maguire

Suzanne Slamen

Grant Briggs

Andrew Langford

Angela Borthwick

Suzanne Beal

Heather Cooke

George Yung

Thomas Clarke

Kirsten Barnett	Jacqueline Hood
Megan Anderson	Jennifer Zamora
Martine Spencer	Bob Sharples
Samantha Bright	Mrs Chris Phillips
Patricia Tabone	Seana Garrett
Jesper Hansen	Peter Enright
Thea Shields	Gary Bateman
Sinead Kennedy	Sylvia van der Peet
Pat Grainger	Linda Shewan
Anna Clemson	Milan Takla
Martin Desmarais	Sarita Ryan
Annette Herrera	Dorothy Browne
Louise Banks	Jing Yang Zhao
Anna Chapman	Valerie Forster
Matthew Davidson	Katrina Molloy
Danyelle Hucker	Isobella Tremauville
Dario Bulfone	Penny Harris
Georgia Mitchell	Helene Rogers
Judy Jordan	Margaret Campion
Sandra Hawkins	Carole Wilkinson
Fiona Poulton	Siobhan Robb
Robert McKenzie	Audrey van den Berg
Debra Dean	Kelly Williams
Carly Murphy	Leah Oliver
Amanda Morris	Lisa Hall
Christin Down	Jack Abbott
Kris Kostadinov	Leneen Forde
Andree Austin	Peter Wadham
Judith Wheeler	Amy Alexander
Tallulah Lacey	Jacqueline Mitchell
Andrea Werner	Gordon Walker
Alex Marsal	Donald Edwards
Michael Santhanam-Martin	Sally Fedyszyn
Mark Landmann	Helen Robinson
Helga Kuhse	Jessica Kemp
Katrina Sangster	Debbie McIntyre
Lynn Mowson	Heather Hesterman
Gemnax Falk	Les Burton

Dan Nunan

Christine Newnham

Lydia Bevanda

Leonie Stephens

Suzy Ditterich

Kate Kantor

Brenda Hawke

Maree McGlashan

Cindy Davidson

Leonarda Richards

Tom Lumley

Catherine Langmead

Emily Taylor Hunt

Lee Naish

Janine Joseph

Kobe Roberts

Mia Harrison

Clancy Every

Vanessa Brait

Charles Colman

Barbara Fitzpatrick-Haddy

Wioletta Wach

Andrew Remington

Linda Greenwood

Julie Clarke

Bronwen Mander

Gilda Barrett

Vivianne Goblitschke

Elizabeth Melgaard

John Hughes

Fiona Williamson

Maximus Mildern

Geoffrey Dodd

Genevieve Kenworthy

Garland Simpson

Ilian Keskendes

Kath White

Carlo Colosimo

Miriam Cooper

Linda Kouvaras

Jacki Staude

Orien Humennyj-Jameson

Kye Sharpe

Jeff Ko

Kate Grang

Lynda Britten-Epworth

Rhonda Fitzpatrick

Belinda Davis

Marie Ormonde

Samuel Leeder

Ian Anderson

Karina Zambrians

Neale Carr

Elisse Simone Schoer

Karen Zipkas

Anthony St John Brown

Samantha Sweeney

Robyn Gray

Elizabeth Hope

Annelise Macs

Sonia Ivetac

Pat Reynolds

Peter Sheehan

David Gooch

Ken Duell

Penny Lewisohn

Gillian Upton

Anda Banikos

Marion Robertson

David Wilson

Zoe Mallett

Adrian Evans

Robyn Aldrick

Pat Nicol

Janine Shields

Anne Beuchat

Holly Bracken

Bob Falvey

Felix Quinn

Marcus Barber

Jennifer Peters

Ildi Ehsman

Hilary Ericksen

Michel Beuchat

John Harland

Sue Brown

Donella Storey

Catherine Clarke

Sharyn Young

Jack Winterbottom

Luisa Novak

Roger Smith

Heather Simmons

Nicky Melville

Ruth Leveson

Tayne Cooper

George Quain

Craig Poulton

Chris Durie

Melissa Wade

Kinto Behr

Carol Henderson

Kris Washusen

Kavi Thancanamootoo

Tom McQuillen

Rick De Vos

Janet Ford

Natalie Inverno

Alyssa Seckinger-Crow

Davey Simmons

Scott Martin

Rod Yeo

Sarah Hiley

Nanette White

Barbara Loh

Belinda Connell

Anna Forehan

Maria Sola

Ricky Buchanan

Joan Haynes

Catherine Mitchell

Margaret Bates

Jan Murray

Akarna Bowers

Steven Berry

Michelle Nicholson

Mark Rosenbrock

Charlotte Webb

Eliya Acone

Pamela Dinsmore

Noel Billing

Spencer Gigacz

Corrie Williams

Katherine Lawford

Chloe Sherwood

Rebecca New

Elizabeth Powell

David Holowko

Bridget Vincent

Hiro Suse Chan

Tiff Patterson

Joanna Prendergast

Corinne Evans

Damian Wilson

Charlie Salvador

Pamela Judd

Cass Alexander

Paula Lloyd

Tash Oldaker

Tony McLean

Elisabeth Kakoschke

Greta Mortensen

Jennifer Dean	Angela Allen
Brenda Muscat	Jenny Manassa
Warren Reed	Dean Herbert
Megan Barry	Viyaja Pandji
Donna Peck	Michelle Pretty
Lorena Cavalcante	Catrina Sofo
Isabel Carter	Judith Brown
Annie Mac	Louisa-Jill Fowler
Lucy Jones	Lakshami Titmarsh
Kelly Harding	Eva van der Vlies
Susan Anderson	Holly and Emily Holmes
Jacinta Duncan	Jacqui Vanderzee
Ava Gardner	Tracey Brown
Stephen Adams	Allison O'Toole
Tristan Janie	Jane Obeirne
John McKay	Cassandra Corrone
Steve Najdovski	Janet Ashkar
James Maino	Charissa Johnson
Mark Thomson	Benjamin Bates
Jo Western	Cayla Nicholson
Sally McDonnell	Katt Murray
Walter Williams	Jessie McLennan
John Wright	Felicity Allen
Jane Ormonde	Mike McGregor
Barbara Tinney	Caroline Vaitkunas
Ronald McCoy	Dinny Kube
Peter McKenzie	Samuel Toose
Libby Funtera	Melissa D'Amico
Georgina Batterham	Karri Giles
Sam Moorhead	Melanie Ralescu
Sonia Jane	Nikki Lusk
Daniela Bradley	Codey Hayes
Bev Landy	Katie Vevoda
Susan Allen	Judith Venables
Kimberley Wheeler	Chloe Tabone
Susan Davies	Alexandra Taylor
Bruce Whimpey	Megan Rowe
Nick Anderson	Alice Drake

Gavin Crabtree

Christine Olsen

Robert Parlinton

Anne Phefley

Paul Killeen

Elizabeth Gofton

Warwick Brown

Bianca Werkmeister

Eden Alley-Porter

Meredith Jay

Sandra Nicol

Tania Green

Jed Martin

Fiona Bowie

Jennifer Smethurst

Peter Kurz

Alec Hand

Deborah Punton

Adrienne Tudor

Kathleen Savage

Silvana Tran

Andrew Blyth

Lesley Vuillermin

Solway Nutting

Heidi Trudinger

Davide Rizzo

Marie Aaltonen

Carol McCoy

Cressida Bradley

Lynda Jesser

Roger East

Coralie Davies

Byron Meyer

Alex James

Andrew Napier

Judith Vearing

Shane Foyster

Lois O'Connor

Patricia Mackle

Kaye Jones

Cassandra Johnstone

Nicole Muldoon

Daniel Horsley

Louise Pontin

Krista Minzenmay

Annie Edney

Lindsay Bamfield

Colin Smith

Jennifer Thomas

Peter Conlon

Anna Suzuki

Liam Thomas

Shirley Deviesseux

Paul Penna

Stacey Harwood

Craig McConaghy

Vanessa Birch

Narelle Graefe

Jane Burns

Imke Schmidt

Helen van de Pol

Katerina Mynarova

Suzanne Elliot

Carolyn Haywood

Tania Davey

Melissa Davies

Katy Wells

Robert Forster

Cary Jones

Stephen Oakes

Rosemary Gloz

Dominique Batten

Danielle Worsley

Gary Saunders

Lillie Thompson

Nessie Croft

 N. Hildebrand

 Julie Spicer

 Glenda Maxwell

 Bron Peddington-Webb

 Hugh Silvers

 Pam Atkins

 Lucia Bourke

 Sarah Pitt

 Katie Butler

 Pete Rode

 Julia Veitch

 Sil Lannello

 Colleen Jones

 Doug Osborn

 Catherine Murray

 Emily Jarvis

 Carolyn Murphy

 Dortha Hanaen

 Shannon Anderson

 Harry Zanios

 Julia Karas

 Belinda Lowry

 Kate Phillipson

 Pauline Coles

 Christine Maxwell

 Zeffi Home

 Eloise Stone

 Jeff Goldings

 Deanna Wang

 Dan Milne

 Kerri Howley

 Joshua Kelly-Alleblas

 Kristie Dunn

 Deborah Azubel

 Isaac Pitt

 Sonia Davoine

 Selina Knight

 Lyndall Wallace

 Tanna Draper Nagas

 Raymond Mackenzie

 Amanda Miller

 Alexander Sloggett

 Perrie Gillett

 Luke Ashton-Lawson

 Jane Webster

 Rod Carmichael

 Christine Richardson

 Carmen Reid

 Janet ETTY-Leal

 Emily Paddon-Brown

 Kevin Sparrow

 Hanifasari Achmad

 Kathryn Woods

 Peter Episcopos

 Vivan Zivkova

 Jodie Oliver

 Marg Thomas

 Amanda Kelly

 Bette Mitchell

 Justine Jones

 Linda Diggins

 Michele Damschke

 Zoe Hodgetts

 Catherine Shepard

 Naomi McConchie

 Ethan Kusch

 Duncan Forster

 Helen Franks

 Morgaine Barter

 Fayoz Najmitidinov

 Janette Lansdowne

 Marita Wallace

 Beti Nicolas

 Steve Martin

 Jack Walsh

 Alice Plagne

Samari Smith

Heidi Jakob

Hasmeet Sethi

Yvonne Schilling

Grace De Felice

Faith Kisby

Alysha Somers

Jone Jacobs

Emma Craighorn

Lily Hall

Amelia Hogg

Catherine McDonald

Andeli Zuzic

Olivia Box

Lara Portelli

Lana Howitt

Tom Norwood

Olga Norwood

Finella O'Connor

Tasmin Frischknecht

Lee O'Hara

Stephen Norwood

Belinda Northey

Luke Howlett

Stephanie Norwood

Jo Adam

Teana Amor

Jenny Lawrence

Lily Barlow

Lucy McConville

Campbell Roberts

Bonnie Sheppard

Louise Taylor

Mingmei Li

Rose Ingram

Emily Lanman

Jade Bell

Carly Dennis

Grace Mooney

Chloe Macmillan

Natalie Nana

Michael Atgemis

Daniel Landgraf

Philip Czaj

Tess Lynch

John Sharp

Winter Galbraith

Katy Marriott

Crys Kirk

Margaret Clark

Catherine Underhill

Ilona Lerner

Ellie Hinder

Erin Hart

Anne Bolitho

Karen Spinks

Michael Foster

Rosalie Richards

Mark Seabrook

Callum Paisley-Gunn

Brett Taylor

Robyn Bourchier

Catherine Sawkins

Gaie Buysen

Christine Doolan

Phil Hunter

Gabrielle Nord

Jo Wade

Karen Hinds

Vicki Vemis

Stephanie Vemis

April Hales

Letizia Sammut

Belinda Eden

Kathryn Ebsworth

Olivia Hucker

Jennifer Wilson

Pietro Porcu

Suzie Brown

Marlene Christiane Andrade Muniz

Hannah Huntersmith

Vicki Sweet

Roslyn Campbell

Sue Boggan

Joan Bowker

Stephanie Jones

Lee Campbell

Clare Tomison

Janine Bugg

Andrew Faulkner

Joanna To

Nicholas Handley

Rayna Fahey

Gemma Tillack

Stephen Melia

Juliette Hughes Norwood

Alexander Buck

Dr Tamara Jordan

Dr Simon Perrin

Tobe Cooper

Gabriel Crossan

Robert Briggs

Name Withheld

Elizabeth Branigan

Michel Boudreau

Lee Murray

Wan Tung Lee

Jill Snowdon

Catherine Chambers

Christine Lowe

Ricki de Wolff

Ashby Seabrook

Ruby Wiles

Karen Deer

Lucy Hole

Mitch Jones

Julie O'Brien

Dr Don Searle

Merrilyn Hogan

Jan Heald

Amy Curlis

Marion Manifold

Katey McRae

John Cooper

Isabelle Nash

Corey Cresswell

Manfred Hacker

Erin Bicknell

Nathan Schram

Elizabeth Costello

Malia Durley

Braydon Davies

Judith McDonald

Bernice Chee

Fiona Blair

Daniel Thompson

Carla van Laar

Sarah Hartree

Katey Redman-Brown

Chris Breaden

Carolyn Turner

Dana sang

Sandra Stephens

Jon Hughes

Charlotte Tranberg

Carol V.

Kirill Smelov

Jill Winfield

Leon Hassall

David Weinstein

Jo Cross

Susan Brinksma

India Cowie-Kent

Hinton Lowe

Marcus Percy

Iris Egan

Thasleem Reza

Gretel Templeton

Caroline Wareham

Jennifer Bartle

Neale Terrill

Peter Kuestler

Kier Matthews

Dr Kerry Wardlaw

Virginia Burns

Beryl Flower

Adele Hanafin

Ruth Sutherland

Klaus Tomanke

Rose Wild

Danielle Damiano

Lynn Barron

Tess Lockhart

Amanda Welsh

Jo Humphrys

Lynn Brown

Sandra Valeni

Lynette Cameron

Jacqui Cheetham

Fathima Hussain

Kerry Butler

Cathy Mcnicol

Georgia Cragie

Daryl Hook

Glenda Haynes

Lily Zanrosso

Mehr Gupta

Karin Bashtannyk

Antony Fowler

Diane Lang

Mari Elvi

Jack Killeen

Rose Kinley

Sheree Millen

Cheryl Lundin

Kate Lawrence

Oliver Fabinyi

Ian Chambers

Wayne Ashdown

Kate Hood

Lauren Hunt

Liz McLeod

Illa Stass

James Aldrige

Kiri Artz

Emma MacGregor

Robyn Dawkins

Penny Maddock

Guena Gasco

David Furphy

Clelie Burton

Katharina Rapp

Juneen Schultz

Ruth Coulthurst

Michelle Destefano

Nathan Combes

Madison Watson

Will Brownlee

Adam Demmert

Nicolina Caia

Susan Meyer

Sabrina Denaro

Rose Spinks

Lily Moore

Kate Negus

Aurielle Lee

Rachael Tilley

Bree Scott

Jessica Adams

Jude Jillard

Emma Baker

Monika Andrews

Lorraine Higgins

Marty Watts

Samantha Bruechert

Liam Unwin

Scott Brierley

Kerry Liddell

Paige Harris

Paul Swaffield

Maree Nihill

Grace Taylor

Nancy Georgy

Margit Renata

Catherine Fogarty

Stacey Ferrando

Hariklia Heristanidis

Heidi Woodruff

Joshua Kenzie

Julie Jackson

Carmel Toohey

Cohen Walkerden

Chezka Braid

Alex Cadden

Ynez Galtry

Emma T.

Wendy Mayer

Peter Digaletos

Kenneth Armstrong

Fleur Rubens

Fiona Haasz

Cameron Tozer

Michelle Hayes

Tania Barat

Mari Lourey

Pippa White

Kaye Pritchard

Valerie Austin

Kimberley Miter

James Matino

Annie Duncan

Andrew Mellody

Jacinta Rollef

Samantha Schell

Natalie Divett

Kate Thornton

Dorothy Loughton

Colin Lewis

James Curtis Sargeant

Lindsay Marchment

Jerry Koliha

Christine Toppi

Natasha Sharma

Aaren S.

James Ahern

Brianna Lohde

Peter Winter

Suzanne Petersen

Melanie Travis

Benita Botha

Anouska Scott-Teunen

Rob Paul

Matthew Phelan

Margherita Ferraro

Ann Middlebrough

Jacinta Turner

Helen Woods

Kate Hutchison

Judi Solomon

Andrew Bell

Caitlin Jones

Stuart Behrend

Leigh Douglas

Barbara Fischer

Lesley Jobling

Tess Lamin

Rebecca Copeland

Simon Maynard

John Kearney

Justine Wallace

Libby Smith

Jenny Favalaro

Matt Rollbusch

Gabrielle Doolan

Liz Denborough

Maureen Thomson

Suzanne Palmer-Holton

Kerry Brown

Camille Ravesi

Kevin Sewell

Hannah Potter

Graeme Walters

Callum Diamond-Smith

Michelle Clark

Joanne McKenna

John Laws

Ashley Reed

Nadav Zisin

Louis Gauci

Damian Thrum

Ramez Aldaoud

Jessica O'Neill

Aj Napier

Helena Apted

Karen McAloon

Jeanne Esmond

Madeline Faught

Karen Pastore

Louis Lara

Philip Stockton

Karin Goodman

Fazlitdin Najmitdinov

Wiosna Goodman

Nola Kennedy

Patricia Druce

Mick Van de Vreede

Narelle Watson

Erin Byrne

Ian Vanderstoel

Mary Cotter

Moya Brown

Nina Janardhanan

Rachael Bartlett

Sally Wellings

Michael Tregear

Una Causevic

Isobel Knowles

Jan Scott

Alicia Centofanti

Susan Morton

Elaine Al Meqdad

Hilary Smith

Ophelia Densmore

Timothy Selwood

Lynette Mackenzie

Genevieve van der Sluijs

Jemma C

Isabella Gazzola

Benita Bakon

Sean Martin

Kate Nekic

Beth Mandile

Linda Reid

Margaret Norwood

Richard Arnold

Natalie Poole

Pam Dawson

Sarah Barton

Dr Jo Centra

Lynne Waddington

Leigh McLeod

Joanna Thomson

Professor Norie Neumark

Simon Crowe

Terri Martin

Clinton Hare

Jenn Spencer-Stewart

Chantal Forge

Jade Bell

Leigh McLeod

Koen Wallis

Kevin Audley

Jodie Oliver

Eva Corifeo

Annie Bolitho

Pro forma B signatories (submission 950)

Marie-Lousie Drew

Carolyn Haywood

Barbara Darvall

Linda Dal Castello

Christine Askew

Andy Hine

Barbara Pelczynska

Emma Buckley Lennox

Stephen Lance

Minna Tom

Roger East

Caroline Langer

Adele Ireland

Marco Setiawan

Susan Bannerman

Mary Cotter

Greer Allen

Bronwyn Baird

Tara Broderick

Anthony Brown

Matilda Hiscock

Simon Vergers

Janet McCarthy

Judith Sise

Luke Simpkin

Lachlan Vermont

Mick Sydney

Judith Baldacchino

Kerrie O'Neill

Jodie Winnell

Friends of Steel Creek Inc

Dr Lea Jellinek

Anita Davis

Roberto D'Andrea

Ele Mason-Sakkas

Elizabeth Wade

Joel Brown

Warwick Rouse

Darian Zam

Herbz Rah

Sean Corrigan

John Pasqua

Anthony Holden

Julia Symons

Martin Watts

Rod Brooks

P Nunez

Kirsty Wilson

Jennifer Brewer

Jakke Perkins

Janelle de Soza

Mark Cramond

Doctors for the Environment	James Magree
Clem Wetherall	Dr Jill Orr-Young
Carol Collins	Jeannie Marsh
Greg Johnson	Chris Hooper
Kathy Pan	Sasha King
Victor Hoisington	Bronwen Evans
Kylie Thomas	Robert Skappel
Sue Moore	Alexander Magree
Robyn Aldrick	Ana Oluic
Janet Hall	Joe Hickey
Graham Dent	Peter Kurz
Angela Merriam	Rowena Groundwater
Dale Martin	Graeme Stockton
Kristen Pearson	Wendy Syfret
Asha Benham-Bannon	Jessica Hargrave
James Harker	Karen Anders
Doug Palmer	Robyn Scott

A.2 Public Hearings and site visits

Thursday, 3 December 2020

via videoconference

Name	Title	Organisation
Dr Gillian Sparkes	Commissioner	Office of the Commissioner for Environmental Sustainability
Dr Scott Rawlings	Director of Science and Reporting	Office of the Commissioner for Environmental Sustainability
Hamish Webb	Director, Knowledge and Planning	Department of Environment, Land, Water and Planning
James Todd	Executive Director, Biodiversity Division	Department of Environment, Land, Water and Planning
Kylie White	Deputy Secretary, Environment and Climate Change	Department of Environment, Land, Water and Planning
Dr Mark Norman	Chief Conservation Scientist	Parks Victoria
Dr Jenny Gray	Chief Executive Officer	Zoos Victoria

Tuesday, 23 February 2021

Meeting rooms G1 & G2, 55 St Andrews Place, East Melbourne and via videoconference

Name	Title	Organisation
Lisa Palma	Chief Executive Officer	Wildlife Victoria
Anna Murphy	Director and Head of Flora Ecology	Threatened Species Conservancy
Patrick Medway AM	Honorary Secretary, Chief Executive Officer and Treasurer	Australian Wildlife Society
Dr Kylie Cairns		Centre for Ecosystem Science, School of Biological, Earth and Environmental Sciences, University of New South Wales
Michelle Thomas	President and Shelter Director	Animalia Wildlife Shelter and Rescue
Steven Kuitert	Wildlife Rescuer, Surveyor and Photographer	Animalia Wildlife Shelter and Rescue
Peter Hylands	President	Australian Wildlife Protection Council
Brendan Wintle	Professor of Conservation Ecology	University of Melbourne

Wednesday, 24 February 2021

Meeting rooms G1 & G2, 55 St Andrews Place, East Melbourne and via videoconference

Name	Title	Organisation
Andrew Cox	Chief Executive Officer	Invasive Species Council
Barry Howlett	Executive Officer	Australian Deer Association
Jill Pickering	President	Australian Brumby Alliance
Ginny Imhoff	Field Officer	Australian Brumby Alliance
Fiona Sutton	President	Ecological Consultants Association of Victoria
Yasmin Kelsall		Ecological Consultants Association of Victoria
Dr Melanie Birtchnell		Ecological Consultants Association of Victoria
Dr Ernest Healy	Secretary	Association for Conservation of Australian Dingoes

Wednesday, 10 March 2021

Meeting rooms G1 & G2, 55 St Andrews Place, East Melbourne and via videoconference

Name	Title	Organisation
Monique Dawson	Chief Executive Officer	VicForests
Deon Kriek	General Manager Operations	VicForests
Bill Paul	Manager Environmental Performance	VicForests
Kate Gavens	Chief Conservation Regulator	Office of the Conservation Regulator
Ross Hampton	Chief Executive Officer	Australian Forest Products Association
Boris Iskra	National Codes and Standards Manager	Wood Products Victoria
Dr Michelle Freeman	Vice President	Institute of Foresters of Australia and Forest Growers
Jacqui Martin	Chief Executive Officer	Institute of Foresters of Australia and Forest Growers
Professor David Lindenmayer AO		Fenner School of Environment and Society, Australian National University
Steve Meacher	President	Friends of the Leadbeater's Possum

Thursday, 11 March 2021

Meeting rooms G1 & G2, 55 St Andrews Place, East Melbourne and via videoconference

Name	Title	Organisation
Dr Holly Sitters		University of Melbourne
Daniel Idczak	Vegetation Management Team Leader	Country Fire Authority (CFA)
Dale Tonkinson	Biodiversity Advisor	Country Fire Authority (CFA)
Michael Sherwen	Cultural Heritage Advisor	Country Fire Authority (CFA)
Dr Bruce Lindsay	Senior Lawyer	Environmental Justice Australia
Richard Hughes	Victorian Campaigns Manager	The Wilderness Society
Annie McCallum	Leader, Wilderness Society Mornington Group	The Wilderness Society
Jodie Gregson	Co-leader, Westside Wilderness Society Group	The Wilderness Society
Tina Lawrence	Co-founder	Victorian Wildlife Shelters Coalition
		Regional Victorians Opposed to Duck Shooting
Rebecca Cook	Head of Prevention	RSPCA Victoria
Mhairi Roberts	Policy and Advocacy Manager	RSPCA Victoria

Tuesday, 20 April 2021

Meeting rooms G1 & G2, 55 St Andrews Place, East Melbourne and via videoconference

Name	Title	Organisation
Dr Matt Edmunds	Principal Ecologist	Australian Marine Ecology
Jono La Nauze	Chief Executive Officer	Environment Victoria
Dr Nicholas Aberle	Campaigns Manager	Environment Victoria
Tyler Rotche	Healthy Rivers Campaigner	Environment Victoria
Professor Lee Godden	Director	Centre for Resources, Energy and Environmental Law, University of Melbourne
Associate Professor Craig Nitschke	Associate Professor in Forest and Landscape Dynamics	School of Ecosystem and Forest Sciences, University of Melbourne
Paul Sullivan	Chief Executive Officer	Birdlife Australia
Dr Grainne Maguire	Coastal Birds Program Leader	Birdlife Australia

Wednesday, 21 April 2021

Meeting rooms G1 & G2, 55 St Andrews Place, East Melbourne and via videoconference

Name	Title	Organisation
Professor David Cantrill	Executive Director Science	Royal Botanic Gardens Victoria
Dr Kim Lowe	Research Director	Arthur Rylah Institute for Environmental Research
Dr Nadine Richings		EnRICHed Pursuits
Dr Brian Coffey	Vice Chancellor's Research Fellow	Centre for Urban Research, RMIT University
Dr Barbara Wilson	Honorary Associate Professor in Ecology	School of Life and Environmental Sciences, Deakin University
Dr Jack Pascoe	Conservation and Research Manager	Conservation Ecology Centre
Professor Andrew Bennett	Director and Professor of Ecology	Research Centre for Future Landscapes, La Trobe University
Dr Jim Radford	Principal Research Fellow	Research Centre for Future Landscapes, La Trobe University
Dr Bek Christensen	President	Ecological Society of Australia
Dr John Morgan	Co-Chair, ESA Policy Working Group	Ecological Society of Australia

Tuesday, 27 April 2021

Quality Parklake Hotel, 481 Wyndham Street, Shepparton, Vic 3630

Name	Title	Organisation
Dr Victor Steffensen	Co-founder	Firesticks Alliance Indigenous Corporation
Monica Morgan	Chief Executive Officer	Yorta Yorta Nation Aboriginal Corporation
Rodney Carter	Group Chief Executive Officer, Dja Dja Wurrung Group	Dja Dja Wurrung Clans Aboriginal Corporation
Nathan Wong	Program Manager, Land Strategy Djandak	Dja Dja Wurrung Clans Aboriginal Corporation
Nate Perry	Program Manager, Dhelkunya Dja Policy	Dja Dja Wurrung Clans Aboriginal Corporation
Matthew Shanks	Strategic Advisor, Cultural and Natural Resource Management	Taungurung Land and Waters Council Aboriginal Corporation

Tuesday, 28 April 2021

Quality Parklake Hotel, 481 Wyndham Street, Shepparton, Vic 3630

Name	Title	Organisation
Wendy Radford	Secretary	Bendigo and District Environment Council
Stuart Fraser	Member	Bendigo and District Environment Council
John Pettigrew	Chair	Goulburn Valley Environment Group
Louise Costa	Committee Member	Goulburn Valley Environment Group
Sharon Terry	Manager, Environment	Greater Shepparton City Council
Paul Dainton	Team Leader Sustainability and Environment	Greater Shepparton City Council

Tuesday, 11 May 2021

Meeting Rooms G1 & G2, 55 St Andrews Place, East Melbourne and via videoconference

Name	Title	Organisation
Andrew Maclean	Chief Executive Officer	Landcare Victoria
Stuart Moseley	Chief Executive Officer	Victorian Planning Authority
Paul Cassidy	Director Streamlining	Victorian Planning Authority
Peter Murrell	Sustainability and Liveability Officer	Victorian Planning Authority
John Kotsiaris	Conservation Officer	Victorian National Parks Association
Matt Ruchel	Executive Director	Victorian National Parks Association
Emma Germano	President	Victorian Farmers Federation
Lisa Gervasoni	Senior Stakeholder Policy and Advocacy Advisor	Victorian Farmers Federation
Dr James Fitzsimmons	Director of Conservation and Science and Director, Protect Oceans, Lands and Waters	The Nature Conservancy
Chris Commins	Special Project Officer	Mountain Cattlemen's Association of Victoria
Paul Mahony		
Rowan Reid		Otway Agroforestry Network
Andrew Stewart		Otway Agroforestry Network

Wednesday, 12 May 2021

Meeting Rooms G1 & G2, 55 St Andrews Place, East Melbourne and via videoconference

Name	Title	Organisation
Lisa Pittle	Manager of Environment	Nillumbik Shire Council
Michelle Wyatt	Environment Coordinator	Macedon Ranges Shire Council
Krista Patterson-Majoor	Biodiversity Projects Officer	Macedon Ranges Shire Council
Dr Adrian Marshall	Facilitator	Grassy Plains Network
Bonnie Gelman	Member	Grassy Plains Network
Jordan Crook	Member	Grassy Plains Network
Alan Thatcher	Member	Green Wedges Coalition
David Bennett		

Wednesday 16 June 2021

via videoconference

Name	Title	Organisation
Erin Rose	Budj Bim World Heritage Executive Officer	Gunditj Mirring Traditional Owners Aboriginal Corporation
Jodie Honan	Ecologist	Gunditj Mirring Traditional Owners Aboriginal Corporation
Dr Andrea Lindsay	Member	Bellarine Landcare Group
Sophie Small	Facilitator	Bellarine Landcare Group
Jane Gibb	Secretary	Gerwerd Animal Protection (GAP) Alliance
Shane Howard	Treasurer	Belfast Coastal Reserve Action Group
Teresa O'Brien	Secretary	Belfast Coastal Reserve Action Group
Billy Briggs	Forestry Project Officer	Eastern Maar Aboriginal Corporation

Thursday, 17 June 2021

via videoconference

Name	Title	Organisation
Lyn Watson	Director and Founder	Australian Dingo Foundation
Melinda Browning	Spokesperson	Australian Dingo Foundation
Peter Hawker	Chair	Field and Game Australia
Cam Walker	Campaigns Co-ordinator	Friends of the Earth (Melbourne)
Fiona Bell	Vice President	Protectors of Public Land
Debb Kerr	Chief Executive Officer	Victorian Forest Products Association

Tuesday, 10 August 2021

via videoconference

Name	Title	Organisation
Carolyn Jackson	Acting Deputy Secretary, Environment and Climate Change	Department of Environment, Land, Water and Planning
James Todd	Executive Director, Biodiversity Division	Department of Environment, Land, Water and Planning
Hamish Webb	Director Knowledge, Planning and Risk in Forest Fire and Regions	Department of Environment, Land, Water and Planning
Kate Gavens	Chief Conservation Regulator	Office of the Conservation Regulator
Dr Mark Norman	Chief Conservation Scientist and Executive Director of Environment and Science	Parks Victoria
Trevor Hodson	Member	Friends of the Barwon
Craig Copeland	Chief Executive Officer	OzFish
Barbara Hill		
Dr Megan O'Shea		
Daryl Cochrane		
Jason Wood		
Geoffrey Goode		
Nina Earl		
Gray Ardern		Friends of Warrandyte State Park

Wednesday, 11 August 2021

via videoconference

Name	Title	Organisation
Rex Motton	Committee Member	Prospectors and Miners' Association

Thursday, 26 August 2021

via videoconference

Name	Title	Organisation
David Packham OAM		
John Cameron		
Gerard Drew	Executive Committee Member	South Gippsland Conservation Society
Tom Crook	Facilitator and Programs Manager	East Gippsland Conservation Management Network
Jill Redwood	Coordinator	Environment East Gippsland
Vic Jurskis	Committee Member	The Howitt Society
John Mulligan	Committee Member	The Howitt Society
Daniel Miller	General Manager, On Country	Gunaikurnai Land and Waters Aboriginal Corporation
Uncle Russell Mullett	Registered Aboriginal Party Manager	Gunaikurnai Land and Waters Aboriginal Corporation
Lisa Roberts	President	Friends of Bats and Habitat Gippsland

Extracts of proceedings

Committee meeting—Wednesday 3 November 2021

Chapter 1

Dr Ratnam moved, that a new recommendation be inserted at line 89¹ in the following terms:

Recommendation: That the Victorian Government consider referring a parliamentary inquiry into the health of rivers, waterways and the marine environment.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Bath
Ms Terpstra	Dr Bach
Ms Taylor	
Mr Melham	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

¹ Line References refer to the line in the Draft Report and are Chapter specific.

Ms Bath moved, that in line 186 the word 'forestry' be deleted and replaced by the words 'land clearing'.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Dr Ratnam
Dr Bach	Ms Terpstra
	Ms Taylor
	Mr Melham
	Mr Meddick
	Mr Hayes
	Mr Grimley

The question was negatived.

Ms Bath moved, that at line 266 the words 'The next greatest impact on Victorian biodiversity is considered to be bushfires' be inserted.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Dr Ratnam
Dr Bach	Ms Terpstra
	Ms Taylor
	Mr Melham
	Mr Meddick
	Mr Hayes
	Mr Grimley

The question was negatived.

Ms Bath moved, that the heading 1.6.4 at line 267 be renamed ‘Bushfires and Climate Change’.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Dr Ratnam
Dr Bach	Ms Terpstra
	Ms Taylor
	Mr Melham
	Mr Meddick
	Mr Hayes
	Mr Grimley

The question was negatived.

Ms Bath moved, that line 300 be removed and replaced with the words ‘and the positive and negative perspectives from stakeholders’.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Dr Ratnam
Dr Bach	Ms Terpstra
Mr Grimley	Ms Taylor
	Mr Melham
	Mr Meddick
	Mr Hayes

The question was negatived.

Dr Ratnam moved, that at line 455 the words ‘However, stakeholders consistently identified the need for additional funding to deliver the outcomes under the strategy’ be added.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
	Mr Melham
	Mr Meddick
	Ms Bath
	Dr Bach
	Mr Grimley

The question was negatived.

Dr Ratnam moved, at line 468 that the words ‘and the Committee is confident that, based on the Government’s stated long-term policy plans and the recognition of the need for action across all sectors in the community, the will to continue to develop and refine approaches to this vital issue is evident. However, ...’ be deleted.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Ms Bath	Ms Taylor
Dr Bach	Mr Melham
Mr Hayes	Mr Meddick
Mr Grimley	

The question was agreed.

Chapter 3

Mr Meddick moved, at line 90 after ‘destruction’ replace with ‘shooting of native animals and removal of native flora’.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Mr Melham	Dr Bach
Mr Meddick	Ms Taylor
Dr Ratnam	
Mr Hayes	
Mr Grimley	

The question was agreed.

Chapter 4

Ms Bath moved, that at line 16, remove lines 16–22 replace with:

A recent Pacific Conservation Biology review, published through CSIRO Publishing, examined the threats to species listed as threatened under *Australia’s Environment Protection and Biodiversity Conservation Act 1999* (the ‘EPBC Act’). The review found that out of all the EPBC-listed species in Australia (1,533 at the time of publication), invasive species affect the largest number of listed species (1,257 species) or 82 per cent of all threatened species. The two next-greatest threats were ecosystem modifications (e.g. fire) at 74 per cent and agricultural activity at 57 per cent.

Continue with:

In evidence presented to the Committee, Andrew Cox, Chief Executive ...

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes
	Mr Grimley

The question was negatived.

Ms Bath moved, that the following be inserted at line 27:

Chief Executive Officer of Victorian Forest Products Association, Deb Kerr, endorses this finding.

The CSIRO have analysed the EPBC Act terrestrial listed species and have come up with a figure that 82 per cent have been impacted by invasive species. That likely is a similar number for Victorian listed species. Invasive species are also listed as the key threatening processes under the EPBC Act and the FFG Act.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes
	Mr Grimley

The question was negatived.

Mr Hayes moved, that a new recommendation be inserted at line 200 in the following terms:

The Committee therefore considers it appropriate that the Victorian Government review the administration and enforcement of the CaLP Act to ascertain if the functions proscribed under the Act could be undertaken by an agency with a more holistic view of environmental and ecosystem protection more appropriately undertaken by another agency.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Mr Meddick moved, that at line 219 the following words be added:

It is noted that where native species come into competition for resources in an agricultural setting, that there is a shift in how they are viewed. They move from being revered to being regarded as a pest species, resulting in ATCW's (Authority To Control Wildlife) to kill them being issued. The Committee notes that this directly impacts the biodiversity of and native environment of an area or landscape.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	Mr Grimley
Dr Ratnam	
Mr Meddick	
Mr Hayes	

The question was agreed.

Ms Bath moved, that at line 369, the words ‘Could be strengthened’ be replaced with: ‘Should be a top priority for Government’.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes
	Mr Grimley

The question was negatived.

Mr Meddick moved, that at line 506 the words ‘that hunting as a sport has community support and is an activity which is engaged in by sections of the community’ be deleted and replaced with the words ‘that hunting as a sport has support from a limited, minority of the community’.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	Mr Grimley
Dr Ratnam	
Mr Meddick	
Mr Hayes	

The question was agreed.

Ms Bath moved, that at line 509 the word ‘sport’ is deleted and replaced by the word ‘pursuit’.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
Mr Hayes	Mr Melham
Mr Grimley	Dr Ratnam
	Mr Meddick

The question was negated.

Ms Bath moved, that at line x the following words be inserted:

This was further evidenced by Mr John Cameron during his presentation to the Committee at a public hearing:

I think outcomes and deliverables are below par because of poor organisational efficiency and effectiveness. And in DELWP—the annual report before last—52 per cent of the staff are in the CBD and 11 per cent were field staff.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
Mr Hayes	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Grimley

The question was negated.

Ms Bath moved, that at line 1042 the following words be inserted:

When implementing the *Catchment and Land Protection Act* (Vic) and the Invasive Plants and Animals Policy Framework, the first action by government should be to explore how the existing resources can be deployed more efficiently and effectively.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
Mr Hayes	Mr Melham
Mr Grimley	Dr Ratnam
	Mr Meddick

The question was negatived.

Ms Bath moved, that at line 1262 the following words be inserted:

The Committee acknowledges that the Victorian Government agencies' current use of 1080 bait is carried out in accordance with prescribed standards. Kylie White, Deputy Secretary, Climate Change, DELWP said:

We use 1080 and any other chemicals according to the standards that we must meet to use that, and that includes the appropriate use of 1080 baits, the way in which they are buried and then the way in which they are monitored.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Dr Ratnam
Ms Taylor	Mr Hayes
Mr Melham	
Ms Bath	
Dr Bach	
Mr Grimley	
Mr Meddick	

The question was agreed.

Mr Hayes moved, that at line 1280 the words ‘consider the phasing’ are deleted and replaced by the word ‘phases’.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Meddick	Ms Taylor
Mr Hayes	Mr Melham
Mr Grimley	Ms Bath
	Dr Bach

The question was negatived.

Mr Meddick moved, that at line 1280 the following words be inserted after ‘controlling of pest animals’:

This phase out should begin in July 2022, beginning in National Parks in the first year, then be expanded into Agriculture and other applications in the second year and be completed by December 2023.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Dr Ratnam moved, that at line 1284 the following words be inserted:

The Victorian Government should increase funding for research into humane and effective controls for invasive species including pest animals.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Meddick	Ms Taylor
Mr Hayes	Mr Melham
Mr Grimley	Ms Bath

There being an equality of votes, the Chair gave her casting vote to the Noes.

The question was negated.

Dr Ratnam moved, that at line 1467 the words ‘There are conflicting views on the impact of cats across a range of landscapes’ be deleted.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
	Mr Melham
	Ms Bath
	Mr Meddick
	Mr Grimley

The question was negated.

Chapter 5

Ms Bath moved, that the heading at line 2 be changed to ‘Bushfires and Climate Change’.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes
	Mr Grimley

The question was negated.

Ms Bath moved, that at line 11 after the word ‘Impacts of’ Insert the words ‘bushfires and’.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes
	Mr Grimley

The question was negated.

Ms Bath moved, that at line 12 the following words be inserted: 'Fuel load and preparatory indigenous cool burns'.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes
	Mr Grimley

The question was negatived.

Dr Ratnam moved, that a new finding be inserted at line 51 in the following terms:

Climate change is almost exclusively driven by burning fossil fuels for energy, as well as greenhouse gas emissions produced from agriculture and changes to the land and marine environment.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Ms Bath moved, that at line 165 the following words be inserted:

Mr Boris Iskra from Wood Products Victoria stated that:

a sustainable forest management strategy aimed at maintaining or increasing forest carbon stocks, while producing an annual sustained yield of timber, fibre or energy from the forest, will generate the largest sustained mitigation benefit.

During the public hearing the Committee heard that Victorian forests are certified by Responsible Wood, which is recognised through the Programme for the Endorsement of Forest Certification, which manages 75 per cent of all certified forests around the world. Wood Products Victoria confirmed that forests in Victoria are also certified as being managed sustainably.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes
	Mr Grimley

The question was negated.

Ms Bath moved, that the recommendation at line 685 be omitted.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
Mr Grimley	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes

The question was negated.

Ms Bath moved, that a new recommendation be inserted at line 685 in the following terms:

The Victorian Government further invest in strengthening regionally based natural resource management programs, including local community based organisations such as providing ongoing funding to Landcare coordinators, to more effectively engage local communities to arrest ecosystem decline, to integrate resources more efficiently, and achieve environmental outcomes and habitat restoration.

- Oppose on private land until appropriate consultation with private landholders is undertaken.
- Oppose on private land until arrangements are made to pay ‘private’ landowners for the provision of a ‘public good’ conservation and/or enhanced biodiversity.
- Oppose on private land until the detail of the guidelines are known and private landowners can assess how workable the ministerial guidelines are.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
Mr Grimley	Mr Melham
Mr Hayes	Dr Ratnam
	Mr Meddick

The question was negatived.

Dr Ratnam moved, that the recommendation at line 685 be amended in the following terms:

That the Victorian Government review environmental legislation, including the Flora and Fauna Guarantee Act, and recommend legislative reform to ensure Victoria’s environmental laws:

- articulates clear standards for environmental restoration
- imposes a general duty on public and private land managers to restore or enhance biodiversity in partnership with Traditional Owners
- is underpinned by ministerial guidelines describing how environmental restoration and enhancement should be undertaken by public land managers and emphasising that this duty goes further than simply avoiding harm to biodiversity. These guidelines should highlight the importance of empowering Traditional Owners to drive environmental restoration on Country.

The Committee Divided.**The question was put.**

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Meddick	Ms Taylor
Mr Hayes	Mr Melham
	Ms Bath
	Dr Bach
	Mr Grimley

The question was negatived.

Ms Bath moved, that at line 950 the words ‘protecting existing’ be deleted and replaced by the words ‘maintaining healthy’.

The Committee Divided.**The question was put.**

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes
	Mr Grimley

The question was negatived.

Ms Bath moved, that at line 993 the following words be inserted:

The significant potential for the forestry and forest products industry to contribute to climate change mitigation was acknowledged in the 4th assessment report of the Intergovernmental Panel on Climate Change (IPCC), which stated:

A sustainable forest management strategy aimed at maintaining or increasing forest carbon stocks, while producing an annual sustained yield of timber, fibre or energy from the forest, will generate the largest sustained mitigation benefit.

This is achieved by storing carbon in wood products which both minimises carbon losses from future bushfires and produces renewable, low emissions materials. Trees in forests and plantations typically sequester carbon at a maximum rate between 10 to 30 years old. After this age, if the trees are not harvested, the sequestration rate slows until maturity at about 80 to 100 years of age.

Claims that a reduction in timber harvesting sequesters more carbon also ignores the stored carbon from the timber and paper products produced, and the substitution that would occur with imported wood and paper products from countries that do not have the stringent environmental protections and sophisticated forest managements practices that are in place in Australia.

All native forest harvested in Victoria (and Australia) is sustainably regenerated by law and so does not result in deforestation. However, reforestation cleared areas will create carbon sinks to counteract greenhouse gas emissions and will also assist in controlling salinity and creation of wildlife habitat

In a submission to the Inquiry, the Australian Forest Products Association stated that:

Victoria’s public native forest resources are managed productively and sustainably. This was confirmed in a 2013 audit by the Victorian Auditor-General, Managing Victoria’s Native Forest Timber Resources. This is not surprising given the scientific rigour and planning that VicForests applies to its operations, and the comparatively small volumes of native forest harvested each year. [Deb Kerr]

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes
	Mr Grimley

The question was negatived.

Mr Hayes moved, that a new recommendation be inserted at line 1095 in the following terms:

That the Victorian Government provide the necessary investment for Landcare to develop the expertise and capacity to work with commercial carbon farming project developers. So that together, they may engage individual landowners in joint carbon farming projects large enough to offset establishment costs and complexities.

The Committee Divided.

The question was put.

Ayes	Noes
Mr Hayes	Ms Terpstra
	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Ms Bath
	Dr Bach
	Mr Grimley

The question was negated.

Ms Bath moved, that at line 1132 the heading be changed from ‘Climate Change, Bushfires and biodiversity’ to ‘Bushfires’.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes
	Mr Grimley

The question was negated.

Ms Bath moved, that lines 1133 to 1153 be deleted.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes
	Mr Grimley

The question was negatived.

Ms Bath moved, that at line 1133 the following words be inserted:

It was widely recognised throughout the inquiry that high intensity bushfires represent one of the most damaging threats to Victorian ecosystems.

At a public hearing, Dr Michelle Freeman, Vice President of the Institute of Foresters of Australia and Forest Growers, stated that high intensity fire is a major issue causing major forest changes and compositional changes. A submission to the Committee highlighted:

The greatest most pervasive threats to our forest ecosystems are invasive species and the increased frequency and intensity of bushfires, which are being exacerbated by climate change.

Year-round management actions such as promoting and supporting forest health and diversity, more strategic fuel management interventions, maintaining roads for access and protection, as well as intervention to manage pests and diseases, are all critical aspects in need of attention and will be required across tenures. We also need to recognise that the disproportionate focus on bushfire response and investment in aerial firefighting capacity, rather than effectively resourcing preventions to mitigate fire and rather than focusing on rapid first-attack responses, are putting ecosystem processes, flora and fauna at risk.

Commenting on the seriousness of fire as a contributor to ecosystem decline Dr Craig Nitschke from the School of Ecosystem and Forest Sciences, University of Melbourne stressed that:

Wildfire is the big driver as a direct effect and in interaction with how it affects hollow-bearing trees and foraging resources.

At a separate public hearing, Mr John Cameron stated:

It is fire intensity that kills and it is fire intensity that damages the environment. And that is related more to the fuel level than it is to climate or weather.

The fires over the last 20 years have had an obviously undesirable impact on biodiversity and our ecosystems. They have caused billions of dollars of damage; 183 lives have been lost. And these high-intensity large fires were predictable and they were avoidable.

If you keep the fuel levels below about 10 tonnes per hectare you will have relatively low fire intensities, but if you let the fuel levels get above that then you can have difficulty suppressing bushfires.

We need to do a better job of protecting the forests from wildfire and also probably focusing the investment in the management of our parks and native forests for wildlife on proactive management of the resource specifically for the wildlife rather than trying to lock up more forest.

5.1 Bushfire Mitigation and Fuel Reduction

For the purposes of bushfire mitigation, the importance of fuel reduction was stressed within a number of submissions to the Inquiry.

In his submission, Mr John Camerson defined high intensity wildfires, that occur after insufficient fuel reduction are indiscriminate and they destroy sensitive rainforest, montane communities and riparian strips causing stream sedimentation and degradation of waterways.

Wildfires release huge amounts of carbon dioxide including from carbon stored in the soil that can take hundreds of years to restore. Wildfire contributes 5–10% of global CO₂ emissions each year and are a significant contributor to greenhouse gas. The CO₂ released from low intensity prescribed fire is very small and replenished within 5 to 10 years.

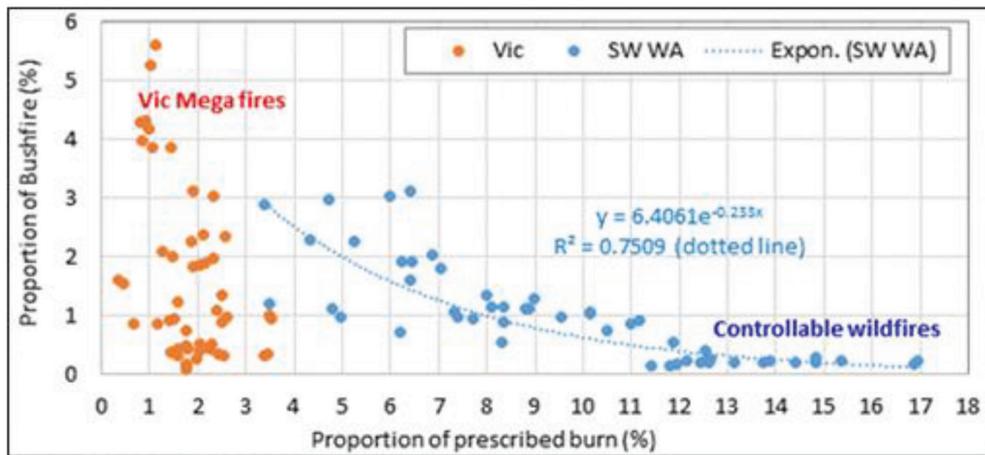
Wildfire is the big driver as a direct effect and in interaction with how it affects hollow-bearing trees and foraging resources.

It is fire intensity that kills and it is fire intensity that damages the environment. And that is related more to the fuel level than it is to climate or weather.

The fires over the last 20 years have had an obviously undesirable impact on biodiversity and our ecosystems. They have caused billions of dollars of damage; 183 lives have been lost. And these high-intensity large fires were predictable and they were avoidable.

In the last 200 years there have been about 800 bushfire deaths in Australia—600 in Victoria. Now, the failure to reduce fuels to less than 8 tonnes per hectare means destruction to the environment, loss of water supplies, death and injury to humans and fauna and loss of homes and infrastructure.

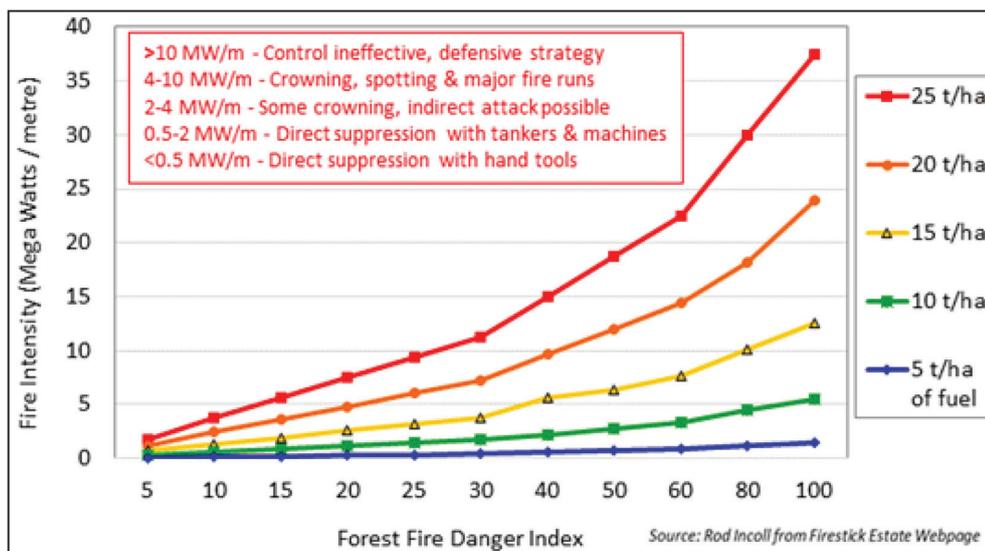
In evidence he submitted to the Committee former CSIRO Scientist, Mr David Packham, explained the ‘Sneeuwjagt curve’ which is an indicator that shows if you want to avoid large intense forest wildfires you must prescribed burn at least 8% of the forest each year. Mr Packham explained that Victorian mega fires could have been predicted from the Sneeuwjagt curve, as depicted in the following diagram:



Mr Packham further suggested that controlling forest fuel is vital if we are to avoid damaging wildfires.

This holds true under all climate scenarios and is particularly relevant under extreme fire weather as reflected in a higher Forest Fire Danger Index (FFDI). The figure below shows at fuel levels below about 8 tonnes per hectare bushfires can be controlled even at high FFDI's (extreme weather/climate). At high fuel levels of 20–25 tonnes per hectare bushfires are uncontrollable even at low FFDI's.

The impact of fuel load and forest fire danger index (weather/climate) is represented in the following table:



In his submission, Mr David Packham stated that research validates the amount and characteristics of forest fuel have a considerable impact on fire intensity. He stated:

Reduce the fuel load from 36 tonnes per hectare to 8 tonnes per hectare, the bushfire intensity decreases by 20 times and all fires can be controlled, environmental damage is reduced and no lives are lost.

Ecologist for the University of Melbourne, Dr Holly Sitters commented that in the last Victorian bushfire 3 billion vertebrates were killed. One of Dr Sitter's objectives has been to figure out exactly what aspect of fire regimes are causing problems for these species, and she has found that big, severe, frequent fires are often the problem. Large scale prescribed burning with very low severity within the burn perimeter was suggested to leave quite a few unburnt patches. Depending on the forest type the canopy would remain intact with vegetation structures, such logs and hollows, remaining.

Case Study: I have been working mostly in the Otway Ranges, a little in the Central Highlands and a lot in the heathy woodland of western Victoria, and so in those ecosystems the animals we have been focusing on—ground-dwelling mammals and birds—are very little affected by that sort of low-severity prescribed burning.

Additionally, there was born frustration by witnesses who cited the opportunity after the royal commission in 2009 to do more prescribed burning or other forms of fuel reduction was largely ignored. The recommendation stemming from the royal commission was 5 per cent, however Victoria achieved less than two per cent.

With the bushfire in 2019–20 there was a two-week window of opportunity when the forest fire danger index was low enough for that fire to be suppressed and it was not.

Submitters such as former gold miner, Mr David Bentley, expressed concern over a lack of prescribed burning. He stated:

There have already been multiple inquiries into public land management and its effect on bushfires, including Royal Commissions. There have been countless recommendations made to improve the environment and lessen the devastation to ecosystems, property and lives caused by bushfire and yet many of those sensible recommendations have not been enacted by government. Tracks are still being closed. Local knowledge is still ignored in favour of orders from city-based academic bureaucrats.

More controlled burning is repeatedly recommended yet it is still opposed by conservation groups and seems to be opposed by many in Parks Vic and DELWP judging by the small amount of burning being done. More workers and their equipment in the forests are a way to lessen fire damage. There is much public anger at the lack of fire preparedness.

In a submission to the Committee, the Country Fire Authority (CFA) acknowledged fire as an ongoing and long term force in Victorian ecosystems that continues to shape them. CFA's Biodiversity Advisor, Mr Dale Tonkinson stated that it is not possible to understand the effects of fire by just calling it fire, nor is it possible to understand any

individual fire without the context of what has gone before. He further stated that what has gone before is very much related to timing, intensity and how big fires are.

As a volunteer based emergency response organisation, the CFA stressed that they do not have any specific responsibility for ecosystem management but the community expectations around environment and ecosystems fall upon them and they respond accordingly. Through their submission to the Committee it was noted the vital role that they play in terms of vegetation and fuel management:

Relevant CFA programs are the statewide vegetation management team that we both belong to, with two biodiversity advisors across the state, a cultural heritage advisor, a coordinator and a team leader. So Dan is the team leader. We also have 13 regional vegetation management officers, and they support our fuel management activities. This whole program works in the non-emergency space around fuel management, which under the CFA Act we also have responsibilities for. We also have a research and development team that undertakes applied research, particularly in climate change and fire and vegetation relationships. [Mr Dale Tonkinson—Biodiversity Advisor, Country Fire Authority]

Recommendation XX: That Victorian Government recognise that Vegetation Management Officers (VMO) provide vital training and skills to councils, road managers, landholders and CFA volunteers in fuel reduction prescribed burns and other mechanical bushfire prevention works. That the Victorian Government provide ongoing and appropriate resources and funding to allow VMO's to continue bushfire mitigation and protect lives and property.

VMO within CFA are retained as technical professionals but are supported with resources and funding to undertake these important works.

Finding XX: The Victorian Government through Safer Together has failed to meet burn targets.

Recommendation XX: That the Victorian Government abandon its 'Safer Together' policy and adopt Recommendation 56 of the *2009 Victoria Bushfires Royal Commission*, incorporating increasing application of Traditional Owners forest fire management practices, where appropriate.

5.1.1 Other Jurisdictions

Comparing the rate of prescribed burning undertaken in Victoria with that in Western Australia Mr John Cameron stated in his submission to the Committee they were working to achieve a rate of 8% with low intensity fires. He added that, as a result, Western Australia have been very successful in controlling wildfires.

CASE STUDY: I worked in the forests in WA for three years, in the south-west forests, and I am familiar with them. I also saw the type of burns that they undertook and the results. I think that there are a lot of similarities between the forests in WA and the foothill mixed-species forests in Australia. Also I think it is possible to prescribe burn the alpine ash forests on the high plateaus where we get the lightning strikes and make us

safer, and possibly the snow gum and certainly the mixed-species foothill forests. Also in DELWP's annual report in 2019 they indicated that they would prescribe burn into June, and I have spoken to lots of people that suggest that there are many forests that can be prescribe burnt at times that people might not have considered possible, such as well into June.

5.1.2 Cool Indigenous Burns

Submitters such as Dr Victor Steffensen, Practitioner for Firesticks Alliance, has been working with indigenous knowledge for over 30 years and has been helping communities put traditional knowledge back onto landscapes and onto the community for social and environmental wellbeing. He affirmed the role as being really crucial to improve our landscapes, the health of our communities and also for the broader community. Like other submitters he stressed the importance of bringing indigenous fire management back onto Country.

Dr Steffensen affirmed that indigenous fire management is the outstanding one at the moment because the landscape is very sick and the fire is high on the agenda, alongside with water to start to revitalise it and rehabilitate, also with cultural values, as well. He stated:

Over the years, I have worked with many communities, across many different States across Australia, and also internationally with doing this practice of reviving knowledge from landscapes, and helping communities to do that on their own Country. The aim of the Firesticks Alliance is to help communities to do their own business on their own countries and support them with training, if they need it.

I think low-intensity fire does nourish the soil, and I have heard many old elders talk about the right colour charcoal being a blanket for country throughout the winter.
[Dr Jack Pascoe—Conservation Ecology Centre]

Citing the social applications as being crucial for the health of young people, the Firestick Alliance have created a three year training program in the Hunter Valley. The first of its kind, the program currently consists of 40 trainees.

It is crucial that Indigenous knowledge is shared in good faith and shared in a way that we want to bring everyone – everyone to know this knowledge and to look after our Country into the future. To also work in areas in improving agriculture. Looking at the green economics, as well, within healthy landscapes. And if we do not have a healthy landscape, then we do not have a baseline for green economics. And that is why it is so crucial that we make the Country healthy, not only for the green economic opportunities around managing landscapes, but also for the cultural indicators and knowledges, as well, that will further – show further benefits.

Indigenous fire management is not just about burning. It is about many layered benefits that come from land. So, traditional knowledge is structured on a number of knowledge categories, which evolves every living thing on the landscape, including people. And when we apply certain practice to landscapes, through indigenous management, there are seven-fold benefits that come from that. So, for example, when we burn, we are

looking after trees. We are looking after the animals. It is creating employment. It is creating education for people. It is building the bridge of reconciliation between black and white people of Australia. It is just to name a few. So, I know and understand and also seen evidence that young people improve their lives when we get them on Country. [Dr Victor Steffensen—Firesticks Alliance]

The Taungurung Land and Waters Council Aboriginal Corporation stated in their presentation to the Committee that their goal is to have primarily two things. A cultural fire program where they are healing first and then managing Country with cultural fire and associated practices so forest gardening and the cultural flows and that sort of stuff, especially in flood plain country.

Where we are seeing cultural fire as kind of one of the leading applied practices to do that, to manage Country. [Matthew Shanks, Taungurung Land and Waters Council Aboriginal Corporation]

The importance of cool indigenous burns was also shared by many other submitters to the inquiry.

Council has 400 hectares or so of bushland reserves, which we manage for access and amenity but also for biodiversity conservation. So we directly employ the Wurundjeri Narrap team. We also engage with them around traditional burning in our reserves, so we are looking at opportunities for that. [Lisa Pittle—Nillumbik Shire Council]

We also, similarly to Nillumbik, do engage traditional owner groups for on-ground works as appropriate, including for cool burns where we can. As I mentioned, we have a great desire to continue to work with traditional owner groups and to do more with them, including with their on-ground teams, such as the Narrap Team. They are very stretched for what they can actually do and how many services they can actually provide across their country, hence why I feel that expanding core funding for those groups would really help them grow their teams and grow their service capacity to enable them to meet the demands on their services. If they had greater ability to work across their country, we would certainly engage them more. [Macedon Ranges Shire Council]

Many submitters stressed that ‘All Peoples’ connection to the land has gradually been reduced over the last century as communities have become more urbanised and government regulation has reduced the range of activities allowable in the bush. It was felt that the decisions about land management are made by people who have no connection to the land. Today, the groups with the most connection to the land are farmers and those working in the forest.

The concern is that many traditional skills have been lost including those related to ‘cool burning’. To restore those skills it will be necessary to involve people in training programs. However training programs in themselves are not enough. There needs to be strong government commitment to the necessity to reduce fuel levels in the forests and a commitment to ensuring that the training programs result in results on the ground. [Garry Squires]

For successful cultural burning, East Gippsland resident, Mr Garry Squires stressed the importance of adopting the following traditional indigenous principles:

- The canopy should remain green, the ground brown
- Smoke should be white and the ash black—not the reverse
- The controlled burn should creep over the ground like water
- Burn regularly.

5.1.3 Cool Indigenous Burns and Endangered Species

We have forests that are declining fast. We have a massive extinction occurring before our ears within our vegetation and within the animals. And it is really alarming. And that is not lately. That has been an alarm bell that has been ringing from the Elders long before the last 30 years we have been doing this work, which those Elders have now passed. [Dr Victor Steffensen—Firesticks Alliance]

Ecologist and ecological historian, Mr Vic Jurskis, provided an historical overview on koalas endangered species and koalas.

There are only three mammals that are critically endangered in Victoria today, and none of them are arboreal or forest dependent. The mountain pygmy possum is rare because it lives in alpine boulder fields, where it can survive under the snow. This habitat was protected by Aborigines when they burnt when they were feasting on Bogong moths, and mountain cattlemen continued the tradition.

Since the alpine habitats have been protected, they have been incinerated by a succession of mega-fires. There have also been a lot less moths turning up in the mountains, because they breed in the Murray-Darling, where their grubs feed on weeds, crops and pastures. They used to feed on drought-adapted vegetation that disappeared along with Aboriginal burning. But now the weeds and crops disappear when irrigation water is diverted for so-called environmental flows, which top up an artificial freshwater lake at the mouth of the Murray, so the moths and the pygmy possums are both in strife. The brush-tailed rock wallaby and the southern bent-wing bat are the same. They are not forest dependent. But anyway, Victor Steffensen says we should not manage for species; we need to see the big picture and maintain the whole landscape for the right fire.

Koalas are just one species that irrupted when we disrupted Aboriginal burning. There were many others that did as well, and then there were the small mammals that we lost on the other hand. When we disrupted Aboriginal burning we upset the balance that maintained healthy mature trees and diverse, grassy ground layers and everything that depended on them.

Koalas were naturally a very rare species, because soft young growth is a rare commodity in healthy mature forests, and koalas only lived in forests. They were confined to forests. No explorers, apart from Strzelecki, ever saw koalas, because they did not live in the woodlands and the grassy areas that Europeans sought for agriculture.

They only moved into those areas after they irrupted from the forests and the woodland trees got sick. When people sowed pastures and changed the soils the trees got sick and started recycling soft young growth, so the koalas irrupted in the forests from lack of burning and in the woodlands from the trees being sick.

The young koalas are very mobile, and they go out looking for new territory to occupy. So it was not just in Victoria. There is a great myth about koalas irrupting in Victoria because they were translocated. That is absolute nonsense. Koalas like any other animal irrupt when there is an abundance of food, and the abundance of food has been as a result of the growth of dense young forests with disruption of burning and the sickening of old woodland trees with either just disruptions of burning and/or pasture improvement. So koalas irrupted right across their range, except in far northern Queensland, where there was very limited agricultural development and they still maintained the traditional burning practices.

The only difference between Victoria and other places is in the timing, but, in general from south-east Queensland down to Victoria and South Australia the koalas crashed in the federation drought because they were relying on all this soft young growth that collapsed in the federation drought, and then they disappeared from the woodland valleys and things where they never really lived anyway before whitefellas came along.

Nearly all the koala populations that have been studied and written about are all unsustainably dense populations. Healthy sustainable populations are in the order of one koala per 100 hectares. The densities at Cape Otway at the moment are, like, 20 per hectare—or they were recently. That is 2,000 times the natural density.

So what needs to happen is that we need to restore healthy forests and low sustainable densities of koalas. In the meantime you have got the animal welfare problem of what to do with all the surplus. The idea of translocating them somewhere else in the bush does not work. All the translocations have always been into areas where there are already koalas. The reason they have gone mad after translocation is because people have excluded fire from the areas where they have translocated koalas. [Vic Jurskis]

CASE STUDY: The symptom of an upside-down bit of country like this was koala overabundance. Because there was no top-down pressure on them and they were able to take advantage of manna gums, which are a highly nutritious species, they were able to explode in numbers and they took out the canopy of the trees. It is certainly no blame on the koala; it was just an ecosystem well and truly out of balance.

The koala population along with the canopy crashed drastically, and you would have seen in the news if you were paying attention at the time that it became quite prominent in the media. Many hundreds of koalas, probably thousands, starved to death as that ecosystem collapsed. Hundreds probably I euthanised myself because that ecosystem could no longer take them and they were starving to death and they could not be rehabilitated. [Dr Jack Pascoe—Conservation Ecology Centre]

Everywhere that koalas have had isolated manna gum woodlands and there is no top-down pressure on koalas, they become overabundant and they take out the forest.

Other experts shared their opinions about koalas.

The Committee Divided.**The question was put.**

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes
	Mr Grimley

The question was negatived.

Ms Bath moved, that a new recommendation be inserted at line 1343 in the following terms:

The Victorian Government ensure that programs and funding are directed to sustaining and restoring Victoria's iconic landscapes, including ash-type forests, by establishing and maintaining strategic seedbanks for vulnerable forest types; combined with forest nursery developments and strategic reforestation programs to implement timely and effective regeneration across fire-affected public lands.

The Committee Divided.**The question was put.**

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes
	Mr Grimley

The question was negatived.

Chapter 6

Mr Meddick moved, that at line 3 the following words be inserted and others deleted:

Insert ‘animal’ in front of ‘agricultural uses, such as grazing stock’. Delete ‘and cropping’. Insert another bullet point ‘arable agriculture such as cropping, for animal feed and human consumption’.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Mr Meddick moved, that at line 8 the words ‘invasive pest’ be deleted and replaced by the word ‘introduced’ and the word ‘pest’ be replaced by the words ‘non-native’.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	Mr Hayes
Dr Ratnam	Mr Grimley
Mr Meddick	

The question was agreed.

Dr Ratnam moved, that the finding at line 83 be amended in the following terms:

The ongoing **removal and** degradation of native vegetation is a key driver of ecosystem decline and is threatening Victorian biodiversity.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Dr Ratnam moved, that a new finding be inserted at line 84 in the following terms:

Habitat loss in Victoria is caused by agricultural uses, development and urban expansion, for example the construction of houses, roads and other major infrastructure, native timber harvesting, resource extraction, degradation related to invasive pest species, erosion, climate change and bushfires.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
Mr Meddick	Mr Melham
	Ms Bath
	Dr Bach
	Mr Grimley

The question was negated.

Dr Ratnam moved, that a new recommendation be inserted at line 239 in the following terms:

Reform Victoria’s current project-by-project environmental assessment laws to ensure laws can take into account the cumulative ecological impacts of development.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
Mr Meddick	Mr Melham
	Ms Bath
	Dr Bach
	Mr Grimley

The question was negatived.

Ms Bath moved, that at line 515 the following words be inserted:

It is to be acknowledged, however, that the Country Fire Authority in their submission to the Inquiry expressed compliance with legislation from a local government point of view is problematic because it is very poorly resourced.

It is very poorly resourced, but the political will, especially at local government level, to enforce the Planning and Environment Act is often absent. [Dale Tonkinson—Biodiversity Advisor, Country Fire Authority]

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
Mr Hayes	Mr Melham
Mr Grimley	Dr Ratnam
	Mr Meddick

The question was negatived.

Ms Bath moved, that at line 521 the following words be inserted at the end of the recommendation:

In addition, staff should be efficiently and effectively deployed and any training on the guidelines for removal, destruction and lopping of native vegetation should include training on the fire risks and the risk to personal safety of such vegetation.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
Mr Hayes	Mr Melham
Mr Grimley	Dr Ratnam
	Mr Meddick

The question was negatived.

Mr Hayes moved, that a new recommendation be inserted at line 522 in the following terms:

That the Victorian Government remove the exemption enabling the removal of native vegetation without a permit or offsets on urban land 4,000 sq m² or less that is being divided for development.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Meddick	Ms Taylor
Mr Hayes	Mr Melham
Mr Grimley	Ms Bath

There being an equality of votes, the Chair gave her casting vote to the Noes.

The question was negatived.

Ms Bath moved, that a new recommendation be inserted at line 594 in the following terms:

That the Victorian Government ensures that there a full, transparent and regulated market, which operates from arms-length from government departments and NGOs such that there is no conflicts of interest between market participants in the regulation and purchasing of vegetation offsets.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes
	Mr Grimley

The question was negated.

Ms Bath moved, that at line 648 the following words be inserted:

Many stakeholders would like to see the removal of vegetation offsets. Rex Motton from the Prospectors and Mining Association of Victoria told members of the Committee at a public hearing that the association would like to see the removal of native vegetation offsets for small-scale mining because it does not seem that this is particularly appropriate.

The licence area is usually in the order of 1 to 5 hectares. So for small-scale miners who have limited funds it is fairly prohibitive to take on these really quite large environmental programs. We are quite willing to work with community groups and First Nations groups in order to get a positive outcome, but it should not be prohibitive or preventative to have such a burden, an economic burden, on such a small operation.

Mr Motton further expressed that native vegetation offsets are not necessarily directly benefiting the area that is impacted. Sharing these concerns are the South Gippsland Conservation Society Inc. who stated that:

Mostly it is local governments that administer it, and they do not have the capacity to be entirely focused on front-end paperwork and just have no interest in long-term compliance. Really it is designed to boost the liquidity and reduce the cost of clearing permits for developers. By design the net gains scheme inevitably leads to net loss. Adding to this is just the poor administration of the scheme.

The Committee Divided.**The question was put.**

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
Mr Hayes	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Grimley

The question was negated.

Mr Hayes moved, that at line 668 the following words in a new bullet point be inserted: 'Offsets should only be used as a last resort'.

The Committee Divided.**The question was put.**

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed to.

Dr Ratnam moved, That at line 826 the Finding be amended in the following terms:

Implementation of the recommendations made by the Independent review of the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) would contribute to halting ecosystem decline in Victoria.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
	Mr Melham
	Ms Bath
	Dr Bach
	Mr Meddick
	Mr Grimley

The question was negatived.

Mr Hayes moved, that at line 827 the word ‘will’ be deleted and replaced with the words ‘is necessary to’.

The Committee Divided.

The question was put.

Ayes	Noes
Mr Hayes	Ms Terpstra
Dr Ratnam	Ms Taylor
Mr Meddick	Mr Melham
	Ms Bath
	Dr Bach
	Mr Grimley

The question was negatived.

Dr Ratnam moved, that at line 1087 the words ‘consider funding’ be deleted and replaced with the word ‘fund’.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
Ms Bath	Mr Melham
Dr Bach	Mr Meddick

There being an equality of votes, the Chair gave her casting vote to the Noes.

The question was negatived.

Ms Bath moved, that at line 1091 the following words be inserted:

Any initiatives to protect and restore remnant grassland on private land should ensure that the landowner is adequately compensated for costs of delivering ‘public good’ conservation of ecosystems.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
Mr Hayes	Mr Melham
	Dr Ratnam
	Mr Meddick

The question was negatived.

Ms Bath moved, that at line 1098 the following words be inserted:

Ensuring that the funding is adequate to cover the costs incurred by private landowners of delivering the ‘public good’ conservation and also for the ‘opportunity costs’ they incur as a result of any restricted land use.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes

The question was negatived.

Dr Ratnam moved, that at line 1124 the recommendation be amended in the following terms:

The Victorian Government must work with Traditional Owners, environmental groups and the broader community to undertake the restoration and promotion of the grassland reserves' unique biodiversity assets.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
Mr Meddick	Mr Melham
	Ms Bath
	Dr Bach

The question was negatived.

Ms Bath moved, that at line 1136 the following words be inserted:

VicForests explained that 94% of the forest estate is in either land reserves or unavailable or productive forests, leaving only 6% available for harvesting on a rotational basis.

The total amount in our model that is available to us is about 417 000 hectares out of the 7.5 million hectares. That is not going to be harvested; that is just the total gross amount that is available to VicForests for even consideration of harvesting.

The proportion of the state forest that is harvested annually is 0.04 per cent of the forested areas, and that dot on the map is an actually statistically accurate representation of the amount of forest that is harvested on an annual basis. [Monique Dawson—VicForests]

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes

The question was negatived.

Ms Bath moved, that at line 1163 the following words be inserted:

Regional forest agreements are the means, or have been the means, to bolster protections for Victoria's unique forest biodiversity and threatened species, and they govern commercial forestry on public and private lands. Victoria's forests are mostly multiple use, as I have said, and that includes timber harvesting activities. You have heard previously from other witnesses that 0.04 per cent of trees are harvested and all coops are regenerated. 0.04 per cent is equivalent to four trees in 10 000, just to put that into context.

Victoria has increased its reserve area by 77 per cent. That is the area down here. Overall it is the only jurisdiction to have increased its total public land estate over the period of time since RFAs commenced. During that same time period Victoria also reduced the net native timber harvestable area by 54.5 per cent and log take declined by 62 per cent.

But Victoria's forestry plan is ill-conceived. Native trees take many decades to reach harvestable age—an 11-year time frame from 2019 and nine years from now leaves a gap of many decades, even if a native timber plantation estate was in existence, which it is not. Eighty-two per cent of public land has forest cover, while 10 per cent of private land also has forest cover. That amounts to around 1.5million hectares. The bars there are the forest cover—green for the public land and red for the private land—and the percentage is shown in the lines.

Following the modernisation of Victorian RFAs earlier this year, the Institute of Foresters of Australia felt that the Victorian Government should now:

- Ensure the responsible agencies (i.e. DELWP and DJPR) and State-owned enterprises (i.e. VicForests), are fully supported in their mandates to manage public native forests in accordance with these renewed agreements, which are designed to facilitate ecosystem and species protection, restoration and recovery in Victoria, in the context of climate change impacts; and
- Consider further the scope to extend these agreements (or the policy principles they represent) to ensure a longer-term view is applied to active management of public native forests across Victoria.

In their submission to the Inquiry, they called on the State government to reverse the decision to phase-out timber harvesting in native State forests on the basis that it will not guarantee protection of biodiversity, and will be more likely to counter-productively foster a significant reduction in active, adaptive and accountable forest management across public land, especially in relation to fire.

Additionally, they call upon the Victoria Government to promote, foster and support responsible agencies and State-owned enterprises to ensure there is active, adaptive and accountable forest management across public land tenures, principally to address the broader threats of wildfires, invasive species and climate change.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes

The question was negatived.

Ms Bath moved, that at line 1186 the following words be inserted:

The Victorian Forest Products Association stated that Victoria has increased its reserve area by 77 per cent.

Overall it is the only jurisdiction to have increased its total public land estate over the period of time since RFAs commenced. During that same time period Victoria also reduced the net native timber harvestable area by 54.5% and log take declined by 62%. [Deb Kerr, Victorian Forest Products Association]

During a public hearing, the Victorian Forest Products Association informed the Committee that the biodiversity in forest coupes is well known because it is surveyed. Concerns were expressed, however, for the rest of the public land estate.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes

The question was negatived.

Ms Bath moved, that at line 1385 the following words be inserted:

Ms Dawson stated that VicForests map all of the areas of forest by the characteristics of that forest area using LiDATA. VicForests are then able to overlay this data with where possums are found.

What we can say is that these detections show that there is a high correlation between a Leadbeater’s possum being in an area of the forest that has good mid-storey connectivity—not tall trees, mid-storey connectivity—and that there is a low correlation with old tall forests. [Monique Dawson—VicForests]

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes

The question was negated.

Ms Bath moved, that at line 1463 the recommendation be deleted and replaced with the following words:

The Victorian Government establish a framework for active and adaptive forest management practice across Victoria’s public forest estate using appropriate monitoring and data in national parks and reserves and landscape scale management of vulnerable and threatened species. The framework must define a baseline ecosystem benchmark against which comparisons can be made to meaningfully assess ecosystem decline in relation to forests and woodlands.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes

The question was negated.

Ms Bath moved, that at line 1467 the heading be amended to read: 'Forestry and the Environment'.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes

The question was negatived.

Ms Bath moved, that at line 1513 the word 'denied' is deleted and replaced by the words 'rejected claims'.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Dr Ratnam
Ms Terpstra	
Ms Taylor	
Mr Melham	
Dr Bach	
Mr Meddick	
Mr Hayes	

The question was agreed.

Ms Bath moved, that at line 1521 the following words be inserted:

The Committee heard at a public hearing that VicForests have committed considerable resources that focus on Leadbeater's possum surveys. These are only conducted in Ash type forests. Ms Monique Dawson stated that they have also been detected in forest recently affected by fire; despite the current understanding that the species generally do not occupy habitat in areas recently affected by fire.

Monique Dawson from VicForests further confirmed:

We have a very substantial monitoring and evaluation program. So we go back in after we have harvested and we confirm the persistence of threatened species in the coupes that we operate in. We are getting very good results from those post-harvest surveys.

We also have over time been substantially funded by the state government to participate in developing better science around the Leadbeater's possum. So a lot of the money that we receive from the state government is so that we can participate in the Leadbeater's possum conservation effort. Now, I am very proud to be able to provide this committee with the hot-off-the-press results of that analysis. We can now map all of the areas of forest by the characteristics of that forest area using LiDAR data, and we have then overlaid that with where possums are found.

Mr Bill Paul from VicForests further confirmed the practices implemented in terms of identifying threatened species in timber coupes:

We have scientists, as we said, in the business and we utilise them to train our staff to identify those habitat values. But it is our field forestry staff who in most cases are qualified with tertiary qualifications as well, and they are out assessing those areas, identifying the habitat values and marking out and then supervising the operations to ensure they comply with the requirements we have set up.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes

The question was negatived.

Ms Bath moved, that at line 1566 the words 'Moreover, Professor Lindenmeyer' are deleted and replaced by the words 'However, Professor Lindenmeyer' and the following words be inserted:

Ms Dawson reiterated VicForest's findings, as derived from LiDATA mapping, which confirms that Leadbeater's possums are not found in old tall forests.

It makes sense because the mid-storey provides forage, so it is the food that the possums need, and so that is where you would find them. And fire has a stronger impact on that mid-storey and Leadbeater presence than harvesting.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes

The question was negatived.

Ms Bath moved, that at line 1572 the following words be inserted:

Study co-author Professor Rodney Keenan, from the University of Melbourne, says:

Some argued that the severity and frequency of these fires were made worse by logging and associated forest management and that harvesting in native forests should cease to reduce fire risk. Little evidence from those fires has been presented to support these contentions.

Their new analysis, he says, indicates ‘that the extent and severity of these fires was largely determined by three years of well-below-average rainfall, leading to dry fuels across all vegetation types, extreme fire weather conditions, and local topography’. [<https://cosmosmagazine.com/earth/climate/bushfire-experts-clash-over-logging-impacts>]

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes

The question was negatived.

Ms Bath moved, that at line 1587 the following words be inserted:

In their submission to the Inquiry, Forest & Wood Communities Australia stated that:

The government has not been successful in forest management as evidenced by the increasing threat of fire and the intensity of fire when it occurs due to its failure to control fuel loads in unmanaged forests.

Their submission further noted University of Melbourne academic Patrick Baker's June 2020 report which stated that fire is the greatest threat to Victoria's ecosystems, not logging.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes

The question was negated.

Ms Bath moved, that at line 1621 the following words be inserted:

New Heading: Native Timber Industry Expertise in Bushfire Mitigation

Acknowledging the industry's broader role in contributing to fire suppression, Ms Monique Dawson from VicForests acknowledged the critical role that forestry workers play in being part of the firefighting force.

She stated that the industry is not just about plantation forests; they are active community members. In times of need, like particularly fires and post fires, they play an important role in being part of the firefighting force, but also in assisting in opening roads that might have been closed through timber or removing burnt timber from the roadside so it makes it safe for the passage of vehicles. So that is a workforce that will be largely lost if the native timber forestry is closed down.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes

The question was negated.

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Ms Bath moved, that at line 1747 the following words be inserted:

6.5.2 Victorian Forestry Plan

While other reputable scientists find considerable fault with the Victorian Forestry Plan.

The Institute of Forestry Association, in describing their qualifications, proposed opposition to the flawed plan.

As described in our introductory statement, the IFA/AFG is an independent professional association of forest scientists, managers and growers operating in all aspects of forest and natural resource management throughout Australia and across all land tenures. It is important to clarify that the IFA/AFG is not an industry association. Our purpose is to promote credible science-based discourse and respectful discussion around forest issues.

The IFA/AFG challenges these tenets, based on the following points:

- i. The VFP is premised on a debatable view that sustainable native forest timber harvesting is one of the major threats to bushfire management and wildlife protection across Victorian landscapes.

Timber harvesting is not the major threat to bushfire management and wildlife protection.

The IFA/AFG does not agree with the argument that the cessation of native forest timber harvesting will remove a major threat to Victoria's forests, nor will it meaningfully benefit bushfire management or wildlife protection.

It is now well established that the major threats to forest ecosystems in Victoria are:

- Large scale, high intensity bushfires (refer for example, Nitschke et al, 2020), which are occurring at increased frequencies due to climate change;
- introduced feral pest animals (e.g. cats, foxes and deer) and plants (e.g. myrtle rust); and
- a historical legacy of extensive clearing of forests for agriculture as well as ongoing impacts of urban expansion.

The impact of these factors on forest ecosystems is evident across all public land tenures, including in national parks and other conservation reserves that have been subject to minimal direct human disturbance. This is evident from Victoria's State of the Forests reports. Ceasing native forest timber harvesting will not assist in mitigating declines caused by these major landscape-scale threats.

For example, over the past 20 years, Victoria has seen multiple large-scale bushfires that have burnt extensive areas of all public native forest tenures—notably in 2003, 2006/07, the Black Saturday bushfires of 2009, and most recently the catastrophic bushfires of the 2019/20 summer. The increasing extent and occurrence of bushfire disasters in south-eastern Australia indicates that current fire management regimes (focussed principally on suppression, more so than mitigation through land management), will not allow the full range of ecosystem processes and biodiversity to be sustained, nor reduce to an acceptable level the impact of bushfires on human lives and property.

Furthermore, we note that native forest timber harvesting currently occurs in a small proportion of Victoria’s public land estate—the area of State forest harvested on an annual basis in recent years equates to approximately 0.04% of forests on public land.

In this context, we contend the cessation of native forest timber harvesting—in a small proportion of public lands—will not, in and of itself, provide improved outcomes for bushfire management and wildlife protection. There are significantly larger threats to these values that will continue to have an impact on native forests across public and private land tenures across the state.

- ii. By adopting the VFP in its current format, Victoria will forego the opportunity to transform to different forms of sustainable timber harvesting in native forests, which could realise a range of benefits that would be complementary to a plantation industry and increase resilience to future climate change and bushfire risks. This includes opportunities for Traditional Owners to implement traditional management practices and develop new types of businesses based on their natural resources and drive.

Active management in native forests is needed to provide multiple benefits for society.

Active management of native forests is required to address ecosystem declines and has the potential to provide multiple benefits for society, and in particular Traditional Owners. The IFA/AFG is concerned that the VFP will lead to foregoing these benefits and result in potentially adverse forest management outcomes over the longer term.

The Intergovernmental Panel on Climate Change (IPCC) has noted previously that: ‘In the long term, a sustainable forest management strategy aimed at maintaining or increasing forest carbon stocks, while producing an annual sustained yield of timber, fibre or energy from the forest, will generate the largest sustained mitigation benefit’.

Supporting this, current research suggests that one of the most effective tools we could utilise to combat the negative effects of climate change on forests is restoration silviculture, including forest thinning and selective harvest. For example, these approaches can expedite the recruitment of large trees across the landscape, minimise tree mortality during bushfires and mitigate negative effects of pests and diseases, to name a few.

- iii. The VFP may lead to a reduction in the number of skilled persons working in native forests, reducing capacity to manage increased risks of bushfire under climate change and adapt using science-based silvicultural (forest management) techniques.

The VFP is expected to reduce the number of skilled persons working in public native forests.

Regardless of whether native forest timber harvesting continues, native forests will require targeted active and adaptive management to address ecosystem declines and build resilience to threats from climate change, bushfires and invasive species. The VFP does not address the issue of where the required skills and resources will come from to manage these threats into the future.

For example, it is not well appreciated how maintaining a strong native forest timber industry is integral to maintaining effective fire management across forested landscapes and reducing the risks of catastrophic impacts on forest values and society. Experienced forest managers and timber harvesting crews working in native forest have the skills and familiarity to use the plant and equipment required to confidently mount rapid and aggressive first attack on any fire outbreaks.

The 2019/20 summer has highlighted the increasing threat of forest bushfires in Australia. Over the last 25 years, there has been a reduction in the number of experienced forest managers and timber harvesting crews working in native forest with the skills and capacity to use the plant and equipment required to confidently mount rapid and aggressive first attack on any fire outbreaks.

- iv. There are significant limitations on the further development of Victoria's plantation estate; notably the challenges of procuring large areas of suitable, arable land within designated hubs; challenges of meeting investor return requirements from greenfield plantations; and, the long rotation periods (indicatively 30–50+ years) required to replace native forest timbers.
- v. The VFP is unlikely to change Victorian consumer demand for hardwood timber products. It will simply lead Victoria to becoming increasingly reliant on imports and in doing so, shift responsibility for sustainable forest management to other jurisdictions over which Victoria will have little to no influence.

Demand for timber is increasing and consumers still prefer locally grown timber over alternatives.

Locally grown timber is a renewable, carbon neutral resource. The lack of local supply of native forest timbers resulting from the VFP will lead to increased reliance on substitution with alternative products (including fossil fuel intensive alternatives such as aluminium, concrete and steel, and coal or petroleum-based fuels), or timber and wood fibre imports, often from developing countries whose forests are not managed to the same high environmental standard as in Australia.

Market research by Pollinate reveals more of the story (summarised in Fig. 1), which shows that consumers are comfortable with timber harvesting if they know the trees are replaced, and clearly disagree that importing more timber is preferable to sourcing trees locally. (see graph below).

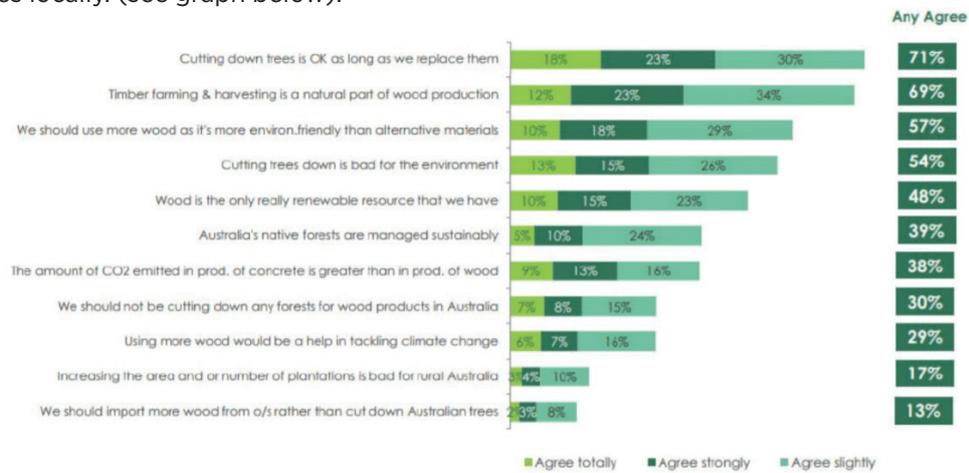


Fig 1 Summary of market research of consumer preferences for wood and perceptions of timber harvesting (Pollinate, 2014)

As scientists representing the forestry profession, we do advocate. We advocate for good science, good solutions and good outcomes for forests across Australia. We advocate for active and adaptive land management across all land tenures (national parks, State forests and private forests). We consider that Australia’s forests, if managed well, have the capacity to support all forest values including biodiversity, conservation, water, carbon and social and commercial interests. We also believe that the future of forest management should include two-way capacity building with Traditional Owners.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes
	Mr Grimley

The question was negated.

Ms Bath moved, that at line 1826 the paragraph be deleted and replaced by the words:

The Committee notes the definition of ‘old growth’ has been used in agreements covering the regulation of forests, including in Regional Forest Agreements and to change the definition would be breaking long established agreements.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes
	Mr Grimley

The question was negatived.

Mr Hayes moved, that a new recommendation be inserted at line 1834 in the following terms:

The Victorian Government should bring forward a plan to end native forest logging by 2030 and immediately start the transition to a pulp and timber industry which is not reliant on native forests.

The Committee Divided.

The question was put.

Ayes	Noes
Mr Hayes	Ms Terpstra
Dr Ratnam	Ms Taylor
	Mr Melham
	Ms Bath
	Mr Meddick
	Mr Grimley

The question was negatived.

Ms Bath moved, that at line 1872 the following words be inserted:

A number of inquiry participants acknowledged the disadvantages of transitioning to plantation based timber noting that replacing 1 million m³ currently supplied from native forest, requires ca 70-140,000 gross ha and an investment of \$1 to \$1.5 billion in land and plantation costs over ca 30 years. [John Cameron]

It was considered that this investment is unlikely to be completed and the 'Forestry Plan' will result in the use of more imports with high 'timber miles' or less sustainable building materials and further adverse socioeconomic impacts for Victorian 'timber towns'.

From a point of view of moving away from native timber harvesting, the big question becomes around a lot of the plantations, hardwood plantations, if we are, say, concerned about keeping some of these local communities going and the mills that produce sawlogs, take sawlogs to produce high-end furniture products and so forth, you know, if we wanted to keep those mills going, we would need to be thinking about a very different plantation model of forestry from what we have right now. I mean, yes, maybe they could switch to pine, but then that would be millions of dollars in investments into those mills to have them transition. Also a major investment would be needed to transition to higher end technology to cut smaller pieces of wood. But there is also the time frame. The exit plan is 10 years, if I recall, or probably less than that now. [Dr Nitschke—School of Ecosystem & Forest Sciences—University of Melbourne]

There were two aspects of the government's announcement. The first was that timber harvesting would cease in old-growth forests from the time of the announcement, but we had already ceased harvesting in old-growth forests some six months in advance of that announcement. The second aspect of the policy is that there will be no harvesting at all in state forests from 2030. [Monique Dawson—VicForests]

It is not commercially viable to have a hardwood plantation to produce a sawlog because capital—plantation companies are not going to put trees in the ground and wait for 120 years to get a return on that investment. So hardwood forests—generally the economics of it only work for a pulp log because you can produce that at a much earlier age, and so you get that return on investment.

Plantation forests are softwood, predominantly, and they are produced for a product which is a lighter, softer product that is used for different applications to the applications for hardwood. [Monique Dawson—VicForests]

It is not valid for us to say, 'Well, perhaps they can be fully utilised by the plantation sector'. That is also not going to be realistic, because the plantation estate has been static for quite some now and the economic drivers to expand the plantation estate are just not there. It is competing with higher value land uses, like dairy in Gippsland and cropping in south-western Victoria and other areas. So it just does not make it a viable option to say, 'Well, okay, let's expand the pine plantations and the blue gum plantations'. [Deb Kerr—Victorian Forest Products Association]

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes

The question was negatived.

Ms Bath moved, that at line 1874 the word ‘some’ is deleted and replaced by the word ‘many’ and that at line 1874 the following words be inserted:

The Victorian Labor Government’s announcement last year that it would phase out the native timber industry from 2020, with a full shutdown by 2030, means there will be even further timber reductions between now and 2030. These reductions will have a devastating impact on Victoria’s hardwood timber industry, as native forestry industry in Victoria is already at the point where it cannot sustain any further reduction in production forest. Further reductions will mean significant job losses even before the Victorian Government’s 2030 deadline. [Ross Hampton, Australian Forest Products Association]

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes
	Mr Grimley

The question was negatived.

Ms Bath moved, that at paragraph at line 1922 is deleted and replaced by the words:

The Committee recognises the Victorian Forestry Plan polarises opinion, however, leading scientists and industry experts identify that Victoria has insufficient hardwood plantation volume to replace the hardwood native industry by 2030.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes
	Mr Grimley

The question was negated.

Dr Ratnam moved, that at line 1925 the finding is deleted and replaced by the new finding in the following terms:

Native forest logging is contributing to ecosystem decline by fragmenting forest ecosystems and reducing habitat, reducing diversity and habitat values, e.g. hollow-bearing trees, causing large scale soil disturbance, erosion and weeds, increasing fire frequency and severity and negatively impacting water quality.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
Mr Meddick	Mr Melham
	Ms Bath
	Dr Bach
	Mr Grimley

The question was negated.

Ms Bath moved, that a new finding be inserted at line 1926 in the following terms:

The Victorian Forestry Plan is flawed and will not deliver the environmental outcomes it purports nor ensure sufficient wood volume to accommodate the loss of Victoria's sustainable native timber industry.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes
	Mr Grimley

The question was negated.

Mr Hayes moved, that a new recommendation be inserted at line 1928 in the following terms:

The Victorian Forestry Plan should support the urgent transition of the forestry industry to a more environmentally sustainable based supply

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
Mr Meddick	Mr Melham
	Ms Bath
	Dr Bach
	Mr Grimley

The question was negated.

Dr Ratnam moved, that a new recommendation be inserted at line 1929 in the following terms:

In light of the catastrophic impacts of the 2019/20 bushfires, the Victorian Government should bring forward the Victorian Forestry Plan to cease native forest logging in Victoria by 2024.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
Mr Meddick	Mr Melham
	Ms Bath
	Dr Bach
	Mr Grimley

The question was negatived.

Chapter 7

Mr Meddick moved, that at line 82 the following words be inserted after the words Human impacts 'woodlands':

Hunting of wildlife, including recreational killing of otherwise protected species impacts native animal populations, both target and non-target, as well as surrounding habitats.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Dr Ratnam moved, that a new finding be inserted at line 89 in the following terms:

Key threats to native species in Victoria include climate change, changes to fire frequency and intensity, invasive species, land clearing and changes to rivers, wetland and floodplains

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Dr Ratnam moved, that a new finding be inserted at line x in the following terms:

It is crucial to prevent further decline in native species—not just for individual species themselves, but for the vast array of ecosystems services they provide.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Ms Bath moved, that at line 454 the following words be inserted:

Professor Brendan Wintle, Professor of Conservation Ecology, University of Melbourne noted the importance of adopting landscape-scale coordination and the oversight.

He stated:

A lot of the activities we do have to happen at a landscape scale, but the focus on what that means for this species and that species is what allows us to connect this to the public interest.

He stated:

We have to manage the whole landscape, and if you just focus on species you'll keep losing them; you've got to change practices at a landscape scale.

He further stated:

We just do not spend enough money on sophisticated programs to track changes in species abundance across the landscapes.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
Mr Hayes	Mr Melham
Mr Grimley	Dr Ratnam
	Mr Meddick

The question was negatived.

Dr Ratnam moved, that the finding at line 455 be amended to read:

Only a small proportion of Action Statements for threatened species and communities and potentially threatening processes are in place, despite these being a mandatory requirement under the *Flora and Fauna Guarantee Act 1988* (Vic). Further, even where action statements are in place, they are rarely implemented, monitored or reported on. Lack of adequate funding is a key reason for this.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
Mr Meddick	Mr Melham
	Ms Bath
	Dr Bach
	Mr Grimley

The question was negated.

Dr Ratnam moved, that a new recommendation be inserted at line 458 in the following terms:

That the Victorian Government ensure, as a matter of urgency, that all threatened species and communities and potentially threatening processes listed under the *Flora and Fauna Guarantee Act 1988* (Vic) have Action Statements in place within one year and that significant new funding is allocated to their implementation. An action plan which identifies priority Action Statements should be developed to facilitate this process.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
Mr Meddick	Mr Melham
	Ms Bath
	Dr Bach
	Mr Grimley

The question was negated.

Ms Bath moved, that at line 458 after the words 'to facilitate the process' the words 'and any extra funding should only be provided after a review of how to improve the efficiency, effectiveness and deliverable outcomes within the current model of funding' be inserted.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes
	Mr Grimley

The question was negated.

Ms Bath moved, that at line 473 the words 'That the Department of Environment, Land, Water and Planning undertake regular assessment and revision of the conservation status of species listed under the *Flora and Fauna Guarantee Act 1988* (Vic) to ensure that species population changes are monitored, and the most appropriate conservation status is recommended' are deleted and replaced by the words 'The Department of Environment, Land, Water and Planning conservation management of threatened species should be on a landscape wide assessment strategy.'

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes
	Mr Grimley

The question was negated.

Ms Bath moved, that at line 626 the recommendation be amended to read:

The Victorian Government ensures the Flora and Fauna Guarantee Act only permits the relevant Minister to make a declaration of critical habitat.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes
	Mr Grimley

The question was negatived.

Ms Bath moved, that at line 643 the following words be inserted at the end of the recommendation:

That the ‘resourcing’ of the *Flora and Fauna Guarantee Act 1988* (Vic) should also include locating the staff close to ecosystems, equipped with job descriptions that are sufficiently process complete and with appropriate authority limits so that they can operate more efficiently and effectively.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
Mr Hayes	Mr Melham
Mr Grimley	Dr Ratnam
Mr Meddick	

The question was agreed.

Dr Ratnam moved, that at line x the word ‘adequate’ is deleted and replaced by the words ‘substantially increased’.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Grimley	Ms Taylor
Mr Hayes	Mr Melham
	Ms Bath
	Dr Bach
	Mr Meddick

The question was negated.

Mr Meddick moved, that at line 675 the following words be inserted:

RSPCA has suggested recreational duck shooting (which is currently permitted under the Act) be prohibited based on data provided by the aerial survey of wetland birds in eastern Australia. The survey illustrates dire conditions for native waterbirds;

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Mr Meddick moved, that a new recommendation be inserted at line 785 in the following terms:

That the Victorian Government consider, in relation to ducks and native water birds, ceasing recreational duck shooting

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
Mr Meddick	Ms Bath
	Dr Bach
	Mr Grimley

The question was negatived.

Dr Ratnam moved, that at line 831 the following words be inserted:

- Provides transparency about permits issues
- Monitors and publicly reports on the execution of permits.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
Mr Meddick	Mr Melham
Mr Grimley	Ms Bath
	Dr Bach

The question was negatived.

Ms Bath moved, that the finding at line 955 be deleted.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes
	Mr Grimley

The question was negatived.

Mr Hayes moved, that at line 1370 the words ‘consider significantly increasing’ are deleted and replaced by the words ‘should significantly increase’.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
Mr Meddick	Mr Melham
Mr Grimley	Ms Bath
	Dr Bach

The question was negatived.

Dr Ratnam moved, that a new finding be inserted at line x in the following terms:

The NSW Saving our Species program is well regarded as an example of effective policy around threatened species. Key attributes of the program include focus on individual species needs, publicly accessible information and clear monitoring and reporting on performance.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
Ms Bath	Mr Melham
Dr Bach	Mr Meddick
	Mr Grimley

The question was negatived.

Dr Ratnam moved, that the recommendation at line 1569 be amended to read:

That in delivering Biodiversity 2037, the Victorian Government review and incorporate features of New South Wales' Saving our Species program to bolster Victoria's individual species conservation efforts.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
Ms Bath	Mr Melham
Dr Bach	Mr Meddick
	Mr Grimley

The question was negatived.

Dr Ratnam moved, That the finding at line 1640 be amended to read:

Both landscape-scale and individual species approaches are important in threatened species management to ensure the best outcomes for species. However, Victoria's approach under Biodiversity 2037 favours landscape scale interventions. It involves some, but limited, individual species interventions.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
Mr Meddick	Mr Melham
	Ms Bath
	Dr Bach
	Mr Grimley

The question was negatived.

Chapter 8

Ms Bath moved, that words be inserted at line 230 in the following terms:

Many submitters stated that the major factor now impacting on the decline of Victoria’s biodiversity is intense wildfire.

Whilst many would focus on logging operations as being a major factor, the reality is that logging operations actually create disturbance and diversity in the forest which is a strength for ecosystem resilience. In addition, any negative impacts on biodiversity as a result of forest operations are infinitesimal in comparison to the impact of intense wildfire burning over hundreds of thousands of hectares of land on which fuel loads have not been managed. [Garry Squires]

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes
	Mr Grimley

The question was negated.

Dr Ratnam moved, that the following words be inserted at line 265:

Also in relation to land reservation, Dr James Fitzsimons, Director of Conservation and Science, and Director, Protect Oceans, Lands and Waters, The Nature Conservancy noted that:

The 30 per cent goal is not just our goal [of protected land]; it is what the world is probably going to go towards. So I think that it is important for Victoria to think ahead to say, 'Well, this will be a target by 2030'. We are on 17 per cent now. The spatial target is important, but it should not be the main driver. We should be looking at the scientific principles of comprehensiveness, representativeness, adequacy of the system—so again those systems that are very under-represented.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
Mr Meddick	Mr Melham
	Ms Bath
	Dr Bach
	Mr Grimley

The question was negatived.

Dr Ratnam moved, that the following words be inserted at line 339:

... the Research Centre for Future Landscapes, La Trobe University stated 'I take exception to that term, lock up and leave, because I think it misrepresents certainly the intention of park management and the way most parks should be managed, because they should be managed.' However he also made the point that active management is hampered by lack of funding for agencies including Parks Victoria.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
Mr Meddick	Mr Melham
	Ms Bath
	Dr Bach
	Mr Grimley

The question was negatived.

Dr Ratnam moved, that the following words be inserted at line 345:

The Committee however notes that the Government did not accept the recommendation to provide additional funding to Parks Victoria to manage these new parks.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
	Mr Melham
	Ms Bath
	Dr Bach
	Mr Meddick
	Mr Grimley

The question was negatived.

Dr Ratnam moved, that a new recommendation be inserted at line 345 in the following terms:

The Victorian Government should consider providing additional funding, as recommended by VEAC, to enable Parks Victoria to manage the newly created National Parks in Victoria's central west region.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

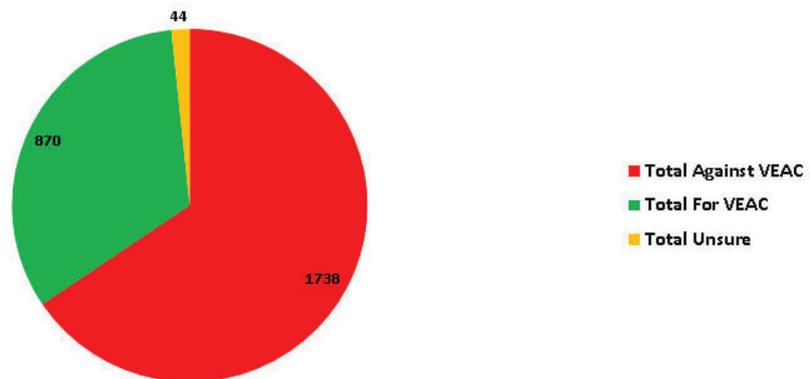
Ms Bath moved, that the following words be inserted at line 419:

Many submitters had extensive concerns about the biased nature recommendations emanating from VEAC and the lack of understanding of active management of crown land that still enables people and industry to play a positive role within the environment.

In his submission to the Inquiry, Mr David Bentley highlighted the concerns held by many public land user groups:

There was overwhelming opposition from the public to the VEAC recommendations. However, on VEAC's website 'The Summary of Submissions' fails to mention the public anger, yet this Summary will be shown to the politicians and senior bureaucrats by VEAC to justify their recommendations.

The following chart, included in Mr Bentley's submission and sourced by Stephen Smithams, shows that 66% of submissions were opposed to the VEAC recommendations:



Mr Jason Wood, Director of Silver Lining Investments Pty Ltd and Forward Prospects Pty Ltd proposes the abolishment of the Victorian Environment Assessment Council (VEAC) and dismissal of the present Central West Investigation Final Report on the grounds that it is scientifically unfounded, does not take account of the full range of issues of Ecologically Sustainable Development, or represent the genuine interests of the majority of stakeholders. The replacement of VEAC with an alternative form of governance will be discussed later in Chapter 9.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes
	Mr Grimley

The question was negatived.

Ms Bath moved, that the following words be inserted at the end of the recommendation at line 583:

Any increased funding should only be made available after a professional appraisal of how Parks Victoria can first improve efficiency and effectiveness and extra funds should only be awarded based on a rigorous ‘project plan’ that clearly demonstrates how the extra funds will deliver improved outcomes.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
Mr Grimley	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes

The question was negatived.

Mr Hayes moved, that at line 583 the words ‘consider increasing this’ are deleted and replaced by the words ‘should increase this’.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
Mr Meddick	Mr Melham
Mr Grimley	Ms Bath
	Dr Bach

The question was negatived.

Ms Bath moved, that the following words be inserted at line 811:

The licenses that we have in order to have that Crown land and those river frontages come with a whole bunch of responsibilities. Campers, who will be allowed into that land, will be sharing in those responsibilities. There has to be a really strong registration system to ensure that where there is a need for compliance and enforcement we actually have an adequate tool to be able to do so. [Emma Germano, VFF]

Sharing these concerns were Friends of the Barwon who stated:

We have serious concerns about the new regulations regarding camping on Crown land, and we would in fact be urging farmers to change their leases from Crown grazing leases to riparian management leases, which basically takes away the ability to access those areas in sensitive areas. We know that there are very many sensible fishermen, but there is a fairly big rump that do the wrong thing. We have seen fires from camp fires that have been lit, we have seen trees that have been cut down—all against the spirit of the legislation or what should be done. And I speak as a fisherman of many years, but unfortunately there is a group that does the wrong thing and there are certainly serious concerns. Many farmers have expressed the same thing. [Mr Trevor Hodson—Friends of the Barwon]

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
Mr Hayes	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Grimley

The question was negated.

Mr Hayes moved, that at line 1080 the words ‘consider enhanced’ are deleted and replaced by the word ‘enhances’.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
	Mr Melham
	Ms Bath
	Dr Bach
	Mr Meddick
	Mr Grimley

The question was negated.

Dr Ratnam moved, that at line 1081 the word ‘consider’ is deleted and replaced by the words ‘That the Victorian Government support and fund Trust for nature’.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
	Mr Melham
	Ms Bath
	Dr Bach
	Mr Meddick
	Mr Grimley

The question was negated.

Ms Bath moved, that at line 1105 the following words be inserted:

Provided private landowners are willing participants in new programs.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes
	Mr Grimley

The question was negatived.

Ms Bath moved, that at line 1575 the following words be inserted:

At a public hearing, Mr John Cameron contributed to the causes of environmental damage caused by bushfires. He stated that:

It is fire intensity that kills and it is fire intensity that damages the environment. And that is related more to the fuel level than it is to climate or weather.

In relation to fuel levels Mr Cameron suggested that:

If you keep the fuel levels below about 10 tonnes per hectare you will have relatively low fire intensities, but if you let the fuel levels get above that then you can have difficulty suppressing bushfires.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes
	Mr Grimley

The question was negatived.

Ms Bath moved, that at line 1579 the following words be inserted:

The government's Safer Together policy commits to holistically measuring the impact of burn and non-burn risk treatments across public and private land by the end of 2020. DELWP and its partner agencies are not on track to meet this commitment.

While DELWP has some projects underway to work towards this, it has now been five years since IGEM first recommended this approach. DELWP advised us that it will develop the capability to measure the impact of both burn and non-burn treatments by late 2021.

The Victorian Auditor General's report into Reducing Bushfire Risk reveals the Victorian Government has over the past five years not even reached half (43%) of its arguably already low fuel reduction burn target.

The independent report showed that not anywhere near enough fuel reduction burning is taking place, which was a major contributing factor in 2019/10 bushfires.

The Victorian Government has set itself a target of reducing the fire risk to 70% of what the risk would normally be if left untreated, and states that to achieve this it must treat between 200,000 and 270,000 ha annually.

However, the VAGO report states the Government has been treating an average of 86,744 ha over past years, just 43% of the lower level of its own target.

The Auditor General also reported:

- Fuel management reduces the intensity of fires and makes them easier for firefighters to control.
- The Government has not recorded the reasons its targets are not met and why planned burns are not completed.
- The Government has a key role in reducing the risk bushfires pose to people, property and the environment.
- The Government does not clearly demonstrate the impact of its planned burns (positive or negative) on the environment and ecosystems.
- Limited assessments occur after the planned burns it does complete, impacting the Government's ability to assess how quickly fuel re-accumulates.
- The Government reports the number of ecosystem resilience assessments it conducts, but not the results or outcomes of these assessments.

Finding XX: The Victorian Government through Safer Together has failed to meet burn targets.

Recommendation XX: That the Victorian Government abandon its 'Safer Together' policy and adopt Recommendation 56 of the 2009 Victoria Bushfires Royal Commission, incorporating increasing application of Traditional Owners forest fire management practices, where appropriate.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
Mr Hayes	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Grimley

The question was negatived.

Dr Ratnam moved, that at line 1812 the following words be inserted:

Evidence from BirdLife Australia highlighted that planned burning activities can have an adverse impact on ecosystems and threatened species:

And whilst it is great that the Victorian government is working with BirdLife on many of those recovery projects for those species, the logging of native forests and poorly planned prescribed burns are undermining some of that great work. Just for an example, BirdLife recently stepped in to prevent planned burns of she-oak refugees in East Gippsland, which are critical for the survival of glossy blacks, which were impacted by the fires.

Further, evidence from Friends of Bats and Habitat Gippsland highlighted the ecological risks of planned burning:

Gippsland accounts for the largest area of planned burns, with over 800 000 hectares or 39 per cent of the total area. We have grave concerns that precious unburnt forest is being damaged by planned burns, by roadside clearing for planned burns and by logging. The cabbage tree palms flora reserve is the site of a 2000-hectare planned burn. This is a refuge for threatened species, and it is an old, historic flying fox colony.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
Mr Meddick	Mr Melham
	Ms Bath
	Dr Bach
	Mr Grimley

The question was negatived.

Dr Ratnam moved, that a new finding be inserted at line 1828 in the following terms:

Poorly managed planned burning, particularly where on ground biodiversity assessments have not been conducted, can have significant negative impacts for native species.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
Mr Meddick	Mr Melham
	Ms Bath
	Dr Bach
	Mr Grimley

The question was negatived.

Ms Bath moved, that a new recommendation be inserted at line 1908 in the following terms:

Traditional Owners' forest fire management practices should be fostered and reintroduced, where possible, to complement existing prescribed burning programs.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes
	Mr Grimley

The question was negatived.

Chapter 9

Ms Bath moved, that at line 49 the following words be inserted:

In his submission to the Committee Mr Jason Wood, Director of Silver Linings Pty Ltd and Forward Prospects Pty Ltd, proposed the abolishment of the Victorian Environmental Assessment Council (VEAC) on the basis that it is scientifically unfounded, does not take account of the full range of issues of Ecologically Sustainable Development and that fails to represent the genuine interests of the majority of stakeholders.

As an alternative form of governance he suggested the creation of a new Victorian Public Land use Commission (VPLUC) to look at land categories in a similar way to the first peoples which placed humans at the centre of land use, partitioned the landscape into actively managed ecological mosaics with a specific purpose for each area and which integrated ecological enhancement and sustainability into the planned use of that land:

Abolish the VEAC and dismiss the Central West Investigation Final Report on the grounds that it does not represent the genuine interests of the majority of stakeholders. [Jason Wood]

A far more desirable and effective system would mandate the involvement in a truly independent Land use Commission that encompasses the principles of integrative ecology and ecologically sustainable development. [Jason Wood]

What we need is a range of areas of expertise that are not attached to stakeholders or portfolios so that it is a more central meeting place for discussion about how a project could proceed, what projects are valid. And all we need is a checklist based on the National Strategy for Ecologically Sustainable Development and each project can be assessed on the merits of that checklist and even on a competitive basis, whether they are commercial or government projects. [Jason Wood]

The replacement of VEAC with a PLUC would ensure that humans are placed at the centre of land use and operate independently from any ministerial portfolio. Furthermore, it would draw heavily on the National Strategy for Ecologically Sustainable Development (NSES D) with guiding principles of governance. The landscape would then be segmented into actively managed ecological mosaics with a specific purpose for each area.

The advantages of a VPLUC were highlighted by Mr Wood in his submission to the Inquiry:

- To provide a cooperative effort between conservation, industry, government and the population to effectively 'terraform' Australia's landscape back to the mosaic based overlays developed by the First Peoples.
- To provide a separate, impartial, independent and permanent commission charged with the sole purpose of determining a more balanced and distributed use of land in keeping with the principles of Integrative Ecology across the whole of government.

- Industry and the general public, as both users of land and the source for funding for sustainability must have input and full transparency on the Commission.
- Innovation should be the driver of the Commission's activities.
- The National Strategy for Ecologically Sustainable Development provides the perfect backdrop for land use law reform and should be used as the foundation document to guide the charter of the Commission.

Recommendation: That the Victorian Government abolishes the Victorian Environmental Assessment Council and replaces it with the creation of the Victorian Public Land Use Commission, designed to operate independently of any particular ministerial portfolio and with political and legal integrity built into its structure.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes
	Mr Grimley

The question was negatived.

Dr Ratnam moved, that at line 227 the words 'consider the establishment of' are deleted and replaced by the words 'establish'.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
	Mr Melham
	Ms Bath
	Dr Bach
	Mr Meddick
	Mr Grimley

The question was negatived.

Dr Ratnam moved, that at line 265 the following words be deleted:

However, it considers that the Victorian Government’s focus at this time should remain on effective funding and implementation of Biodiversity 2037 as well as ensuring strong partnerships between existing agencies.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
	Mr Melham
	Ms Bath
	Dr Bach
	Mr Meddick
	Mr Grimley

The question was negated.

Mr Hayes moved, that a new recommendation be inserted at line 271 in the following terms:

There should be a stand-alone Department for the Environment with its own Minister with the sole purpose of protecting the environment and in particular, native species.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
Ms Bath	Mr Melham
Dr Bach	Mr Grimley
Mr Meddick	

The question was agreed.

Mr Hayes moved, that at line 384 the following words be inserted at the end of the recommendation:

Public authorities are required to comply with the provisions of the FFG Act, rather than simply consider them.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
Mr Meddick	Ms Bath
Mr Grimley	Dr Bach

There being an equality of votes, the Chair gave her casting vote to the Noes.

The question was negatived.

Dr Ratnam moved, that at line x² the words ‘That the Victorian Government investigate mechanisms for ensuring whole-of-government training on ecological literacy’ are deleted and replaced by the words ‘That the Victorian Government investigate and implement whole of Government training on ecological literacy for all Victorian public servants’.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

2 Where a line number is not specified, any agreed amendment is placed at the appropriate location by agreement.

Ms Bath moved, that a new recommendation be inserted at line 508 in the following terms:

The Victorian Auditor General’s Office (VAGO) should continue to conduct regular audits of the overall performance of government agencies against all measures of efficiency and effectiveness, not just environmental outcomes.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes
	Mr Grimley

The question was negatived.

Mr Hayes moved, that at line 512 the words ‘This role could potentially be facilitated through the Victorian AuditorGeneral’s Office’ are deleted and replaced by the words ‘This role should be established as a function of the Auditor General’s Office’.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
	Mr Melham
	Ms Bath
	Dr Bach
	Mr Meddick
	Mr Grimley

The question was negatived.

Ms Bath moved, that at line 611 the following words be inserted:

Implementation of the recommendations should occur after consideration of the economic, social and environmental impacts in addition to Parliamentary scrutiny of the efficiency and effectiveness of such recommendations.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes
	Mr Grimley

The question was negatived.

Ms Bath moved, that at line 638 the following words be inserted:

The Committee recognises the enormity of the requirement of active management, habitat preservation and restoration of country and notes the importance of co-management of the landscape with traditional owners and non indigenous Australians.

We are not saying that we need to put a fence around anything or take control of anything. We very much want to do it with the state, but we want the state to do it in a genuine way that recognises a change in the balance a bit, so over time we will get more involved in more elements of it. [Mr Daniel Miller, Gunaikurnai Land and Waters Aboriginal Corporation]

I would like to say that it is too big a job for any one section of society, Aboriginal or otherwise, to handle. We need to manage the whole landscape. John said that there was not that much Aboriginal burning in the early days. Well, that was after the smallpox. But the whole point is that the whole landscape has to be managed and it is too big a job for just one section or one tenure or whatever. It has got to be across the whole landscape. [Vic Jurskis—Howitt Society]

The Gunnai/Kurnai people have what we call joint management over a number of parks and reserves within their settlement area. We consider that to be a start and a stepping stone for both us and for the state. So when we think of managing country we do not just think of those 10 parks and reserves; we think of the whole settlement and in fact even beyond the recognised settlement area, you know, because we consider it a joined up landscape. And using fire as an example—and I think it is a good one—the state have legislative responsibility around fire and forest management, and we all know and

accept that. So GLaWAC, as the traditional owner group for the Gunnai/Kurnai people, are starting to exercise their interests and what we see as rights in that space, again for the settlement area, not just for those bits of joint management. [Uncle Russell Mullet, Gunaikurnai Land and Waters Aboriginal Corporation]

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes
	Mr Grimley

The question was negated.

Dr Ratnam moved, that at line 675 the following words be inserted:

Professor Brendan Wintle stated ‘The funding for the plan, as I have just said, is about one-tenth of what we really actually need to fund, maybe a twentieth.’

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Dr Ratnam moved, that the finding at line 852 be deleted.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
Ms Bath	Mr Melham
Dr Bach	Mr Meddick
	Mr Grimley

The question was negated.

Mr Hayes moved, that at line 872 after the words 'biodiversity management', the words 'at a high level' be inserted.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
	Mr Melham
	Ms Bath
	Dr Bach
	Mr Meddick
	Mr Grimley

The question was negated.

Mr Hayes moved, that at line 1030 the words from 'comprehensively' to the end of the paragraph is deleted and replaced by the word 'removed'.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
	Mr Melham
	Ms Bath
	Dr Bach
	Mr Meddick
	Mr Grimley

The question was negated.

Mr Hayes moved, that at line 1039 in the recommendation the words ‘assess and identify’ are deleted and replaced by the words ‘and remove’.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
	Mr Melham
	Ms Bath
	Dr Bach
	Mr Meddick
	Mr Grimley

The question was negatived.

Ms Bath moved, that at line 1039 in the recommendation after ‘Victoria’ the following words be inserted:

including the management of Country, in collaboration with public and private land managers, as a matter of priority.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes
	Mr Grimley

The question was negatived.

Mr Hayes moved, that at line 1050 the following words be inserted:

after the word 'knowledge' add the words 'and representation'.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
	Mr Melham
	Ms Bath
	Dr Bach
	Mr Meddick
	Mr Grimley

The question was negatived.

Ms Bath moved, that at line 1141 the recommendation be deleted and the following words be inserted:

Local Government should not have the role of enforcement.

Stakeholders have identified the need to improve biodiversity 'outcomes' on private and public land, yet the answer is not to direct funding through another tier of government where a significant proportion will be consumed by another tier of administration across 79 Local Government Areas.

The Committee recognises weaknesses with local government and biodiversity initiatives, however any additional financial support should be for direct grants to private landowners and public land managers including local government grants. The Committee endorses that any funding should be managed in a streamlined way and directed to those who submit proposals for field projects, including LGA's that will have a demonstrated favourable impact on ecosystems.

The Liberals and Nationals believe a relevant arm of DELWP (or for some projects the Catchment Management Authorities) can lead-manage the financial support of regional biodiversity initiatives. DELWP has greater expertise than local governments and is better placed to manage long term projects than a fragmented approach involving 79 LGA's.

Recommendation 53: That the Victorian Government provide financial support in the form of direct government grants to private landholders and public land managers/ agencies, including local government. The funding should be managed in a streamlined way and directed to those who submit proposals for field projects. Applicants that will have a demonstrative favourable impact on ecosystems.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes
	Mr Grimley

The question was negated.

Chapter 10

Dr Ratnam moved, that at line 241 the words ‘consider the establishment of’ are deleted and replaced by the word ‘establish’.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
	Mr Melham
	Ms Bath
	Dr Bach
	Mr Meddick
	Mr Grimley

The question was negated.

Mr Hayes moved, that at line 330 the words ‘considering the establishment of’ are deleted and replaced by the words ‘establishing’.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
	Mr Melham
	Ms Bath
	Dr Bach
	Mr Meddick
	Mr Grimley

The question was negatived.

Dr Ratnam moved, that a new finding be inserted at line 691 in the following terms:

Native vegetation continues to be cleared in Victoria, including illegally.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
Mr Meddick	Mr Melham
	Ms Bath
	Dr Bach
	Mr Grimley

The question was negatived.

Dr Ratnam moved, that at line x the word 'consider' is deleted and replaced by the word 'amends'.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
	Mr Melham
	Ms Bath
	Dr Bach
	Mr Meddick
	Mr Grimley

The question was negatived.

Chapter 11

Ms Bath moved, that at line 877 the following words be inserted:

Any increase in funding should be subject to first undertaking an appraisal of how efficiency and effectiveness can be improved.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Hayes
	Mr Grimley

The question was negatived.

Ms Bath moved, that at line 895 the following words be inserted:

This should be in partnership with First Nations peoples so there is co-management and not sole management.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Bath	Ms Terpstra
Dr Bach	Ms Taylor
Mr Hayes	Mr Melham
	Dr Ratnam
	Mr Meddick
	Mr Grimley

The question was negatived.

Mr Hayes moved, that at line 1033 the words ‘consider providing’ are deleted and replaced by the word ‘provide’.

The Committee Divided.

The question was put.

Ayes	Noes
Dr Ratnam	Ms Terpstra
Mr Hayes	Ms Taylor
	Mr Melham
	Ms Bath
	Dr Bach
	Mr Meddick
	Mr Grimley

The question was negatived.

Recommendations

Ms Taylor moved, that Recommendation 1 be accepted and form part of the report.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Mr Melhem moved, that Recommendation 2 be accepted and form part of the report.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Mr Hayes moved, that Recommendation 7 be accepted and form part of the report.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Mr Meddick moved, that Recommendation 8 be accepted and form part of the report.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Mr Grimley moved, that Recommendation 11 be accepted and form part of the report.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Dr Ratnam moved, that Recommendation 16 be accepted and form part of the report.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Ms Taylor moved, that Recommendation 19 be accepted and form part of the report.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Mr Melhem moved, that Recommendation 21 be accepted and form part of the report.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Mr Hayes moved, that Recommendation 23 be accepted and form part of the report.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Mr Melhem moved, that Recommendation 26 be accepted and form part of the report.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Mr Meddick moved, that Recommendation 28 be accepted and form part of the report.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Dr Ratnam moved, that Recommendation 29 be accepted and form part of the report.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Mr Grimley moved, that Recommendation 30 be accepted and form part of the report.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Ms Taylor moved, that Recommendation 35 be accepted and form part of the report.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Mr Melhem moved, that Recommendation 44 be accepted and form part of the report.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Mr Hayes moved, that Recommendation 47 be accepted and form part of the report.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Mr Meddick moved, that Recommendation 49 be accepted and form part of the report.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Dr Ratnam moved, that Recommendation 51 be accepted and form part of the report.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Ms Taylor moved, that Recommendation 52 be accepted and form part of the report.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Mr Melhem moved, that Recommendation 58 be accepted and form part of the report.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Mr Hayes moved, that Recommendation 59 be accepted and form part of the report.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Dr Ratnam moved, that Recommendation 60 be accepted and form part of the report.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Mr Grimley moved, that Recommendation 61 be accepted and form part of the report.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Mr Meddick moved, that Recommendation 62 be accepted and form part of the report.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Ms Taylor moved, that Recommendation 67 be accepted and form part of the report.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Mr Melhem moved, that Recommendation 74 be accepted and form part of the report.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Mr Meddick moved, that Chapter 1 as amended be adopted and stand part of the Report.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Mr Meddick moved, that Chapter 4 as amended be adopted and stand part of the Report.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Mr Hayes moved, that Chapter 5 as amended be adopted and stand part of the Report.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Mr Melhem moved, that Chapter 6 as amended be adopted and stand part of the Report.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Mr Meddick moved, that Chapter 7 as amended be adopted and stand part of the Report.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Mr Melhem moved, that Chapter 8 as amended be adopted and stand part of the Report.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Ms Terpstra moved, that Chapter 9 as amended be adopted and stand part of the Report.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Mr Meddick moved, that Chapter 10 as amended be adopted and stand part of the Report.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

The question was agreed.

Mr Melhem moved, That the Draft Report (Chapters 1 to 11, including Findings 1 to 54 and Recommendations 1 to 74, together with Appendix A), be adopted as the Report of the Committee, and that it be Tabled on 2 December 2021.

The Committee Divided.

The question was put.

Ayes	Noes
Ms Terpstra	Ms Bath
Ms Taylor	Dr Bach
Mr Melham	
Dr Ratnam	
Mr Meddick	
Mr Hayes	
Mr Grimley	

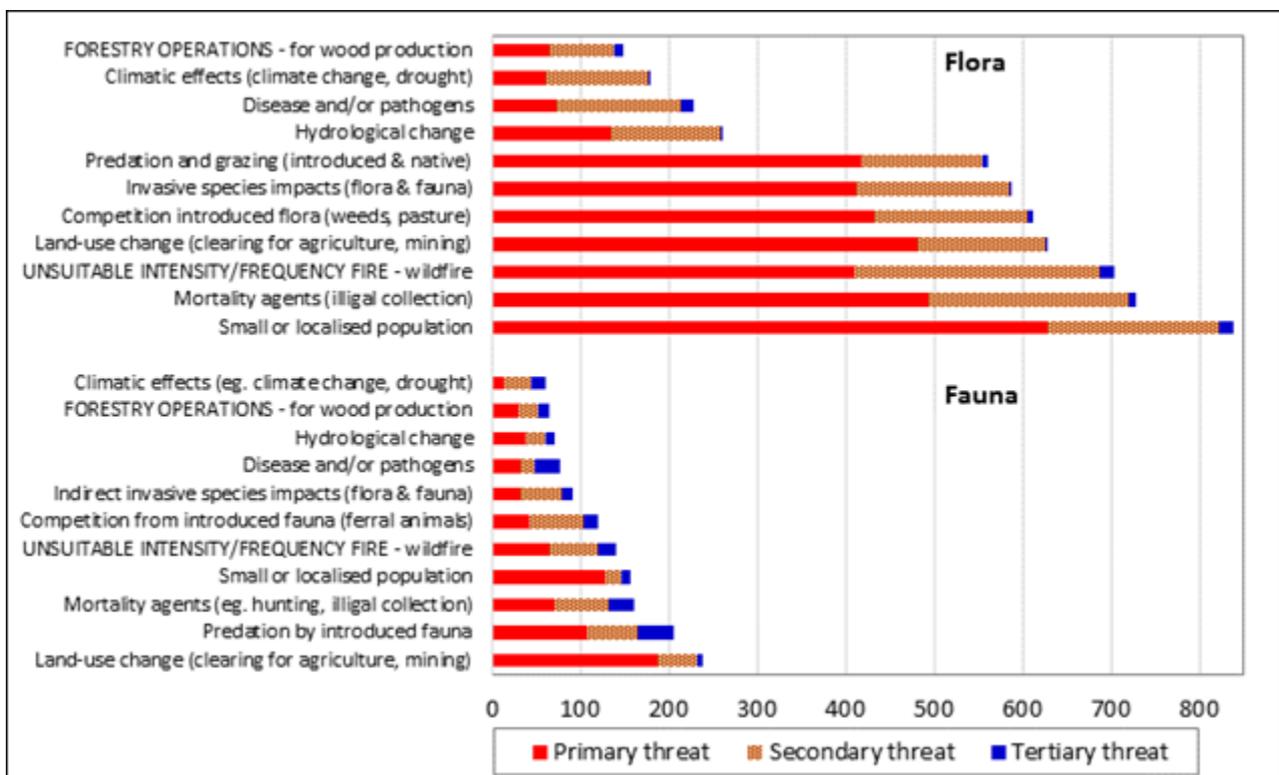
The question was agreed.

Minority reports



VICTORIAN PARLIAMENTARY INQUIRY INTO ECOSYSTEM DECLINE

THE NATIONALS AND LIBERALS MINORITY REPORT



Prepared by The Nationals and Liberals

11 November 2021

Cover figure: Threat rating and threat categories for forest-dwelling threatened species¹

¹ The figure shows the number of species for which a threat in that category was specified and the data was sourced directly from ABARES (2018). Australia's State of the Forests Report 2018 Chapter 1, p122.

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1. About the Inquiry

1.1 Terms of Reference

On 30 October 2019 the Legislative Council agreed to the following motion:

That this House requires the Environment and Planning Committee to inquire into, consider and report, within 12 months, on the decline of Victoria's ecosystems and measures to restore habitats and populations of threatened and endangered species, including but not limited to —

- (a) the extent of the decline of Victoria's biodiversity and the likely impact on people, particularly First Peoples, and ecosystems, if more is not done to address this, including consideration of climate change impacts;
- (b) the adequacy of the legislative framework protecting Victoria's environment, including grasslands, forests and the marine and coastal environment, and native species;
- (c) the adequacy and effectiveness of government programs and funding protecting and restoring Victoria's ecosystems;
- (d) legislative, policy, program, governance and funding solutions to facilitate ecosystem and species protection, restoration and recovery in Victoria, in the context of climate change impacts;
- (e) opportunities to restore Victoria's environment while upholding First Peoples' connection to country, and increasing and diversifying employment opportunities in Victoria; and
- (f) any other related matters.

1.2 Committee Membership

Dr Matthew Bach, Liberal Party

Ms Melina Bath, The Nationals

Dr Catherine Cumming, Independent

Mr Stuart Grimley, Derryn Hinch's Justice Party

Mr Clifford Hayes (Deputy Chair), Sustainable Australia Party

Mr Andy Meddick, Animal Justice Party

Mr Caesar Melham, Australian Labor Party

Dr Samantha Ratnam, Victorian Greens

Ms Nina Taylor, Australian Labor Party

Ms Sonya Terpstra (Chair), Australian Labor Party

Participating Member:

Mrs Bev McArthur, Liberal Party

1.3 Foreword to the Minority Report

This Minority Report gives a voice to the submissions and testimony ignored in the Committee Report. These submissions and testimony highlight that much of the ecosystem decline in Victoria is ‘at the Governments own hand’ - a direct result of poor government policy, inadequate execution of programs and mismanagement of the major threats such as fire, invasive species and predators on public land.

The Nationals and Liberals on the committee were motivated to prepare this Minority Report because of major concerns with the Committee Report. Our concerns with the Committee Report include:

- Most members of the eleven-person Committee (apart from the Liberals and Nationals) are from the government or have demonstrated an alignment with the government – hardly independent.
- The Committee Report lacks the independence required to critically examine the government’s current policy and practise and to objectively develop improved policies, strategies and programs.
- The Committee Report is very selective in its use of the material presented to the Inquiry and has completely ignored a large body of expert submission and testimony, particularly those critical of current government policy and practise.
- The findings and recommendations in the Committee Report do not adequately take into account critical multidisciplinary knowledge, information, data, practical experience and positive suggestions.
- Findings and recommendations with respect to management of forest ecosystems are more about ‘political science’ rather than ‘real science’ and many lack a multidisciplinary approach necessary to deliver practical outcomes.
- The Committee Report takes a scattergun approach to recommendations and lacks focus on those critical success factors likely to lead to improved outcomes.
- The Committee Report basically ignores submissions, testimony and the Victorian Auditor General Office (VAGO) report² on the ‘Safer Together’ policy.
- The Committee Report ignores submissions, testimony critical of the efficiency and effectiveness of DELWP. Efficiency and effectiveness issues were raised in a VAGO³ report on Biodiversity 2037.
- Climate change is overstated as a threat to endangered species and is used to cover up organisational deficiencies and poor service delivery, particularly with respect to bushfire.
- Submissions and testimony of many regionally based interest groups have not been adequately taken into account.

The Nationals and the Liberals put forward this Minority Report with a focus on real outcomes:

- We focus on the major threats to ecosystem such as high intensity bushfires, invasive species and predators etc.
- Our Minority Report makes positive suggestions that should deliver improved outcomes on public land and private land and avoid continuation of failed policy and practise.
- We provide a more holistic appraisal of the wide range of imperatives that should be considered in ecologically sustainable forest land-use and forest management decisions.
- We focus on the drivers of organisational performance as a key to improve the efficiency and effectiveness of our agencies such as DELWP, rather than introducing more layers of unfocused and overlapping legislation and regulation.
- Positive suggestions are provided to substantially reduce the threat from high intensity bushfires – suggestions that are practical, proven, supported by fire behaviour experts and are embodied in the best practise regime employed with considerable success in South West WA.
- Some of the negative sentiment on prescribed burning is associated with ‘hot’ prescribed burns which are not part of the ‘best practise’ prescribed burning we are advocating.

² VAGO (2020). Reducing Bushfire Risk. Independent Assurance Report to Parliament October 2020.

³ VAGO (2021) Protecting Victoria’s Biodiversity. Independent assurance report to Parliament 2021-22:07 Oct 2021.

We acknowledge committee members and thank EPC secretariat staff Michael Baker, Alice Petrie, Samantha Leahy, Cat Smith and Holly McLean for their contribution and hard work on the Inquiry.

The Nationals and Liberals acknowledge the efforts of the many talented people in our agencies and we advocate for organisational improvement so that those people can be more effective.

The Nationals and Liberals recommend future actions take into account this Minority Report. We ask that Parliament treat the selective evidence, findings and some of the recommendations of the Committee Report with caution.



Melina Bath MP

Member for Eastern Victoria Region



Beverley McArthur MP

Member for Western Victoria Region



Matthew Bach MP

Member for Eastern Metropolitan Region

2. Executive summary

Evidence presented to the Inquiry indicated that:

- Bushfire, invasive species and introduced predators (and not sustainable harvesting) are the main threats to our forest ecosystems.
- The 'Safer Together' bushfire policy has failed and contributed to the 2019-20 bushfires.
- The 'Victorian Forestry Plan' is flawed, replacement plantations are unlikely to be fully implemented, and the plan will lead to lower economic output and job losses in regional areas.
- VicForests has professionally managed the 415,000 hectares of public forest under its charter and meets a raft of audits of its environmental performance.
- DELWP and Parks Victoria have not managed the 7.8 million hectares of public native forest well and these agencies need organisational improvement, not more legislative/regulatory band-aids.
- Improved management of ecosystems on private land requires strategies that make remnant native vegetation etc. more valuable rather than more costly, through mobilising volunteer effort, targeted grants and less rather than more regulatory red (green) tape.
- Victorian public and private land management is currently covered by a plethora of legislation and regulation which has not worked and impedes rather than supports continuous improvement.

The Committee Report is selective in its use of submissions and evidence, demonstrated by it failing to report, mention or cite some submissions and evidence presented by those who provided critical analysis of the government's fire management policy and practise.

The Committee Report downplays the adverse impact of bushfire and the favourable use of prescribed fire and presents no solution to reduce the frequency and extent of bushfires. It calls for action on climate change despite experts indicating excessive fuel is the key driver of our bushfires. Action on climate change, while warranted, is a global decision outside the direct control of Victorian agencies and with a long lead time.

The Minority Report believe bushfires are Victoria's greatest threat to ecosystems and improved mitigation is required, of which low intensity prescribed fire is currently the most cost-effective option and works under all climate scenarios. We need more cool burning as practised by traditional owners and less hot prescribed fire. The Minority Report believe the 'Safer Together' policy has failed because it is based on an excessively high 70% residual risk target and only about 2% prescribed burning (VBRC recommended 5%). Including the area burnt by bushfire in the calculation of residual risk is a nonsense, as that is what the policy was meant to avoid. The Victorian Auditor General raised so many concerns with the residual risk approach that it is not 'fit for purpose'.

Our Minority Report addresses the issues and insurmountable challenges associated with the Victorian Forestry Plan (ignored in the Committee Report). If the plan is implemented it will lead to 'economics of underdevelopment' at the 'direct hand of government', rather than the invisible hand of market forces:

- The 'Victorian Forestry Plan' fails to acknowledge the long lead times, low returns and challenges of ramping up plantation supply. It will lead to worse rather than better ecologically sustainable development, and the \$110 million of government investment is insufficient.
- Replacing 1 million cubic metres currently supplied from native forest, requires ca 70,000 to 140,000 hectares and an investment of \$1.0-\$1.5 billion in land and plantation costs over 30 years.
- The Forestry Plan will have an adverse impact on scale economies in agriculture because it is based on converting 70,000 to 140,000 hectares of farmland to plantations.

- Past native timber access policy, exacerbated by bushfires, has resulted in the loss of \$6.6 billion Gross Regional Product and 5,560 jobs over the last 20 years from native forest timber.
- The 'Forestry Plan' is likely to contribute to a further loss \$5.6 billion in Gross Regional Product and the loss of another 3,660 jobs over the next twenty years in disenfranchised rural communities, already severely impacted by reducing native log supply and recent fire, floods and a pandemic.

Our Minority Report shows an understanding of the issues of economic equity with respect to private landowners. We cannot ignore private land owner's costs of providing 'public good' conservation and also the 'opportunity costs' regulation and restriction place on 'highest value' use of private land.

We need to make ecosystem improvement valuable rather than costly. More legislation, regulation and bureaucrats often deliver worse rather than better outcomes or stymie progress. The regulatory 'status quo' has been relatively inefficient, ineffective and costly particularly in terms of lost opportunities. Sustainable improvement requires making ecosystems more valuable to more people and this will often involve mobilising the users of that ecosystem in the implementation of its improvement.

The value of our forests could be enhanced, and biodiversity projects adequately funded if we implemented more multiple use. The value of our public forests has diminished due to a focus on single use (or no use).

The Committee Report demonstrates a lack of focus on the most important drivers of improved management of ecosystems with far too many recommendations (74). If all 74 recommendations are implemented, effort on the most important recommendations will likely be diluted with adverse consequences for Victorian ecosystems. This Minority Report has taken note of the significant issues with the efficiency, effectiveness and delivery by our agencies, highlighted in VAGO audits.

The Committee Report calls for more legislation, regulation and red tape (bureaucratic inertia) rather than developing good strategies, implementing them effectively and delivering on promised outcomes through focus on critical success factors. The recommended increase in legislation and regulation will add the cost of more layers of bureaucratic red tape without necessarily adding value in ecological outcomes.

This Minority Report supports following the lead of successful organisations who deliver improved performance often against the odds of a non-supportive regulatory framework, adverse impacts and limited resources/budget. Successful organisations focus on critical success factors and are efficient and effective because of good organisational leadership, structure, strategy, skill formation, systems, staffing and culture. Implementation is the key and our agencies need to better manage efficiency, effectiveness and outcomes whether it be to meet legislation, regulations, policies or strategies.

This Minority Report (unlike The Committee Report) does not propose 'more of the same'. We note that VicForests is a more focused organisation than DELWP and Parks Victoria. VicForests is led by a CEO (not Secretary) reporting to an 'independent' Board and with focused management, imbedded research and has a record of operating efficiently and effectively and delivering on its objectives. VicForests research on Leadbeater's possum has successfully delivered a new understanding of habitat requirements. To avoid mega bushfires and improve ecosystem management we need:

- Focused organisations and/or management to improve the efficiency and effectiveness of agencies so they can deliver improved outcomes on the lands they manage.
- Staff responsible for public land need to be relocated in the regions closer to the ecosystems they manage. In 2019 over half of DELWP's people were located in the CBD of Melbourne and only 11% were field staff – not ideal for the management of public land.
- Roles within the various agencies should be 'process complete'. With improved skill formation there is scope for increased delegation to get more out of the talent within our agencies.
- DELWP needs a demerger. DELWP is a conglomerate of many unrelated functions headed by seven Assistant Secretaries who report to one Secretary who reports to four Ministers. The Department of Health and Human Services was split to improve management of Covid and this should be considered for DELWP.

- The demerged agencies need clearer accountability for each separate agency, particularly for forest fire preparation, mitigation and control by the Minister and the Government which is accountable to the parliament.
- We need a focused Forest Fire Organisation to manage fire preparation, mitigation and suppression, headed by CEO and with improved lines of command.

There has been an increase in the average annual area burnt by bushfire associated with the transition from a focused Forests Commission operating from 1918 to 1983 to the unfocused mega department we now call DELWP which has operated from 2015 with mixed results.

Year	Abrev.	Organisation name & functions/responsibilities	Area bushfire (000 ha/yr)
1918-83	FCV	Forests Commission of Victoria Forestry, Parks, Flora & Fauna,	185
1951-83	FCV	Forests Commission of Victoria Forestry, Parks, Flora & Fauna,	119
1983-90	CFL	Department of Conservation, Forests and Lands Forests, Parks, Public land, Fisheries, Wildlife, Flora & Fauna	55
1990-92	DCE	Dept. Conservation and Environment Forests, Parks, Public land, Fisheries, Wildlife, Flora & Fauna	35
1992-96	CNR	Dept. Conservation and Natural Resources Forests, Catchments, Land, Parks, Flora & Fauna, minerals & petroleum, primary industries, water	8
1996-2002	DNRE	Dept. Natural Resources & Environment Forests, Catchments, Land, Parks, Flora & Fauna, minerals & petroleum, primary industries, water	33
2002-12	DSE	Department of Sustainability and Environment Forests, Heritage, Environment, Land, Water, Planning, Fauna & Flora, Conservation.	314
2012-14	DEPI	Dept. Environment & Primary Industries Agriculture, Forests, Land, Fire, Environment, Water, Natural resources, Regions, Desalination	260
2015-->	DELWP	Dept. Environment, Land Water & Planning Environment, Climate change, Water, Catchments, Local government, Forests, Land, Fire, Environment, Infrastructure, Planning, Regions, Energy	294

Source: Derived from annual reports and various government sources

We support the following recommendations in the Committee Report:

3, 4, 5, 6, 9, 10, 12, 13, 14, 15*, 18*, 19, 20, 22, 24*, 25*, 27#, 31, 32, 33, 34, 36, 37*, 38, 39, 40, 41, 42, 43, 45, 46#, 48, 50, 53, 54*, 55, 56*, 57, 63, 64, 65, 66, 68, 69*, 70*, 71*, 72, 73

(* attempted amendment) (# successful amendment)

We oppose the following recommendations in the Committee Report:

1, 2, 7, 8, 11, 16, 19, 23, 26, 28, 29, 30, 35, 44, 47, 49, 51, 52, 58, 59, 60, 61, 62, 67, 74

Summary of Recommendations:

Minority Report Recommendation No 1: The Victorian Auditor General’s Office (VAGO) should continue to conduct regular audits of the overall performance of government agencies against all measures of efficiency and effectiveness, not just environmental outcomes.

Minority Report Recommendation No 2: That the Victorian Government abandon its ‘Safer Together’ fire policy and adopt Recommendation 56 of the 2009 Victoria Bushfire Royal Commission which called for fuel reduction on 5% of the forest (rolling average). This target can incorporate increasing application of Traditional Owners forest fire management practices, where appropriate.

Minority Report Recommendation No 3: That the Victorian Government support, foster and reintroduce Traditional Owners’ forest fire management practices, where possible, to complement prescribed burning programs.

Minority Report Recommendation No 4: That the Victorian Government work in collaboration with Traditional Owners to offer accreditation in qualifications in conservation and Indigenous land

management, such as Certificate III in Conservation and Indigenous Land Management as conducted in NSW.

Minority Report Recommendation No 5: That the Victorian Government discard the Victorian Forestry Plan and continue with sustainable harvesting of native forests. The Victorian Government must work with VicForests to continue to maintain practices which enhance healthy, sustainable and productive forest systems.

Minority Report Recommendation No 6: That the Victorian Government ensure that programs and funding are directed to sustaining and restoring Victoria's iconic landscapes, including ash-type forests, by establishing and maintaining strategic seedbanks for vulnerable forest types; combined with forest nursery developments and strategic reforestation programs to implement timely and effective regeneration across fire-affected public lands.

Minority Report Recommendation No 7: The Nationals and Liberals oppose the reintroduction of dingoes as an apex predator.

Minority Report Recommendation No 8: The Nationals and Liberals oppose the phase out of legal 1080 baiting used according to prescribed standards.

Minority Report Recommendation No 9: The Nationals and Liberals recommend the continued use of the Authority to Control Wildlife permit system for control of fauna species where they cause damage to the environment or economic loss.

Minority Report Recommendation No 10: The Nationals and Liberals support in principle that the Department of Environment, Land, Water and Planning conservation management of threatened species should be on a practical landscape-wide strategy.

Minority Report Recommendation No 11: The Nationals and Liberals recommend that any increased funding should only be made available after a professional appraisal of how state government agencies such as DELWP or Parks Victoria can first improve efficiency and effectiveness and extra funds should only be awarded based on a rigorous 'project plan' that clearly demonstrates how the extra funds will deliver improved outcomes.

Minority Report Recommendation No 12: That the Victorian Government further invest in strengthening regionally based natural resource management programs, including funding of local community-based organisations such as Landcare to cover Landcare coordinators and grants for Landcare projects.

Minority Recommendation 13: That the Victorian Government ensures that there is a full, transparent and regulated market, which operates from arms-length from government departments and NGOs such that there is no conflict of interest between market participants in the regulation and purchasing of vegetation offsets.

Minority Report Recommendation No 14: That the Victorian Government provide ongoing funding/resources for Vegetation Management Officers (VMO's) to provide vital training and skills to councils, road managers, landholders and CFA volunteers in fuel reduction by prescribed burning and mechanical treatment.

Minority Report Recommendation No 15: The Nationals and Liberals recommend that any initiatives to protect and restore native vegetation including remnant grassland on private land should ensure that the landowner is adequately compensated for costs of delivering 'public good' conservation of ecosystems. The government should ensure that the funding is adequate to cover the costs incurred by private landowners of delivering the 'public good' conservation and also for the 'opportunity costs' they incur as a result of any restricted land use.

3. Independent Reports on Victorian fire and biodiversity programs

In their submission to the Inquiry, Forest & Wood Communities Australia stated that the government has not been successful in forest management, as evidenced by the increasing threat of fire and the intensity of fire when it occurs, due to its failure to control fuel loads in unmanaged forests.

The Victorian Auditor General's Office (independent office of the Parliament) has a track record of unbiased, impartial and balanced appraisal of government policy and programs with respect to efficiency, effectiveness and measurement of outputs against objectives.

Minority Report Recommendation No 1: The Victorian Auditor General's Office (VAGO) should continue to conduct regular audits of the overall performance of government agencies against all measures of efficiency and effectiveness, not just environmental outcomes.

3.1 VAGO Report on the modelling underpinning the 'Safer Together' fire policy

The Victorian Auditor General's Office (VAGO) 2020 audit raised so many issues with the modelling of residual fire risk underpinning the 'Safer Together Policy', such that the failed 'Policy' is 'not fit for purpose'.

One of the most damning findings was that over the four year audit period, DELWP prescribed burnt only 30% to 43% of the area required to achieve its 70% residual risk target (86,744 ha pa rather than the 200,000 to 275,000 ha pa required). The target was only achieved by including area burnt by large bushfires, the outcome the policy was meant to avoid. The Auditor General also reported:

- Fuel management reduces the intensity of fires and makes them easier for firefighters to control.
- The Government has not recorded the reasons its targets are not met and why planned burns are not completed.
- The Government has a key role in reducing the risk bushfires pose to people, property and the environment.
- The Government does not clearly demonstrate the impact of its planned burns (positive or negative) on the environment and ecosystems.
- Limited assessments occur after the planned burns it does complete, impacting the Government's ability to assess how quickly fuel re-accumulates.
- The Government reports the number of ecosystem resilience assessments it conducts, but not the results or outcomes of these assessments.

Other issues raised by the Auditor General⁴ were:

- DELWP advised that it could reduce Victoria's bushfire risk by 30 per cent with \$50 million pa but failed to advise that it could achieve greater risk reduction with further investment.
- DELWP did not explain that the model used (Phoenix RapidFire) has several limitations.
- Limitations of the datasets and model simulations include using data that was not up-to-date.
- The models need expert validation and peer review.
- DELWP completes too few fuel hazard assessments after planned burns and bushfires, reducing its ability to validate how quickly fuel re-accumulates to hazardous levels.
- DELWP's modelling relies on a range of assumptions that likely impact the results, including the application of a single extreme fire scenario.

⁴ VAGO (2020). Reducing Bushfire Risk. Independent Assurance Report to Parliament October 2020

- DELWP has not systematically or comprehensively verified the effectiveness of Phoenix RapidFire predictions against real fire events.
- The tool needs significant investment to be fit for purpose.
- Regional targets did not consider key factors that determine a region's risk including current fuel loads.
- Regional risk targets had not been reconsidered since 2016, a serious issue given regional fuel loads can change quickly.
- A lack of focus on risks on private land created a gap in understanding risk across the state, leading to suboptimal risk-reduction.
- Cost-effectiveness of fuel management and other risk mitigation was not considered in strategic planning due to a lack of data, leading to suboptimal use of resources. (This is yet another example of DELWP's inability to manage efficiency and effectiveness).
- In 2019–20, DELWP delivered only 43 per cent of the 'priority' burns and only 30 per cent of 'normal ranked' burns.

3.2 Victorian Auditor General's Office (VAGO) audit of DELWP biodiversity performance

DELWP's objective under its program *Protecting Victoria's Environment – Biodiversity 2037* is a healthy environment and a net improvement in the outlook of all threatened species. The focus is on implementing broad actions across a landscape to protect the greatest number of species.

The Victorian Auditor General's Office (VAGO) audit of DELWP's biodiversity performance found many deficiencies relating to efficiency, effectiveness and ability to measure its performance, similar to the VAGO report of the government's fire policy. On performance on protecting Victoria's biodiversity VAGO found:

- Much of the data used in DELWP's models is old, likely to be outdated and contains critical gaps raising questions about DELWP's modelled outputs and decision support.
- DELWP cannot demonstrate how well it is halting decline of populations of threatened species.
- DELWP has no transparent risk-based process to prioritise these species for management.
- DELWP makes limited use of available legislative tools to protect threatened species.
- Funding is short, however, to support further investment DELWP has not provided the Government evidence-based advice on the costs and benefits of protecting and monitoring threatened species.
- DELWP lacks performance indicators and its reporting lacks accountability and comprehensiveness to demonstrate the impact of its management interventions.
- DELWP tells the public little about the cost, quality and effectiveness of its work and whether it is on track to meet its Biodiversity 2037 target.

4. Threats to native flora and fauna

4.1 Overview of major threats

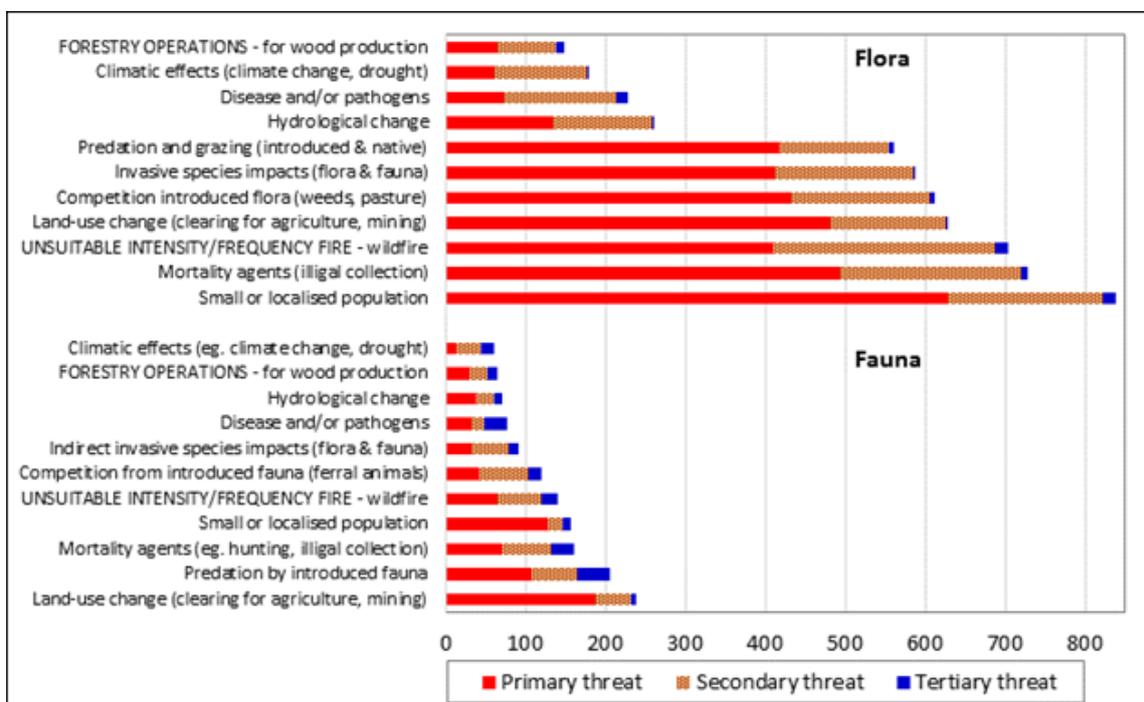
An understanding of the relative impact of the various threats to our native flora and fauna is fundamental to the development of cost-effective strategies consistent with ecologically sustainable development.

Fossil records show plants adapt to climate changes as the impact of changes on plant growth are partly accommodated by adaptations in plant structure and function. Plants adapt many other fundamental biochemical processes in response to changes in temperature or water availability, such that they remain productive and reproductively viable⁵.

⁵ From M. Adams and P. Attiwill (2011). Burning issues, sustainability and management of Australia's southern forests. CSIRO AND Bushfire CRC.

Forestry operations for wood production pose the lowest threat to Flora and one of the lowest threats to fauna relative to other more serious threats. Similarly, climatic effects pose relatively low threats to flora and fauna. High intensity or frequency of wildfire (bushfire) pose significant threats to native flora and fauna (**Figure 1**).

Figure 1: Threat rating and threat categories for forest-dwelling threatened species⁶



The results **Figure 1** concur with evidence given to the inquiry:

The major factor now impacting on the decline of Victoria’s biodiversity is intense bushfire. Whilst many would focus on logging operations as being a major factor, the reality is that logging operations actually create disturbance and diversity in the forest which is a strength for ecosystem resilience. In addition, any negative impacts on biodiversity as a result of forest operations are infinitesimal in comparison to the impact of intense wildfire burning over hundreds of thousands of hectares of land on which fuel loads have not been managed. – Mr Garry Squires

Threats to threatened native flora are much higher from grazing from introduced and native fauna, invasive species, competition from introduced plants, clearing for farming and mining, unsuitable fire (essentially wildfire) and illegal collection than for forestry operations (harvesting for wood production).

Threats to threatened native fauna are much greater for invasive species, competition from introduced animals, wildfire, illegal hunting, predation by introduced animals and clearing for agriculture and mining than for forestry operations (harvesting for wood production).

4.2 Recent CSIRO review of threats to species

A recent *Pacific Conservation Biology* review, published through CSIRO Publishing, examined the threats to species listed as threatened under Australia’s *Environment Protection and Biodiversity Conservation Act 1999* (the ‘EPBC Act’). The review found that out of all the EPBC-listed species in Australia (1,533 at the time of publication), invasive species affect the largest number of listed species (1,257 species) or 82 per cent of all threatened species. The two next-greatest threats were ecosystem modifications (e.g. bushfire) at 74 per cent and agricultural activity at 57 per cent.

⁶ The figure shows the number of species for which a threat in that category was specified and the data was sourced directly from ABARES (2018). Australia’s State of the Forests Report 2018 Chapter 1, p122.

Chief Executive Officer of Victorian Forest Products Association, Ms Deb Kerr, endorsed this finding:

The CSIRO have analysed the EPBC Act terrestrial listed species and have come up with a figure that 82 per cent have been impacted by invasive species. That likely is a similar number for Victorian listed species. Invasive species are also listed as the key threatening processes under the EPBC Act and the FFG Act. – Ms Deb Kerr – Victorian Forest Products Association

4.3 Landscape management and species-specific actions (Biodiversity 2037)

Protecting Victoria’s Environment - Biodiversity 2037 focuses on landscape management to reduce the threat to multiple species rather than the previous approach of producing protection plans for individual threatened species (which are usually expensive with a poor chance of success). The new approach can work for multiple species across multiple locations and under multiple threats. It would appear to be a more cost effective approach We support the thrust of The Committee Report recommendation that the *Flora and Fauna Guarantee Act 1988* (Vic) be amended if required to remove contradiction between the Act and Biodiversity 2037 and also accommodate cost-effective broader landscape threat management.

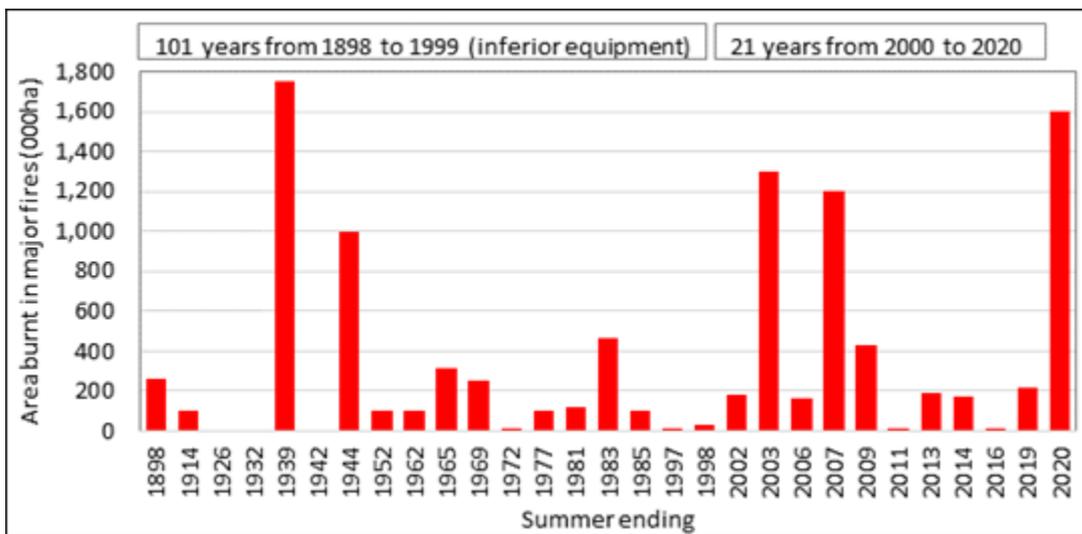
5. The bushfire threat & effective solutions

5.1 Victoria’s deteriorating fire record over the last twenty years

Despite improvements over the last 21 years in equipment to detect and fight fires, the government’s ability to control major bushfires on forested land has declined. In the 101 years to 1999, there were only two fires exceeding a million hectares, whereas in the last 20 years Victoria has had four mega fires with three of those fires exceeding one million hectares along with several ‘campaign’ fires (

Figure 2).

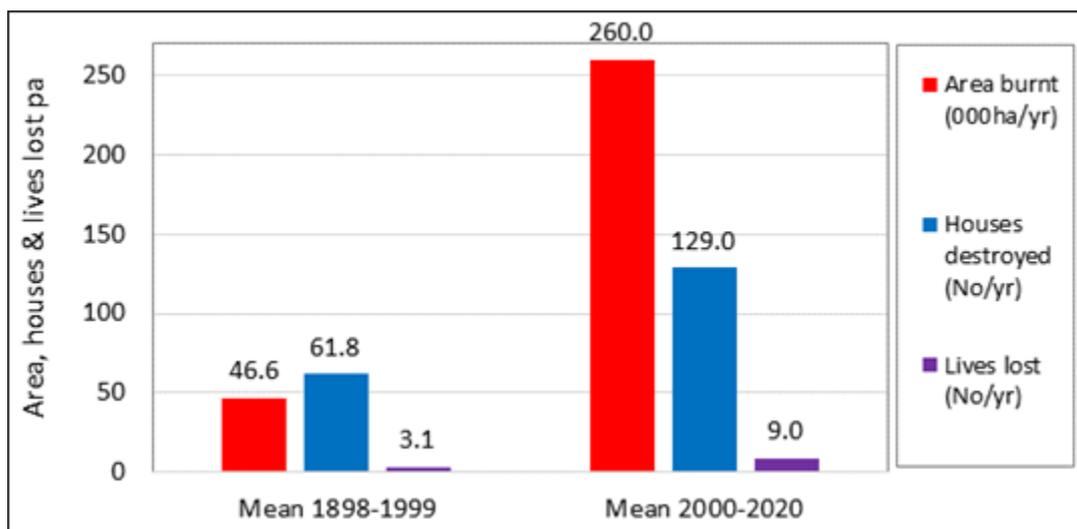
Figure 2: Victorian area burnt by major bushfires over the last 120 years⁷



Those fires over the last 21 years have caused substantial loss. In Victoria, the area lost is 5.6 times greater, houses lost twice as many and lives lost three times as many over the last 21 years, than the preceding 101 years, on a per annum basis. This is after substantial improvements in firefighting equipment, including modern aircraft for surveillance and limiting fire damage to communities (Figure 2).

⁷ Derived from DELWP webpage and Annual Reports.

Figure 3: Victorian losses per annum for 101 years to 1999 and for 21 year to 2020⁸



5.2 Victoria’s deteriorating fire record is due to lack of focus on controllable factors

Our deteriorating bushfire record is due to ignoring the fundamentals of fire behaviour, mitigation and suppression. **Fire is a function of Fuel + Oxygen + Ignition (Fire Triangle) and Forest Fire is a function of Fuel + Topography + Weather (Forest Fire Triangle).** Forest land managers have no control over Topography and Weather (including climate impacts), but can effectively control the fuel load. Given that we cannot exclude ignition or fire completely we effectively have two choices⁹:

- Implement sufficient low intensity prescribed fires to reduce fuel (**Figure 4 left**), or
- Accept high intensity wild fires (**Figure 4 right**).

Figure 4: Relative impacts of a prescribed burn (left) and a wild uncontrolled bushfire (right)



⁸ Derived from DELWP webpage and Annual Reports.

⁹ Cameron J. N. (2020). Victorian mega bushfires and government policy and practise. Submission NND.600.00145.01 to the Royal Commission into National Natural Disaster Arrangements. April 2020.

Controllable factors contributing to mega fires that require more focus on works in the “off season” as well as “disaster management” over summer are:

- Effective management of fuel load through prescribed burning or mechanical treatment.
- Maintenance of access roads and tracks and some strategic fire breaks.
- Very early detection based on improved technologies such as aerial infrared surveillance.
- Rapid initial attack including the use of light surveillance aircraft equipped with retardant.
- Effective early suppression, not just containment.

Victoria has experience too many mega fires because of an inability to manage the controllable factors well. We risk more large fires if the climate change debate masks action on the controllable factors.

Locals in rural communities with a lifetime of experience living and working in forested public lands are concerned by a lack of a common-sense and practical approach to fire management. Eminent fire behaviour experts have highlighted insufficient use of fuel management, lack of effective standing aerial surveillance, delayed detection, delayed initial attack and inadequate suppression in Victoria.

Analysis of Melbourne’s weather over the last 150 years (longest complete data set available) indicates only small changes in days of high temperature and rainfall over the last 20-25 years. These changes are considered to be insufficient to explain the large increase in size and intensity of bushfires. Over the last 25 years, the number of days per year above 35 °C or 40 °C was about one day above the long run average and rainfall was about 8% below the long run average¹⁰.

The increase in size and intensity of the bushfires can be explained by the build-up of forest fuel from insufficient fuel reduction and a change in fuel characteristics on areas burnt by bushfires (more ‘ladder fuel’) relative to areas burnt by prescribed fire.

5.3 Failed Safer Together Policy

Victoria’s 2019-20 mega bushfire could have been prevented if we implemented best practice fire mitigation employed in South West WA and recommended by the Victorian Bushfire Royal Commission (VBRC). Following the 2009 bushfires the VBRC recommended 5% of the forest be fuel reduced each year. Experts called for 8% in line with South West Western Australia’s ‘best practise’.

In 2015 Victoria ignored the VBRC recommendation and introduced a new approach, ‘*Safer Together*’,¹¹ The Minister Hon Lisa Neville said:

“Our new approach is about doing more to reduce the risk of bushfire and knowing what we do is more effective. We will involve local communities in decision making, taking into account what people value in their local area.”- Hon Lisa Neville

The resulting prescribed burning was about 2%, well below the VBRC target and in the 2019-20 summer about 1.6 million ha was burnt, 396 house destroyed, businesses irreparably damaged and five lives lost despite mild weather in the fortnight after ignition – ‘*Safer Together*’ was not safer, or more effective, nor what local rural communities wanted.

Fire behaviour experts believe 70% residual risk is way too high and excessive fuel contributed substantially to last summer’s bushfire losses, along with delayed initial attack and poor suppression under favourable weather in the two weeks after ignition (see Cameron RC submission NND.600.00145).

The 70% target has only been achieved with considerable high intensity wildfire, an outcome the policy was supposed to avoid.

¹⁰ Cameron, J. N. (2020). Victorian mega bushfires and government policy and practise. Submission NND.600.00145.01 to the Royal Commission into National Natural Disaster Arrangements. April 2020.

¹¹ Victorian State Government (2015). Safer together, A new approach to reducing the risk of bushfire in Victoria.

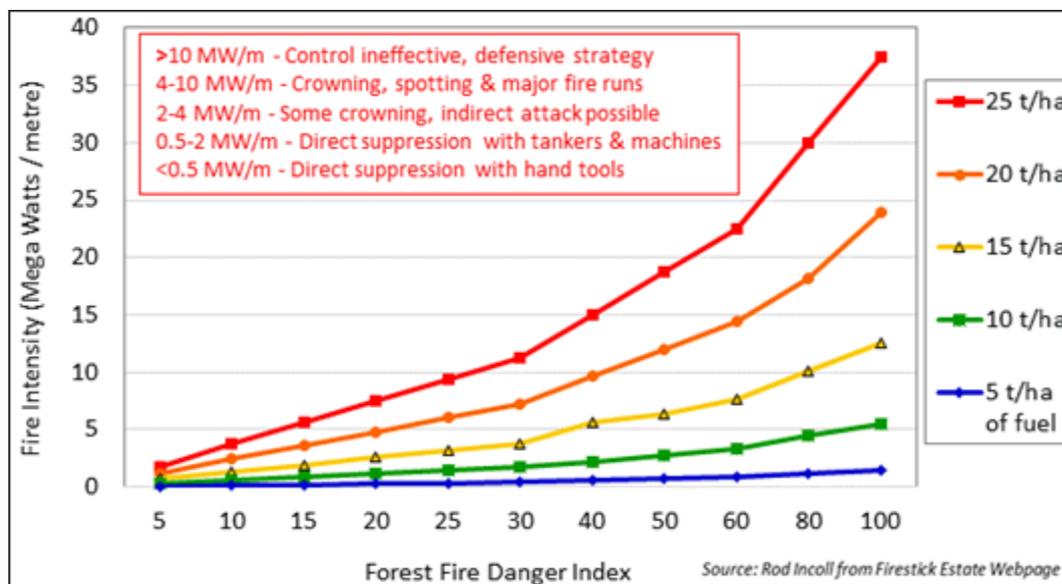
Minority Report Recommendation No 2: That the Victorian Government abandon its ‘Safer Together’ fire policy and adopt Recommendation 56 of the 2009 Victoria Bushfire Royal Commission which called for fuel reduction on 5% of the forest (rolling average). This target can incorporate increasing application of Traditional Owners forest fire management practices, where appropriate.

5.4 Fire intensity as a function of fuel load and weather (climate)

Victoria has been subjected to too much high intensity fire that is difficult to suppress and causes the most damage to life, property, ecosystems and threatened species.

Fire intensity is primarily a function of the fuel and the Forest Fire Danger Index (FFDI), where FFDI is a function of weather conditions and the drought factor, including climate change. As the fuel load increases above 5 t/ha and particularly above 10 t/ha, fire intensity increases considerably. The impact of weather, drought and climate (incorporated in FFDI) is relatively small in low fuel loads but more marked in heavy fuel loads. Low fuel loads allow suppression under more severe fire weather than heavy fuels (**Figure 5**).

Figure 5: Impact of fuel load and Forest Fire Danger Index on fire intensity



5.5 Victorian bushfire performance compared to South West WA

The forests of South West WA have an outstanding fire record yet have been subjected to adverse climate change, drought, and days of extreme fire danger similar to Victorian Forests and the WA forests about communities and residential areas. “Best practise” prescribed burning has been practised in South West WA since 1962 and has proved to be remarkably successful. The success is remarkable considering South West WA has a more Mediterranean climate characterised by very long dry summers.

Over the last 20 years prescribed burning in the South West forests of WA has averaged about 5.5% pa and their wildfire losses have been contained to less than 1.7% of the forest annually compared to Victoria’s prescribed burning of only 1.4% pa and bushfire loss of 10% of the forest annually. Tragically, Victoria has lost 183 lives from wildfire over the last twenty years, compared to 2 lives lost from wildfire in South West WA (**Table 1**)¹². Both states have been subjected to similar climate change.

¹² Cameron, J. N. (2020). Victorian mega bushfires and government policy and practise. Submission NND.600.00145.01 to the Royal Commission into National Natural Disaster Arrangements. April 2020.

Table 1: Prescribed burning, wildfire and deaths in Victoria compared to South West WA

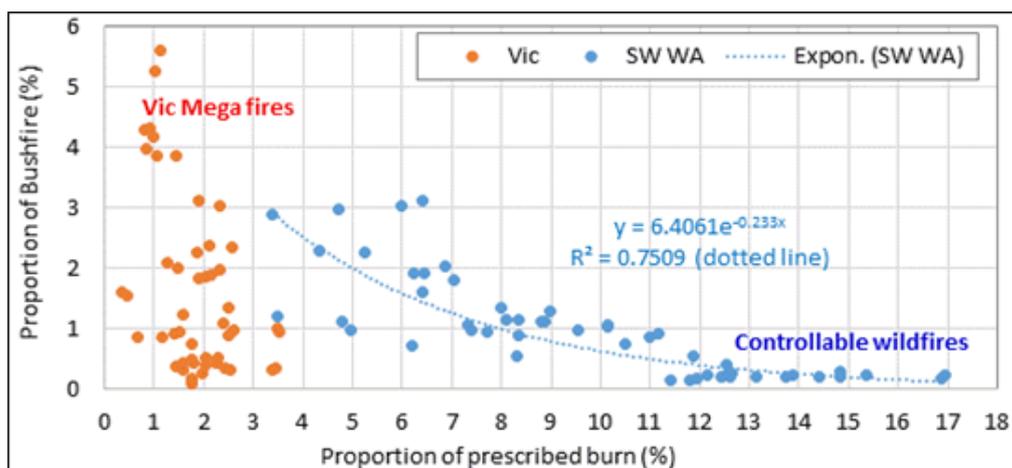
Attribute	Victoria 7.8 mill ha	South West WA 2.5 mill ha
Prescribed burn 1962-1999 (% of forest area)	1.6	11
Prescribed burn 2000-2020 (% of forest area)	1.4	5.6
Bushfire 1962-1999 (% of forest area)	1.9	0.6
Bushfire 2000-2020 (% of forest area)	10.0	1.7
Lives lost 1962-1999 (No)	129	0
Lives lost 2000-2020 (No)	183	2

Note that in the South West forests of WA a decrease in the area prescribed burnt (11.0% to 5.6%) has been associated with a significant increase in the area burnt by bushfires (0.6% to 1.7%). A Forest and Fire Scientist Rick Sneeuwjagt has analysed 58 years of fire records and established an inverse relationship between the proportion of the forest prescribed burnt and the proportion of the forest burnt by unplanned bushfires. This data set has been combined with data from Victoria by John Cameron.

5.6 The Victorian mega bushfires could have been predicted from the ‘Sneeuwjagt curve’¹³

The ‘Sneeuwjagt curve’ indicates that if you want controllable bushfires you must prescribed burn 5% and preferably 8% of the forest each year (**Figure 6**), according to an appropriate spatial pattern across the landscape. In South West WA they have maintained the rolling average proportion prescribed burnt always above 3.5% and avoided mega fires. Victoria¹⁴ has never exceeded 3.5% pa prescribed burnt and has experienced mega bushfires in 1983, 2003, 2006-07, 2009 and 2019-20 and some ‘campaign’ fires over the last 20 years. As a rule of thumb, on a rolling four year basis, the equation (blue line) suggests for every 1% increase in prescribed burning, wildfire loss is reduced by approximately 0.45% of the forest each year and if you want an average wildfire loss of less than 1.0% pa, you need to prescribe burn ca. 8% each year.

Figure 6: The Victorian mega fires could have been predicted from the “Sneeuwjagt curve”



“The fires over the last 20 years have had an obviously undesirable impact on biodiversity and our ecosystems. They have caused billions of dollars of damage and 183 lives have been lost. And these high-intensity large fires were predictable and they were avoidable” – Mr John Cameron

¹³ Derived and updated from Sneeuwjagt (2011). The Effectiveness of Prescribed Burning in the Control of Large Eucalypt Forest Fires. 5th International Wildfire Conference, South Africa.

¹⁴ Victorian data derived from Tolhurst (2007) Submission to the “Inquiry into the Impact of Public Land Management Practices on Bushfires in Victoria” conducted by the Environment and Natural Resources Committee of the Victorian Parliament; and DELWP annual reports.

5.7 Findings from Bushfire Inquiries

5.7.1 Select committee inquiry into the 2003 ACT fires (Nairn Inquiry)

The Select Committee¹⁵ heard a consistent message right around Australia:-

- *“There has been grossly inadequate hazard reduction burning on public lands for far too long;*
- *local knowledge and experience is being ignored by an increasingly top heavy bureaucracy;*
- *when accessing the source of fires, volunteers are fed up with having their lives put at risk by fire trails that are blocked and left without maintenance;*
- *there is a reluctance by state agencies to aggressively attack bushfires when they first start, thus enabling the fires to build in intensity and making them harder to control; and*
- *better communications between and within relevant agencies is long overdue.”- The Select Committee.*

5.7.2 Esplin inquiry into the 2003 Victorian bushfires

Principal areas of concern raised in submissions to this inquiry included; land management preparedness, principally fuel reduction on public land; agency preparedness; response issues, that is how the fire was fought; management of resources in the fighting of the fires; and recovery issues. The Esplin Inquiry¹⁶ noted:

“Prescribed burning, for whatever purpose, will reduce the amount of fuel present. If the amount of fuel is less, then the potential heat released in a fire from the remnant fuel is less. If this heat is less, then the chance of controlling any unplanned fire is greater. If the chance of fire control is greater, then the chance of loss of human life and property is smaller.”- The Esplin Inquiry.

5.7.3 Victorian 2009 Bushfire Royal Commission Recommendations

There was considerable frustration by witnesses who cited that after the royal commission in 2009, the opportunity to do more prescribed burning or other forms of fuel reduction was largely ignored. The recommendation stemming from the royal commission was 5 per cent prescribed burning, however, Victoria achieved less than two per cent.

On land and fuel management, the Victorian Bushfire Royal Commission (VBRC)¹⁷ warned of the build-up of excessive fuel loads and emphasised the importance of prescribed burning and roadside works:

- *“Prescribed burning is one of the main tools for fire management on public land. It cannot prevent bushfire, but it decreases fuel loads and so reduces the spread and intensity of bushfires.....it also helps protect flora and fauna. Ironically, maintaining pristine forests untouched by fuel reduction can predispose those forests to greater destruction in the event of a bushfire”.*
- *“Of7.7 million hectares ofnational parks, state forests and reserves,DSE burns only 1.7 per cent (or 130,000 hectares) of this public land each year. This is well below the amount experts and previous inquiries have suggested”.*
- ***“The State has allowed the forests to continue accumulating excessive fuel loads, adding to the likelihood of more intense bushfires and placing firefighters and communities at greater risk”.***
- ***“The Commission proposes that the State make a commitment to fund a long-term program of prescribed burning, with an annual rolling target of a minimum of 5 per cent of public land each year, and that the State be held accountable for meeting this target.***

¹⁵ House of Representatives Select Committee (2003). A Nation Charred: Report on the inquiry into bushfires. 23 October 2003. (Nairn Report)

¹⁶ B. Esplin (2003). Report of the Inquiry into the 2002-2003 Victorian Bushfires.

¹⁷ VBRC 2010. The 2009 Victorian Bushfire Royal Commission Report, Chapter 7 Land and fuel management.

- “DSE should modify its Code of Practice for Fire Management on Public Land so that it is clear that protecting human life is given highest priority, and should report annually on prescribed-burning outcomes.”
- “The Commission proposes that DSE expand its data collection on the effects of prescribed burning and bushfire on biodiversity.”
- “In the case of bushfires, roads and roadsides can be important fuel breaks, so road managers need to reduce the fuel levels in preparation for the fire season. Roads are also essential for people seeking to escape fires and for emergency services seeking access to fires”.
- “Concerns would be reduced if the State’s planning provisions were amended to facilitate a broad range of roadside works to reduce bushfire risk”- **Victorian Bushfire Royal Commission.**

5.8 Prescribed burning to reduce bushfires

Based on decades of rigorous fire behaviour research, Mr David Packham OAM MAppSci and Mr John Cameron MBA DIP Hort said *that controlling forest fuel is vital if we are to avoid damaging wildfires:*

If you keep the fuel levels below about 10 tonnes per hectare you will have relatively low fire intensities, but if you let the fuel levels get above that then you can have difficulty suppressing bushfires. – Mr John Cameron.

In the last 200 years there have been about 800 bushfire deaths in Australia—600 in Victoria. Now, the failure to reduce fuels to less than 8 tonnes per hectare means destruction to the environment, loss of water supplies, death and injury to humans and fauna and loss of homes and infrastructure. – Mr David Packham.

The amount and characteristics of forest fuel have a considerable impact on fire intensity. Reduce the fuel load from 36 tonnes per hectare to 8 tonnes per hectare, the bushfire intensity decreases by 20 times and all fires can be controlled, environmental damage is reduced and no lives are lost. - Mr David Packham

Submitters such as Prospectors and Miners Association of Victoria and Bush Users Group United, Mr David Bentley, was concerned over a lack of prescribed burning:

There have already been multiple inquiries into public land management and its effect on bushfires, including Royal Commissions. There have been countless recommendations made to improve the environment and lessen the devastation to ecosystems, property and lives caused by bushfire and yet many of those sensible recommendations have not been enacted by government. Tracks are still being closed. Local knowledge is still ignored in favour of orders from city-based academic bureaucrats – David Bentley.

More controlled burning is repeatedly recommended yet it is still opposed by conservation groups and seems to be opposed by many in Parks Victoria and DELWP judging by the small amount of burning being done.

5.9 Cool Indigenous burning

5.9.1 The Firestick Alliance

Submitters such as Dr Victor Steffensen, Practitioner for Firesticks Alliance, have been working with indigenous knowledge for over 30 years and has been helping communities put traditional knowledge back

onto landscapes and onto the community for social and environmental wellbeing. He affirmed the role as being really crucial to improve our landscapes, the health of our communities and also for the broader community. Like other submitters he stressed the importance of bringing indigenous fire management back onto Country.

Dr Steffensen affirmed that indigenous fire management is the outstanding one at the moment because the landscape is very sick and fire is high on the agenda, along with water, to start to revitalise it and rehabilitate, also with cultural values, as well. He stated:

- *Over the years, I have worked with many communities, across many different States across Australia, and also internationally with doing this practice of reviving knowledge from landscapes, and helping communities to do that on their own Country. The aim of the Firesticks Alliance is to help communities to do their own business on their own countries and support them with training, if they need it - **Dr Victor Steffensen, Firesticks Alliance.***

5.9.2 Importance of cool indigenous burning

The Taungurung Land and Waters Council Aboriginal Corporation stated in their presentation to the Committee that their goal is to have primarily two things. A cultural fire program where they are healing first and then managing Country with cultural fire and associated practices so forest gardening and the cultural flows and that sort of stuff, especially in flood plain country.

- *Where we are seeing cultural fire as kind of one of the leading applied practices to do that, to manage Country. – **Mr Matthew Shanks, Taungurung Land and Waters Council Aboriginal Corporation.***

The importance of cool indigenous burns was also shared by many other submitters to the inquiry.

*I think low-intensity fire does nourish the soil, and I have heard many old elders talk about the right colour charcoal being a blanket for country throughout the winter – **Dr Jack Pascoe, Conservation Ecology Centre.***

*The concern is that many traditional skills have been lost including those related to ‘cool burning’. To restore those skills it will be necessary to involve people in training programs. However, training programs in themselves are not enough. There needs to be strong government commitment to the necessity to reduce fuel levels in the forests and a commitment to ensuring that the training programs result in results on the ground – **Mr Garry Squires.***

For successful cultural burning, East Gippsland resident, Mr Garry Squires stressed the importance of adopting the following traditional indigenous principles:

The canopy should remain green, the ground brown

Smoke should be white and the ash black – not the reverse

The controlled burn should creep over the ground like water

*Burn regularly - **Mr Garry Squires***

Minority Report Recommendation No 3: That the Victorian Government support, foster and reintroduce Traditional Owners’ forest fire management practices, where possible, to complement prescribed burning programs.

5.9.3 Training and accreditation in cultural burning

Citing the social applications as being crucial for the health of young people, the Firestick Alliance have created a three year training program in the Hunter Valley. The first of its kind, the program currently consists of 40 trainees.

It is crucial that Indigenous knowledge is shared in good faith and shared in a way that we want to bring everyone – everyone to know this knowledge and to look after our Country into the future. To also work in areas in improving agriculture. Looking at the green economics, as well, within healthy landscapes. And if we do not have a healthy landscape, then we do not have a baseline for green economics. And that is why it is so crucial that we make the Country healthy, not only for the green economic opportunities around managing landscapes, but also for the cultural indicators and knowledges, as well, that will show further benefits.

*Indigenous fire management is not just about burning. It is about many layered benefits that come from land. So, traditional knowledge is structured on a number of knowledge categories, which evolves every living thing on the landscape, including people. And when we apply certain practice to landscapes, through indigenous management, there are seven-fold benefits that come from that. So, for example, when we burn, we are looking after trees. We are looking after the animals. It is creating employment. It is creating education for people. It is building the bridge of reconciliation between black and white people of Australia. It is just to name a few. So, I know and understand and also seen evidence that young people improve their lives when we get them on Country – **Dr Victor Steffensen, Firesticks Alliance.***

Minority Report Recommendation No 4: That the Victorian Government work in collaboration with Traditional Owners to offer accreditation in qualifications in conservation and Indigenous land management, such as Certificate III in Conservation and Indigenous Land Management as conducted in NSW.

The Nationals and the Liberals are pleased that the above Recommendation was adopted in the Committee report.

At a public hearing, Daniel Miller, General Manager of the Gunaikurnai Land and Waters Aboriginal Corporation spoke of the need for cultural burning educational accreditation with a particular focus on the Gippsland environment:

*We already do it in an unaccredited way, I guess, for people as part of their cultural education. But we are also looking at not being the keeper of all this knowledge but helping to facilitate that, again, in an accredited way. So we have strategic partnerships with several universities for outcomes that are similar to what we are talking about, and then the next step would be to help that to realise that level of training. Again, it is not about us being the keeper and deliverer of all of it; it is often about a place where it can be shared together- **Daniel Miller, General Manager, Gunaikurnai Land and Waters Aboriginal Corporation***

Uncle Russell Mullett, Registered Aboriginal Party Manager from the Gunaikurnai Land and Waters Aboriginal Corporation told the Committee of the importance of cultural burns:

*One of the things about it is we know what bushfires raging do and how deep into the soils those fires penetrate, and we know the effects. I think it takes at least 10 or 15 years for it to come back. But that coming back—the bush is resilient; it comes back thicker than previously. But it also nukes a lot of the animals in it. With cool burning regimes, it trickles around. You know, people want to question it. It is about not scorching yourself and not scorching the animals. - **Uncle Russell Mullett, Gunaikurnai Land and Waters Aboriginal Corporation***

5.10 Fire detection, initial attack and bushfire suppression by government agencies

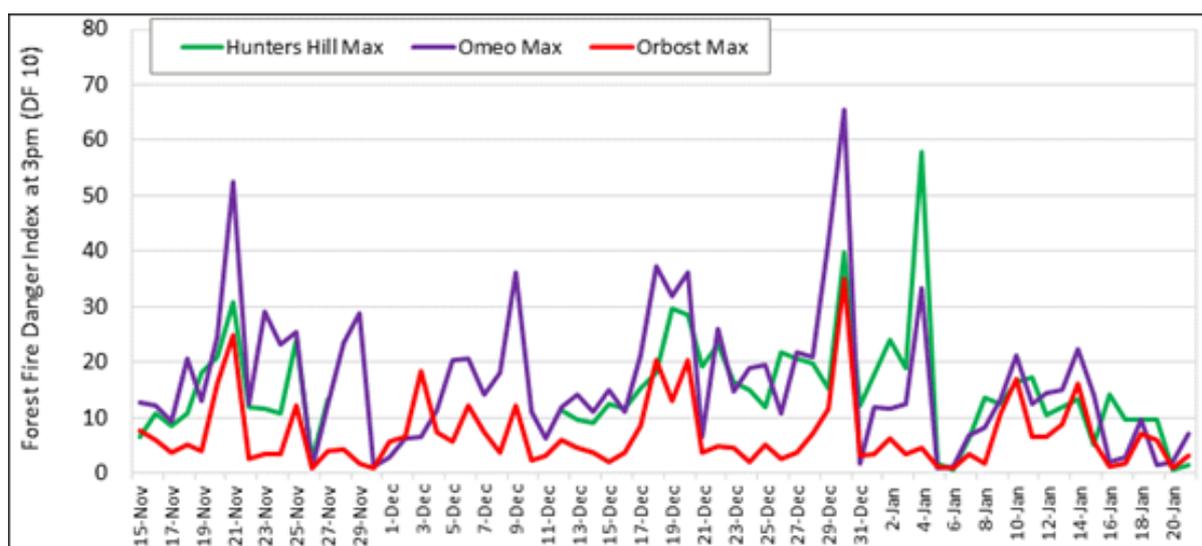
Forest workers and their equipment are located in the forests and provide a valuable resource that can be used in early initial attack and bushfire suppression to lessen fire damage. There is much public anger at the lack of fire preparedness, slow initial attack and not mounting suppression with sufficient force by government agencies.

Rural communities have lost assets, livelihoods, and lives, because bushfires escaped public land and destroyed private property. DELWP has used private property as 'neighbour firebreaks', rather than better fire mitigation in public forests. This is inequitable and probably actionable under WorkSafe or Common law. Fires escaping from public forest are attributed to poor fuel reduction, firebreaks and fire access; and tardy detection, initial attack and suppression¹⁸.

5.11 Victorian 2019-20 fire was controllable based on FFDI in the fortnight after ignition

With the bushfire in 2019–20 there was a two-week window of opportunity after ignition when the forest fire danger index was low enough for that fire to be suppressed and it was not. The Forest Fire Danger Index between the 22nd of November and 8th of December remained below 20 to 30, and sufficiently low to allow suppression, provided there was prudent fuel reduction, adequate fire access, rapid initial attack and appropriate fire suppression force (**Figure 7**)¹⁹.

Figure 7: Forest Fire Danger Index at Drought Factor 10 for East Gippsland & North East Fires



5.12 Light aircraft for early fire detection, surveillance and prompt initial attack

The best strategy for first attack is to bring a bushfire under control at or near the time and point of ignition, when the fire is small. There is an urgent need for new methods to locate and extinguish fires before they get out of control. Victoria must do better at keeping more fires small - **all fires start small, but we let too many get very big**. About half our large bushfires start from lightning strikes, often in inaccessible country. If these fires can be quickly located and suppressed, then human lives, animals, property and the environment will be saved. The Nationals and Liberals have just become aware of an opportunity using Aircraft in a different way is being promoted by National Fire Surveillance (NFS)²⁰.

¹⁸ Cameron J. N. (2020). Ecologically sustainable management of Victorian native forests. Submission S471 to Parliamentary Inquiry into Ecosystem Decline in Victoria.

¹⁹ Derived from BOM data assuming a Drought Factor of 10 and FFDI calculated according to CSIRO CAWCR Technical Report No 10. June 2009.

²⁰ G. Wight NFS.

- Aircraft are mostly used to fight fires after they are larger, more intense and much damage has already been done. Air and ground suppression of large, intense and fast moving fires is costly and dangerous and of limited effectiveness.
- Technology can equip aircraft for surveillance, early fire detection (including at night), rapid initial attack and quick suppression to avoid costly dangerous fires.
- NFS plan to equip planes with surveillance infrared fire detection technology, aerial fire spotting capability and fire suppression capability.
- The concept is simple and relatively inexpensive and fills a void in current firefighting capability.
- It involves a standing patrol of small specialised fixed wing aircraft over remote and fire sensitive areas.
- Detect small fires quickly including using infrared technology before dawn or before smoke is sighted.
- Locate the fire, report accurate location, fire behaviour, forest fuel condition, topography and access.
- Immediately mount initial attack using the 1000 litres of fire retardant on board to contain the spread of the fire, well before ground crews can arrive.
- In most cases the retarding of the fire until ground crews arrive will facilitate suppression of fires well before they become large and intense and before weather conditions worsen.
- Going harder much earlier after ignition is much better than waiting for traditional fire attack.

6. The Victorian Labor Government's Forestry Plan

The Victorian Labor Government's announcement last year that it would phase out the native timber industry from 2020, with a full shut down by 2030. We mount a strong case for continued access to the 6% or 415,000 hectares for the sustainable production of native timber.

The Victorian Forestry Plan is flawed and will not deliver the environmental outcomes it purports nor will new plantations ensure sufficient wood volume to accommodate the loss of Victoria's sustainable native timber industry.

Minority Report Recommendation No 5: That the Victorian Government discard the Victorian Forestry Plan and continue with sustainable harvesting of native forests. The Victorian Government must work with VicForests to continue to maintain practices which enhance healthy, sustainable and productive forest systems.

6.1 Why the Government's Forestry Plan is poor policy and likely to fail

6.1.1 Overview of why the Forestry Plan is flawed policy

A number of inquiry participants acknowledged the huge challenge and disadvantages of transitioning to plantation based timber. Mr John Cameron provided a comprehensive analysis of the Forestry Plan in his submission which he summarised in his evidence to the inquiry:

The 'Forestry Plan' fails to acknowledge the long lead times, low returns and huge issues and challenges associated with ramping up plantation supply, and is likely to lead to worse rather than better ecologically sustainable development and the promised \$110 million of government investment is insufficient.

Replacing 1 million cubic metres currently supplied from native forest, requires 70,000 to 140,000 gross hectares and an investment of \$1.0-\$1.5 billion in land and plantation costs over ca 30 years.

The 'Forestry Plan' is essentially a 'media release' on compensation for closing the native forest timber industry in 2030 and 'token' establishment of plantation on marginal sites.

Continuation of sustainable harvesting of some native forests will deliver a mix of native forest age classes and genetic recombination, both desirable for adaptive ecosystems.

This will provide continuing diversified rural employment and help stave off ‘economics of underdevelopment’ facing rural communities, particularly ‘timber towns’.

It will also avoid the adverse impact on scale economies in agriculture under the ‘Forestry Plan’ which is based on converting large areas of farmland to plantations.

It will also avoid the undesirable substitution of native timber with building materials that are less ecologically sustainable, because they archive less carbon, consume more energy in manufacture and release more emissions. – Mr John Cameron.

It was considered that this investment is unlikely to be completed and the ‘Victorian Forestry Plan’ will result in the use of more imports with high ‘timber miles’ or less environmentally sustainable building materials and further adverse socioeconomic impacts for Victorian ‘timber towns’.

6.1.2 Government agency Vicforests view of the Victorian Forestry Plan

VicForests is the government agency responsible for sustainable harvesting and successful regeneration of harvested areas within the 415,000 hectares or only 6% of the 7.8 million hectares of Victoria’s native forests available for sustainable timber production. The CEO of Vicforests provided the following comments:

- *There were two aspects of the government’s announcement. The first was that timber harvesting would cease in old-growth forests from the time of the announcement, but we had already ceased harvesting in old-growth forests some six months in advance of that announcement. The second aspect of the policy is that there will be no harvesting at all in state forests from 2030.*
- *It is not commercially viable to have a hardwood plantation to produce a sawlog because capital—plantation companies are not going to put trees in the ground and wait for 120 years to get a return on that investment. So hardwood forests—generally the economics of it only work for a pulp log because you can produce that at a much earlier age, and so you get that return on investment.*
- *Plantation forests are softwood, predominantly, and they are produced for a product which is a lighter, softer product that is used for different applications to the applications for (native) hardwood. –Ms Monique Dawson, CEO, VicForests.*

6.1.3 Industry view of the Victorian Forestry Plan

Members of the forest industry believe the Victorian Forestry Plan is ill conceived, flawed and will have a considerable adverse socioeconomic impact on regional communities:

Victoria’s forestry plan is ill-conceived. Native trees take many decades to reach harvestable age—an 11-year time frame from 2019 and nine years from now leaves a gap of many decades, even if a native (replacement) timber plantation estate was in existence, which it is not.

....the plantation estate has been static for quite some time now and the economic drivers to expand the plantation estate are just not there. It is competing with higher value land uses, like dairy in Gippsland and cropping in south-western Victoria and other areas. So it just does not make it a viable option to say, ‘Well, okay, let’s expand the pine plantations and the blue gum plantations. – Ms Deb Kerr, Victorian Forest Products Association

6.1.4 Professional view on the Victorian Forestry Plan

The Institute of Foresters of Australia and Australian Forest Growers (IFA/AFG) are an independent professional association of forest scientists, managers and growers operating in all aspects of forest and natural resource management across all land tenures in Australia – they are not an industry association.

The IFA/AFG does not agree that cessation of native forest timber harvesting will remove a major threat to Victoria’s forests, nor will it meaningfully benefit bushfire management or wild life protection. The major threats to forest ecosystems in Victoria are large scale, high intensity bushfires; introduced feral pest animals and plants; and urban expansion. IFA/AFG said that:

By adopting the Victorian Forestry Plan in its current format, Victoria will forego the opportunity to transition to different forms of sustainable timber harvesting, which could realise a range of benefits that would be complimentary to a plantation industry and increase resilience to future climate change and bushfire risk. This includes opportunities for Traditional Owners to implement traditional management practises and develop new types of businesses based on their natural resource and drive. - IFA/AFG

Concerns were raised by Melbourne University’s School of Ecosystem and Forest Science and Mr Garry Squires a professional forester:

From a point of view of moving away from native timber harvesting, the big question becomes around a lot of the plantations, hardwood plantations, if we are, say, concerned about keeping some of these local communities going and the mills that produce sawlogs, take sawlogs to produce high-end furniture products and so forth, you know, if we wanted to keep those mills going, we would need to be thinking about a very different plantation model of forestry from what we have right now. I mean, yes, maybe they could switch to pine, but then that would be millions of dollars in investments into those mills to have them transition. Also a major investment would be needed to transition to higher end technology to cut smaller pieces of wood. But there is also the time frame. The exit plan is 10 years, if I recall, or probably less than that now. – Dr Nitschke, Uni. Melb.

Whilst many would focus on logging operations as being a major factor, the reality is that logging operations actually create disturbance and diversity in the forest which is a strength for ecosystem resilience. In addition, any negative impacts on biodiversity as a result of forest operations are infinitesimal in comparison to the impact of intense wildfire burning over hundreds of thousands of hectares of land on which fuel loads have not been managed. – Mr Garry Squires.

6.2 Regulation of harvesting native forest timber

All activities on public land, including harvesting, must comply with a raft of legislation (**Table 2**)

Table 2: Key Victorian legislation applicable to public land management

Land Use Category	Legislation	Manager
National and State Parks	<i>National Parks Act 1975</i>	Parks Victoria
Regional Parks	<i>National Parks Act 1975, Crown Land Parks</i>	Parks Victoria
Nature Conservation Reserves	<i>Crown Land (Reserves) Act 1978</i>	Parks Victoria
State Forest - 7.8 million hectares	<i>Forests Act 1958</i>	DELWP
State Forest - 415,000 hectares	<i>Sustainable Forests (Timber) Act 2004</i> <i>Code of Practise for Timber Production 2014</i> <i>Safety and Public Land Act 2004</i>	VicForests
water production areas	<i>Catchment and Land Protection Act, 1994.,</i>	Water Authorities
Softwood production	<i>Victorian Plantations Corporation Act 1993</i>	HVP as licensee
All land use	<i>Flora and Fauna Guarantee Act 1988</i>	All land managers

Under the *Sustainable Forests (Timber) Act 2004* (the Act), the Minister for Agriculture is responsible for allocating timber in State forests to VicForests for harvesting and selling. The allocation to VicForests is made through an Allocation Order, intended to provide long-term access to Victoria's timber resources. VicForests may only harvest and/or sell vested timber resources in accordance with the Allocation Order.

The Gazetted Allocation Order specifies the maximum area available for timber harvesting in any five-year period, and the conditions VicForests must comply with. The conditions include compliance with all relevant Codes of Practice, including the *Code of Practice for Timber Production 2014* and the Forest Management Zoning Scheme for Victoria - Special Protection Zones (SPZ), Special Management Zones (SMZ) and General Management Zones (GMZ). These zones reflect the data assessed in the Comprehensive Regional Assessments (CRAs) that informed Regional Forest Agreements (RFAs).

The current modernised RFAs bolster protection for Victoria's forest biodiversity and threatened species by:

- Reinforcing existing protections of rainforests and protect all old-growth forests from harvesting.
- Providing for more timely interventions to protect threatened species (through Action Statements).
- Identifying and reviewing priorities for research to fill critical knowledge gaps, including the effectiveness of protections and management actions and to improve understanding of new and emerging threats to vulnerable species.
- Strengthening the checks and balances through outcome-based reporting to inform five-yearly reviews, the ability to initiate Major Event Reviews, new audit provisions for evaluation of RFA performance and identification of remedial actions.

VicForests is subject to multiple audit processes, including the annual DELWP Forest Audit Program (FAP), regular audits for the Responsible Wood (formerly the Australian Forestry Standard) and Forest Stewardship Council (FSC) certification programs, and periodic audits by the Victorian Auditor General's Office (VAGO). VicForests has also commissioned independent reviews of aspects of its High Conservation Value (HCV) processes, including during the 2019 Assessment. VicForests has implemented corrective actions since the last HCV assessment relating to design, construction and rehabilitation of waterway crossings, old-growth identification and landscape-scale vegetation management.

6.3 Past claims of illegal harvesting by VicForests were unsubstantiated

VicForest has not had a single prosecution of illegal harvest operations upheld against it in the past three years as evidenced in Ms Pulford's answers to questions in parliament in relation to the debate on the Forest Legislation Amendment (Compliance and Enforcement) Bill 2019 (Legislative Council).²¹

Ms PULFORD: I have some advice on some numbers on the conservation regulator's compliance actions in the last two years. So in 2019–20 investigations completed by the conservation regulator included one letter of advice, four section 70 directions, two findings of non-compliance, two official warnings and no prosecutions.

For 2020–21 there were three letters of advice, one section 70 direction, two findings of non-compliance, three official warnings and no prosecutions. the prosecution that led to the 2018 independent review of timber-harvesting operations was where it was found there was an opportunity for improvement.

Mr RICH-PHILLIPS: Thank you, Minister. So, Minister, to be clear, there have been no prosecutions in the last two years.

Ms PULFORD: That is my advice.

²¹ Hansard, Tuesday 5 October 2021, Legislative Council, page 3394

Mr RICH-PHILLIPS: You referred to the one failed prosecution in 2018. Were there any other successful prosecutions in that 2018 year, which is the one before the two years when there were no prosecutions, or are you effectively saying there was a single prosecution over the last three years, and that is the one failed one?

Ms PULFORD: Yes, that is the advice. That is right. Hang on. Yes, that is correct. So that initial case that has given rise to the review and the reform and the legislation was in 2018. There has not been one since. So the advice that I have provided is accurate in terms of those numbers, yes.

6.4 Socioeconomic impact of exiting native timber harvesting

One submission made a detailed analysis of the economic impact of phasing out native forest harvesting and concluded²²:

- The misallocation by policy, exacerbated by wildfire loss has resulted in the loss of \$6.6 billion Gross Regional Product and 5,560 jobs over the last 20 years.
- The Victorian 'Forestry Plan' is likely to contribute to a further loss \$5.6 billion in Gross Regional Product and the loss of another 3,660 jobs over the next twenty years
- The 'Forest Plan' will lead to an exacerbation of the 'economics of underdevelopment' for disenfranchised rural communities and timber towns, already severely impacted by years of reducing native log supply and is poorly timed coinciding with the recent impact of Covid-19 on regional economies.
- We are witnessing a classic example of the 'economics of underdevelopment' being played out, albeit in this case at the direct hand of government, rather than the invisible hand of market forces.
- Rural communities and timber towns are being stripped of economic output and employment opportunities. This is causing adverse impacts on community services.
- This adverse impact is a result of the abandonment of the application of 'multiple use' to the remaining 6% of forest currently available for timber production. This 6% equates to only 0.004% or 3,000 ha of the forest logged each year across spatially dispersed small coupes.

6.5 Plantations are no substitute for sawlogs harvested from native forests

Virtually all the existing hardwood plantations in Victoria are unsuitable for sawntimber. This is because of smaller log size, defects, recoveries, density, durability, drying properties and stress profile of hardwood plantation logs from un-thinned and unpruned plantations are significantly poorer than logs currently harvested from native forests²³.

Existing hardwood plantations have been established primarily to produce pulpwood and have not received the early pruning and thinning necessary to produce high quality sawlogs. The limited sawlogs that have been supplied from existing plantations contained more defects than sawlogs from native forest. When processed, the resulting sawntimber was generally unsuitable for appearance grade products and some structural sawntimber products. The smaller diameter and more defects including tension wood make plantation hardwood sawlogs difficult to saw and dry. Local sawmills substantially reduced sawing plantation sawlogs in about 2010 when the old >30year old *E. regnans* plantations were liquidated

²² Cameron J. N. (2020). Ecologically sustainable management of Victorian native forests. Submission S471 to Parliamentary Inquiry into Ecosystem Decline in Victoria.

²³ J. Cameron and R. Meynink (2008). Feasibility of timber currently harvested from Melbourne's water catchments. Phase 1 – Resource and Timber Properties. Report to Department of Sustainability and Environment.

6.6 Plantations are not a perfect substitute for pulpwood harvested from native forests

Most of the existing plantations in Victoria are generally suitable for pulping, although wood, pulp and paper quality varies considerably with species, age and site. Most plantation species harvested before 20 years of age are inferior to Ash residual pulplogs (residues logs after removal of sawlogs) currently supplied from Victoria's native forests.

The new plantations required to substitute for residual native forest pulplogs will be unlikely to fill any supply shortfall before 2040 because rotations of at least 20 years are required to meet quality requirements, deliver a return on investment.

6.7 Challenges expanding plantation supply

There are numerous challenges in replacing native forest Eucalypt timber with plantation timber²⁴:

- The greatest challenge with plantations is the long lead time to final harvest (ca 30 years), scarce land, high costs and relatively low investment returns.
- In Victorian and particularly Gippsland, plantation area and future plantation supply are declining.
- This is evidenced by zero net new planting in the region and increased fire loss.
- Area and log supply from Eucalypt plantations are declining rapidly, with major grower's clearfelling and converting most Eucalypt to pine plantations or farming.
- Area and log supply from softwood plantations has plateaued and may decline.
- Plantation hardwood or softwood timber is no substitute for timber harvested from native forests and is inferior for sawntimber²⁵.
- Small holdings and high land cost make it very difficult to acquire land for new plantations, particularly for Eucalypts with their high site requirements (deep soil and high rainfall).
- There is a potential adverse impact of increased plantations on stressed water catchments²⁶.
- With respect to Eucalypt plantations for sawntimber, considerable challenges include securing sufficient land to establish a large enough plantation, to ensure a large enough log supply to support a mill of sufficient scale, and to justify the considerable investment in new reconfigured mills to handle the poorer size and quality of plantation grown logs²⁶.

6.8 Poor Ecologically Sustainable Development of other substitute building material

Most European countries are targeting increased wood production from their native forests, given the improved sustainability of using more wood including for bioenergy.²⁷

Timber is a renewable raw material that is recyclable and whose manufacture into sawntimber consumes less energy and contributes less to air emissions than alternative building materials.

Converting trees into sawntimber is greenhouse friendly. Production of sawntimber use less fossil fuel energy, releases less carbon in manufacture and stores more carbon in use. Carbon stored in mild steel could be about 30kg/m³ assuming 0.4% carbon by weight and basic density of mild steel of 7,860kg/m³, but this is still only about one eighth of the carbon stored in sawntimber (**Table 3**)

²⁴ Cameron J.N. (2021) Inquiry into Ecosystems decline in Victoria, public hearing by Zoom 26 August 2021.

²⁵ Feasibility of plantations substituting for timber currently harvested from Melbourne's water catchments. Phase 1 – Resource and Timber Properties Report prepared by John Cameron and Rod Meynink MBAC Consulting Group for Department of Sustainability and Environment. 2008.

²⁶ Feasibility of plantations substituting for timber currently harvested from Melbourne's water catchments. Phase 2 Markets, supply, land and water. Report prepared by John Cameron and Rod Meynink MBAC Consulting Group for Department of Sustainability and Environment. 2008.

²⁷ P. Hopkins, Timberbiz 12/7/20.

Table 3: Greenhouse friendly attributes of Sawntimber as a building materials²⁸

Material	Energy use in production (MJ/m ³)	Carbon released (kg/m ³)	Carbon stored (kg/m ³)
Sawntimber	750	15	250
Concrete	4,800	120	0
Steel	266,000	5,320	ca. 30
Aluminium	1,100,000	22,000	0

7. The native forest timber industry

7.1 RFA's, reservation and the small area available for harvesting

Following the modernisation of Victorian RFAs earlier this year, the Institute of Foresters of Australia felt that the Victorian Government should now:

- Ensure the responsible agencies (i.e. DELWP and DJPR) and state-owned enterprises (i.e. VicForests), are fully supported in their mandates to manage public native forests in accordance with these renewed agreements, which are designed to facilitate ecosystem and species protection, restoration and recovery in Victoria, in the context of climate change impacts; and
- Consider further the scope to extend these agreements (or the policy principles they represent) to ensure a longer-term view is applied to active management of public native forests across Victoria.

In their submission to the Inquiry, they called on the state government to reverse the decision to phase-out timber harvesting in native state forests on the basis that it will not guarantee protection of biodiversity, and will be more likely to counter-productively foster a significant reduction in active, adaptive and accountable forest management across public land, especially in relation to fire.

Additionally, they call upon the Victoria Government to promote, foster and support responsible agencies and state-owned enterprises to ensure there is active, adaptive and accountable forest management across public land tenures, principally to address the broader threats of wildfires, invasive species and climate change.

Ms Monique Dawson from VicForests explained that 94% of the forest estate is in either land reserves or unavailable for productive forests, leaving only 6% available for harvesting on a rotational basis.

The total amount in our model that is available to us is about 417 000 hectares out of the 7.5 million hectares. That is not going to be harvested; that is just the total gross amount that is available to VicForests for consideration of harvesting.

The proportion of the state forest that is harvested annually is 0.04 per cent of the forested areas, and that dot on the map is an actually statistically accurate representation of the amount of forest that is harvested on an annual basis.

Regional forest agreements (RFA's) are the means, or have been the means, to bolster protections for Victoria's unique forest biodiversity and threatened species, and they govern commercial forestry on public and private lands. Victoria's forests are mostly multiple use, as I have said, and that includes timber harvesting activities. You have heard previously from other witnesses that 0.04 per cent of trees are harvested and all coups are regenerated. 0.04 per cent is equivalent to four trees in 10 000, just to put that into context – Ms Deb Kerr.

²⁸ Adapted from RAC Report & I. Ferguson, B. Lafontaine, P. Vinden, L. Bren, R. Hateley, and B. Hermesec, B. (1996). Environmental Properties of Timber. FWPRDC Report PN005.95

The Victorian Forest Products Association stated that Victoria has increased its reserve area by 77 per cent:

Overall it is the only jurisdiction to have increased its total public land estate over the period of time since RFAs commenced. During that same time period Victoria also reduced the net native timber harvestable area by 54.5% and log take declined by 62%. – Deb Kerr, Victorian Forest Products Association.

During a public hearing, the Australian Forest Products Association informed the Committee that the biodiversity in forest coupes is well known because it is surveyed. Concerns were expressed, however, for the rest of the public land estate.

The Victorian Labor Government's announcement last year that it would phase out the native timber industry from 2020, with a full shut down by 2030, means there will be even further timber reductions between now and 2030. These reductions will have a devastating impact on Victoria's hardwood timber industry, as native forestry industry in Victoria is already at the point where it cannot sustain any further reduction in production forest. Further reductions will mean significant job losses even before the Victorian Government's 2030 deadline. – Mr Ross Hampton, Australian Forest Products Association.

7.2 Native timber industries role in fire control and fire risk

Forest & Wood Communities Australia stated that the state government has not been successful in forest management as evidenced by the increasing threat of fire and the intensity of fire when it occurs due to its failure to control fuel loads in unmanaged forests. Their submission further noted University of Melbourne academic Patrick Baker's June 2020 report which stated that fire is the greatest threat to Victoria's ecosystems, not logging.

Ms Monique Dawson from VicForests acknowledged the critical role that forestry workers play in being part of the firefighting force. She stated:

That the industry are active community members. In times of need, like fires, they play an important role in being part of the firefighting force; in assisting in opening roads that might have been closed through fallen trees or removing burnt timber from the roadside so it makes it safe for the passage of vehicles. So that is a workforce that will be largely lost if the native timber forestry is closed down. - Ms Monique Dawson, VicForests.

Professor Rodney Keenan, from the University of Melbourne, disputed the flawed notion that harvesting native forests increased fire risk:

Some argued that the severity and frequency of these fires were made worse by logging and associated forest management and that harvesting in native forests should cease to reduce fire risk. Little evidence from those fires has been presented to support these contentions.

Their new analysis, he says, indicates that the extent and severity of these fires was largely determined by three years of well-below-average rainfall, leading to dry fuels across all vegetation types, extreme fire weather conditions, and local topography. - Professor Rodney Keenan, University of Melbourne.

7.3 Harvesting native forests does not make them more prone to fire

Logging in multiple use forests does not make them more prone to fire than unharvested forests in reserves. The flammability of stands is explained by fuel accumulation and stand structure. Lindenmayer et al²⁹ proposed that logging makes "some kinds of forests more prone to increased probability of ignition and

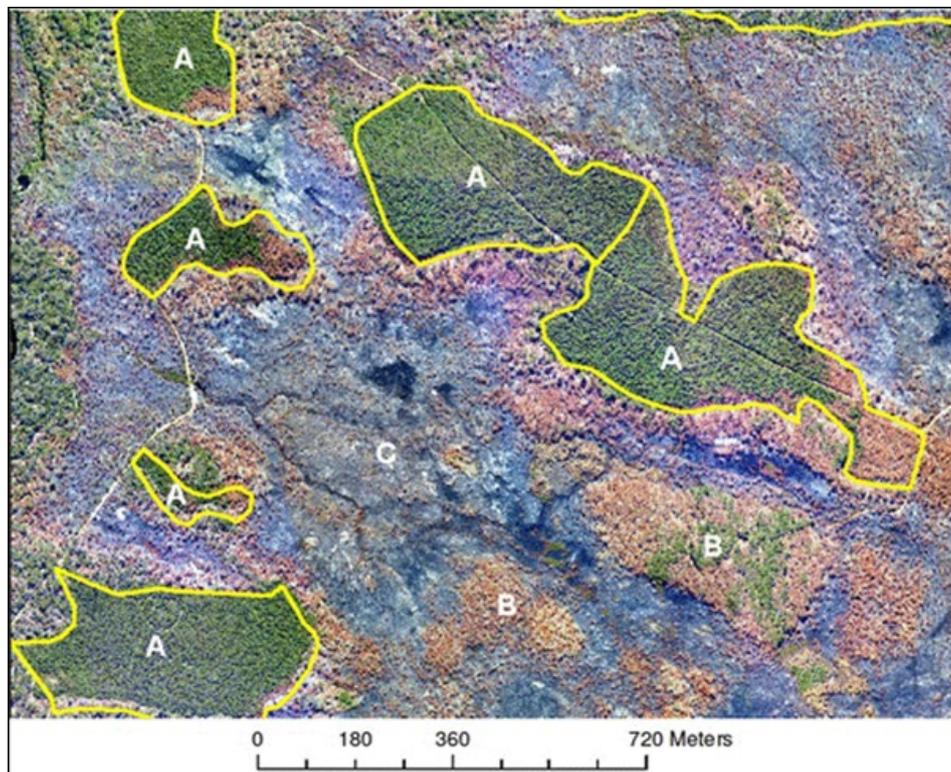
²⁹ Lindenmayer, D.B., Hunter, M.L., Burton, P.J. & Gibbons, P. (2009) Effects of logging on fire regimes in moist forests. Conservation Letters., 2, 271- 277

increased fire severity.” Eminent Australian forest scientists lead by Peter Attiwill³⁰ refuted the proposition as follows:

We find no support for that argument from considerations of eucalypt stand development, and from reanalysis of the only Australian study cited by Lindenmayer et al. In addition, there is no evidence from recent megafires in Victoria that younger regrowth (<10 years) burnt with greater severity than older forest (>70 years); furthermore, forests in reserves (with no logging) did not burn with less severity than multiple-use forests (with some logging). The flammability of stands of different ages can be explained in terms of stand structure and fuel accumulation, rather than as a dichotomy of regrowth stands being highly flammable but mature and old-growth stands not highly flammable. Lack of management of fire-adapted ecosystems carries long-term social, economic, and environmental consequences.

Immediately following harvesting and regeneration burning, soil becomes wetter with greatly reduced canopy interception, evaporation and transpiration, and there is virtually no surface fuel. Experience in WA (**Figure 8**) and Victoria is that up to age 10 years, regenerating eucalypt stands do not burn readily.

Figure 8: Unburnt 10y Marri (A) & burnt mature Marri (B) & Jarra (C)³¹



7.4 Ecological sustainability of managing 6% of native forest for timber production

During the public hearing the Committee heard that Victorian forests are certified by Responsible Wood, under Programme for the Endorsement of Forest Certification, which manages 75% of all certified forests around the world. Wood Products Victoria Technical Officer Mr Boris Iskra confirmed that forests in Victoria are also certified as being managed sustainably. Mr Boris Iskra stated:

³⁰ P. Attiwill, P. F. Ryan, N. Burrows, N. P. Cheney, L. McCaw, N. Neyland and S. Read (2013). Timber Harvesting Does Not Increase Fire Risk and Severity in Wet Eucalypt Forests of Southern Australia. Conservation Letters, A journal of the Society for Conservation Biology.

³¹ Derived from Attiwill et al (2013).

Wood Products Victoria fully supports the Victorian forestry and wood products industry, which produces sustainable, renewable, certified, local softwood and hardwood timbers and value-added manufactured products that collectively through their use play a significant role in assisting to deliver a low-carbon future and combating climate change. Wood truly is the ultimate renewable. - Mr Boris Iskra, Wood Products Victoria.

In their submission to the Inquiry (Submission 691), the Australian Forest Products Association stated that:

Victoria's public native forest resources are managed productively and sustainably. This was confirmed in a 2013 audit by the Victorian Auditor-General, Managing Victoria's Native Forest Timber Resources. This is not surprising given the scientific rigour and planning that VicForests applies to its operations, and the comparatively small volumes (and area) of native forest harvested each year – Ms Deb Kerr, IFA

7.5 Impact of harvesting on biodiversity, ecosystems, flora and fauna

The Committee heard at a public hearing that VicForests have committed considerable resources that focus on Leadbeater's possum surveys. These are only conducted in Ash type forests. Ms Monique Dawson stated that they have also been detected in forest recently affected by fire; despite the current understanding that the species generally do not occupy habitat in areas recently affected by fire. Ms Monique Dawson further confirmed:

We have a very substantial monitoring and evaluation program. So we go back in after we have harvested and we confirm the persistence of threatened species in the coupes that we operate in. We are getting very good results from those post-harvest surveys - Ms Monique Dawson, VicForests.

Ms Dawson presented information to show that harvesting native forest can enhance Leadbeater's possum by providing mid-story connectivity. Ms Dawson stated that VicForests map all of the areas of forest by the characteristics of that forest area using LiDATA and overlay this data with where possums are found.

We also have over time been substantially funded by the state government to participate in developing better science around the Leadbeater's possum. So a lot of the money that we receive from the state government is so that we can participate in the Leadbeater's possum conservation effort. Now, I am very proud to be able to provide this committee with the hot-off-the-press results of that analysis. We can now map all of the areas of forest by the characteristics of that forest area using LiDAR data, and we have then overlaid that with where possums are found.

What we can say is that these detections show that there is a high correlation between a Leadbeater's possum being in an area of the forest that has good mid-storey connectivity—not tall trees, mid-storey connectivity—and that there is a low correlation with old tall forests. – Ms Monique Dawson, VicForests.

Ms Dawson reiterated VicForests findings which confirms that Leadbeater's possums are not found in old tall forests as derived from from LiDATA mapping.

It makes sense because the mid-storey provides forage, so it is the food that the possums need, and so that is where you would find them. And fire has a stronger impact on that mid-storey and Leadbeater's presence than harvesting – Ms Monique Dawson, VicForests.

Mr Bill Paul from VicForests further confirmed the practices implemented in terms of identifying threatened species in timber coupes:

We have scientists, as we said, in the business and we utilise them to train our staff to identify those habitat values. But it is our field forestry staff who in most cases are qualified with tertiary qualifications as well, and they are out assessing those areas, identifying the habitat values and marking out and then supervising the operations to ensure they comply with the requirements we have set up. - Mr Bill Paul, VicForests

7.6 Contribution of the forest and forest products industry to climate change

The significant potential for the forestry and forest products industry to contribute to climate change mitigation was acknowledged in the 4th assessment report of the Intergovernmental Panel on Climate Change (IPCC), which stated:

“A sustainable forest management strategy aimed at maintaining or increasing forest carbon stocks, while producing an annual sustained yield of timber, fibre or energy from the forest, will generate the largest sustained mitigation benefit.”

This is achieved by storing carbon in wood products which both minimises carbon losses from future bushfires and produces renewable, low emissions materials. Trees in forests and plantations typically sequester carbon at a maximum rate between 10 to 30 years old. After this age, if the trees are not harvested, the sequestration rate slows until maturity at about 80 to 100 years of age.

Claims that a reduction in timber harvesting sequesters more carbon also ignores the stored carbon from the timber and paper products produced, and the substitution that would occur with imported wood and paper products from countries that do not have the stringent environmental protections and sophisticated forest managements practices that are in place in Australia; or the use of materials with greater greenhouse emissions.

All native forest harvested in Victoria (and Australia) is sustainably regenerated by law and so does not result in deforestation. However, reforestation cleared areas will create carbon sinks to counteract greenhouse gas emissions and will also assist in controlling salinity and creation of wildlife habitat (submission 691, page 9).

8. Public land management for improved ecosystems

Year-round management actions such as promoting and supporting forest health and diversity, more strategic fuel management interventions, maintaining roads for access and protection, as well as intervention to manage regeneration, pests and diseases, are all critical aspects in need of attention and will be required across tenures.

Minority Report Recommendation No 6: That the Victorian Government ensure that programs and funding are directed to sustaining and restoring Victoria’s iconic landscapes, including ash-type forests, by establishing and maintaining strategic seedbanks for vulnerable forest types; combined with forest nursery developments and strategic reforestation programs to implement timely and effective regeneration across fire-affected public lands.

We recognise the disproportionate focus on bushfire response including investment in large aerial fire tanker capacity, rather than bushfire prevention/mitigation based on effectively resourcing fuel reduction, early fire detection, rapid first-attack responses, are putting ecosystem processes, flora and fauna at risk.

8.1 Adequacy of State legislation governing activities on public land

Victorian public lands are managed through a complex framework of legislation. The following list along with Regional Forest Agreements and a layer of Commonwealth legislation govern activities in Victoria's native forests:

- *Forests Act 1958*
- *Safety and Public Land Act 2004*
- *Sustainable Forests (Timber) Act 2004*
- *Flora and Fauna Guarantee Act 1988*
- Regional Forest Agreements
- *National Parks Act 1975*
- National Parks Regulations 2013

Further increasing legislation is unlikely to deliver an outcome that is any better than the legislation introduced over the last thirty or so years. What Victoria requires is ways to make both our regulatory and operating agencies operate more efficiently and effectively. John Mulligan, East Gippsland Wildfire Taskforce commented on adequacy of legislation and hindrance of the Victorian Government agency responsible for managing Parks:

- *In answer to this I would suggest that the legislative framework is more than adequate. It is not the legislation that is letting the ecology down, but the administration and application of field operations.*
- *The patchwork burning and natural fires of the past (which Parks now always fight and extinguish) was much kinder to the environment. - John Mulligan, East Gippsland Wildfire Taskforce.*

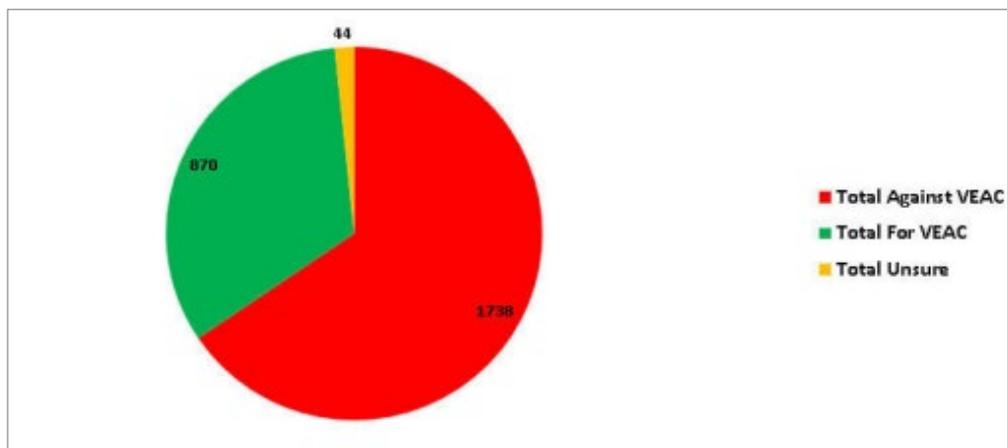
8.2 The role of Victorian Environmental Assessment Council – VEAC

Many submitters had extensive concerns about the biased nature of recommendations emanating from VEAC and VEAC's lack of understanding of active management of crown land that still enables people and industry to play a positive role within the environment. In his submission to the Inquiry, Mr David Bentley highlighted the concerns held by public land user groups:

There was overwhelming opposition from the public to the VEAC recommendations. However, on VEAC's website "The Summary of Submissions" fails to mention the public anger, yet this Summary will be shown to the politicians and senior bureaucrats by VEAC to justify their recommendations. - Mr David Bentley

The following chart, included in Mr Bentley's submission and sourced by Stephen Smithams, shows that 66% of submissions were opposed to VEAC recommendations (**Figure 9**).

Figure 9: Proportion of submissions for and against VEAC recommendations



Many witnesses shared their commitment to enhancing the environment and elaborated on their frustration with the lack of active landscape management.

I have firsthand knowledge of VEAC and also Engage Victoria's system in use. Nature is now the sole ownership and responsibility of autocracy. Would you replace the responsibility of the care and development of your child's life to the hands of a removed centralised bureaucracy, as has been done to natural life? I am here to engage you and will answer any questions honestly and openly. Please engage rural Australians. We have so much to offer, yet our integrity is treated as no more than a tradable commodity for urban votes. Rhetoric is no substitution for reality.

*Every action has a reaction or a consequence. Thousands of different ecosystems, yet stewardship is replaced with one lazy lock-up solution from centralised government. Yet historically our environment has never been without management, never before locked up and left without evolution—and now left without evolutionary defences from weeds, feral animals, population and ideological stupidity. **Mr Daryl Cochrane, Bush User Groups United member.***

In his submission to the Committee Mr Jason Wood, Director of Silver Linings Pty Ltd and Forward Prospects Pty Ltd, proposed the abolishment of the Victorian Environmental Assessment Council (VEAC) on the basis that it is scientifically unfounded, does not take account of the full range of issues of Ecologically Sustainable Development and that it fails to represent the genuine interests of the majority of stakeholders.

He also called for the dismissal of the present Central West Investigation Final Report on the grounds that it is scientifically unfounded, does not take account of the full range of issues of Ecologically Sustainable Development, or represent the genuine interests of the majority of stakeholders.

As an alternative form of governance Mr Jason Wood suggested the creation of a new Victorian Public Land Use Commission (VPLUC) to look at land categories in a similar way to the first peoples which placed humans at the centre of land use, partitioned the landscape into actively managed ecological mosaics with a specific purpose for each area and which integrated ecological enhancement and sustainability into the planned use of that land. Mr Jason Wood suggested a truly independent Land Use Commission that encompasses the principles of integrative ecology and ecologically sustainable development:

What we need is a range of areas of expertise that are not attached to stakeholders or portfolios so that it is a more central meeting place for discussion about how a project could proceed, what projects are valid. And all we need is a checklist based on the National Strategy for Ecologically Sustainable Development and each project can be assessed on the merits of that checklist and even on a competitive basis, whether they are commercial or government projects.

*The replacement of VEAC with a PLUC would ensure that humans are placed at the centre of land use and operate independently from any ministerial portfolio. Furthermore, it would draw heavily on the National Strategy for Ecologically Sustainable Development (NSES) with guiding principles of governance. The landscape would then be segmented into actively managed ecological mosaics with a specific purpose for each area. – **Mr Jason Wood, Bush User Groups United member***

The advantages of a VPLUC were highlighted by Mr Wood in his submission to the Inquiry:

To provide a cooperative effort between conservation, industry, government and the population to effectively 'terraform' Australia's landscape back to the mosaic based overlays developed by the First Peoples.

To provide a separate, impartial, independent and permanent commission charged with the sole purpose of determining a more balanced and distributed use of land in keeping with the principles of Integrative Ecology across the whole of government.

Industry and the general public, as both users of land and the source for funding for sustainability must have input and full transparency on the Commission.

Innovation should be the driver of the Commission's activities.

The National Strategy for Ecologically Sustainable Development provides the perfect backdrop for land use law reform and should be used as the foundation document to guide the charter of the Commission.— **Mr Jason Wood**

8.3 Impact of fire on forest ecosystems

It was widely recognised throughout the inquiry that high intensity bushfires represent one of the most damaging threats to Victorian ecosystems. At a public hearing, Dr Michelle Freeman, Vice President of the Institute of Foresters of Australia and Forest Growers, stated that high intensity fire is a major issue causing major forest changes and compositional changes. A submission to the Committee highlighted:

The greatest most pervasive threats to our forest ecosystems are invasive species and the increased frequency and intensity of bushfires..... - **Dr Michelle Freeman.**

8.3.1 Impact of bushfire on Fauna

Ecologist for the University of Melbourne, Dr Holly Sitters commented that in the last Victorian bushfire 3 billion vertebrates were killed.

Commenting on the seriousness of fire as a contributor to ecosystem decline Dr Craig Nitschke from the School of Ecosystem and Forest Sciences, University of Melbourne stressed that:

Wildfire is the big driver, has a direct effect and in interaction with how it affects hollow-bearing trees and foraging resources - **Dr Craig Nitschke.**

Commenting on the seriousness impact of the 2019-20 summer bushfire of fire, John Mulligan, East Gippsland Wildfire Taskforce provided the following evidence:

Bush animals and birds manage light patchwork burning very well, it is only the mega type fires that destroy them. Also, all bush animals and birds are very territorial so it would be doubtful if the returned birds would be accepted back by the resident birds so the whole exercise was probably an expensive waste of time. Whereas, had a regular burning program similar to what we use to do, been carried out then the survival of all species would have been ensured. But this situation is what happens when common sense and practicality are replaced by idealism and ignorance.

The catchment of the Betka River which lies to the west of Mallacoota was heavily burnt in some of the worst of the 2019/20 fires. Then because of the dry conditions and no flow the entrance to the sea closed. Subsequently, recent rains in the area flooded the stream and forced open the ocean entrance.

I have been told by a reliable witness that the clean beach sand over which the overflow flowed was black from the ash in the river, also littered with dead fish that had died from lack of oxygen in the water.

Parks Victoria removed the visible dead fish and made some excuse that the saltwater ingress was the cause of the fish deaths. Saltwater ingress in previous openings has not killed fish.

So imagine the whole length of the river not just the little bit the public have access to at the mouth and then imagine the vast range of marine life in this one river that have been seriously affected by these catastrophic fires. — **John Mulligan.**

8.3.2 Impact of prescribed fire on fauna

One of Dr Sitter's objective has been to figure out exactly what aspect of fire regimes are causing problems for these species:

She has found that big, severe, frequent fires are often the problem. Large scale prescribed burning with very low fire intensity leave quite a few unburnt patches within the burn perimeter was suggested. Depending on the forest type the canopy would remain intact with vegetation structures, such logs and hollows, remaining.

*I have been working mostly in the Otway Ranges, a little in the Central Highlands and a lot in the heathy woodland of western Victoria, and so in those ecosystems the animals we have been focusing on—ground-dwelling mammals and birds—are very little affected by that sort of low-severity prescribed burning - **Dr Sitter***

8.4 Impact of bushfire and prescribed fire on CO₂

Prescribed fire plays a key role in reducing CO₂ emissions through reducing bushfires. Bushfires release huge amounts of carbon dioxide including from carbon stored in the soil that can take hundreds of years to restore. Wildfire contributes 5-10% of global CO₂ emissions each year and are a significant contributor to greenhouse gas. The CO₂ released from low intensity prescribed fire is very small and replenished within 5 to 10 years.

8.5 Invasive species

The Committee Report has not made the eradication of invasive species a top priority for the Andrews Government. This is a major weakness with the majority report.

When implementing the *Catchment and Land Protection Act (Vic)* and the *Invasive Plants and Animals Policy Framework*, the first action by government should be to explore how the existing resources can be deployed more efficiently and effectively.

8.6 Control of damaging fauna

We oppose using apex predators such as dingoes to control other introduced predator species recommended in the Committee Report. That recommendation would have devastating impact on domestic and native animals. Farmers who already suffer great stock losses from wild dogs have also suffered from recent bushfires and floods.

Minority Report Recommendation No 7: The Nationals and Liberals oppose the reintroduction of dingoes as an apex predator.

The Nationals and Liberals acknowledged the legal use of 1080 bait carried out in accordance with prescribed standards:

- *We use 1080 and any other chemicals according to the standards that we must meet to use that, and that includes the appropriate use of 1080 baits, the way in which they are buried and then the way in which they are monitored - **Kylie White, Deputy Secretary, Climate Change, DELWP.***

Minority Report Recommendation No 8: The Nationals and Liberals oppose the phase out of legal 1080 baiting used according to prescribed standards.

Minority Report Recommendation No 9: The Nationals and Liberals recommend the continued use of the Authority to Control Wildlife permit system for control of fauna species where they cause damage to the environment or economic loss.

8.7 Approach to conservation and management of threatened species

Professor Brendan Wintle, Professor of Conservation Ecology, University of Melbourne noted the importance of adopting landscape-scale coordination and the oversight. A lot of the activities we do have to happen at a landscape scale, but the focus on what that means for this species and that species is what allows us to connect this to the public interest. He stated:

“We have to manage the whole landscape, and if you just focus on species you’ll keep losing them; you’ve got to change practices at a landscape scale”.

*“We just do not spend enough money on sophisticated programs to track changes in species abundance across the landscapes. - **Professor Brendan Wintle, University of Melbourne.***

Minority Report Recommendation No 10: The Nationals and Liberals support in principle that the Department of Environment, Land, Water and Planning conservation management of threatened species should be on a practical landscape-wide strategy.

The Inquiry received calls for more funding for work on threatened species, but also heard evidence from VAGO and others that the government agencies such as DELWP had issues with focus, efficiency and effectiveness, exacerbated by poor organisational structure, strategy, systems, staffing, skill formation etc.

Minority Report Recommendation No 11: The Nationals and Liberals recommend that any increased funding should only be made available after a professional appraisal of how state government agencies such as DELWP or Parks Victoria can first improve efficiency and effectiveness and extra funds should only be awarded based on a rigorous ‘project plan’ that clearly demonstrates how the extra funds will deliver improved outcomes.

8.8 Mountain pygmy possum, brush tailed rock wallaby and southern bent-wing bat

Ecologist and ecological historian, Mr Vic Jurskis, provided an historical overview on three endangered mammal species.

There are only three mammals that are critically endangered in Victoria today, and none of them are arboreal or forest dependent. The mountain pygmy possum is rare because it lives in alpine boulder fields, where it can survive under the snow. This habitat was protected by Aborigines when they burnt it when they were feasting on Bogong moths, and mountain cattlemen continued the tradition.

Since the alpine habitats have been protected, they have been incinerated by a succession of mega-fires. There have also been a lot less moths turning up in the mountains, because they breed in the Murray-Darling, where their grubs feed on weeds, crops and pastures. They used to feed on drought-adapted vegetation that disappeared along with Aboriginal burning. But now the weeds and crops disappear when irrigation water is diverted for so-called environmental flows, which top up an artificial freshwater lake at the mouth of the Murray, so the moths and the pygmy possums are both in strife.

The brush-tailed rock wallaby and the southern bent-wing bat are the same. They are not forest dependent. But anyway, Victor Steffensen says we should not manage for species; we need to see the big picture and maintain the whole landscape for the right fire.

8.9 Koalas

Mr Vic Jurskis, provided an overview which shows that historically koalas have been a sparse species rather than endangered species:

Koalas are just one species that irrupted when we disrupted Aboriginal burning. There were many others that did as well, and then there were the small mammals that we lost on the other hand.

When we disrupted Aboriginal burning we upset the balance that maintained healthy mature trees and diverse, grassy ground layers and everything that depended on them.

Koalas were naturally a very rare species, because soft young growth is a rare commodity in healthy mature forests, and koalas only lived in forests. They were confined to forests. No explorers, apart from Strzelecki, ever saw koalas, because they did not live in the woodlands and the grassy areas that Europeans sought for agriculture. They only moved into those areas after they irrupted from the forests and the woodland trees got sick. When people sowed pastures and changed the soils the trees got sick and started recycling soft young growth, so the koalas irrupted in the forests from lack of burning and then in the woodlands from the trees being sick.

The young koalas are very mobile, and they go out looking for new territory to occupy. So it was not just in Victoria. There is a great myth about koalas irrupting in Victoria because they were translocated. That is absolute nonsense. Koalas like any other animal irrupt when there is an abundance of food, and the abundance of food has been as a result of the growth of dense young forests from disruption of burning and the sickening of old woodland trees due to disruptions of burning and/or pasture improvement. So koalas irrupted right across their range, except in far northern Queensland, where there was very limited agricultural development and they still maintained the traditional burning practices.

The only difference between Victoria and other places is in the timing, but, in general from south-east Queensland down to Victoria and South Australia the koalas crashed in the federation drought because they were relying on all this soft young growth that collapsed in the federation drought, and then they disappeared from the woodland valleys and things where they never really lived anyway before whitefellas came along.

Nearly all the koala populations that have been studied and written about are all unsustainably dense populations. Healthy sustainable populations are in the order of one koala per 100 hectares. The densities at Cape Otway at the moment are, like, 20 per hectare—or they were recently. That is 2000 times the natural density.

*So what needs to happen is that we need to restore healthy forests and low sustainable densities of koalas. In the meantime you have got the animal welfare problem of what to do with all the surplus. The idea of translocating them somewhere else in the bush does not work. All the translocations have always been into areas where there are already koalas. The reason they have gone mad after translocation is because people have excluded fire from the areas where they have translocated koalas - **Vic Jurksis**.*

Everywhere that koalas have had isolated manna gum woodlands and there is no top-down pressure on koalas, they become overabundant and they take out the forest. Other experts shared their opinions about koalas:

The symptom of an upside-down bit of country like this was koala overabundance. Because there was no top-down pressure on them and they were able to take advantage of manna gums, which are a highly nutritious species, they were able to explode in numbers and they took out the canopy of the trees. It is certainly no blame on the koala; it was just an ecosystem well and truly out of balance.

*The koala population along with the canopy crashed drastically, and you would have seen in the news if you were paying attention at the time that it became quite prominent in the media. Many hundreds of koalas, probably thousands, starved to death as that ecosystem collapsed. Hundreds probably I euthanised myself, because that ecosystem could no longer take them and they were starving to death and they could not be rehabilitated. – **Dr Jack Pascoe, Conservation Ecology Centre**.*

9. Private land management for improved ecosystems

9.1 More bureaucracy will not deliver improved outcomes

Many submitters stressed that connection to the land has gradually been reduced over the last century as communities have become more urbanised and government regulation has reduced the range of activities allowable in the bush. It was felt that the decisions about land management are made by people who have no connection to the land. Today, in addition to traditional owners the groups with the most connection to the land are farmers and those working in the forest.

9.2 Adequacy of state legislation governing private plantations

Mr David Bennett is Risk and Compliance Manager at PF Olsens who manage plantations throughout Australasia. Mr Bennett has 30 years' experience in operational forestry; safety, training and environmental compliance; certification; and management of risk and compliance with regulations. He indicated that there are seven Acts that regulate plantation forestry and provided the following evidence:

We get our authority to act and use the land under the Planning and Environment Act, and that enables the code of forest practices. So all of the operations are regulated under the code of forest practices framework, which is fairly unique as a land use. There are no other rural land uses that have a similar sort of model, but it works well and I think it is a fairly robust document.

Obviously, the Environment Protection Act—it touches on biodiversity management mainly along waterways, so under the SEPPs under the environmental Act there are rules around not disturbing and protecting the biodiversity along waterways.

The Wildlife Act is quite a powerful Act and quite important to us at the moment.

The Prevention of Cruelty to Animals Act also touches us. I will touch on that later in my presentation.

The Flora and Fauna Guarantee Act—the plantation estate that we manage has got about 60 to 70 listed species under the Act, so it is real. We have got to engage and make sure that we are managing the land appropriately for those plants and animals.

The Catchment and Land Protection Act has provisions around weed management and feral pest management and appropriate management of the trees.

And then more lately the Plant Biosecurity Act—again, it is around weeds and treats the biosecurity. Trees are subject to pests as well as agricultural trees. Some of the pests in pine plantations are things like Sirex wasp—those sorts of things—so managing biosecurity and having good biosecurity in place is important to managing the crops and protecting the crops we manage.

Mr David Bennett added that managing according to the seven state statutes involves dealing with several government agencies such as CMA, EPA and DELWP³² and also complying with a layer of commonwealth legislation.

*So I suppose my plea to the committee is that you look at these legislations and the plethora of them, their effectiveness and their efficiency and whether there are some opportunities to streamline and improve them to then provide the outcome of reversing ecosystem decline - **Mr David Bennett, PF Olsens.***

³² CMA – Catchment Management Authority, EPA – Environment Protection Authority & DELWP – Department of Land, Environment, Water & Planning.

9.3 Role of local government and potential duplication

The Country Fire Authority (CFA) in their submission to the Inquiry expressed compliance with legislation from a local government point of view is problematic because it is very poorly resourced.

It is very poorly resourced, but the political will, especially at local government level, to enforce the Planning and Environment Act is often absent. – Dale Tonkinson, Biodiversity Advisor, CFA.

Before we throw good money after bad, we should question whether local government should not have the role of enforcement. Stakeholders have identified the need to improve biodiversity 'outcomes' on private and public land, yet the answer is not to direct funding through another tier of government where a significant proportion will be consumed by another tier of administration across 79 Local Government Areas.

The Committee recognises weaknesses with local government and biodiversity initiatives, however, the Nationals and the Liberals believe any additional financial support should be for direct grants to private landowners and public land managers including local government grants. The Committee endorses that any funding should be managed in a streamlined way and directed to those who submit proposals for field projects, including LGA's that will have a demonstrated favourable impact on ecosystems.

The Nationals and Liberals believe a relevant arm of DELWP (or for some projects the Catchment Management Authorities) can lead-manage the financial support of regional biodiversity initiatives. DELWP has greater expertise than local governments and is better placed to manage long term projects than a fragmented approach involving 79 LGA's.

9.4 Need outcome focused incentives and leadership

The following comments were made by local government:

Council has 400 hectares or so of bushland reserves, which we manage for access and amenity but also for biodiversity conservation. So we directly employ the Wurundjeri Narrap team. We also engage with them around traditional burning in our reserves, so we are looking at opportunities for that" – Lisa Pittle, Nillumbik Shire Council.

We also, similarly to Nillumbik, do engage traditional owner groups for on-ground works as appropriate, including for cool burns where we can. As I mentioned, we have a great desire to continue to work with traditional owner groups and to do more with them, including with their on-ground teams, such as the Narrap Team. They are very stretched for what they can actually do and how many services they can actually provide across their country, hence why I feel that expanding core funding for those groups would really help them grow their teams and grow their service capacity to enable them to meet the demands on their services. If they had greater ability to work across their country, we would certainly engage them more. – Macedon Ranges Shire Council.

9.5 Landcare funding

The Nationals and Liberals see the need to more effectively engage local communities, garner volunteer input and integrate resources more efficiently to better arrest ecosystem decline, and achieve improved environmental outcomes and habitat restoration.

Minority Report Recommendation No 12: That the Victorian Government further invest in strengthening regionally based natural resource management programs, including funding of local community-based organisations such as Landcare to cover Landcare coordinators and grants for Landcare projects.

9.6 Vegetation Offsets

DEWLP manages Victoria's entire state-based vegetation offset system from regulations to sales to compliance. That includes the writing of regulations, mapping of vegetation zones, approval of offset sites for sale, managing of offset sales (but not involved price), granting of permits, quality assurance programs and compliance checks.

Where third parties and brokers are involved to assist with tasks such as the sourcing of offset units, DEWLP has final approval over almost every aspect of the market. DEWLP generally:

- Writes the system's **regulations**.
- Develops the **mapping** that dictates permit requirements.
- Assesses **offset sites** to go onto the market.
- Manages **sales** of land for offset units.
- Assesses **permits** that have offset unit requirements.
- Manages **quality assurance** of offset sites.
- Runs **compliance checks** of purchased offset sites

A downfall of DEWLP's monopoly is a serious lack of compliance checks, meaning that there is often no way to know whether land bought as an offset is actually maintained for the purpose it was purchased.

Native vegetation offsets may apply to public as well as private land. Many stakeholders would like to see the removal of native vegetation offsets. Rex Motton from the Prospectors and Mining Association of Victoria told members of the Committee at a public hearing that the association would like to see the removal of native vegetation offsets for small-scale mining because it does not seem that this is particularly appropriate:

The licence area is usually in the order of 1 to 5 hectares. So for small-scale miners who have limited funds it is fairly prohibitive to take on these really quite large environmental programs. We are quite willing to work with community groups and First Nations groups in order to get a positive outcome, but it should not be prohibitive or preventative to have such a burden, an economic burden, on such a small operation – Rex Mottom, Prospectors and Mining Association of Victoria.

Mr Motton further expressed that native vegetation offsets are not necessarily directly benefiting the area that is impacted. Sharing these concerns are the South Gippsland Conservation Society Inc. who stated that:

*Mostly it is local governments that administer it, and they do not have the capacity to be entirely focused on front-end paperwork and just have no interest in long-term compliance. Really it is designed to boost the liquidity and reduce the cost of clearing permits for developers. By design the net gains scheme inevitably leads to net loss. Adding to this is just the poor administration of the scheme - **South Gippsland Conservation Society Inc.***

Minority Recommendation 13: That the Victorian Government ensures that there is a full, transparent and regulated market, which operates from arms-length from government departments and NGOs such that there is no conflict of interest between market participants in the regulation and purchasing of vegetation offsets.

9.7 CFA role on prescribed fire, bushfires and ecosystem management

In a submission to the Committee, the Country Fire Authority (CFA) acknowledged fire as an ongoing and long-term force in Victorian ecosystems that continues to shape them. CFA's Biodiversity Advisor, Mr Dale Tonkinson stated that it is not possible to understand the effects of fire by just calling it fire, nor is it possible to understand any individual fire without the context of what has gone before. He further stated that what has gone before is very much related to timing, fire intensity and how big fires are.

As a volunteer based emergency response organisation, the CFA stressed that they do not have any specific responsibility for ecosystem management but the community expectations around environment and ecosystems fall upon them and they respond accordingly. Through their submission to the Committee it was noted the vital role that they play in terms of vegetation and fuel management:-

Relevant CFA programs are the statewide vegetation management team that we both belong to, with two biodiversity advisors across the state, a cultural heritage advisor, a coordinator and a team leader. So Dan is the team leader. We also have 13 regional vegetation management officers, and they support our fuel management activities. This whole program works in the non-emergency space around fuel management, which under the CFA Act we also have responsibilities for. We also have a research and development team that undertakes applied research, particularly in climate change and fire and vegetation relationships. – Mr Dale Tonkinson, Biodiversity Advisor, Country Fire Authority.

Vegetation Management Officers VMO's are retained as technical professionals within CFA but require support with resources and funding to undertake these important works. VMO's play a key role in bushfire mitigation and protect lives and property.

Minority Report Recommendation No 14: That the Victorian Government provide ongoing funding/resources for Vegetation Management Officers (VMO's) to provide vital training and skills to councils, road managers, landholders and CFA volunteers in fuel reduction by prescribed burning and mechanical treatment.

Under the Andrews Government there has been substantial discontinuity of leadership of the CFA. Over the last few years the CFA has had four Chairman, six CEO's and three Chief Officers. In addition, there has been essentially three different compositions of the Board including one where the entire Board was dismissed by the Andrews Government.

There has been a lack of respect for the volunteers by the government resulting in a decline of 5,490 in operational volunteer firefighters over recent years, which has not been offset by the increase of 776 in career firefighters.

9.8 Equity issues for private landowners

Minority Report Recommendation No 15: The Nationals and Liberals recommend that any initiatives to protect and restore native vegetation including remnant grassland on private land should ensure that the landowner is adequately compensated for costs of delivering 'public good' conservation of ecosystems. The government should ensure that the funding is adequate to cover the costs incurred by private landowners of delivering the 'public good' conservation and also for the 'opportunity costs' they incur as a result of any restricted land use.

9.9 Camping on licenced river frontages

Concerns were raised about third party campers on licenced river frontages. The Victorian Farmers Federation (VFF) and Friends of the Barwon raised concerns:

The licenses that we have in order to have that Crown land and those river frontages come with a whole bunch of responsibilities. Campers, who will be allowed into that land, will be sharing in those responsibilities. There has to be a really strong registration system to ensure that where there is a need for compliance and enforcement we actually have an adequate tool to be able to do so. – Emma Germano, VFF.

We have serious concerns about the new regulations regarding camping on Crown land, and we would in fact be urging farmers to change their leases from Crown grazing leases to riparian management leases, which basically takes away the ability to access those areas in sensitive areas. We know that there are very many sensible fishermen, but there is a fairly big rump that do the wrong thing. We have seen fires from camp fires that have been lit, we have seen trees that have been cut down—all against the spirit of the legislation or what should be done.....unfortunately there is a group that does the wrong thing and there are certainly serious concerns. Many farmers have expressed the same thing. – Mr Trevor Hodson – Friends of the Barwon.

10. Making Ecosystems valuable and harnessing volunteers

We need to focus on making ecosystem improvement valuable rather than costly. More legislation, regulation and bureaucrats often deliver worse rather than better outcomes or stymies progress and it has proved to be relatively inefficient, ineffective and costly. The secret to sustainable improvement is to make ecosystems more valuable to more people and this will often involve the users of that ecosystem.

Enhanced value to support ecosystem improvement is likely to be generated from sustainable multiple use rather than single use. This requires reversing the trend over recent years of single use or 'lock it up'

On public or private land the government can make ecosystem improvement more valuable by harnessing those that have a vested interest in improving the resource, which includes user who are prepared to either pay or volunteer their time to ensure improvement. Examples include Landcare, Field and Game Association, CFA and Prospectors and Miners.

10.1 Landcare volunteers

Landcare is a valuable volunteer movement who contribute to reducing land degradation and improving biodiversity and ecosystems primarily on private land. Mr Andrew Maclean, Chief Executive Officer, Landcare Victoria offered the following commentary:

The principal way people volunteer is they volunteer their time, so they go to the tree-planting days and those sorts of activities.

The committee's volunteer time in organising, strategising and planning the activities.

I also like to make the point that ultimately the landholders volunteer their land to make it available for these ecosystem restoration projects.

Now, whilst there is quite a level of enthusiastic volunteering around those themes, the hard work of organising the planting day, all that sort of stuff, that really is where the facilitators come in. So, they spend their days busily applying for grants—that is a big part of their role—and basically organising the volunteers, seeing that people turn up to implement the project. - Mr Andrew Maclean, CEO, Landcare Victoria.³³

10.2 Field and Game Association

Field and Game Australia was formed in 1958 by concerned hunters who lobbied for shooters to be licenced and the money raised was used to acquire and restore wetland habitats across Victoria. Over 75,000 hectares has been restored into natural wetlands through the state game reserve system, and over 70 of these reserves are Ramsar listed. Mr Peter Hawker Chair, Field and Game Australia, provided the following evidence to the Inquiry:

³³ Inquiry into Ecosystem Decline in Victoria Transcript. Tuesday, 11 May 2021

Field and Game members are very passionate about their wetland conservation and restoration and ensuring that wetland ecosystems are protected for generations to come. Field and Game has delivered substantial projects across Australia in the last 60 years.

....it seems only a natural progression to form a public fund, and that became a reality in 2002. It was stated that whilst wetlands on public land were being managed by bureaucrats and state game managers, we also saw a need to actually have more access to be able to perform more conservation and perform more maintenance, and that became very problematic. So in 2002 we established the Wetlands Environmental Taskforce Trust for that purpose of purchasing, restoring and maintaining wetland habitats.

With ownership of the habitats came the full access required to rehabilitate ecosystems and restore biodiversity. With the rehabilitation comes the transformation—none so dramatic as the changes brought about in the Heart Morass in Gippsland. Back in 2004 a parcel of 819 hectares of the Heart Morass was up for sale. The land was worn down, depleted, after a century of stock grazing, with salinity issues and salt water intrusion.

The restoration and conservation started with the 2006 purchase and continues to this day. Field and Game Australia's members have and will continue to volunteer their time and expertise to rehabilitate this degraded farmland to the thriving wetland habitat it once was. In the years since that first parcel of land was purchased over 50 000 native trees have been planted, 20 tonnes of introduced or invasive carp have been removed and seeds have been collected from over 50 native plant species for revegetation, with thanks to hunters and the Heart Morass project partners, which were Field and Game Australia, Watermark, Bug Blitz, West Gippsland Catchment Management Authority and the Hugh Williamson Foundation.

Field and Game has been involved in longstanding and very difficult situations to save wetlands within Australia as well as in Victoria. I think part of those many efforts have predominantly been aimed at non-game species, especially the ibis up at Kerang, and we actually have seen increases in broilgas across the regions as well.

But some of the wetlands that have benefited from Field and Game's hunter-led conservation efforts—and I will just include a few of these wetlands for the committee— would be Hird Swamp, which is a Ramsar-listed wetland and part of the Kerang wetlands; Johnson Swamp, a Ramsar-listed part of the Kerang wetlands; Dowd Morass, another Ramsar-listed part of the Gippsland Lakes; Reedy Lake at Nagambie; Kanyapella Basin near Echuca; Tower Hill at Warrnambool; Lake Eppalock near Bendigo; the Loveday Wetland complex in South Australia; Gunbower Island and Gunbower forest, Ramsar listed, near Kerang; Gaynor Swamp near Rochester; Lake Buloke near Donald; Harrison Dam in the Northern Territory; Lake Wellington at Sale; Jack Smith Lake at Sale; the Heart Morass and Sale Common at Sale.

*I could continue to go on with many more wetlands that have actually had long-term benefit from Field and Game members and hunter-conservationists, and they continue to do work in these wetlands—from eradicating pest species to building nest boxes to actually supporting tracks, making sure there is an overall management program in place and working alongside government departments – **Peter Hawker, Chair, Field and Game Australia.***

Field and Game Australia has consistently been at the forefront of wetland conservation, often being the first to notice changes in waterfowl habitat and population, continually seeking the reasons for these changes. Wildlife scientists agree that the loss of habitat is the greatest threat to waterfowl and far greater than the recreational hunting. Several species, including the hardhead, blue-winged shoveler, blue-billed duck and musk duck, have been considerably affected throughout the alteration and loss of their habitat, reflecting the continuing need for Field and Game Australia's wetland restoration and conservation programs.

10.3 Contrasting approach on volunteering by 'green' activist groups

The Wilderness Society has, by its own admission has thousands of members, however, it has no active invasive weed or pest species eradication programs. This is in stark contrast to Field and Game Australia who put their money where their mouth is and roll up their sleeves, do the hard field work and make a positive contribution to real-world outcomes for ecosystem improvement.

Further Questions on Notice and Submitted by Richard Hughes, Victorian Campaigns Manager, The Wilderness Society Victoria³⁴.

Ms Bath: Noting definitive CSIRO research that finds that invasive weed species are by far the greatest threat to threatened species, at the Hearing you answered that although you have thousands of members none of your programs target weed eradication. Why?

Mr Hughes: There are multiple analyses of the drivers of extinction in Australia. These variously highlight habitat loss, invasive species or climate change as the predominant driver, depending on how the analysis was done, relevant species and location. Wilderness Society is campaigning and engaging community members to secure strong environmental laws that are properly enforced, including threatened species protection that properly addresses invasive and other threats. As an example, our submission to the Royal Commission into Natural Disasters highlighted the need to redress the vast underinvestment in invasive species management and endangered species recovery programs.

Ms Bath: Acknowledging the harm that feral animals cause to flora and fauna in the forest, why do you not participate in programs aimed to eliminate feral animals?

Mr Hughes: The Wilderness Society is deeply concerned about the impact of invasive fauna. Our focus is on the intersection where habitat destruction exacerbates the impacts of invasive fauna on threatened species...

11. Other issues raised with the Inquiry

Due to the enormity of the volume of submissions and hearing testimonies it is not possible to do justice to many of the issues canvassed by community members, stakeholders and professionals.

We recognise and thank submitters who raised the importance of:

- The recognition, management, preservation and welfare of sustainable Australian Wild Horse populations. (Australian Brumby Alliance)
- Conservation objectives and modern mineral resource development are not mutually exclusive outcomes – the two can, and do, successfully co-exist. (Minerals Council of Australia)
- Bees as pollinators and comments from beekeepers in relation to a decline in flowering cycles and a noticeable and significant reduction in nectar production from the forests. (Gippsland Apiarists Association Inc).
- Historical context to declining ecosystems, with (Bill) Gammage in his book, *The Biggest Estate on Earth* and Jurskis in *Firestick Ecology* provide a comprehensive review of the Australian landscape at the time of European arrival and the use of fire by Aboriginal people, prior to the destruction of the Aboriginal way of life. (South East Timber Association – SETA)
- Volunteers from the ADA who are involved in Deer Management Programs across land tenures in conjunction with public, private and NGO land managers and other Volunteer organisations. (Australian Deer Association).
- An Assessment of the Gillespie and Midas Social and Economic Analysis for the Victorian Environmental Assessment Council's (VEAC) Recommendations for Public Land in Victoria's Central West, prepared by Regulation Economics for the Prospectors and Miners Association of Victoria (David Bentley).

³⁴ Transcripts Question on Notice Thursday, 11 March 2021 Submitted by Richard Hughes, Victorian Campaigns Manager, The Wilderness Society Victoria.

Minority Report – Legislative Council Environment and Planning Committee inquiry into Ecosystem Decline

The Minority Report by Clifford Hayes, Deputy Chair of the Committee, on behalf of the Sustainable Australia Party, has been produced in response to concerns held about some of the content, findings and recommendations in the majority report of the Legislative Council Environment and Planning Committee inquiry into Ecosystem Decline. This minority report is informed by evidence given before the Committee, which has not sufficiently been taken into account in the majority report.

Chapter 1 – The Need for Urgent Action To Reverse Ecosystem and Biodiversity Decline

While the majority report goes a good way towards addressing the concerns of many witnesses about the grievous state of our ecosystems and biodiversity in Victoria, overall it could do better to take into account the urgency of the situation and therefore the need for urgent action, which a number of witnesses conveyed in their evidence.

A number of findings and recommendations in the report reflected a need for action, in that they asked the Victorian government to consider additional funding and to consider a much stronger regime of regulation and enforcement.

However, it is submitted that this is inadequate for the emergency at hand and the majority report needed to call for more funding and more regulation and enforcement, rather than just asking the government to consider that this should occur. There is no timetable for the government's consideration set out, nor any mechanism whereby the government can inform the Committee of the nature and outcome of its deliberations.

While a number of witnesses did not go to a macro view, a number who did, were in concurrence about the dire environmental situation that faces this state after years of neglect and destruction.

Dr Brian Coffey, Vice-Chancellor's Research Fellow, at the Centre for Urban Research, RMIT University provided the following evidence at a public hearing of the Committee:

“transformative change is required. We need to shift the trajectory of development towards sustainability so that our economy fits within our ecology while still meeting people’s needs. For too long we have tried to fit nature into the economy. I would argue that we need to fit the economy into nature. This requires far-reaching structural and social change, something akin to the industrial revolution.”¹

It is the contention of this minority report that the majority report favoured incremental change and improvements when in fact “transformative change is required.” Sufficient evidence was heard about the parlous state of Victoria’s environment to merit recommendations that favoured transformative change rather than incremental change.

Dr Coffey described transformative change as:

¹ Brian Coffey, Vice-Chancellor's Research Fellow, at the Centre for Urban Research, RMIT University, Public Hearing, Melbourne, 21 April 2021, Transcript of Evidence, p30

“a fundamental, system-wide reorganisation across technological, economic and social factors, including our paradigms, our world views, our goals and our values. So that is a really profound sense of change of direction.”²

The majority report does not reflect that need. Rather than offer a profound change of direction, the majority report reflects bringing order to the management of decline. Nature is still required to fit into the economy rather than the other way around, which is what is needed.

Dr Jenny Gray, Chief Executive Officer of Zoos Victoria, reflected this need for transformation when she called for “bravery.”³

Dr Gray said:

“a lot of our tried and tested conservation tools are not working.”⁴

She went on to say:

“I think there is going to be bravery in terms of things that we need to stop doing and there is going to be bravery in terms of things we start doing, and that is where the collaboration really comes in. We can only be brave if we live in a culture of collaboration and a culture of learning.”⁵

On a subject which will be dealt with at length later in this minority report, Victoria’s rapid population growth this century has been a big contributor to the state’s biodiversity and ecosystem decline.

Brendan Wintle, Professor of Conservation Ecology at the University of Melbourne, told the Committee that managing human population growth is a key factor in conservation:

“the congruence of population growth, carbon emissions, nitrogen emissions and plastic accumulation in the oceans—these exponential growths that are disturbing, to say the least..... I think human population growth is key—managing that is key—to conserving, and thinking carefully about sustainable economies that do not just focus on growth as the index of performance is also key. So, yes, I agree that human population growth needs to be very carefully managed. It is the number one or proximal driver behind all of this.”⁶

Victoria has experienced rapid population growth this century, in some years the population growth rate was running at four times the rate of the developed country average.⁷ This issue and its negative impact on ecosystems and biodiversity will be addressed later in this minority report. Despite many witnesses referring to it, the issue received almost no attention in the majority report.

Clearly, given all the above, a much more urgent transformative approach is needed and this is also not reflected in the majority report. Even with the measures suggested in the report, ecosystem and biodiversity decline pressures will continue in Victoria.

We have to act urgently and we have to do more.

² Ibid., p.30

³ Dr. Jenny Gray, Chief Executive Officer, Zoos Victoria, Public Hearing, Melbourne, 3 December 2020, Transcript of Evidence, p.36

⁴ Ibid., p.36

⁵ Ibid., p.36

⁶ Brendan Wintle, Professor of Conservation Ecology, University of Melbourne, Public Hearing, Melbourne, 23 February 2021, Transcript of Evidence, p.55

⁷ <https://propertyupdate.com.au/population-growth-in-victoria-from-slow-growth-to-woah-growth/>
<https://data.worldbank.org/indicator/SP.POP.GROW?locations=OE>

FUNDING

Current programs are underfunded and the Committee heard evidence they are not working.

Drastic action is urgently needed. Saying as the majority report does, that the Victorian government should consider more funding and should consider regulatory reform, is not adequate.

The government immediately needs to provide more funding and reform environmental regulation.

Dr John Morgan, Co-chair, ESA Policy Working Group, Ecological Society of Australia said:

“The question for this inquiry is: is the decline grim enough for governments to change their behaviour and actions? And we might ask: how bad do you think the ecosystem decline actually is? Is it catastrophic and worth acting on? The ESA—our organisation—submits that far from being incapable of acting or ignorant of the approaches that we need to improve the situation, ecosystem scientists have a really good understanding of some of the solutions that are necessary to bring about change, but it requires a will to implement them.”⁸

Dr Morgan gave further evidence that we are falling behind in restoring damaged ecosystems and the government’s Biodiversity 2037 strategy is underfunded and lacking definition:

“If we take, for example, the 2037 biodiversity strategy, the budget allocated to that strategy in 2017–18 was an \$86 million commitment for four years and then just \$20 million per year ongoing to deliver on the plan. It is a pretty modest investment given the magnitude of the problem that has been identified in this inquiry. Importantly there are relatively few hard targets to be delivered upon in the strategy, and where there are targets it is probably unlikely they will be able to be delivered because the budget has been earmarked. Upscaling existing initiatives and investments is clearly one of the biggest opportunities to arrest the consistent decline in Victoria.”⁹

And he went on to say that the strategy is already well behind schedule:

“the target in the 2037 biodiversity strategy of 200 000 hectares of revegetation is about 20 to 40 times more than what we are currently doing. Over the last 16 years we might have, generously, on back-of-the-envelope calculations, restored maybe 10 000 to 15 000 hectares—in 16 years.”¹⁰

According to Dr Morgan current programmes will not go anywhere near the goal of restoring 200,000 hectares as set out in Biodiversity 2037. Dr Morgan said at current rates of progress we will only achieve just 16,000 of that 200,000 hectare target, which is not even 10 per cent.

The Sustainable Australia Party wholeheartedly agrees with Dr Morgan when he said:

“Biodiversity 2037 is a vision target. So in the meantime those species need something to happen today.”¹¹

⁸ Dr John Morgan, Co-Chair, ESA Policy Working Group, Ecological Society of Australia, Public Hearing, Melbourne, 21 April 2021, Transcript of Evidence, p.64

⁹ Ibid., p.64/65

¹⁰ Ibid., p.68

¹¹ Ibid., p.67

Brendan Wintle, Professor Of Conservation Ecology at the University of Melbourne, said of the Biodiversity 2037 plan:

“The funding for the plan, as I have just said, is about one-tenth of what we really actually need to fund, maybe a twentieth, because the plan deals very broadly with biodiversity and I am talking about what it takes to keep our threatened species in the game, the ones that have been identified as at high risk”¹²

He also said:

“Biodiversity 2037 is still about a fifth or a tenth of the size of the investment that we would need to see in Victoria as far as I can tell to actually conserve our threatened species, so we are talking about a dramatic upscale. It is transformational change, so we have all got a lot of work to do.”¹³

NEED TO DECLARE A BIODIVERSITY EMERGENCY

Biologist, Dr Nadine Richings of EnRIChed Pursuits said we need to declare a biodiversity emergency:

““We have got to acknowledge the problem; that is what we need to do. We have heard so much evidence here about how significant the problem is. We actually have three global existential crises at the moment, and they are all linked. There is the biodiversity emergency, the climate emergency and the emergence of new diseases, and they are all linked to the way that we exploit the environment and its species. So the first thing we need to do is acknowledge the problem, hence declaring a biodiversity emergency””¹⁴

The Sustainable Australia Party supports this call. There is ample evidence presented to the Committee that we are indeed in a biodiversity emergency.

Dr John Morgan of the Policy Working Group, at the Ecological Society of Australia said:

“the World Economic Forum places environmental risks to the economy in the top 10 risks to the global economy. It is crucial we start to understand ecosystems and the science that underpins their management and long-term recovery. It is not a new problem at all, as you have probably become aware of in this inquiry, but it is one we can begin to fix now.”¹⁵

Therefore this minority report contends that much more urgent and immediate action needs to take place and there is no time available to ask the Victorian government to consider taking more action, the government must be advised by the Committee to take more action on the basis that we need transformational change.

¹² Brendan Wintle, Professor of Conservation Ecology at the University of Melbourne, Public Hearing, Melbourne, 23 February 2021, Transcript of Evidence, p.56

¹³ Ibid., p.59

¹⁴ Dr Nadine Richings, EnRIChed Pursuits, Public Hearing, Melbourne, 21 April 2021, Transcript of Evidence, p.26

¹⁵ Dr John Morgan, Co-Chair, ESA Policy Working Group, Ecological Society of Australia, Public Hearing, Melbourne, 21 April 2021 Transcript of Evidence, p.66

Chapter 2 - Administration and Regulation of the Environment

Administration and regulation of the environment was a significant issue of concern for several witnesses. A fundamental conflict of interest at the Department of Environment Land Water and Planning (DELWP) exists; and several witnesses believe that the department as it is currently organised, is not structured to deliver the environmental outcomes that Victoria urgently needs.

DELWP as it is currently constituted, is a mega department and has a conflict of interest and objectives that mitigate against environmental and wildlife protection.

Lisa Palma, CEO of Wildlife Victoria said the:

“department (which) is accountable for protecting wildlife and prosecuting and investigating wildlife crime....is also the department that issues licences to kill wildlife.”¹⁶

Peter Hylands, President of the Australian Wildlife Protection Council said:

“What we have got is a marketing department for killing and not a department that cares about biodiversity conservation. I can say that because I have experienced it ad nauseam in Victoria, and it has got a lot worse.....Victoria has one of the most toxic relationships of anywhere in the country between that department and the wildlife carers. That relationship is typically quite poor, and I think that was reflected by the previous speaker. That is totally unnecessary, and it comes out of that department culture which has developed over the years and has not been managed properly. I mean, there needs to be a just and proper management approach to these issues, and that is what is completely lacking in DELWP. And I think the behaviour of DELWP and Parks Victoria combined in relation to wildlife conservation is appalling, so we need something else going on here.”¹⁷

Mr Hylands, earlier in his evidence also said:

“in creating a new department there may be an opportunity, and I might be being naive here, to actually have a new beginning and do something that is profoundly beneficial to the state of Victoria and to its people and its natural systems.”¹⁸

This is a proposal the Sustainable Australia Party agrees with. Victoria needs a department whose sole responsibility is the environment. DELWP needs to be broken up as there are too many conflicts of interest.

Gerard Drew, Executive Committee Member of the South Gippsland Conservation Society, also spoke of a conflict of interest in the environmental area:

“So a couple of not very specific but just general suggestions for improvements—what can be done: the overarching administrative culture, prioritising the protection of nature—it just must be done; removing the conflict of interest in decision-making.”¹⁹

¹⁶ Lisa Palma, CEO Wildlife Victoria, Public Hearing, Melbourne, 23 February 2021, Transcript of Evidence, p.3

¹⁷ Peter Hylands, President of the Australian Wildlife Council, Public Hearing, Melbourne, 23 February 2021, Transcript of Evidence, p.47

¹⁸ Ibid., p.47

¹⁹ Gerard Drew, Executive Committee Member, South Gippsland Conservation Society Inc., Public Hearing, Melbourne, 26 August 2021, Transcript of Evidence, p.10

Jill Redwood, Co-ordinator at Environment East Gippsland said:

“I would also like to see a very distinct division between VicForests, forest fire management and DELWP. At the moment they seem to be one very big boys’ club.”²⁰

John Cameron told the Committee on 26 August 2021, said:

“I think there are a lot of talented people in DELWP and Parks, but I think that they need to be released from the shackles of an unfocused mega-department and also they need to be empowered with process-complete roles.....Currently the DELWP secretary reports to four ministers, and I think that violates the Westminster system of ministerial accountability. I think DELWP has too many functions, which means that it lacks focus, which is one of the cornerstone strategies of successful organisations. I would also like to say that it is basically a conglomerate, and conglomerates were proved to be ineffective and discarded by business in the 1980s.”²¹

The Sustainable Australia Party believes that the current mega-department, the Department of Environment, Land, Water and Planning, is not functioning properly to protect the environment.

Dr Brian Coffey of RMIT’s Centre for Urban Research, summed it up well:

“If we do not change our institutions and reform the sense of direction, we are unlikely to be successful on our journey.”²²

Many witnesses called for stronger enforcement of environmental laws and an increase in enforcement officers.

Dr Coffey discussed the need for public environmental accountability:

“I think the important thing is that having these strong foundations for public environmental accountability really contributes to the public accountability of government decision-making at the very centre of government. While we have a Commissioner for Environmental Sustainability in Victoria—it reports through the environment portfolio—the profile is really low. It has been around for 20 years; I do not think anybody really knows about it. Their powers are quite weak.”²³

He went on to say:

“When the office was originally proposed, they were going to have a strategic audit function—that they would systematically assess compliance with environmental legislation. That seemed to not get picked up. So I think there is a lot of room to strengthen the commissioner’s role. You could potentially transfer the office of the Commissioner for Environmental Sustainability into the Auditor-General’s office to fulfil that more central public accountability operation.”²⁴

Dr Jim Radford, Principal Research Fellow at the Research Centre for Future Landscape at Latrobe University, also supported this:

²⁰ Jill Redwood, Co-ordinator, Environment East Gippsland, Public Hearing, Melbourne, 26 August 2021, Transcript of Evidence, p.29

²¹ John Cameron, Public Hearing, Melbourne, 26 August 2021, Transcript of Evidence, p.2

²² Dr Brian Coffey, Vice-Chancellor’s Research Fellow, Centre for Urban Research, RMIT University, Public Hearing, Melbourne, 21 April 2021, Transcript of Evidence, p.35

²³ Ibid., p.31

²⁴ Ibid., p.31

“Yes, well, I think independent auditors or commissioners—whatever you want to call them—is a really good place to start, and I think we are starting to see some traction in Victoria through Auditor-General’s reports. So setting up that independent body that oversees, for example, a monitoring office or the implementation of threatened species recovery plans would hopefully provide some of that. That would come in the governance arrangements associated with that office—and that is not my area of expertise, exactly how you set that up—and the legal and governance mechanisms to ensure that that is in place.”²⁵

The Sustainable Australia Party supports an increased role for the Auditor-General in ensuring accountability for improved environmental outcomes.

Dr Nicholas Aberle, Campaigns Manager at Environment Victoria called for the Office of the Conservation Regulator (OCR) to be made a statutory authority:

“We in Victoria do not really have an independent regulator in the same way that some other states do. For example, our Environment Protection Authority is really focused on pollution and the impacts of pollution, so the EPA in Victoria does not look at biodiversity in the way that, for example, the South Australian and I think New South Wales EPAs operate.

“So I think there is definitely scope for greater regulatory oversight there, and independent regulatory oversight. More recently in Victoria we have established the office of the chief conservation regulator —have I got that right?—which is starting to play that role. But as you are probably aware—I think the chief regulator has already given evidence to this Committee—that is not a statutory role, it is not an independent role that sits within the department, so I think there is definitely scope for the scale and breadth of that type of regulation to be expanded.”²⁶

Richard Hughes, Campaigns Manager of the Victorian Wilderness Society, said:

“I think in general we see the need for independent regulation around environmental laws and regulation. In terms of the OCR that is particularly the case. Obviously that is a fairly new office, operating out of the department, which perhaps you would argue is a step forward, or some people might argue is a step forward, but what we are really from our perspective continuing to see is breaches to environmental regulations in the way that forestry operations are conducted, and the OCR is not really successfully addressing those issues. And there would be advantages to actually having a properly resourced independent regulator outside of the department.”²⁷

He went on to say:

“We would very much prefer to see a regulator that is independent and properly resourced and can provide the policing role that is really required to ensure that regulations around forestry operations and other areas of environmental management are properly policed.”²⁸

The Sustainable Australia Party believes that this is the way forward to ensure optimal environmental outcomes for the state.

²⁵ Dr Jim Radford, Research Centre for Future Landscape, Latrobe University, Public Hearing, Melbourne, 21 April 2021, Transcript of Evidence, p.62

²⁶ Dr Nicholas Aberle, Campaigns Manager, Environment Victoria, Public Hearing, Melbourne, 20 April 2021, Transcript of Evidence, p.11

²⁷ Richard Hughes, Campaign Manager, Victorian Wilderness Society, Public Hearing, Melbourne, 11 March 2021, Transcript of Evidence, pp 32-33

²⁸ Ibid., p.33

Many other witnesses to the inquiry gave the same evidence.

Steve Meacher, President of Friends of Leadbeater's Possum, said:

"During the court case the government conducted a review of timber harvesting regulation and responded by setting up the Office of the Conservation Regulator. Being a department within a department, this body does not seem to have the capacity or the will to operate as an independent enforcer. In fact, as the regulator now acts as the delegate for the minister in some decisions.....the OCR now seems to be part of the problem not the solution."²⁹

Tina Lawrence of the Victorian Wildlife Shelters Coalition, said:

"While we do not doubt the commitment of the conservation regulator to compliance and enforcement, the fact is that DELWP and its many predecessors have demonstrated time after time over the past 45 years that they are incapable of properly managing human-wildlife conflict and wildlife crime or meeting the critical moment we are in in terms of biodiversity loss. DELWP policing DELWP via the OCR is not going to fix that."³⁰

She went on to say:

"In my statement I made it clear that I did not think that DELWP policing DELWP would work. It has not worked over 45 years, and I think that the issues relating to human-wildlife conflict and the fact that that is resulting in removing industrial levels of wildlife from the landscape every year needs to be dealt with and managed by another authority. I do not think that they are up to it. I really do not doubt the conservation regulator's commitment to all of these things, but, as I said in my statement, they are completely overcommitted. Their workload is just absolutely enormous, and I really fear that what will happen is wildlife, which has always been the lowest of low priorities within DELWP, will remain at that level."³¹

As mentioned in the majority report, Professor Lee Godden, Director of the Centre for Resources, Energy and Environmental Law, at the University of Melbourne, supports an independent regulator. He told the Committee:

"I would certainly strongly support an independent agency."³²

The Sustainable Australia Party believes in an independent OCR, that one should be established as a result of this inquiry and it also should be a well-resourced one.

Dr Bruce Lindsay, Senior Lawyer at Environmental Justice Australia, said that the OCR needs better resourcing:

"Clearly it needs to be resourced well, and it needs to be resourced effectively."³³

Lisa Palma, CEO of Wildlife Victoria also said funding of the OCR was inadequate:

²⁹ Steve Meacher, President of Friends of Leadbeater's Possum, Public Hearing, Melbourne, 10 March 2021, Transcript of Evidence, p.49

³⁰ Tina Lawrence, Victorian Wildlife Shelters Coalition, Public Hearing, Melbourne, 11 March 2021, Transcript of Evidence, p.39

³¹ Ibid., p.43

³² Professor Lee Godden, Director, Centre for Resources, Energy and Environmental Law, University of Melbourne, Public Hearing, Melbourne, 20 April 2021, Transcript of Evidence, p.23

³³ Dr Bruce Lindsay, Senior Lawyer, Environmental Justice Australia, Public Hearing, Melbourne, 11 March 2021, Transcript of Evidence, p.23

“I know that there will be no, or delayed, action on the majority of the cases that we that we individually report into the Department of Environment, Land, Water and Planning.....In my observation, there are some very dedicated officers that work in the department and at the OCR, but for the level of wildlife crime that we are seeing come through it is apparent to me that resources are quite limited.”³⁴

Dr Jim Radford, Principal Research Fellow, Research Centre for Future Landscapes, at La Trobe University called for a significant increase in funding for DELWP and Parks Victoria:

“That would be around about 1 per cent of gross state product. We think it is reasonable. That is where we get the \$4.5 billion per annum. That would be, as I mentioned, for core funding of the department and Parks Vic, but it would be for doing a lot more than we are doing now. That is the bottom line. As I mentioned, there are dozens of action plans sitting on shelves not being implemented. There is a whole range of landscape-scale threat management that we could be doing. Dr Bach asked about invasive species, and in effect for many of them it is a matter of person power and getting out there and doing, well, if it is weed eradication, the spraying, or laying traps or whatever it might be. That is the approach.....

“So we know what needs to be done for many species, or at least we have got a decent idea, but it is a matter of pulling them off the shelf, funding them and getting on with it. So legislate for mandatory implementation of action statements for all threatened species, all threatened communities and all threatening processes and fund them accordingly.”³⁵

Dr Radford’s call for Victorian government funding of \$4.5 billion per annum for DELWP and Parks Victoria, may seem like a lot of money. However, it must be seen in the context of the biodiversity emergency the state is experiencing and some figures provided by Professor Brendan Wintle of Melbourne University:

“Let us think about it in context. In Australia every year on our pets we spend \$12.2 billion. As a public we spend \$12.2 billion a year on our pets. We spend \$580 million a year on pet grooming, \$1.1 billion a year on just toys for our pets.....\$2.5 billion a year we spend just on cats—our biggest bird killers. Unfortunately Victorians are the biggest spenders. We spend on average twice as much as anybody else on our pet care, including cat care. So we are great pet lovers; we are not very good at spending on threatened species.”³⁶

Matt Ruchel, Executive Director of the Victorian National Parks Association, also endorsed this call for a funding increase in the environment sector:

“One per cent of the state budget is our provocative ambit claim, I suppose. It is about 0.5 per cent at the moment, so we are saying for parks 1 per cent. That point is really in some ways about trying to avoid the argument around—it is not a competition in a sense. Parks provide a whole range of services, both for visitor, economic and ecosystem services. Some of the ecosystem service things like clean water, stopping erosion, pollination are all worth billions of dollars. The health budget is

³⁴ Lisa Palma, CEO, Wildlife Victoria, Public Hearing, Melbourne, 23 February 2021, Transcript of Evidence, p.2

³⁵ Dr Jim Radford, Research Centre for Future Landscapes, La Trobe University, Public Hearing, Melbourne, 21 April 2021, Transcript of Evidence, p.58

³⁶ Professor Brendan Wintle, Professor of Conservation Ecology, University of Melbourne, Public Hearing, Melbourne, 23 February 2021, Transcript of Evidence, p.52

24 per cent of the state expenditure— something like that—education is in the 20s, security is in the 14s and 15s. You could take a point off each of those without making a huge difference.”³⁷

Gray Ardern of the Friends of Warrandyte State Park, talked about how funding affects his group and a restoration project they worked on:

“we poured a huge amount of effort into that land over three years. But the grant period has finished, the funds have dried up, we have planted all these plants there, but we have no further funding to continue the good work that we have done. We needed to employ contractors to get the huge amount of weeds out of that site, but with the drying up of those funds the site is now deteriorating. We are getting over there and working on it as often as we can, but there are limits to what a voluntary organisation can do out of its own resources. Now, had the same funding been a permanent stream of funding for Parks Victoria, this project could be continuing now, not going backwards.

“That is the kind of point that I am trying to make. The funding of volunteer organisations through grants seems on the face of it to be a good way of harnessing all that enthusiasm, but it does have the limitation that once the funding dries up the projects tend to go backwards. As for the second point, Dr Ratnam, that was really just a further amplification of the need for further funding for Parks Victoria. The fact that it cannot even manage to have rangers on duty every weekend during really busy times of the year demonstrates that there simply is insufficient funding for this very important organisation. I hope that answers your question, but I am happy to elaborate if you desire.”³⁸

Dr Lindsay of Bellarine LandCare Group said:

“one thing I am very much aware of and I do not think has changed is that there is simply inadequate funding and inadequate staff to do the job that these government agencies and local governments and so on need to do. Relatively speaking, I think it has been quite strongly reduced from the past, in particular not just informing but enforcing the law. So there is a considerable amount of illegal behaviour or skating the legalities of behaviour. I am thinking of things like we are required to destroy our noxious weeds, our rabbits, our boars and so on. It does not happen very often. It may not be enforced. But there are other illegal things that happen that are just, well, skated over or a bit of a slap on the wrist or not done at all, and the staff simply are not there to do the job.”³⁹

Shane Howard, Treasurer of the Belfast Coastal Reserve Action Group, mentioned in his evidence that the number of rangers for South West Victoria has dramatically decreased since the 1980s:

“We need government and community to be working together. We need an end to habitat destruction, and strengthened nature laws. We need a tree planting workforce to restore habitat. We need to expand Landcare and Coastcare programs. We need to greatly increase funding for Parks Victoria. In the 1980s there were eight rangers. There are now two rangers for the entire south-western region, such was the decimation of Parks Victoria by the Kennett government, and

³⁷ Matt Ruchel, Executive Director, Victorian National Parks Association, Public Hearing, Melbourne, 11 May 2021, Transcript of Evidence, p.24

³⁸ Gray Ardern, Friends of Warrandyte State Park, Public Hearing, Melbourne, 10 August 2021, Transcript of Evidence, p.46

³⁹ Dr Andrea Lindsay, Bellarine Landcare Group, Public Hearing, Melbourne, 16 June 2021, Transcript of Evidence, p.12

I know there had to be cost cutting was done. This needs to be restored. We need a dedicated program for reviving species facing extinction and we need a huge program of weed and invasive species eradication.”⁴⁰

On the other side of the state, Tom Crook, Facilitator and Programs Manager of the East Gippsland Conservation Management Network said:

“Twenty years ago when I first came to East Gippsland, NRE, the DELWP equivalent of the day, in Orbost was one of the area’s largest employers. Now DELWP’s natural environment team for the whole eastern region is only a handful of people. That is not because the forest management needs and the needs of the ecosystems to be looked after have gone away, it is because governments have decided not to resource those needs or those areas. The task at hand is massive, yet we see a continued reduction in funding for natural area management.

“Another example would be the Snowy River and Errinundra national parks. They are in excess of over 100 000 hectares, and we have got two rangers, who basically have to do all the work for those park areas— supplemented by some others, but that is their core responsibility.”⁴¹

Cam Walker, Campaign Co Ordinator of the Friends of the Earth, said:

“My experience is I know the park system reasonably well, with the exception of the north-west probably. I spend a lot of time in the alpine zones and I am just aware of how stretched the rangers are, and other Parks Vic workers. What they do is absolutely astonishing, but they do not have the resources they need. So I think a priority needs to be an annual commitment in state budgets to adequately fund revolving funds for private land conservation, plus Parks Vic and other land managers to manage the impacts of invasives, to manage the impacts of climate change and to manage the impacts of increased visitation.”⁴²

The Sustainable Australia Party urges the Victorian government to create many more of the types of jobs these witnesses referred to. This would be in the interests of reversing the serious ecosystems and biodiversity decline referred to by multiple witnesses who provided evidence to this inquiry. Since the pandemic, the government has announced job creation initiatives in areas such as housing and infrastructure. However, there are clearly plenty of employment opportunities in the environmental sector, as the evidence above establishes.

Chapter 3- Population

The majority report failed to reflect the contribution of a number of witnesses on the impact of Victoria’s high population growth rates in this century. These have been well above the developed nation average by some margin, let alone being well above the Australian average over the last century. Many witnesses spoke of the impacts of this growth, but nowhere are they sufficiently reflected in the majority report. It is a serious omission, as even a number of witnesses from Victorian

⁴⁰ Shane Howard, Treasurer of the Belfast Coastal Reserve Action Group, Public Hearing, Melbourne, 16 June, 2021, Transcript of Evidence, pp 26/27

⁴¹ Tom Crook, Facilitator and Programs Manager, East Gippsland Conservation Management Network, Public Hearing, Melbourne, 26 August 2021, Transcript of Evidence, pp.16/17

⁴² Cam Walker, Campaign Co-ordinator of Friends of the Earth, Public Hearing, Melbourne, June 17 2021, Transcript of Evidence, p.22

state government organisations said that they took into account the impact of population growth, as part of their efforts to reverse ecosystem and biodiversity decline.

Dr Gillian Sparkes, Commissioner of the Office of Environmental Sustainability said:

“we know that at the end of the day this is a system. It is a systems approach that is required and it is a systems approach that is creating ecosystems decline, and we are trying to look at all aspects of the system, from population to urbanisation to climate change et cetera and all those pressures.”⁴³

By failing to include population and the evidence of multiple witnesses on the impact of Victoria’s extraordinarily high rates of population growth, the majority report has not taken a “systems approach” to ecosystems and biodiversity decline, and failed to look at all aspects of that system.

Kate Gavens, Chief Conservation Regulator at the Office of the Conservation Regulator, an office which is part of DELWP told the Committee:

“Of course at the start of the year we had the loss of 1.5 million hectares during the devastating bushfires, but we also had the ongoing issues that are really *critical* to us as a regulator *to be understanding and responding to*—in relation to climate change, population growth, habitat loss and exacerbating biodiversity loss—and we certainly take that into consideration in where we put our regulatory effort.”⁴⁴

Clearly, the evidence of the Chief Conservation Regulator is that population growth is a factor that her office looks at, when understanding and responding to ecosystem and biodiversity decline. Yet the majority report, which is a report on this issue, has not regarded population growth as “*critical..... to be understanding and responding to.*”

The Victorian Auditor-General in a report tabled in Parliament in 2017 wrote on Victoria’s high rates of population growth:

“Victoria has experienced strong population growth since 2011, with the population forecast to grow from 6.1 million in 2016 to 7.7 million by 2031.”⁴⁵

In the first half of the 1990s, the website Property Update, states that Victoria’s population growth rate was 0.5 %.

In the second half of the 1990s, it reports that the state’s population growth had increased to a rate of 1% a year. By 2016 -17 this growth rate had increased to 2.3%.⁴⁶ This was nearly four times the developed country average figure for population growth.⁴⁷

The Sustainable Australia Party has long considered that Victoria’s high rate of population growth is not sustainable, and is a major factor in ecosystem and biodiversity decline in the last two decades. Both the Federal and Victorian Government policy favours high population growth and seeks to return

⁴³ Dr Gillian Sparkes, Commissioner of the Office of Environmental Sustainability, Public Hearing, Melbourne, December 3 2020, Transcript of Evidence, p.5

⁴⁴ Kate Gavens, Chief Conservation Regulator, Public Hearing, Melbourne, 10 March 2021, Transcript of Evidence, p.12

⁴⁵ <https://www.audit.vic.gov.au/sites/default/files/2017-08/20170823-Effectively-Planning-for-Population-Growth.pdf>, page vii

⁴⁶ <https://propertyupdate.com.au/population-growth-in-victoria-from-slow-growth-to-woah-growth/>

⁴⁷ <https://data.worldbank.org/indicator/SP.POP.GROW?locations=OE>

to these high rates of growth as soon as possible. Some of the state government's own senior environmental officials, as quoted above, look at population growth as an issue, and the minority report contends that the majority report should have as well.

Population was mentioned by numerous witnesses in public hearings before the Committee as impacting on Victoria's biodiversity and ecosystems.

Biologist, Dr Nadine Richings of EnRICHed Pursuits told the Committee that increasing population further beyond our current significantly expanded levels, will create significant challenges and these need to be discussed at all levels of government and in the community:

"If people decide that a higher population is required, then you will lower the quality of life. You are correct about the impact of our species and our numbers on biodiversity everywhere and certainly in Australia. Human life is very dependent on biodiversity. We often talk about engaging with nature or reconnecting with nature. We are part of nature and we need to get this idea in our head: we are part of nature. We are nothing without nature; we cannot lose biodiversity. We cannot. This is such a critical issue."⁴⁸

Dr Richings went on to say:

"So we need to tackle these issues and—I do not know what we need, whether they are round tables, whether they are large workshops—seriously get people in a room, whether it is at Victorian government level, council level, federal level, and seriously talk about what population of humans can this country hold for us to have a reasonable quality of life, and our quality of life includes the quality and health and wellbeing of the entire environment. It is such a critical question. I do not have the answer to what that number is, but there is so much that we need to tease out in there.....if we continue to develop this land the way we have, we will just lose more habitat. So I do not know the answer to the number, but there are so many critical things that we must think about before we go just increasing Australia's population."⁴⁹

The Sustainable Australia Party in this minority report is in agreement with Dr Richings that there needs to be a population plan and that this needs to be discussed, including in the majority report. There are, as Dr Richings said, many critical things to think about and little to no evidence that this is occurring.

It is difficult to plan for reversing Victoria's alarming rate of biodiversity decline without a detailed population policy.

Dr Richings said on this subject:

"we need a population policy, but the population policy has got to include indicators for biodiversity in the environment—everything we do. Our health and wellbeing policy should be a far more holistic approach. Have you heard of approaches such as One Health? One Health, Planetary Health, EcoHealth are three examples of holistic health and wellbeing policies that connect humanity back to the rest of the planet and appreciate that we cannot have a healthy, well and safe life without a healthy, safe and well environment. So our health and wellbeing policy should be connected back to all of biodiversity, and one of the elements that has to be considered

⁴⁸Dr Nadine Richings, EnRICHed Pursuits, Public Hearing, Melbourne, 21 April 2021, Transcript of Evidence, p.22

⁴⁹Ibid., p.22

in that, in our health and wellbeing, is: what is an appropriate population number for Australia, what is an appropriate population density?"⁵⁰

Much more attention needs to be paid to this and that includes in the majority report, which ignored the issue.

Geoffrey Goode, who appeared before the Committee on August 10, also provided evidence regarding the need for planning and discussion about what our population level should settle at:

"The main concern I have indicated is the overall adverse effect I consider the very rapid rate of population increase has had and is having on the natural environment and ecosystems of Victoria, as it is having on much of the world. Just as concerning is the open ended nature of this increase, where governments and their planning systems appear to be valuing and encouraging the growth of human populations without even indicating when or where such increase should have a declared upper limit on both its time rate of increase and the absolute level of population in the jurisdiction concerned. Official declaration of figures of that rate of increase and that level of population included in planning and environment legislation could be later amended to either increase or decrease them, but that would at least require that the major question be reviewed and debated publicly by the elected representatives of Victoria's voters."⁵¹

Mr Goode therefore called for discussion about population to be part of the democratic process, which it currently is not. He said the Victorian government is heavily in favour of further environmentally damaging high rates of population growth. This may help explain the lack of weight given in the majority report to the concerns of multiple witnesses about the effect of population growth on the decline of biodiversity and ecosystems in Victoria. Mr Goode told the Committee:

"the Victorian government comes across as saying it is a great thing. They are not unhappy with population growth. There seems to be insufficient concern. This committee is certainly one good sign that things might change.....If you are pushing it and you are nudging it all the time and saying, 'Look, we've got to do this because of the population', it will happen. You will get the population growth, more land will be concreted, more things will happen that are not conducive to ecosystem quality."⁵²

Mr Goode said that many people in Victoria think there should be a limit to our population growth and this is something the Sustainable Australia Party hears often:

"What is hard to contest is that Victoria's fourfold increase in human population in the last 70 years has resulted in a massive expansion of the Melbourne metropolitan area, in area and in density, and extensive environmental effects in many parts of Victoria as a consequence of the state's much larger population and that there is no projected upper limit on that, although many think there should be."⁵³

A number of witnesses including Dr Richings gave evidence that high rates of population growth as projected and indeed encouraged by the Victorian government are not compatible with reversing ecosystem and biodiversity decline. This evidence was nowhere recorded in the majority report.

⁵⁰ Ibid., pp.22/23

⁵¹ Geoffrey Goode, Public Hearing, Melbourne, 10 August 2021, Transcript of Evidence, p.40

⁵² Ibid. p46

⁵³ Ibid. p40

Ms Fiona Bell, Vice-President, Protectors of Public Lands Victoria, gave the following evidence:

“Rapid population growth in Victoria has placed more pressure on all ecosystems, accelerated the destruction of some natural habitats and changed the way of life of people in Victoria. Pre COVID-19 Victoria had been receiving a higher proportion of overseas migration than other states, and it has relied on this growing population to drive much of its economic growth and housing construction. However, more people means more land is needed, more natural resources used and more waste and rubbish produced, which causes more pollution. All of these adversely affect many ecosystems. Victoria needs economic growth but not necessarily that dependent on large population growth.”⁵⁴

Dr Ernest Healy, Secretary of the Association For Conservation Of Australian Dingoes said:

“I think that, despite sometimes the best efforts to mitigate the impacts of population growth on the natural world, there is no doubt really that the size of population relates directly to impact on the natural world—the way we either extract resources directly from the natural world or take away the natural world to build cities and suburbs and the many other things we do where we have to clear land for urban development et cetera. Some of the things that could be done to mitigate it that are quite obvious things are not really done well enough. We could do things better. There is some relativity to it, but I tend to agree with the basic observation that rapid population growth and city building and urban development have been a major source of ecosystem loss and decline. It is very significant. I agree with that.”⁵⁵

And the quote in regards to population, of Brendan Wintle, Professor of Conservation Ecology at the University of Melbourne, cited in Chapter One of this minority report, is repeated here in more detail:

“It reminds me of a great report prepared by the WWF, the World Wildlife Fund, called the Great Acceleration, and it shows basically the congruence of population growth, carbon emissions, nitrogen emissions and plastic accumulation in the oceans—these exponential growths that are disturbing, to say the least. When I say we could feed a lot more people, I am not expressing a preference for having lots more people. I think human population growth is key—managing that is key—to conserving, and thinking carefully about sustainable economies that do not just focus on growth as the index of performance is also key. So, yes, I agree that human population growth needs to be very carefully managed. It is the number one or proximal driver behind all of this.”⁵⁶

Mr Boris Iskra, Technical Officer, Wood Products Victoria, told the Committee:

“There are a range of key drivers that can have an impact on ecosystem decline: population growth and urbanisation and the increased propensity for bushfires or wildfires, which, when they become uncontrolled, are the biggest risk to Victoria’s native flora and fauna and to overall forest ecosystems.”⁵⁷

In regards to Melbourne, a number of witnesses gave evidence that the increase in population promoted by the Victorian government leads to more land clearing, both for housing and for farming to feed all the additional people. Melbourne’s tremendous population growth is a factor in biodiversity and ecosystem decline.

⁵⁴ Fiona Bell, Vice-President, Protectors of Public Land Victoria, Public Hearing, Melbourne, 17 June 2021, Transcript of Evidence, p.27

⁵⁵ Dr Ernest Healy, Secretary, Association for Conservation of Australian Dingoes, Public Hearings, Melbourne, 24 February 2021, Transcript of Evidence, p.41

⁵⁶ Brendan Wintle, Professor of Conservation Ecology at the University of Melbourne, Public Hearing, Melbourne, 23 February 2021, Transcript of Evidence, p.55

⁵⁷ Boris Iskra, Technical Officer, Wood Products Victoria, Public Hearing, Melbourne, 10 March 2021, Transcript of Evidence, p.21

Former Victorian Treasury economist, Leith Van Onselen wrote that between 2004 and 2018, Melbourne’s population grew by 1.3 million people, a staggering 36% increase, with further large increases projected for decades to come.⁵⁸

Rebecca Cook, Head of Prevention at the RSPCA, told the Committee that Melbourne’s growth was having negative environmental impacts:

“When considering the impact of ecosystem decline on native animals, we highlighted two case studies in our submission—that of kangaroos and native ducks. We know that Melbourne’s growth corridor is having an impact on kangaroo welfare by reducing available habitat for kangaroos. In recent years we have seen examples of kangaroos becoming displaced or landlocked, which significantly impacts the welfare of those individuals. We are concerned that there has been no long-term monitoring of kangaroo populations and that therefore the impacts of increased development through kangaroo habitat is unknown.”⁵⁹

Allan Thatcher, member of the Green Wedges Coalition also has significant concerns about the impacts of Melbourne’s population growth:

“Overall the Green Wedges Coalition is concerned that without strengthened policy the future land use and development of green wedges could be dominated by urbanisation, resulting in the loss of Indigenous vegetation communities. We see the critical role of indigenous vegetation communities in habitat for indigenous flora and fauna; canopy cover that reduces the heat-island impacts of Melbourne, which is a major issue; critical connections between ecosystems by means of biolinks or wildlife corridors; and protection of green natural infrastructure of our waterways.”⁶⁰

Mr Thatcher went on to say:

“Basically the aim is that the primacy of land use in the green wedges is rural, but in fact we are seeing urban uses, whether they be schools or places of worship or tourist developments or whatever. We are seeing those as becoming dominant in the planning applications so that there are quite large structures with parking and associated facilities really dominating the landscape. The issue we see with this is that if this is allowed to continue, it is what they call death by 1000 cuts; it is a cumulative process over time. And we just do not see that that is strong enough in the planning process to actually ensure that the rural land uses have primacy, not the urban uses.”⁶¹

Patrick Medway, Chief Executive Officer of the Australian Wildlife Society told the Committee:

“I guess we cannot stop development because there is a constant push across Australia for development—cities expanding, country towns expanding and land clearing for farming. Then that is totally changing the environment for all the species, and the ecosystems that incorporated them and that survived for so long have literally been destroyed.”⁶²

Mr Medway also said:

“Certainly development around the cities and the countryside has added to the demise of further bushland habitat in which the wildlife survives.”⁶³

⁵⁸ <https://www.macrobusiness.com.au/2019/08/vic-government-dramatically-lifts-melbournes-population-projection/>

⁵⁹ Rebecca Cook, Head of Prevention, RSPCA, Public Hearing, Melbourne, 11 March 2021, Transcript of Evidence, p.54

⁶⁰ Allan Thatcher, member of Green Wedges Coalition, Public Hearing, Melbourne, 12 May 2021, Transcript of Evidence, p.31

⁶¹ Ibid. p.31

⁶² Patrick Medway, Honorary Secretary, Chief Executive Officer and Treasurer, Australian Wildlife Society, Public Hearing, Melbourne, 23 February 2021, Transcript of Evidence, p.17

⁶³ Ibid., p.17

Brendan Wintle, Professor of Conservation Ecology at Melbourne University warned of further urban expansion in Victoria:

“If we had decent investment in threatened species management here in Victoria, I reckon we would be spending half of that on getting better biodiversity outcomes on farms, so I think there is an immense opportunity, but you are right—we cannot keep giving up more and more. I will add urban expansion and urban development to that list now. It was not a big deal in the late 1800s, but it sure as hell is now because a lot of the most threatened ecosystems, including basalt plains and grasslands, are in places that are subject to urban expansion.”⁶⁴

Barbara Hall who appeared before the Committee on August 10 said:

“The government’s encouragement of population growth goes against the protection of our environment. The devastation around me, in Oakleigh and around the bay, continues, as I said. The species diversity down the coast is in serious decline. For what reasons? I think that needs to be scientifically investigated. Our population makes us uncomfortable as far as traffic goes, and I would want to raise consciousness about it.”⁶⁵

Ms Hall also said:

“so we are watching extinction of animals in Port Phillip Bay. Common crabs are no longer common. If you know where there are lots of crabs around Port Phillip Bay, I would be very interested to know. So we need to regulate ourselves. We need to rewild a goodly part of Victoria for the sake of replenishment, and we need to think about how we bring about a stabilisation of our population.”⁶⁶

Dr Matt Edmunds, Principal Ecologist at Australian Marine Ecology, also spoke of the impact that Melbourne’s rapid rate of population growth in recent decades is having on Port Phillip Bay:

“The recreational fishing for snapper in Port Phillip Bay—it is just going gangbusters with the increasing population. As far as I am aware, there is no traction on ‘Is it too much? How much is too much?’. That is a complete unknown in terms of the recreational space. And we are all the poorer for abandoning the co-management arrangements that were previously in place earlier in this century. I think there were a lot of benefits there and checks and balances. Conservation to fishers to managers were working together. I thought that was a really good model, and there were issues coming out to work together. We do not have that anymore.”⁶⁷

Melbourne’s high rate of population growth and subsequent urban development, has also seriously damaged its native grasslands ecosystems.

Dr Megan O’Shea, spoke about the native grasslands to the Committee:

“So I have got a very long association with that environment and my submission has really been centred around the grasslands in the greater Melbourne area, but a lot of the points that I make are relevant to grasslands across western Victoria.....

“So the main points are around the fact that this ecosystem is in decline. There is estimated to be between 0.5 and 2 per cent of that ecosystem remaining, and this is well below the CAPAD target of 10 per cent for each bioregion. So that is already problematic. The two main causes, from my perspective, associated with the decline of this ecosystem are, by far and away, habitat destruction and habitat clearance, and the other is associated with a lack of management, poor management or inappropriate management regimes. So they are the two main themes associated with this

⁶⁴ Professor Brendan Wintle, University of Melbourne, Public Hearing, Melbourne, 23 February 2021, Transcript of Evidence, p.54

⁶⁵ Barbara Hall, Public Hearing, Melbourne, 10 August 2021, Transcript of Evidence, p.25

⁶⁶ Ibid., p.25

⁶⁷ Dr Matt Edmunds, Principal Ecologist at Australian Marine Ecology, Public Hearing, Melbourne, 20 April 2021, Transcript of Evidence, p.7

system. In terms of habitat destruction and clearance, obviously in Melbourne urban development is really the big driver of that.”⁶⁸

Dr Nicholas Aberle, Campaigns Manager of Environment Victoria told the Committee:

“We have finite space and we have finite resources, so the idea of never-ending growth on a finite planet is very challenging. I think in terms of population growth, economic growth, we need to stay within our limits, and from a population perspective urban growth is a challenge. I mean, we see the continued expansion of Melbourne is impacting some very important and sensitive ecosystems.”⁶⁹

Fiona Bell, vice-president of the Protectors of Public Land, said having the construction industry as the backbone of the economy and the resultant need for ever more people to sustain that industry, is not wise:

“Well, I mean the population of the world has gone up enormously since I was born. But I do not think that actively encouraging too many people here is necessarily the right way to go. But also having the construction industry as a backbone of it, it is building more things for the more people you bring in. It is kind of chasing your tail. I think we could be putting more money into developing other sorts of industries and things and perhaps being more careful as to how many people do come in from overseas, because we know it is migration that is causing the population rise, not people in Victoria having terribly many babies. We know that because of the ageing population, of which I am one, there is a need for younger people who are working even to help look after the older people when we are unable to look after ourselves. But I think it probably needs to be a bit more of a gentle rise and a sustainable sort of rise.”⁷⁰

Nina Earl who appeared before the Committee on August 10, also questioned the wisdom of basing the state economy on ever increasing population numbers:

“One problem with the population issue is Victoria has lost a lot of its manufacturing capacity, which once drove the economy, and now we rely on population increase, i.e. the development industry, to drive the economy. That is my reading of it. So one way is if manufacturing is again encouraged, then there would be less reliance on development and population. And let us remember that we are voluntarily bringing people in from overseas to add to our population pressure. Is that really necessary to drive the economy, when we could encourage manufacturing?”⁷¹

Clearly, relying on population growth to drive the construction industry means more demand for timber for housing, which also means more damage to eco systems.

Patrick Medway, Chief Executive Officer and Treasurer, of the Australian Wildlife Society said:

“Systematically the need for timber is such that in almost every state the forestry commission or its equivalent in each state has worked its way through to log, selectively log and in some horrible places clear-fell whole environments, and then we counter that by putting in forestry plantations of pines, any of the pine systems that they like, quick-growing pines. They then clear the native

⁶⁸ Dr Megan O’Shea, Public Hearing, Melbourne, 10 August 2021, Transcript of Evidence, pp.29/30

⁶⁹ Dr Nicholas Aberle, Campaigns Manager, Environment Victoria, Public Hearing, Melbourne 20 April 2021, Transcript of Evidence, p.11

⁷⁰ Fiona Bell, vice-president of the Protectors of Public Land, Public Hearing, Melbourne, 17 June 2021, Transcript of Evidence, p.29

⁷¹ Nina Earl, Public Hearing, Melbourne, 10 August 2021, Transcript of Evidence, p.44

forest to replant. New Zealand does it. Canada does it. We do it, because timber is perceived to be an economic benefit.”⁷²

Regional city growth and the expanding population there, is also posing challenges. Shane Moseley, Chief Executive Officer of the Victorian Planning Authority, said:

“.....there is a looming issue this committee should probably have in its scope, that we are now seeing growth of scale in regional cities—Ballarat, Bendigo and Geelong—where that sort of strategic assessment has not been done and it is already appearing that there is uncertainty. Geelong have identified northern and western growth areas. One of them at least is already in an urban growth zone, which is a holding zone, and now they are finding they have significant biodiversity issues, whereas if an BCS (Biodiversity Conservation Strategy) had been done first, that would have helped that situation.”⁷³

It would appear that regional city growth is not being strategically planned in terms of environmental protection and this growth, which by all reports is significant in the last few years, is having adverse environmental impacts.

Clearly, the majority report did not adequately reflect the evidence of these witnesses: the size of the population relates directly to impact on the natural world. Several times, biodiversity loss was mentioned in the timeframe since European colonisation but that is a timeframe so vague as to have little meaning. The timeframe of this century when Victoria’s population has grown enormously was nowhere adequately considered in the majority report. Nor how the policy of continuing this rapid growth will further damage our fragile environment.

On 7 November 2021, The Age reported that a statement from the Treasurer’s office indicated that the Victorian government is committed to present population and urban growth policies. Those policies, as stated previously, are for population growth rates as much as four times the average population growth rates for other developed countries.⁷⁴

From this, it can be assumed that the continuation of the present alarming rates of ecosystem and biodiversity decline can be accepted in pursuit of the government’s economic policy.

Dr Brian Coffey from the RMIT Centre of Urban Research, as previously quoted elsewhere in the report said:

“For too long we have tried to fit nature into the economy. I would argue that we need to fit the economy into nature.”⁷⁵

Clearly, this emphasis of attempting to fit nature into the economy is set to continue. The Sustainable Australia Party does not believe this is sustainable or wise. The economy must fit into nature. If that is to happen, then growing our population at levels four times the growth rate of the average developed country, can not continue. It is clear from evidence presented to the Committee that high levels of population growth are a big factor in ecosystem and biodiversity decline, and that this evidence was not adequately covered by the majority report.

⁷² Patrick Medway, Chief Executive Officer and Treasurer, Australian Wildlife Society, Public Hearing, Melbourne, 23 February 2021, Transcript of Evidence, p.20

⁷³ Shane Moseley, Chief Executive Officer of the Victorian Planning Authority, Public Hearing, Melbourne, 11 May 2021, Transcript of Evidence, p.11

⁷⁴ <https://www.theage.com.au/national/victoria/big-melbourne-is-coming-back-but-do-we-still-want-it-20211104-p595w7.html?btis>

⁷⁵ Dr Brian Coffey, Centre for Urban Research, RMIT, Public Hearing, Melbourne, 21 April 2021, Transcript of Evidence, p.30

This minority report has presented the evidence of multiple witnesses that growing populations and human impacts are adverse to the wellbeing of ecosystems biodiversity levels, and is contributing to their significant decline. And under current policies, will continue to do so.

Chapter 4 – Timber Industry/Native Vegetation Removal Permits

One area this minority report would like to highlight is the international dimension in regards to Victoria’s logging industry and specifically the free trade agreements to which Victoria is subject to.

Tom Crook, Facilitator and Programs Manager, at the East Gippsland Conservation Management Network, gave the following evidence to the Committee:

“we are competing with countries who have invested more heavily in technology to make all sorts of dimensions of woods—laminated veneers and glulam and all those technologies. We are competing with them, and with free trade agreements that will not let us impose tariffs to provide a market incentive to buy local products, then it is very difficult for our industry to compete without the revenue from the pulp and fibre.”⁷⁶

Mr Crook said that while our timber industry is supposed to be a sawlog industry, which leaves residual timber standing, a tariff free regime on international timber imports does not make this possible. He said it is necessary to clear big areas of forest in Victoria, not only for sawlogs but also for residual timber for pulp and fibre. This is so the industry can be economically viable and competitive with these international producers under Australia’s free trade agreements. Therefore, a selective harvest regime, he said, is not viable for our Victorian timber industry. Our unprotected industry can not compete alone on the revenue from sawlogs, it also has to destroy a lot more forest to harvest residual trees for pulp and fibre.

This is a little known aspect of our timber industry which needs to be investigated and the role of Australia’s free trade agreements in ecosystem and biodiversity decline needs to be reviewed and clarified. It would appear from the evidence of Mr Crook that our free trade agreements are causing negative impacts on Victoria’s ecosystems and biodiversity.

Exemptions to Native Vegetation Removal Permits

There is ample anecdotal evidence that developers are able to remove all the native vegetation on suburban blocks prior to development. Sharon Terry, Manager of Environment at Shepparton Council, expressed concerns about the exemptions available for the removal of native vegetation:

“Another exemption of concern for us is the 4,000 metre square exemption for native vegetation removal. So on a development - urban residential development space – if you are dividing up land of 4,000 metres square or less, you do not require an exemption to – you do not require a permit to remove native vegetation. So there is an exemption that applies there. This is a really significant area of land, it is around an acre. It is a big bit of land to put a house and a shed and a driveway and design can allow for those trees to remain but because that exemption applies, we are losing significantly large trees. And these trees are our habitat trees, which are crucial for biodiversity in our area.”⁷⁷

⁷⁶ Tom Crook, Facilitator and Programs Manager, East Gippsland Conservation Management Network, Public Hearing. Melbourne. 26 August 2021, Transcript of Evidence, p.20

⁷⁷ Sharon Terry, Manager Environment, Greater Shepparton City Council, Public Hearing, Shepparton, 28 April 2021, Transcript of Evidence, p.24

The Sustainable Australia Party agrees with Ms Terry that an area of land which is 4,000 square metres in size, should require a permit before native vegetation can be cleared. The area before someone clearing land is exempt from applying for a native vegetation removal permit, should be far smaller than 4000 square metres. We are in a biodiversity emergency and this needs to be reflected in the state's permit system for land clearing.

Conclusion

The Sustainable Australia Party believes the majority report had much good to say and examined the evidence from many witnesses and submissions.

This minority report has been drawn up to reflect the view of the Sustainable Australia Party, having considered all the evidence, that Victoria is in a biodiversity emergency. And that this emergency needs to be addressed in a more immediate and comprehensive fashion, in terms of funding, independent regulation, and enhanced environmental law enforcement. And any fair minded consideration of this biodiversity emergency, must take into account that our rapidly growing population has been and will continue to be a significant contributory factor to this biodiversity emergency.

Minority Report - Samantha Ratnam MLC

Inquiry into ecosystem decline in Victoria

Introduction

The health of our environment underpins the health, wellbeing and prosperity of all Victorians.

The Planning and Environment Committee's inquiry into Ecosystem Decline in Victoria was proposed by the Victorian Greens in October 2019 in response to the 2018 Victorian State of the Environment report. This report found that Victoria's biodiversity is largely poor and not improving.

A 2021 audit by the Victorian Auditor General's Office found that programs run by the Victorian Government to address biodiversity loss and restore threatened species can't demonstrate if they are having any impact. This audit highlighted that funding for biodiversity and threatened species is inadequate and that the Victorian Government is failing to utilise existing tools in legislation that could be used to protect biodiversity, habitat and threatened species.

This inquiry has been one of the biggest in the history of the Victorian Parliament and has shone a light on the scale of biodiversity loss and the urgent need to address this crisis.

The importance of this topic was demonstrated by the breadth and depth of interest in this inquiry from members of the public, to local community groups to scientists and experts. It was unfortunate that because of the COVID-19 pandemic, the inquiry was largely unable to undertake regional hearings in person or site visits.

I want to thank all those individuals and organisations who made submissions to the inquiry and particularly the witnesses who appeared at inquiry hearings. The wealth of knowledge, information, expertise, local knowledge and passion that has been brought to this inquiry has been invaluable.

The majority report is largely a fair representation of the evidence presented. However, there are several shortcomings that I wish to expand on in this minority report. These include:

- The report downplays the role of the State Government as a direct driver of ecosystem decline. This role needs to be explicitly acknowledged and addressed.
- The report doesn't adequately reflect the harm caused by native forest logging and doesn't include recommendations to address this harm.
- The report lacks ambition in the recommendations to restore Victoria's 2000 threatened species
- The report doesn't reflect the evidence of harm that can occur to biodiversity and threatened species due to poorly managed planned burning activities

In the following sections, I will outline findings and recommendations that I moved to be included in the majority report but were not supported by the committee as detailed in the appendices of the committee's deliberations on the report.

Chapter 5 - Climate change

Chapter 5 deals with climate change and ecosystem decline. It finds that climate change is a major driver of ecosystem decline. It also finds that climate change is almost exclusively driven by burning fossil fuels for energy. However, a weakness of the report is that it doesn't include the calls from many submitters and witnesses that Victoria stop approving new fossil fuel projects and transition as

quickly as possible away from all use of coal, oil and gas. Victoria's timeline of 45-50% emissions reduction by 2030, and net zero emissions by 2050, does not respond to what scientists say is necessary. To do our share in limiting global warming to 1.5 degrees, Victoria should be aiming for a 75% reduction in emissions by 2030, net zero but 2035 and complete coal phase out by 2030. These are reflected in additional recommendations. Therefore, the majority report should have been stronger and included a recommendation that the Victorian Government immediately cease all new fossil fuel approvals, plan to phase out the state's three coal power stations by 2030 and set emissions reductions targets of 75% by 2030 and net zero emissions by 2035.

Chapter 6 - Habitat loss and fragmentation

Chapter 6 deals with the impact of habitat loss and fragmentation on the decline of biodiversity in Victoria. While the information about what drives continued habitat loss in Victoria was largely comprehensive, this information was not reflected in a finding. The majority report should have included the following additional finding:

Additional finding: Habitat loss in Victoria is caused by agricultural uses, development and urban expansion, for example the construction of houses, roads and other major infrastructure, native timber harvesting, resource extraction, degradation related to invasive pest species, erosion, climate change and bushfires.

The report provided detailed background on the failure of the Victorian Government to deliver the Western Grassland and Eucalypt Woodland reserves by 2020 as required. This failure was also subject to a VAGO audit in 2020. Grasslands are Victoria's most threatened ecosystem, with just 3-5% remaining. Further, what is left is rapidly degrading. Therefore the recommendation related to delivery of these reserves should have been strengthened from "consider funding" to "fund" as follows:

Amended recommendation: That the Victorian Government fund the immediate purchase or leasing of remnant high quality grasslands within the proposed Western Grasslands Reserve and the 36 reserves proposed by the Melbourne Strategic Assessment within Melbourne's urban growth boundary. These areas should be urgently acquired to facilitate ecologically sound management to conserve and restore biodiversity values.

This chapter also deals with the impact of native forest logging in Victoria. The inquiry heard extensive evidence, both in submissions and from witnesses, that native forest logging is driving ecosystem and threatened species decline. For example, evidence provided by Professor David Lindenmeyer included the following:

"There is work that indicates in Australia—published by James Watson—that over 70 species are at risk from logging operations. There is also a significant effect of logging in the wet forest ecosystems in Victoria. It undermines the ecological integrity of mountain ash ecosystems, alpine ash ecosystems. Logging in East Gippsland has fundamentally changed the composition of the forest, and so that it is dominated in those lowland areas by tree species which are not edible for animals such as koalas and greater gliders. So the evidence is clear, and it is compelling to indicate that logging has significantly altered ecosystems and has contributed to the decline of species." Transcript, page 42.

In addition, Environment Justice Australia provided the following evidence:

“Unsustainable extraction of natural resources will continue to drive ecosystem decline in Victoria and cannot be addressed by simply improving current environmental protection regulations or their implementation. In the case of native timber harvesting in Victoria, for example, the appropriate policy response is to bring forward the cessation of harvesting, particularly following this past summer’s catastrophic fires.” Environment Justice Australia, Submission Page 25

The lack of a finding about native forest logging’s ecological impact or any recommendation to accelerate Victoria’s transition out of native forest logging is a significant weakness of the majority report. The finding around logging that “Victoria has the balance right” may reflect the political reality for the Victoria Labor party but does not reflect the ecological reality. In 2021, as climate change, water shortages and the extinction crisis accelerate, the protection and restoration of remaining natural forests is absolutely vital. Therefore the following finding and recommendation should have been included in the majority report:

Additional Finding: Native forest logging is a significant driver of habitat loss, ecosystem decline and loss of forest dependent threatened species in Victoria. Native forest logging is contributing to ecosystem decline by fragmenting forest ecosystems and reducing habitat, reducing diversity and habitat values such as hollow-bearing trees, causing large scale soil disturbance, erosion and weeds, increasing fire frequency and severity and negatively impacting water quality.

Additional Recommendation: In light of the catastrophic impacts of the 2019/20 bushfires, the Victorian Government should bring forward the Victorian Forestry Plan to cease native forest logging in Victoria by 2024.

Chapter 7 - Threatened species

Chapter 7 of the report focuses on threatened species in Victoria. Victoria has 2000 threatened species and ecological communities that represents an increase from around 700 just 5 years ago.

This chapter lacked ambition in several regards. It downplayed the need for additional funding and resources for developing action plans for threatened species and doesn’t adequately state that new funding is needed to improve threatened species recovery. The majority report should have included the following amended findings and recommendations:

Amended finding: Only a small proportion of Action Statements for threatened species and communities and potentially threatening processes are in place, despite these being a mandatory requirement under the Flora and Fauna Guarantee Act 1988 (Vic). Further, even where action statements are in place, they are rarely implemented, monitored or reported on. Lack of adequate funding is a key reason for this.

Amended recommendation: That the Victorian Government ensure, as a matter of urgency, that all threatened species and communities and potentially threatening processes listed under the Flora and Fauna Guarantee Act 1988 (Vic) have Action Statements in place within one year and that significant new funding is allocated to their implementation. An action plan which identifies priority Action Statements should be developed to facilitate this process.

Amended recommendation: That the Victorian Government allocate significant news resources to administer and fully implement the Flora and Fauna Guarantee (Amendment) Act 2019 (Vic), including communicating the Act’s changes to relevant stakeholders and the broader community.

This inquiry also highlighted that Victoria's current policy approach to threatened species conservation, largely occurring within the framework of Biodiversity 2037, prioritises landscape interventions over programs focused on individual species restoration. Witnesses to the inquiry highlighted that while both approaches are vital, the balance in Victoria is too skewed towards landscape approaches. The report and evidence examine the model of the Saving our Species program currently operating in NSW which has delivered transparent threatened species recovery programs. The majority report should have included the following additional findings and recommendations to address these issues:

Additional finding: The NSW Saving our Species program is well regarded as an example of effective policy around threatened species. Key attributes of the program include focus on individual species needs, publicly accessible information and clear monitoring and reporting on performance.

Amended Finding: Both landscape-scale and individual species approaches are important in threatened species management to ensure the best outcomes for species. However, Victoria's approach under Biodiversity 2037 favours landscape scale interventions. It involves some, but limited, individual species interventions.

Amended Recommendation: That in delivering Biodiversity 2037, the Victorian Government reviews and incorporates features of New South Wales' Saving our Species program to bolster Victoria's individual species conservation efforts.

Chapter 8 - Land management

Fire management is a key issue discussed in the land management chapter in the report. Witnesses gave evidence that planned burning activities by Government Agencies can have a significant impact on biodiversity and threatened species where they are not properly planned or managed. However this evidence is not reflected in the report. Examples of this omission of evidence include evidence from BirdLife Australia that highlighted that planned burning activities can have an adverse impact on ecosystems and threatened species. They stated that "and whilst it is great that the Victorian government is working with BirdLife on many of those recovery projects for those species, the logging of native forests and poorly planned prescribed burns are undermining some of that great work. Just for an example, BirdLife recently stepped in to prevent planned burns of she-oak refugees in East Gippsland, which are critical for the survival of glossy blacks, which were impacted by the fires."

Further, evidence from Friends of Bats and Habitat Gippsland highlighted the ecological risks of planned burning. They stated that "Gippsland accounts for the largest area of planned burns, with over 800 000 hectares or 39 per cent of the total area. We have grave concerns that precious unburnt forest is being damaged by planned burns, by roadside clearing for planned burns and by logging. The cabbage tree palms flora reserve is the site of a 2000-hectare planned burn. This is a refuge for threatened species, and it is an old, historic flying fox colony."

This and other similar evidence should have been reflected in the majority report and so too a finding that responds to that strong evidence as follows:

Additional finding: Poorly managed planned burning, particularly where on-ground biodiversity assessments have not been conducted, can have significant negative impacts for native species.