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25th March 2021 (**Updated 31-March-2020**)

Dear Sir/Madam

Please find enclosed the Australian Brumby Alliance response to additional questions on notice from the Parliamentary Inquiry into Ecosystem Decline in Victoria. Below we have provided responses to the following five questions:

Question 1.
The estimated cost of a holding point for brumbies, construction and maintenance costs, as noted on page 22 of the transcript.

Question 2.
Any concerns about horses being taken to slaughter as a result in any of the settings, as noted on page 22 of the transcript.

Question 3
In your opinion, is a new brumby count needed and, if it is, who should conduct that? As noted on page 22 of the transcript.

Question 4
Your point of view on systemic issues with Parks Victoria that contribute to ecosystem decline, as noted on page 24 of the transcript.

Question 5
During your evidence you mentioned that fertility control for brumbies would be a more effective way of managing the brumby population.

5a. Could you provide an example of how administering fertility control might he achieved?
5b Who would administer it?
5c How does it compare financially with current methods if there are any comparisons you can point to.

Should you wish to clarify any of our responses, or have additional question rising from the information provided, please do not hesitate to contact us.

Yours sincerely

J. Pickering

President, Australian Brumby Alliance Inc.

Question 1.

The estimated cost of a holding point for brumbies, construction and maintenance costs, as noted on page 22 of the transcript.

Response

There are 2 types of holding point for Brumbies:

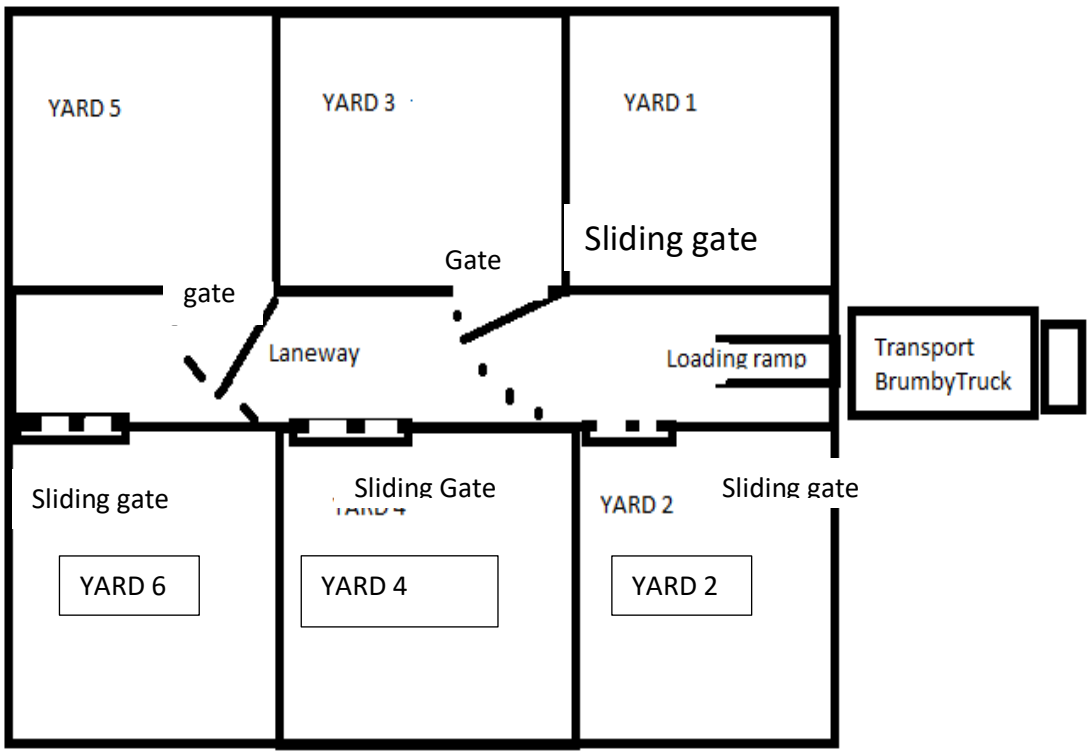
- Temporary National Park holding point
- Holding point for Brumbies collected by a rehomer

Temporary Park holding point yard photo more complex example

Information from HOOFs2010 rehomer for their yards

- Portable Panels to make up yards $100 for panel 2200 x 1800, gate $245.
- Laneway width 1800 (also gate width to control closing/opening yards & lane to separate and load Brumbies safely.
- Yards can have a sand base with some lime to harden but allow urine to drain. Sand is $400 per truck load. The rehomer in the photos bought 40 tons of sand.
- Race Bows $130
- Loading Ramp for safe collection of wild horses $2,500 approx.
- Watering points and Electricity if needed at night.
- Hardened track from road to loading ramp for heavy trucks.

Concept diagram of a basic style of temporary Wild Horse transfer yards Parks Victoria could start with:



Using the costs above, one yard needs 12 panels so with 4 yards and central laneway, maybe budget for 50 portable panels of 2200 x 1800 x$100, plus 5 gate/sliding gates x $250, and support struts as needed.

Race Bows as required. Plus loading ramp $2,500. Plus accompanying fittings. Remember, horses being held need daily attention for water, feed and injury check.

The best practice example is the National Parks & Wildlife Services (NPWS) Blowering Depot holding point for rehomers to collect Brumbies just trapped from the wild by NPWS to their Blowering Holding Point (near Tumut, NSW). This depot has a staff member living on site, essential for holding Wild brumbies in case of accident, injury and to feed & water for short periods. ALL prices blow are approximated.

Setting up from scratch:

- Enough portable panels to separate Brumbies unloaded from the rehomer's truck.
- Build in system of opening and closing laneways to safely separate the Brumbies from each other as needed, i.e. vet gelding, stallion fights, mares about to foal, treat for injuries, etc.
- Well fenced property, preferable owned by the rehomer/rehomer organisation to lower risk of eviction.
- Small & large paddocks to introduce wild brumbies to fences and water sources. In the wild Brumbies just push through the scrub, and drink from running water at ground level. Brumbies often start by tipping over their water container then drinking from the ground.
- Refer to the ABA Rescue & Care of Wild Horses In Australia booklet, (attach separate doc.)

Rehomer holding yards at HOOFs2010, President Anya Abela 0412-442-412 as a working example

Government seed fund of $20,000 would help new rehomer set up costs (with conditions)

Ongoing costs
Jan Carter, President of "Save The Brumbies" (STB) also an ABA member group, has kindly provided a copy of the STB 2019-20 operating balance sheet, plus the following notes;

Actual costs from Save The Brumbies (STB; **New England Brumby Sanctuary** (NEBS)
(STB takes Brumbies from across NSW National Parks & Wildlife Services (NPWS))

BRUMBY HANDLING ONGOING COSTS
During **2019/20** NEBS didn't receive any horses in that period; however the following approx. costs relate directly to the horses for the year.

- **Transport**, approx. $250 per horse but depends on distance, i.e., Oxley Rivers N.P. usually transport for no charge however the KNP horses, transport was around $6000.

- **Vet. Gelding**, approx. 50% of our horses need gelding @ $350 per horse, add **microchip** extra and our vet does give us a discount at that price. That's standard, we sometimes need to call our vet for other reasons, i.e., injury etc. etc.

- **Feed**. Drought in 2020 required hand feeding all horses and buying water for several months. Drought is now over and NEBS has good grass cover, however horses in the yards being handled are fed twice daily for several weeks as needed according to their progress. See feed account on attached of $28,000 annually.

To summarise I would calculate the cost to feed, geld, microchip the average horse over an average 6 month gentling period is around $1500 excluding unexpected vet work and reliant on volunteer horse handling. Modest Adoption fees never cover the overall costs of infrastructure (land, fencing, watering points, installing sufficient handling yards, insurance, maintenance etc).

STB Brumby Rehoming **1920/21 TO Date**: Recent Wild Horses received at NEBS are from Kosciuszko NP (trapped by NPWS and collected from Blowering Depot by STB) have been placed, all colts and stallions gelded and we are taking a further eight horses from Corindi, north of Coffs Harbour who, due to floods and farmers' fences down, have cause problems on neighbouring properties.

NEBS currently can use 250 acres of its total 1385 acres of mostly bush and is very similar to the country where the horses originally come from. During 2019-2020 year NEBS only had about 20 Brumbies in care due to drought and no trapping due to COVID lockdowns. Usual number is up to 35-40 brumbies in care. Then early 2021 received around 20, some placed but more coming shortly from Corindi and Oxley N.P.

INCOME TO CHARITY

- **Government funding NIL** which puts a heavy Burdon on Brumby rescue charities.
- **Adoption Fees** range from $500 (foals, elderly Brumbies) to $1,500 for young adults with "pretty colours" which in a good year may cover ongoing costs, but never covers infrastructure and running costs.
- **Donations** Our supporters help with donations but fundraising is a major strain on the charity.

Government annual fund of $10,000 would help ongoing rehomer costs (with conditions)

SANCTUARY INFRASTRUCTURE/ONGOING COSTS

Examples below, full NEBS 2019/20 financial year profit/loss to show infrastructure costs next page.

- **Fencing** is the biggest, ongoing, outlay it's a constant chore at NEBS in particular, repairing and checking fences.
- **Farrier** $1,150
- **Repairs & Maintenance** $2,383
- **Operating expenses** $14,569
- **Buying water** $2,800
- **Insurance** $2,227
- **Postage & printing** $1,722
- **Vet/medical** $2,407

Next page see 2019/20 financial year profit/loss. President Jan Carter 02-6655-2224, info@savethebrumbies.0rg

Save The Brumbies Inc
241 Martells Rd, Urunga, NSW 2455

Profit & Loss Statement
July 2019 through June 2020

Income		
Sales		
Donations	$46,687.84	
Donations - J Carter	$4,500.00	
Sales/adoptions/sponsorships	$1,600.00	
Membership fees	$45.00	
Total Income		$52,832.84
Cost of Sales		
Gross Profit		**$52,832.84**
Expenses		
Advertising & website	$1,289.99	
Logo Expense	$34.55	
Fundraising expenses	$100.00	
NEBS Opening Day	$39.60	
FARRIER	$1,150.00	
Transport & freight	$180.00	
Bank Fees	$5.00	
Registrations, Dues & Subscriptions	$122.00	
Hay, Feed, wormers etc	$28,397.11	
Horse handling & training	$385.00	
Insurance	$2,227.27	
Equipment & Fittings	$695.00	
Repairs & Maintenance	$2,383.47	
Office Supplies	$160.11	
Postage and printing	$1,722.66	
Stationary & Sundries	$243.95	
Rates	$994.30	
NEBS Operating Expenses	$14,569.54	
Telephone & Internet	$894.52	
Electricity and gas	$70.00	
Water	$2,820.00	
Petrol/Diesel	$181.31	
Vet/Medical	$2,407.54	
Total Expenses		**$61,066.92**
Operating Profit		($8,234.08)
Other Income		
Interest Income	$2,280.92	
Total Other Income		$2,280.92
Other Expenses		
Net Profit / (Loss)		**($5,953.16)**

Question 2.

Any concerns about horses being taken to slaughter as a result in any of the settings, as noted on page 22 of the transcript.

Response

The ABA advocates for a management policy of using fertility control to lower the number of excess Brumbies needing to be rehomed. Put simple, a foal never born will not have to be rehomed.

- **Barmah** and **Bogong** retention numbers of 150 minimum, and higher if scientific studies show it is safe. If an average population increase is 16% then around 20 annually Brumbies need to be trapped, or managed by fertility control easily.

- In the **East VicAlps** with a recommended 1,500 minimum, around 200 annually need to be removed, here we recommend 150 controlled by fertility control, and a flexible 50 passive trapped for rehoming.

Using these figures, no Brumbies need to be slaughtered. Until the ABA recommended minimum management numbers are reached higher rehomer numbers are needed to cope with around 1,200 to be removed from the East Vic Alps, non from Bogong as current numbers need to build up to 150, and 100-200 removed from Barmah. Park Victoria's strategy management at present is not rehomer friendly; instead they have closed any rehomer offers and rushing to shoot 100 plus Barmah brumbies in April 2021.

Parks Victoria rehomer Expression of Interest (EOI) form that they say only attracted a few rehomers is attached. Feedback from ABA members is that this form and process is complex, and without safe transfer yards as highlighted in our response to Question 1, presents high safety risks to both the Brumbies and rehomers. See Attachment 1.

Note also, there is NO government fund support for this costly and work intensive job.

It is always sad to kill a healthy, intelligent, useful animal, but if it has to be done then it should be done quickly and by addressing the issues below.

- In NSW, NPWS trap all Brumbies and those that are not collected by rehomers are sent to the abattoirs, preferable the closest, reputable abattoir.
- Wild horses should not be sent to sale yards as being wild animals they are stressed by close confines, and surrounded by unfamiliar noises, humans and other horses/animals. Occasionally these animals are successfully rehomed by the yards, however there is a risk that people purchasing these animals are not skilled in gentling and general handling in the taming process. ABA has knowledge of bad outcomes for both rehomers and horses in this scenario. Optimal outcomes occur when members of the public purchase Brumbies from rehomers once this initial handling is completed.
- Appropriate water, feeding, handling and transport codes of practices must be adhered to.
- The biggest risk for Brumbies en-route to abattoirs is injuries left un-treated, stress from rough handling which should be kept to a minim by calm, quiet, gentle pressure to load and unload.
- Unfortunately codes of practice for abattoirs seem lacking.

Question 3

In your opinion, is a new brumby count needed and, if it is, who should conduct that? As noted on page 22 of the transcript.

Response

It is our strong opinion that the new count is essential to:

- Inform management plans,
- Ensure a genetically viable number are left in their historic areas (ie minimum of 1,500 in East VicAlps, 150 Bogong High Plains and 150 Barmah),
- Scientifically identify the density level for Brumbies in each region that will maximise positive and minimise negative Brumby impacts.

It is our strong recommendation that the new count involves Parks & Brumby people

The new count should involve representatives from appropriately constructive Brumby groups working alongside Parks Victoria. The count methodology and statistical formulas must be explained and consensus reached before proceeding to ensure

Question 4

Your point of view on systemic issues with Parks Victoria that contribute to ecosystem decline, as noted on page 24 of the transcript.

Response

4.1 Inability to understand the potential benefits of Brumby grazing in Victoria

Analyzing post-socialist grassland conversion in a traditional agricultural landscape – case study Croatia 2017 (Extracts):

- As part of the process of abandoning grazing and mowing, they are increasingly being encroached upon by shrubs and forests (Hellessen and Levin 2014; Meshinev et al. 2000; Vassilev et al. 2011, Tasser et al., 2007).
- An estimated 50% of all species in Europe depend on extensively managed habitats such as .grasslands (Helessen & Levin 2014). Moreover, the increased rates of shrub encroachment which are a direct result of agricultural abandonment, lead to an increased risk of fire (Pavlek et al. in press; Nunes et al., 2005; Martinez et al., 2009.
- With "rural areas being abandoned and left to overgrow (Spevec 2009). Abandoned fields left to overgrowth first become grasslands, and then through secondary succession they become forests.

2016 The interaction of fire and mankind (Extracts):

- These authors are able to show that the abundance and continuity of fuel is the most important variable in fire regimes in this area and that ancient human influence reduced widespread fire by promoting many small fires that ultimately reduced fuel continuity.
- The importance may not simply be how much burns but how it burns and much more informed political, environmental and scientific debate is needed.

Rewilding lost megafauna's item "Introduced megafauna are rewilding the Anthropocene Erick J. Lundgren , Daniel Ramp , William J. Ripple and Arian D. Wallach". Extracts;
1. 67% (Australia) of extinct species richness, from the late Pleistocene to today, have been numerically replaced by introduced megafauna. Much remains unknown about the ecology of introduced herbivores, but evidence suggests that these populations are rewilding modern ecosystems. We propose that attitudes towards introduced megafauna should allow for broader research and management goals.

Parks Victoria (PV) claim that any Brumby impact is bad, and so do not see any reason to conduct an objective study to test ABA's claims of potential Brumby positive impact. So two years ago the ABA commissioned a 2-3 year research program to analyse the distribution and population density of Brumbies in the Eastern Victorian Alpine region. The study has been conducted by Dr David Berman, Adjunct Research Fellow (Wildlife Ecology), University of Southern Queensland. The report will include a method to determine the relationship of positive or negative Brumby impacts in related to Brumby densities.

Parks Victoria refused to join the Brumby impacts study and instead have concentrated on the extermination of all Barmah and Bogong Brumbies and to decimate the East VicAlps Brumbies. It saddens the ABA that PV continue to prioritise Brumby extinction above all other ferals. It is almost as if PV have convinced themselves horses are the primary cause of ecosystem system decline. As

highlighted in the ABA slides presented. Our view is reinforced when we see PV appear to inflame the anti-Brumby community by claims of dung smothering the land, instead of understanding the benefits horse dung provide of partially digested frass that is easy to break down and be used by other native species, such as skinks looking for insects. PV talk of horse pugging damaging the soil, but as seen in the ABA slides, frogs were happy to utilise the protection and captured water to lay their frog spawn.

Auditor-General's 2016 Report (Examples of issues the AG found in PV management

- **Page viii** sates "*a lack of oversight and accountability and poor evaluation, compromised by limitations in data.*"

- **Page xiii states** "Parks Victoria does not monitor and report on the implementation of management plans for the 10 sites it manages and does not evaluate its actions."

- **Page 29** states "In 2013, Parks Victoria reviewed the status of its Ramsar management activities against Ramsar management plans prepared in 2002–03. This review consisted of telephone interviews with Parks Victoria staff about progress on actions……. it is not clear how it has helped further planning".

PV released it's DRAFT Feral Horse Action Plan 26-3-20 for community feedback in 4 weeks
The latest PV Horse Plan contains several examples of failings first highlighted in the Auditor General's report (2016) which we understood PV had subsequently addressed. This lack of rigour and accountability in horse management ideals, if extrapolated across all of PV's management actions, would severely limit PV's ability to effectively slow ecosystem decline, and maybe increase its decline, for frogs, skinks and the Sun Moth, and presumable many more not yet identified positive effects from small managed Brumby populations.

LIMITED DATA and INABILITY to EVALUATE ACTIONS

Page 3 & 28 of PV Draft Horse Plan refers to:

- Improved distributions and abundances of vulnerable or threatened native fauna and flora species. (Page 3)
- Significant reduction in the eastern Alps population through annual removals, particularly in areas of high conservation value. (Page 3)
- Monitoring and evaluation of feral horse damage to sites of high conservation value sites, including mossbeds, peatlands and streambanks. (Page 28)
- Increase the annual rate of removal of horses from the eastern Alps, particularly from areas of high conservation value. (Page 28)

PV used the same reasons to the ABA's legal team to shoot Brumbies after the ABA-v-PV 8-May-20 court decision. While reference to areas of high conservation value indicated PV hold detailed data records in fact when the ABA requested records about where these high conservation areas are, and so be able to quantify species expected to benefit. In fact, PV, under FOI, said they did not hold such documents. See FIRST and SECOND FOI Answers that evidence PV's lack of ability to maintain detailed start and end of treatment data and evaluate the treatment (horse shooting) results.

…….. …….. ……..

FOI 2020/21 - 3 - **Freedom of Information Request Decision Letter**

From: FOI Mailbox FOI@parks.vic.gov.au **Sent:** **Friday, October 16, 2020 1**2:39 pm

ABA Question 2c

(2c)- I request location details of each **high-conservation priority location** and criteria used to define *each high-conservation priority locations including classifications of each species expected to benefit from shooting feral horses in these areas. Since the plan states "**Monitoring and other research projects will run concurrently with operational activities**."*

EOI Reply to question 2c

No documents were found as requested.

ABA Observation – so PV intend to kill Brumbies in high-conservation priority locations that are not documented or locations pinpointed, to benefit threatened species which are not documented or listed in each area, despite stating "Monitoring and other research projects will run concurrently with operational activities".

- Why were these words inserted in the plan but not acted upon?
- Why are the high-conservation priority locations named but no records are held to define their boundaries, or provide location details of the specific species that will benefit from shooting horses?
- Why should public money be wasted on shooting horses to protect certain species that no evidence can be found to prove they even existed at all? The complete lack of records stated in the plan to be conducted does not reflect a global understanding of PV's claims to use best practices, adaptive, evidence based science to manage its parklands.

End of Year Reports

PV FOI replied to ABA - Parks Victoria has committed to the public release of the end of year reports. The reports, for year 1 and year 2, are still being prepared and are not yet ready for public release which is likely to occur in the coming months.

ABA Observation Why did PV state in the plan their commitment to end or year reports when it would appear that they are being produced basically at the end of the 3 year period.

Seasonal Reports
PV FOI reply - Seasonal reports have not been prepared by Parks Victoria. The operational information proposed to be included in the seasonal reports will instead be provided in the end of year reports.

- **ABA Observation** Why did PV state seasonal reports would be prepared, then say they are now incorporated in the end of year reports which have also not been prepared, and
- What benefit would the seasonal reports have provided? If the benefit was to further adapt the plan, that opportunity has passed because all seasonal and End of year Reports will be combined "in the coming months" to not be read until the end of this 3 year plan in June 2021.

ABA Question 2d

(2d) *- I request a copy of the pre shooting baseline data that Parks Victoria will use to compare with the post shooting data to assess the effectiveness of the shooting of feral horses considered essential to be conducted in these sensitive areas Parks Victoria have identified. Such pre and post shooting data is essential for Parks Victoria's quality control measures and provide accountability to this taxpayer funded shooting exercise.*

FOI reply to question 2d

After making enquiries, there are no such documents meeting the terms of your request in existence. However, there is background information contained in the publicly available document *Alpine National Park - Feral Horse Strategic Action Plan 2018-2021* in Chapter 6 and Appendix 1.

ABA Observation – Chapter 6 is titled *Known and potential impacts of feral horses*,
ABA Observation – Appendix-1 is titled *Summary of the science related to feral horse impacts in the Victorian Alps*, but neither Chapter 6 or Appendix-1 identify, quantify or explain sensitive areas. It seems Parks Victoria are not worried about whether shooting has a negative impact, such as no foot depressions for frogs to lay their spawn or skinks losing a good source of insect to eat around horse dung. I would have expected a science based orginisation to monitor any increase or decrease in species after horses are shot to gain more understand of how to protect, improve native species.

- How can a report covering a wild area of the Australian Alps, and a study where damage solely attributed to deer, changed to be horse only damage be relevant to *a measure of the abundance, extent of distribution and reproductive success of endangered species in the area where the shoot was conducted, compared to similar measures in similar (untreated control) sites where there are no wild horses*?
- Why have a science department in parks Victoria that relies on historic grazing information to protect species in un-documented high-conservation priority areas, benefit threatened species not quantified in each area? Repeating actions, when area and species are not unknown, nor it seems needed to be known require a science arm to Parks Victoria?

…….. …….. ……..

The ABA then re-phrased questions for clarity and received this second PV FOI reply

FINAL (Additional Parks Victoria Answer) **From:** FOI Mailbox FOI@parks.vic.gov.au 16-October-20
Subject: FOI 2020/21 - 3 - Freedom of Information Request Decision Letter

Dear ABA, We refer to your email request (**black text**) dated 12 July 2020, received by Parks Victoria on 13 July 2020 and your subsequent email of clarification received on 17 August 2020 (**clarification in bold/blue text** below), in which you sought access to documents under the *Freedom of Information Act 1982* (Vic) ("Act"). *(**Second/final** Parks Victoria **answers in red** below)*
Specifically, you requested access to:

ABA Question 2c

*(2c)- I request location details of each **high-conservation priority location and criteria** used to define each high-conservation priority locations including classifications of each species expected to benefit from shooting feral horses in these areas. Since the plan states "Monitoring and other research projects will run **concurrently** with operational activities."*

I now request copies of all Parks Victoria's "seasonal and end-of-year reports"

Question (2c) PV FOI Reply

No documents were found as requested but after conducting internal consultation I have been provided with the following advice.

- End of Year Reports, Parks Victoria has committed to the public release of the end of year reports. The reports, for year 1 and year 2, are still being prepared and are not yet ready for public release which is likely to occur in the coming months.
- Seasonal reports have not been prepared by Parks Victoria. The operational information proposed to be included in the seasonal reports will instead be provided in the end of year reports.

ABA Question 2d

(2d) - I request a copy of the pre shooting baseline data that Parks Victoria will use to compare with the post shooting data to assess the effectiveness of the shooting of feral horses considered essential to be conducted in these sensitive areas Parks Victoria have identified. Such pre and post shooting data is essential for Parks Victoria's quality control measures and provide accountability to this taxpayer funded shooting exercise.

A measure of the abundance, extent of distribution and reproductive success of endangered species in the area where the shoot was conducted, compared to similar measures in similar (untreated control) sites where there are no wild horses.

Point (2d) Parks Victoria Reply

After making enquiries, there are **no such documents meeting the terms of your request in existence**. However, there is background information contained in the publicly available document *Alpine National Park - Feral Horse Strategic Action Plan 2018-2021* in Chapter 6 and Appendix 1.

ABA observation, We checked these two documents but found nothing to answer question 2d. *to compare with the post shooting data to assess the effectiveness of the shooting of feral horses considered essential to be conducted in these sensitive areas Parks Victoria have identified.*

…….. …….. ……..

LACK of OVERSIGHT and ACCOUNTABILITY

Page 27 of PV Draft Horse Plan states "Over the coming years, management effort in the eastern Alps will be focused on reducing the damage caused by feral horses on vulnerable peatlands and streambanks (asset-based protection). Management of horses will target those areas that are damaged and are the most vulnerable, or are in good condition but have the potential to be impacted by the threat."

ABA observation: there is no quantified data assessed before or after the shooting for PV to know if or how much damage from horses has been reduced. Neither is there any awareness by PV that most of the damage could be from the **1 million plus deer** in the East VicAlps compared to up to 5,000 Brumbies. A ratio of several hundred deer to ONE single Brumby.

FLAWED STUDIES

PV's Draft horse plan states: *Even low densities of horses can cause substantial damage in a short time, as demonstrated by the substantial damage caused by feral horses during their presence in the Mount Nelse area* (Tolsma and Shannon 2018).

ABA observation 1: During the ABA-v-PV legal case 2020 PV's expert evidence was shown to be false in that several (3-4 at least) sites in the researcher's field notes which stated damage was from ONLY DEER, were reported as HORSE ONLY damage in the final Tolsma & Shannon 2018 report. As a result the only conclusion PV came to was that horses, even in small numbers. It is a pity PV scientists never investigated what else, apart from horses, could be causing the damage, and took their default position of blaming horses (ABA opinion).

ABA observation 2 Again, PV never factored in the high ratio a hundred plus deer to ONE single Brumby, nor that over 100 deer were shot in the exact same area Tolsma & Shannon 2018 had conducted their studies around the same time the researchers were doing their visit.

INEFFECTIVE Management strategies

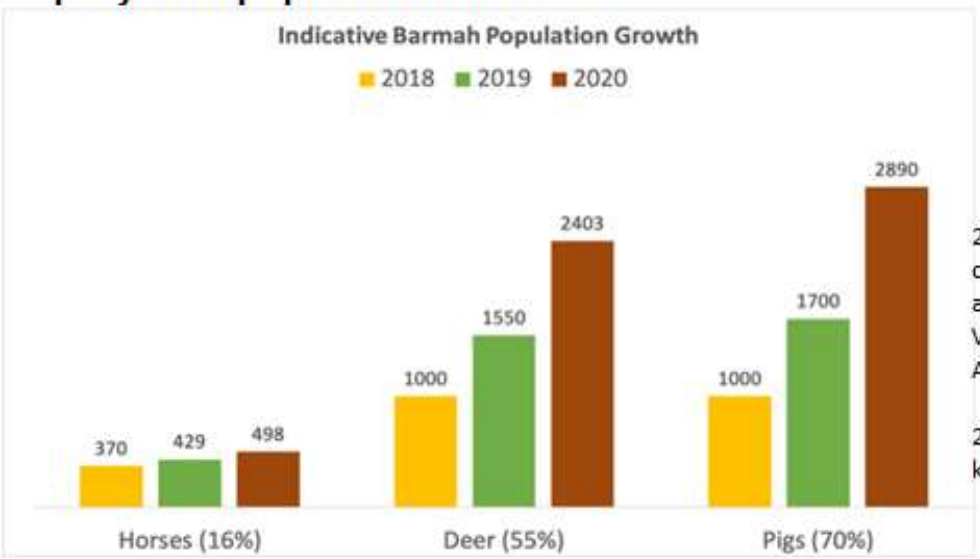
PV's Draft horse Plan states "Ultimately, complete removal of feral horses from across the Bogong-Cobungra area would achieve permanent protection of environmental values across this area."

ABA observation :This statement by PV we feel typifies the view dominating all aspects of PV's approach to preventing ecosystem decline. Because - removing 5,000 Brumbies while hardly denting the 1 million deer population increases (also in the VicAlps), cannot "achieve permanent protection of environmental values". Unless PV really do believe deer or pigs do not cause damage.

SLOW TO IDENTIFY EMERGING THREATS

Over 4300 deer were removed across more than 200,000 hectares to support the recovery of threatened species and habitats. These programs are continuing. However, feral horses are not included in these aerial shooting operations.

Brumbies in perspective: Scale of the problem using Barmah projected population increases



2018 - Total of 34 deer culled but pig data absent (p48 Parks Victoria's Strategic Action Plan 2020).

2019 Cull data not known yet?

ABA observation 1: I million deer in the East VicAlps, increasing at 55% annually means that lowering the overall population requires over 555,000 to be removed annually. So removing 4,300 while spunding a lot, is LESS that 1% of the number needed to be removed before the population will even be slowed. See references to increases on ABA presentation slide;
ABA observation 2: We have had anecdotal evidence sent to us during 2020 and this year also of many shot horses, each lightly covered by a few branches across at least 5 different East VicAlp locations. We are now writing to both PV and DWELP to ask why horses are in fact being shot.

<u>INCORECT INFORMATION</u>
PV's Plan states: On 8 May 2020, the Federal Court of Australia delivered its judgement (FCA 2020) on whether the removal of horses by Parks Victoria compromised cultural heritage values associated with horses in the Alpine National Park, as defined by the Australian Alps National Parks National Heritage Listing. The judgement accepted that feral horses had severe impacts on the biodiversity values of the Victorian Alps and decided that the removal of feral horses would not have a significant impact on the national heritage values of the Australian Alps.

PV has regularly published INCORECT information on the ABA-v-PV Judges findings. In fact, ABA took Parks Victoria to Court to stop **entire** Brumby populations being eradicated (we are not against sustainable management). The case was lost, however, the Judge:

- Accepted the continuing presence of brumbies in the Australian Alps contributes to National Heritage Values relating to high country pioneering history, but that
- Culling ALL Bogong High Plains horses**, while 1,200 remain in East VicAlps** is not significant enough (under the EPBC Act) to detract from their overall heritage values.

<u>EXAGERATED INFORMATION</u>
PV's Plan states: large numbers of feral horses were observed and photographed foraging on severely grazed treeless plains and congregating in very narrow strips of unburnt habitat along sensitive high-altitude waterways, where suitable feed for feral horses remained available. P17]

ABA observation: PV then repeats in the next paragraph almost the same words (cut & paste?).

ABA observation: When the ABA's legal team asked PV for what evidence they used to shoot horses 8 May 2020 PV replied that large numbers of horses were observed and provided our lawyers with the following 6 photos of evidence. Of these 6 photos from PV; 3 of PV's evidence photos had NO horses, and the other 3 showed in total only 11 horses.

Photo 1 (No horses in PV Evidence photo)

Photo 2 (No horses in PV Evidence Photo

Photo 3 (No horses in PV Evidence photo)

Photo 4 (4 horses in PV evidence Photo)

Photo 5 (2 horses in PV Evidence Photo)

Photo 6 (5 Horses in PV Evidence Photo)

PV's contradictory position on altered stream flows through Barmah National Park
PV RRG-MP 2017 Draft p-vii states:

- *The development of river regulation, and irrigation infrastructure such as regulators, canals and levees, have drastically altered stream flows and flooding regimes on the floodplains, resulting in a decline in the health of the River Red Gum forests, streams and wetlands as well as species that depend on them for their continuing survival*.

- However, **PV RRG-MP 2017** Draft p-43 refer to using *infrastructure to divert water from river onto floodplains,* also p-viii infers positive use of regulators/levees "*This may include targeted planned burning and changes to flooding regimes through the use of regulators and levees*".

PV's adaptive management & trends fail to provide baseline data
We have seen several PV plans with an emerging pattern of Acts/protocols to adhere to, people to communicate with, partnerships, the area's significance, natural values, cultural heritage significance, tourism benefits, zoning, PV's vision and great photographs. However, these very wordy aspects of PV's management plans which we feel lack specific, critical detail, timelines and data capture that would, in our view, enable quantitative/qualitative outcomes able to be monitored and evaluated to inform future PV recommendations.

PV monitor, review, use adaptive management but rarely provide hard data to measure
PV RRG-MP 2017 Draft p-4 talks of adaptive management being an integral part of planning to enable evidence-based decisions. If so, what did PV learn from the VEAC's River Red Gum Forests Investigation "Final Report 2008" that PV refer to in the PV RRG draft p-xi, or PV's engagement panel/plan 2008 p-124?

PV RRG-MP 2017 Draft p7 lists ***4 trends*** in waterway & floodplain values, ecological character, meeting hydrological water requirements & aquatic health PV will monitor as ***Key measures for park goals***. The ABA does not see how is it possible for PV's *trends* to translate to action orientated outcomes without baseline data?

PV BNP-SAP 2019 Draft p-23 states that Colloff et al. 2014 *suggest* that grazing by horses damages and uproots plants, decreasing plant density and thereby reducing capacity for regeneration when re-flooded, and that complementary actions such as management of grazing pressure, are also required in addition to the delivery of environmental flows.
But PV only paraphrased Colloff. The **full** Colloff 2014's paragraph states "*Complementary management actions include management of grazing pressure and control of invasive plants, but provision of a flood regime that most closely matches plant-specific water requirements, at least for most of the time,* ***represents the single*** *management action that holds the* ***best prospect for conservation*** *and management of grassy wetlands*."

PV BNP-SAP 2019 Draft p-54 states that "Insights gained from monitoring programs will help to evaluate and improve management effectiveness, as well as identify where changes in the approach or resourcing are needed." This infers a lack of knowledge from the past 4 decades of research which state that unless the flood regime is corrected, the grass will disappear as current flood regimes encourage conditions for red gums saplings and giant rush to take over the remaining Moira grass.

We are highly concerned that a government agency can continually avoid scrutiny or even

be questioned, without answers, on the use of such illogical, denial tactics.

At times it seems that PV's primary approach to managing ecosystem decline is to kill & kill again whatever PV consider bad for the environment. But we do not see data on how may introduced flora or fauna have to be killed, or what PV's end goals are, to improve specific native flora and fauna. Instead PV state that feral impacts have been reduced. PV do sometimes quantify the number of larger feral animals shot, but for smaller feral animals PV provide hectares of pest herbivore control poisoned or regions where shooting occurs,

PV refer to grass slashing or other mechanical fuel treatments, but continue to refuse to consider benefits of Brumby grazing such as lowering fuel loads. In fact PV now describe Brumby grazing as a negative impact because "it reduces species richness", in other words, horses eat grass. To the ABA this is inconsistent, and bordering on illogical.

PV often tell us that they have insufficient funds to adequately do their job, but when large sums of money are provided, there does not seem to be any accountability for PV to provide details of expenditure, quantified measures of success and outcomes, and how PV's work improved ecosystem health.

PV River Red Gum Parks - Draft Management Plan June 2017 Examples of a lack of data.
PV plans have great photos of healthy looking landscape in management plans, then talk of so much damage from horses that horses must be exterminated to save the environments.

Vague statements, no data in PV River Red Gum Parks

- *"The frequency, timing, duration and depth of flooding are critical for the health of River Red Gum forests and many other ecosystems in the River Red Gum Parks" (page V111).*

- *"Ecological research and monitoring that addresses key information gaps and increases the understanding of priority ecological assets and threats will be encouraged and promoted" (Page X).*

- *"Adaptive management is an integral part of the planning approach, enabling ongoing science-and evidence-based decisions" (page 4).*

- *Water management - The goals are to maintain water-dependent ecosystems and improve ecosystem resilience, particularly in the face of climate change. Measures include:*
  - *Trends in waterway and floodplain values — all parks and reserves*
  - *Trends in ecological character — Ramsar sites*
  - *Trends in meeting hydrological water requirements — all water-dependent parks and reserves*
  - *Trends in measures of aquatic health. such as macro-invertebrate communities — all* waterway assets (page 7).

Such generalised statements infer PV understand the problem and how to improve negative impacts. PV frequently use words of monitor, review, adaptive management but we feel that without detailed, quantitate data there is no way to know if PV's work has helped.

Furthermore, subsequent plans cannot use previous plan to inform the next plan and to the ABA it only gives an impression of control. All these approaches we see used by Parks Victoria in management plans are of major concern as we watch the ecosystem decline in Victoria continues. We need data starting points, incremental change measurements etc. to inform and learn from.

There is more, but this is sufficient to provide a range of issues we see in Parks Victoria's management style as it talks of having achieved "a reduction in negative pressure from feral ungulates" to improve the ecosystem they manage.

References

PV means "Parks Victoria"
PV RRG-MP 2017 means "Parks Victoria's River Red Gum Management Plan 2017"
PV BNP-SAP 2019 means "Parks Victoria's Barmah national Park Strategic Action Plan 2019"

Question 5

During your evidence you mentioned that fertility control for brumbies would be a more effective way of managing the brumby population.

Response

Background

For 10 years ABA & its member groups Victorian Brumby Association (VBA) and Save the Brumbies (STB) have done much to promote safe application of Fertility Control (FC) in field situations.

We ran a Fertility Control seminar for Brumbies in 2009 in Brisbane at which Park Managers, RSPCA, Lyn Hinds and Dr Dave Berman spoke, along with other speakers we organised.

Since then we have presented formal submissions on FC in field operations, free roaming wild horses, engaged in discussions with Park Management and government ministers in Victoria and NSW. Each update on FC information involves hours of research and written information. So far none of this has achieved actual FC application in any Park in Australia, as yet.

FC should be applied along with other Brumby controls; we are not claiming FC is a magic, single solution. Once safe Brumby numbers are implemented, such as for Victoria, East VicAlps 1,500 minimum, Barmah and Bogong 150 minimum each, then FC can provide be a primary management tool, complemented by passive trapping as needed.

The VBA sent 2 members to America to be trained in dart gun vaccine (PZP) delivery when we thought Parks would take up our offer - no offer has yet been made. We retain contact with primary FC institutes who will provide qualified trainers to fly to Australia, to train community and Park volunteers once formal OK to start is confirmed.

As time is short now, the ABA now provides a summary of earlier work by the VBA & STB. If the committee would like us to revise all figures and present to the committee, we can, however I suspect your time is pressed also.

5a. Could you provide an example of how administering fertility control might he achieved?

There are many fertility control programs in the USA where fertility control is administered to free roaming wild horses. These programs are government endorsed and have published scientifically proven results. This method has been used in the USA for nearly 40 years and has a huge amount of published, peer reviewed science behind it.

It is delivered via a pneumatic dart to free ranging wild horses with absolutely minimal interruption to their daily grazing activities. There are community run FC programs that have lowered the local population of wild horses significantly, negating the need for expensive government funded and wild horse capture operations. In addition to this, through their citizen science and fundraising aspects and involvement of the community, community engagement is strengthened.

Fertility control is world best practice in terms of management of wild horse populations and eliminates the need to slaughter Brumbies since we can control the number of foals born. Removing Brumbies in a humane manner while minimising any negative impacts by safe density levels and engaging the community all at the same time is a win-win for Parks Victoria, government and Australian social heritage values.

5b Who would administer it?

In Australia, the VBA has held positive discussions with the Sporting Shooters Association Victoria (SSAVic) and can be revisited as soon as Parks Victoria are ready to retain minimal genetically viable numbers living wild in their historic park areas, i.e. 1,500 minimum in VicAlps, and 150 in Bogong and 150 in Barmah as a minimum.

We can start the program as soon as approval is received by applying the following stages:

During 2021 meet with Parks Victoria and key partners to draft an operational plan.

January 2022 implement the agreed plan, such as concurrently;

- Build on Dr Berman's Brumby Density Study by mapping Brumby social behaviours and movements around each park, including the identity of each Brumby mob with interested local community groups who are familiar with the areas involved.
- Develop and formalise partnership plans with the Sporting Shooters Association Victoria (SSAVic) to deliver the vaccines via dart gun. Training and accreditation in dart gun FC can be delivered by Kimberley Frank's team at Science and Conservation Centre ZooMontana, USA. ABA can arrange to fly trainers to Australia to conduct the training.
- Strengthen/join partnerships with Zoos and Universities on their scientific studies.
- Build community support group to monitor/record essential data.
- Deliver 'citizen scientist' program to community observers to assist with recording foaling/ deaths/ other relevant events.
- Target delivery program – ideally late Spring/ early Summer so can record births etc. at the same time as delivery.

During 2023 deliver FC treatments in VicAlps, Bogong and Barmah. Noting the Barmah Brumby Preservation Group also sent 2 members to America to train in dart gun delivery, so could mirror the ABA's schedule in Barmah.

Modelling is guided by Brumby numbers at the time and agreed safe density levels that are above the genetically viable minimum.

Only the mares are vaccinated as that is the only way to have direct control on foal numbers born. There are several vital reasons that stallions should NOT be targeted for sterility, which we can clarify if necessary.

Fertility control is only to be used to retain sustainable populations, never to eliminate a population. This requires treated mares to return to fertility. Again we can clarify if needed. This is a complex application, but one we have studied for 10 plus years.

The sooner FC is formally used, the sooner all Brumbies trapped can be rehomed, and those not born due to FC will never have to be slaughtered. All work on each of the 3 areas will be scientifically written up and peer reviewed, to enable transparency and confidence for environmentalists, governments and Brumby supporters. Endless arguments will cease, and future Australians can continue to see and learn from their unique living heritage.

If additional help is needed, the International organisation Four Paws is also keen to help set up FC dart delivered programs in Australia. We have spoken several times with Four Paws International and they are always supportive and keen to offer help if we need it. Four Paws are also keen to progress scientific FC studies, See example below;

International Organisation FOUR PAWS - Help for Wild Horses in Romania
https://www.four-paws.us/campaigns-topics/topics/help-for-horses/help-for-wild-horses
Since 2013, we have been working to help some of the last horses living wild in Europe. After the disintegration of the Soviet Union, owners who no longer needed their workhorses let them free in the Romanian Danube Delta. In the past 2 decades, this population has grown rapidly. Because the Danube Delta is a strictly protected biosphere reserve, the growing population of horses endangers the flora and fauna. To control the population, Romanian authorities originally saw no other solution than to allow the horses to be shot. We reacted immediately by making an offer to the Romanian government: we would establish a birth control program that could control the population long-term. Since 2012, a team of Romanian vets has been successfully implementing this program.

Continuing Care - 2018 was our sixth year in the Danube Delta looking after the horses and carrying out our birth control program. ***We are also looking to partner with universities interested in researching the interaction between the horses and nature.***

5c How does it compare financially with current methods if there are any comparisons you can point to.

One PZP dart gives a 70% reduction in foaling. Follow up with a second dart at least one month later gives 97.5% reduction in foaling will last another two years.

Parks Victoria figures on costs for trapping Bogong Brumbies are around $180,000 for 51 Brumbies, which is around $3500 PER BRUMBY! Those figures were supplied by PV a few years ago. In NSW trapping costs are just over $1,200 per Brumby trapped. Noting there are higher Brumby densities in Kosciuszko than Bogong and Barmah, and the East VicAlps.

Each PZP dart applied dose costs around $35 (say $45 now), meaning the cost to manage the small Bogong Brumbies by PZP is ~~under~~ less than 1% of trapping costs reported by Parks Victoria.
Dart delivery and modelling the number of mares to treat is conducted by volunteer groups (in the USA and Dartmoor) in conjunction with relevant Park authorities, i.e. in partnership.

Brief Background to PZP & GonaCon Fertility Control

PZP & GonaCon Fertility Control treatments are BOTH deliverable by dart gun, meaning wild horses DO NOT need to be trapped to inject vaccines, a key point that Parks management finds hard to accept, but essential as ???~~they do to~~ it does explain why the costs are so low. Don't understand the last part of this sentence

Background source - *Managing Fertility in Semi-Feral Ponies on Dartmoor, A report by the Dartmoor Hill Pony Association May 2013*.

Dartmoor is famous for its ponies and they play a vital role in maintaining the biodiversity of the moorland. Pony grazing has been shown to benefit many other species including invertebrates, mammals, birds, and plant life, as their selective grazing and browsing creates different habitats of shorter and taller vegetation. Ponies are therefore an important ecological tool and maintaining a sufficient population of ponies is an essential part of the overall management strategy for the moor.

Dartmoor ponies living wild on the moor are the National Park's emblem

Breeding Cycles in wild mares are seasonal with multiple oestrus periods when they can be bred. The oestrus cycle is based on day length: when the days get shorter in late autumn and early winter mares stop cycling, and as days become longer in late winter and early spring they begin to ovulate again. Seasonal breeders such as horses evolved to avoid their young being born at times of the year when survival rates would be poor, such as the middle of winter. The oestrus cycle is typically around 21–22 days. A mare will be in oestrus ('on heat' or 'in season') for 5–7 days of that cycle. The gestation period is 320–350 days.


The ponies were just out of sight to the right, I missed photographing the actual shot, but the pony jumped forward as though it had been stung, then returned to grazing.

Porcine zona pellucida (PZP)

Porcine zona pellucida (PZP) is an immunecontraceptive. Immunocontraception causes the production of antibodies against some essential element of the reproductive process, thus preventing pregnancy.

Originally, PZP required two doses to stimulate a sufficient antibody response to prevent pregnancy in mares. Just like a vaccine, the first PZP dose produced a small response and a small number of antibodies, while a second dose – normally around four weeks later – produced a much greater immune response. Research then developed PZP treatment that involves the injection of a small pellet via a remotely delivered dart, which is designed to release the drug at predetermined times after injection – for example, one month and three months. This one-shot treatment has proven to be effective in blocking fertilisation in horses for one year. Currently PZP treatments last 3-4 years.

Gonadatropin releasing factor (GonaCon) GnRH

Gonadatropin releasing factor is another immunocontraceptive and GnRH is crucial in the reproductive cycle. GnRH causes the release of other hormones that stimulate the ovary of the mare to release an egg, which can then be fertilised. Using immunocontraception to “vaccinate” the animal against GnRH results in the production of anti-GnRH antibodies. These antibodies bind to the GnRH that is naturally circulating in the mare’s bloodstream and block its activity, stopping the release of the gonadotrophin hormones and thereby stopping the development of eggs in the mare’s ovaries.

GnRH has been demonstrated as an effective contraceptive in several mammalian species, both wild and domestic, including pets, cattle, sheep, pigs, and horses. Killian et al (2008) compared PZP, IUDs, and a GnRH vaccine, GonaCon, in wild mustangs in Nevada, U.S. They found that mares receiving a single vaccination of GonaCon showed a high degree of contraception during the first year, but this rate gradually declined to less than half after four years. Note: This report was written over 7 years ago. Now GonaCon, is a single shot treatment that lasts for multiple years. The longevity of the contraceptive response depends on the particular GnRH antigen used and the adjuvant.

In the early 1990s, Turner and Kirkpatrick (1991) proposed the following as the desired characteristics for an ideal wild horse fertility control agent. Specifically, the agent should:

- Be at least 90% effective
- Be capable of administration by remote delivery
- Either be immediately reversible, or its effects should passively wear off
- Be safe to pregnant animals
- Not pass through the natural food chain
- Be inexpensive
- Have no debilitating side effects on horse health
- Not influence the social behaviour of the horses.

ALL these points are as relevant today and all ABA work will adhere to the above criteria.

Conclusion

- PZP & GnRH products are developed in forms that can be delivered by dart gun.
- Both, depending on current vaccines/adjuncts selected provide 2 plus years cover.
- Both can be repeated up to twice, using citizen team records which Zoo Montana teach until we develop our own technique.
- General rule could be to allow each Brumby mare to produce at least 5 foals to ensure a healthy spread of genetic mix, and rotate which mares are foaling to keep the birth rate low enough to meet sustainable Brumby density targets.
- This is the most humane method, least invasive, low cost control method available.
- Let's start this process now, before more Brumbies are born only to be shot.
- This carefully managed process, in conjunction with Parks Victoria, will stop energy and cost wastage in arguments for and against Brumbies, and be highly transparent.
- This process will show the world we can manage conflict, public concerns and still meet environmental objectives and help minimise ecosystem decline in Victoria.

Attachment 1

Click icon below to view VicParks EOI for Brumby Rehomers in Victoria.

Attachment 2
PROTECTION OF THE ALPINE NATIONAL PARK DRAFT Feral Horse Action Plan March 2021

Rescue & Care of Wild Horses in Australia

General Advice & Set-Up Notes for
A Wild Horse Re-Homing Organisation

PREAMBLE

The Purpose of these Notes

These notes are designed to assist new Wild Horse re-homing Organisations with **check lists and ideas to consider** when setting-up. These ideas do NOT claim to cover all issues & should be supplemented by follow-up research and the seeking of other professional and legal advice where required.

Always ensure that the welfare of the horses comes first. This includes considering the option of humane culling where illness, starvation or no other viable rescue alternative is left available.

This booklet has been put together after discussion with existing Wild Horse & Heritage Brumby rescue & re-homing charities/organisations currently operating in NSW, Victoria & WA.

This booklet contains information on:

Section 1 Setting-up a Wild Horse Re-Homing Organisation

Section 2 Undertaking a Rescue

Help Notes Trapping & Trucking notes
Wild Horse handling notes
Care of your Adopted Brumby notes
Grant funding Sources

Please remember with regard to care and handling notes that every organisation and every trainer may do things differently depending on their experience, individual horse requirements, techniques available, etc. Choose methods that best suit **your** organisation, your horses and your situation.

Section One ~

Setting up a Wild Horse/Heritage Brumby Re-homing Organisation

1. Find enough interested persons dedicated enough, knowledgeable enough, financial enough and with enough time to form a Steering Committee!
2. Before incorporation the Steering Committee must have it's first official meeting, with properly set out meeting minutes, and elect Office Bearers. President, Secretary, Treasurer, some states require a Public Officer, some states may also require early appointment of an Auditor. At this meeting, discuss point 4 – preliminary sorting out of a Constitution. Again, ensure meeting minutes are properly taken and motions recorded.
3. At this point all members of the Steering Committee will probably have to put money into the kitty to fund the next few steps, if no funding is available from elsewhere.
4. Most Corporate Affairs Departments will have a pro-forma Constitution suitable for non-profit organisations which can be adapted to suit the group. Create a PRACTICAL, LEGALLY ACCEPTABLE Constitution. Don't just use the pro-forma one to start with and think about getting around to fixing it later. This is difficult and a lot of work and co-ordination. Get it right the first time.

   *(For example, does the group just want to be a rescue society, or does it want to register the horses it rescues within a breed society? Do you need provision for email meetings as well as in-person meetings? Aims and objectives as a rescue society? **ALL** of this must be clearly defined in the Constitution. Currently not all non-profit organisations require auditing but this may change in future. If you are not operating according to your Constitution, there are legal ramifications.)*
5. Second/next meeting of Steering Committee – have a resolution to accept the draft Constitution, and...

   Insurance – basic insurance requirement is Public Liability between 10 – 20 million cover to protect individual members of the organisation. **Note :** PL cover does not necessarily cover you for horse riding or training or some rescue operations – you must identify **EXACTLY** what you will need cover for and then talk to various insurance providers to see who can provide the best cover. (Not cheap!)
6. Form an Association – name the group and get it incorporated under the relevant state's Associations Incorporation Act. (Search the internet.) Submit Constitution at the same time.
7. Set up a bank account for the non-profit organisation – this may only be able to be finalised after the group becomes an incorporated body. Choose signatories – minimum two or according to state requirements. Setting up internet banking is a great idea when members live far apart – if this is the case, more signatories may be required.
8. Have a another meeting once incorporation status is achieved...look at setting up the following;
   - Logo
   - Letterhead
   - Membership Forms
   - Other general business forms

- Apply to Australian Tax Office for registration as a non-profit organisation for taxation purposes.
- Look at whether or not you should apply for registration as a Deductible Gift Recipient status charity. (DGR status.) There are "fors" and "againsts" involved – look at the group's individual circumstances. Will it benefit?
- Look at applying for an ABN (recommended)...and whether the group wishes to register (or not) for GST. Non-profit organisations are usually GST free.
- Look at press release to announce your existence. A copy of some sort of one page explanation of who you are and what you hope to achieve can be distributed locally and also to those government departments in your own state that you may be dealing with.
- Network and get a list of contacts together. State government authorities, RSPCA contacts, Animal Welfare contacts, etc.

9. Work on increasing membership base. Look at website development and how to finance the organisation. Start to look at seeking Corporate Sponsorship or grant funding applications.
10. Affiliate with a National body if possible. This provides additional networking and MUCH support and free advice. Can also result in governments talking to the National body about state issues that the state group may wish to raise.
11. Start a Rescue Database. Source infrastructure – what will you need? A truck? Trailer? Property to house horses, etc.
12. Get a Rescue Team together – endeavour to employ the services of a vet who can accompany rescues or at the very least vet check every single horse rescued as soon as possible.

HELP NOTES...

See the separate PDF documents :

- Application for Endorsement as a Tax Concession Charity
- Instructions for completing Charity Status application
- Application for Endorsement as Deductible Gift Recipient
- Instructions for completing DGR application

Section Two ~
Undertaking A Rescue

"Saving horses is not about saving horses, it's about managing people."
(Dr Sheila Greenwell, 2006)

Heritage Horse Origins

Wild horses on Government/private land originated from domestic horses that escaped or were released long ago and by survival of the fittest have evolved into hardy, intelligent blood lines.

Authorities responsible for over populated wild horse areas should be encouraged to use humane management programs, including infertility programs.

Where wild horses are clearly in danger of being culled or dying of environmental threat such as drought, they should be assessed for potential re-homing.

Re-homing Wild Horses takes time, dedication, skill and emotional strain but the results can be very rewarding. If you assess the Wild Horse's cull threat as critical, and feel it appropriate to begin a re-homing process, read on.

Always communicate openly and honestly with all parties involved. Endeavour never to put anyone standing between your group and the horses you may need to rescue offside. Be organised, professional and do things properly. Try not to take things personally. Do not force your beliefs onto others. Always remember that the horse's welfare comes first.

RESCUE TO DO LIST

1. Contact the Relevant Government Authority

- Identify the Authority/Owner responsible for the area containing the Wild Horses. *Make sure you get your facts straight.*
- Establish healthy, polite dialogue about re-homing procedures with the relevant Authority Officer.
- Clarify the Authorities plan for these horses, and how you can assist with their future care.
- If necessary, contact your relevant RSPCA Office and establish ongoing liaison re: animal welfare.

2. Establish A Viable Action Plan

Be clear as a group about your goals and aims – make sure you understand what you can realistically achieve. Before you start ensure that you can take a rescue from beginning to end – that you have places for the horses to go in the longer term.

Work out how many horses you can rescue, how you will choose them, and how you will deal with those left behind, where necessary. Not every horse can be saved.

If you know the area the horses are running in, and you can get permission or you are able, a recon trip is a good idea. Find out where the horses drink, how many mobs, other animals, etc. Again, *get the facts!*

Ensure you have the funds to undertake any rescue before you start.

3. Trapping

- Establish your options - helicopter/ground mustering, passive trapping, lure horses with food or water, how?
- Passive trapping is preferred as stress/negative human experience is minimised.
- Identify who will do the trapping; Parks, separate contractor or your group.
- Get as much information as possible on the various techniques and how to undertake them. Contact experienced groups. For example, if you muster, stallions cannot be run as far as mares, and mares and foals can only be run for a certain distance before they MUST be rested or they will die.

4. Transport

- Who will transport horses to charity? Costs involved? Distance?
- HOW are the trapped horses to be safely loaded?
- Do stops for food and water have to be organised? Yards hired along the way?
- Do authorities have to be notified? (Bearing in mind it's illegal to transport unbranded horses anywhere in most states except to abbattoirs.)

5. Horse Groups (Mobs)

- Where possible transport one mob of horses (ie family group) together.
- Wild horses are herd orientated and easily fret/stress if isolated from other horses.
- Do not put large groups together.
- Separate herd stallions where possible – from other herd stallions.

6. Destination

- Are there yards sufficient to hold wild horses? Are they safe yards with room for movement, areas for stallions to go, etc?
- Is the road in to the unloading area accessible for the truck hired/used?
- Do the yards have access to small, well fenced paddocks? Electric fencing? (Bearing in mind some wild horses will never have experienced fencing and CANNOT be released into a large paddock unless familiar with fencing. If they get up speed and gallop they can go straight through fences.)

- Do you have a crush or equivalent to handle any sick horses? A good round yard for training?
- Water supply - sufficient water to each area?
- Storage Shed/s – Weatherproof, secure, delivery access ie. feed, equipment, etc.

7. Track Each Horse (Keep the following records)

- Arrival date
- Photograph EACH horse on arrival (shows condition & horse identity on arrival)
- Location horse came from
- Identifying marks & any injuries, etc.
- Decide whether to freeze brand, Microchip, hair sample for DNA testing, etc. once horses are tamed – or will you let new owners do this?
- Record key Progress Stages for each horse, and other comments as needed.
- Date horse sold, to whom, f/u care, ongoing monitoring, etc.
- When a horse is passed on to it's new owner, ensure that EVERY new owner received a copy of care notes and relevant vet notes – ie. worming dates, trimming dates, etc.

8. Identify Volunteers from your group for;

- Trapping (if necessary – only if experienced and INSURED),
- Collecting horses,
- Ground handling, adjusting to human contact, basic handling techniques etc.
- To assist a vet in gelding,
- Property maintenance, etc.

9. Identify local services available, establish cost and does the group pay or do new owners pay?

- Vet (preferable equine specialist)
- Farrier
- Trainers

10. Organise Rehabilitation and Training Programs

- What 'Best Practice' techniques to use? (check with other groups)
- Who to manage/be responsible for the rehabilitation/training program? Delegate!
- How to know when a previously wild horse is ready to be re-homed?
- How to work out the cost of each horse (How to break even on costs to rescue, rehabilitate, train, feed, geld, advertise etc, plus variables such as vet bills etc.)?
- How to advertise horse sales - web, open day, sponsorship, horse/local news etc?
- How to attract the right person to buy the horse, and assess they are suitable?
- What requirements do people need to buy/adopt a horse?

- How do you ensure potential homes are 'good' homes and ensure successful placement?

For further advice and information contact:

NSW **Save the Brumbies**
Jan Carter
President
Ph: 02 6655 2224
www.savethebrumbies.org

Victoria **Victorian Brumby Association**
Colleen O'Brien
President
Ph: 03 5345 1362 mob: 0408 201 107
www.victorianbrumbyassociation.org

WA **Outback Heritage Horse Association**
Katherine Waddington
Secretary
Ph: 08 9756 0709
Email : wadifarm@bordernet.com.au (preferred)
Website http://ohhawa.wildhorses-wa.com/

Dr Sheila Greenwell
OHHAWA Veterinary Advisor/Rescue Team Leader
Email : sjgreenwell1@optusnet.com.au
Ph: 0418 905 835

HELP NOTES

Passive Trapping of Wild Horses

Every state in Australia is different when it comes to environmental conditions, distance, etc. where wild horses are involved. Each wild horse rescue group will have to establish what works best for it with regard to trapping and transport of at risk wild horses/heritage brumbies.

Introduction

There are only a few options that provide for humane treatment of horses and that are practical, cost effective, environmentally sound, and meet legislative and policy requirements. *Guy Fawkes River National Parks document (2005)*

Trap Yards and Paddocks

Three horse capture techniques used in Guy Fawkes National Park (NSW). (**1**) Feed-based lures to attract horses; (**2**) use of coacher horses to encourage horses to enter the capture areas; & (**3**) low stress behavioural techniques for mustering horses into capture areas.

The optimal trap paddock size was found to be approximately 16 hectares (40 acres) and contained a small amount of natural shelter. Along with yards that allowed for separation of horse groups (mobs) while awaiting transport.

Trip gate entries were found most effective, provided special care is taken to ensure the safety and wellbeing of foals within trap yards. Trap yards were most effective when:

- used in conjunction with lures;
- linked with trap paddocks;
- located in areas where a number of horse territories overlap;
- located in a sheltered area;
- yards are of adequate size to minimize social conflict when horses are confined (at least 30 panels); and
- used in conjunction with manually operated or remote trip gates are used to enclose horses.

Trapping using lures

Salt was the most effective lure, but ONLY for the first few days of contact. Hay was the second most effective feed-based lure, with molasses being slow to attract horses but effective once horses were established. Feed-based lures were effective in attracting horses from inaccessible areas and attracting horses into trap paddocks.

In WA, salt, molasses and hay have been found to be ineffective in luring wild horses, due to the horse's reluctance to taste something they don't know and also because salt is more common in the environment in some areas. Again, lure effectiveness varies between states.

Trapping using coacher horses

Three horses were selected from wild herds and educated to accept human contact and hand feeding in the yards. The horses were then released to rejoin wild herds wearing radio collars. Coacher horses were useful to:

- bring wild horses from trap paddocks into trap yards;
- bring stray individuals back to captured herds;
- teach wild horses to accept feed and human contact with a minimum of stress; and
- assist in loading horses onto transport.

Trapping horses using low stress behavioural techniques

- Study a detailed map of area horses are to be trapped/transported from
- Helicopter mustering (low stress techniques) was effective in inaccessible areas.
- Ground mustering using the low stress principles was effective in manoeuvring horses into trap paddocks and in educating horses once contained in trap yards.

Trapping Recommendations

- The most effective method was the combination of a trap paddock linked to steel yards with multiple holding pens.
- Feed-based lures and 'coacher' horses greatly assisted capture success.
- Once captured, horses required approximately 4 to 5 hours of humanisation to prepare them for transportation.
- A modified horse crate fixed to a 4WD truck was used to transport horses from a remote capture site to the transfer point. *(Remember methods vary according to location and state-to-state.)*
- A commercial 2WD stock transporter was used to transport horses from the area of trapping to the re-homing charity/organisation's property.

Capture & Removal of Wild Horses from a National Park (NP) - Require the Contractor to:

- Provide evidence of skills/experience in the humane capture/handling of horses;
- Comply with state legislative provisions relating to care, capture and transport of horses, including the (eg) Code of Practice for the Capture and Transport of Feral horses (English 2001b); and other local requirements.
- Comply with NP requirements & other state government department guidelines as required.
- Minimise environmental impact at capture sites; and
- Record and report to the NP any capture and removal operations, including;
    - Record of all horses removed, including sex, colour and age;
    - Horse Identification Record Form for EACH individual horse captured;
    - Numbers & locations of horses sighted;
    - Record of daily activity at feed stations and trap sites; and
    - Advice on any accidents or injuries to any horse or riders/trappers.

Note: National Parks may provide assistance & material where specific traps and fencing structures need to be constructed. Assistance types/materials must be specified in any contract.

Infrastructure to Trap, Load & Transport Wild Horses

- Truck hire – Correct type for horse numbers to transport, fuel required & costs.
- Dividable truck with suitable divide panels – is essential if foals are involved, never transport vastly different sized horses, such as foals & adults, together.
- Trap design - Consider using portable panels or build temporary yards at the site.
- Equipment – Consider needs for Portable crush, long poles to move horses about, ropes, halters etc?
- Trap area water supply – is there a local supply or must water be transported in, if so how, water container type/s and how to ensure a continued water supply?
- Horse feed - have sufficient hay to cover trapping/loading and trucking process.
- *Allow for unforeseen delays;* ie. Sufficient time for horses to remain on site while they are taught to load and be trucked out.
- Personnel - sufficient food, water, shelter, communication & first aid equipment.
- *Euthanasia* – every horse rescue operation must have access to - or a member with - skill/equipment, to put a horse down humanely in the event you find an injured horse, or an injury occurs. Check with local vets, organisations listed in this document, RSPCA or web for advice on how to euthanase a horse humanely.

  Remember, not all horses can be saved and suffering or long and stressful veterinary treatment can be far crueller than a bullet.

Horse selection IF you cannot collect all horses…

Consider issues such as confirmation, health, age & temperament. Be aware that mature stallions, older mares and horses that display (even fear based) aggressive behaviour can be financially, emotionally, ethically challenging & draining. Consider carefully whether to bring back heavily pregnant mares or orphaned foals unless you can transport them safely & have facilities/finances to cope. DO NOT "skimp" on the rehab/training process due to bringing back excessive numbers or mature/critically ill horses that will adversely impact on the charity's reputation and re-homing success stories.

Clarifying Responsibilities

- When does the charity take over responsibility for the horses' welfare and maintenance if there is a contractor involved?
- Consider whether horses should be branded before the charity sells them on.
- Check all National Park requirements for re-homing, such as not being located on lands that adjoin or are in close proximity to National Park the horse came from.
- Clarify the charity/re-homed owner's responsibility for paying the cost to retrieve any horse subsequently found to have returned to state government land.
- Make available for inspection by the NPs and RSPCA any sites where horses will be retained by the re-homing charity.

Foot note regarding the Guy Fawkes National Parks Trial (Conducted Apr-Oct 2005)

Trial Results

- Horses can be trapped effectively in both steel yards and trap paddocks.
- Of the eight month trial, 19 horse mobs (114 horses) were captured.
- No horses were injured during the capture phase. One horse was euthanased on site from prior injuries & one horse died during loading.
- The program was Supervised by the RSPCA and reported as a success.
- 90% of 114 horses received by the re-homing charity during the trial were sold or retained for breeding, and were eligible to be registered as Guy Fawkes Heritage Horses.

Resources

For further information on the trials & experienced gained by the **"Guy Fawkes River National Park Horse Management Plan"** contact: The Manager, Dorrigo Plateau Area, PO Box 170, Dorrigo NSW 2453 ph: 02 6657 23

For further information about re-homing charities who travel long distances to trap, load and transport home wild heritage horses in remote locations without the use of contractors, contact the **Outback Heritage Horse Association of Western Australia Inc (OHHAWA)** via the website http://ohhawa.wildhorses-wa.com/, or the Secretary Katherine Waddington (08) 9756 0709, or Dr Shelia Greenwell, the charity's Veterinary Advisor and Rescue Team Coordinator, on mobile 0418 905 835.

HELP NOTES

Wild Horse Handling ~ The Initial Stages

CARE & HANDLING OF NEWLY AQUIRED HERITAGE HORSES

Please note the following guidelines are just that – guidelines only. Although they have been written from experience and are offered freely with the best of intentions, professional advice and assistance should always be sought on any equine medical or other matter if you have any concerns. Every horse is individual in its needs and your horse's welfare should always come first.

Introduction

Many of today's heritage horses/old bloodline horses as recognised and defined by the Outback Heritage Horse Association of WA (OHHAWA), have been obtained directly from at risk groups of horses located in remote station areas where they have remained in virtual genetic isolation since the days when they were bred and used as working horses (e.g. stock horses), were released, and escaped subsequent capture or destruction.

These descendants of those original horses are therefore those least likely to have been subject to any modern or introduced breed influence. In days past some of these horses met the requirement for military use and export, and in some cases were specifically bred for that market. They are influenced by the best imported "old blood" horses of breeds proven to withstand the harsh conditions of the new Colony, and have been subjected to severe natural selection pressures since those days.

As a result they posses some unique qualities which would be impossible to reproduce today. Along with these qualities comes the need to recognise certain evolved characteristics which require consideration and initial knowledgeable care.

Handling

Heritage horses rescued from outback stations are wild, perceptive creatures. They possess a well developed sense of self preservation, and as a result are exceptionally sensitive to their environment and any perceived threats. They are not inherently aggressive or flighty, but rather possess a strong herd instinct and are protective of their "family". They may be initially shy of humans, or of species with which they are unfamiliar.

On the other hand, if they have had no bad experiences with the unfamiliar, they can also be very forward and curious – much more so than other breeds. This should be encouraged and rewarded with kind words and touch if possible.

Training times with all horses vary. "It takes as long as it takes" depending on each individual horse's nature and background.

The recommended approach is to recognise the horse's natural sensitivity, be perceptive to the horse's natural reactions and responses and work *within* the animal's

ability for tolerance. The key is to achieve the horse's co-operation and respect through mutual trust, understanding and *patience* – small lessons each day - *not* by restraint, force, prolonged pressure or by expecting the horse to comply with demands which it does not understand or cannot tolerate. Whist this would seem common sense and true for any horse, experience has taught us that heritage horses are often difficult to "bring back" if their developing trust is betrayed in the early stages.

Once trust in people and particularly in the handler has been established, without any harmful association of emotion or injury during the process, heritage horses become remarkably tolerant and loyal.

Choose very carefully if considering the "professional training" option. There are some excellent Horse Starters and Educators around, but there are a lot of "cowboys" about. The OHHAWA are happy to recommend trainers in your area - just ask.

Feeding and Parasite Control

Over many generations, heritage horses have developed the ability to process large amounts of poor quality feed. Remarkably, they can also process large amounts of protein from such things as Cape Weed and Clover without undue side effects such as foundering. This physiological adaptation has developed from generations breeding in harsh conditions and a "feast or famine" situation. The adaptation appears to be inherent; *however* heritage horses *cannot* process rich man-made hard feed or already processed feed or supplements without careful introduction.

Therefore *do not* put your new horse straight on to rich hard feed, seaweed or other supplements, lucerne hay in large amounts or any other sort of rich or processed feed. Your horse will more than likely develop diarrhoea (or become constipated and colicky), and could become quite ill. A common sense approach to feeding is vital.

Note : it has been observed that some foals conceived in the bush are born with first and second incisors. This means that sometimes, in a newly domestic situation, "bush born" foals are thought to be older than they actually are and are therefore also fed incorrectly. If possible, have your horse aged by someone experienced with heritage horses.

As soon as practicable the horse should be wormed and treated for lice if required. Whilst in their natural desert environment these horses are normally worm free due to the low stocking rate and dry conditions, they readily acquire a worm burden in a domestic environment and have no natural resistance to same. Unfortunately they also have little tolerance for chemicals, so treatment, whilst desirable and necessary, must be performed with care. *Do not overdose or too regularly dose heritage horses for worms, etc.* or they may become ill with colic like symptoms. Always err on the side of caution when dosing during the first twelve months of your heritage horse's arrival.

Approach when horses <u>first</u> arrive is as follows –

- Start by keeping your horse in yards or a small, properly fenced holding paddock, preferably with electric fencing. Wild horses have to learn about barriers. In the bush, all the horizontal stuff parts when they run through it – it's only the vertical trees, etc. that do not. When they are first in yards and paddocks, they may attempt to run through solid barriers. Until they are settled, it is strongly advised not to put them in large paddocks or they will build up enough speed to run straight through a fence and possibly suffer serious or even fatal injury. Increase size of area they are in slowly, as your horse becomes tame and you can catch it without too much of a problem.

- Supply as much good quality pasture (grass) or meadow hay as is required for the horse to access whenever desired without allowing waste. You will find that often, to begin with, newly acquired heritage horses eat *much less* than a normal domestic horse. This is okay – for a heritage horse, less feed is *normal* to begin with. You will notice the increase in consumption of hay over a few weeks. As the hay consumption increases, you may wish to add other feed as indicated below, *slowly*.

- If the horse has not learned to drink out of a container (e.g. bowl, bucket, bath etc.) and there is no natural water source available (e.g. dam), put the hay around the container. Some horses will tip the water out of the container onto the ground in order to get a drink, or in hot weather in order to lie in and coat themselves in mud.

- Make available the appropriate minerals/salt lick for your area. If minerals, sprinkle over hay. Many rescued horses arrive in poor condition and are lacking in vitamins and minerals. Ensure they receive minerals in their diet as soon as possible, and *ensure that new owners are informed of the importance of vitamins and minerals, and well mineralised soils/pasture as well as standard hard feed.*

- If possible, slowly introduce Lucerne hay into the diet. About ¼ of the total hay available to start, probably 1/3 would be plenty from there onward. Beware of feeding lucerne off the ground, horses may ingest dirt/sand in an attempt to get the last leaf fragments. (Which may result in colic.)

- After a good week or so, introduce a handful or so of some "cold" grain mix (e.g. Microsweet Rider, Pegasus Liberty, etc.) by sprinkling on the hay. The idea of this is lay the foundation for future increase in feed if required or administration of certain medications (ie. butte mixed with feed), or whatever. *Oats and/or "hot feed" are not recommended for heritage horses.*

NOTE : Heritage/wild horses are naturally suspicious of any new feed and it may take a few days of watching domestic horses consuming similar feed, or sniffing the feed in the yards, before your heritage horse will try it. Be patient and only dole out new feed a little at a time, along with hay or grass which your horse will be happy to eat. The same applies for carrots and apples – if you must feed these, feed them to domestic horses in front of your heritage horse first. They will eventually try it if it appears to be appetising!

- If your horse is not already used to human presence or interaction use the feeding opportunity to quietly walk around it whilst it is eating, Sit with your horse, talk to him/her, and reduce its intolerance zone.

- Any drafting, unloading etc. of the horse should be done quietly also in order for it to understand where you wish it to go rather than be pushed in the required direction in fright – *just* enough pressure to indicate what is required.

- Inoculations for Tetanus and Strangles – particularly in south-west WA – are also recommended.

Other Important Points

- Toxic plants - when first introduced to a paddock so far from their place of origin, heritage horses will have little idea as to what local plants are disagreeable or dangerous, despite their natural ability to judge same. So until they learn (by trial and error – with associated risks) it may be worth putting them in with a sensible "local", tame horse in the hope that it may learn from same.

- Socialisation – newly acquired fillies or wild mares will most often be dominant over tame mares and geldings. This is natural and nothing to be concerned about

because formerly wild horses are actually less likely to inflict serious damage on other horses due to the herd survival instinct. (ie. Their bark is worse than their bite!) *Be aware however* that they may try to exert this dominance by kicking through fences. Injuries can result. Match your heritage horse carefully with the horses in it's paddock and in neighbouring paddocks to begin with until all these "paddock games" are sorted out.

- Newly acquired colts should ideally be kept with geldings so that the larger, dominant (tame) gelding can keep the colt in check. This applies even when the colt is tamed.

- Heritage horses are neither fond of, nor fearful of, dogs. In fact a number of heritage horses have been known to chase and even try to attack any dogs who wander into their paddock. If you have dogs, as most of us do, introduce them to your new horse carefully and in a *controlled* manner. In particular be careful about allowing dogs around new foals as any mare – in particular formerly wild ones - will defend their young.

- "Dingo Time" – the first twenty-four hours of a new heritage foal's life is fraught with danger in the wild, until the foal can keep up with the herd. Owners of formerly wild mares will note that the mares are often *very* wary of allowing anybody or anything near their foal for the first day or so. This is natural and the wariness will pass. A daily feed for the mare at this time is a great incentive to trust again (and also helps the mare following foaling)!

- If hooves are correctly trimmed, barefoot is a great option for heritage horses. They have naturally iron hooves and, if correctly maintained, horseshoes are not required. Boots such as "Old Mac" boots, worn on the front feet only, are an option during winter when hooves are not as hard or when long rides on hard surfaces (such as bitumen) are planned.

- SAND COLIC – wild horses can be rescued from drought areas and already have picked up sand from their desperate search for food. If they go to sandy areas (when rehomed) and are greedy, they can also pick up sand when grazing. Be aware that sand colic can be a problem for rescued heritage horses. They can carry low grade sand colic for weeks without really showing many symptoms. Consult your vet or equine professional re an initial drenching and later preventative maintenance if you think it necessary. Because of the innate toughness of these horses, they sometimes don't show symptoms until they are very ill indeed.

Characteristics

Heritage Horses are by definition hardy (although this *does not* mean that they will tolerate neglect, particularly in the domestic situation), frugal (they still have to be fed), sensible (but not immune to mistreatment or oblivious to their natural instincts), and loyal (if their owner or handler deserves it).

They are correct in conformation for soundness and for the type of work for which they were bred, although this is not always what is required for the show ring! One thing to note is that overall, most heritage horses have iron hooves, big sloping shoulders (even in smaller horses), gentle, wide set eyes and very big barrels. Due to large barrels and big shoulders, this means that often times, young heritage horses can look very disproportionate, in some cases like they are carrying a "worm burden". Rest assured this is just their "homely" phase and they *will* grow into their bodies.

Heritage horses are slow to mature – emotionally as well as physically. Give their bones time to grow and set. It is recommended that you do not ride your heritage horse hard

or regularly until it is at least 4 – 5 years old, although getting it used to a saddle and ponying it out, etc. at a younger age is a good idea.


At left, a healthy "ugly duckling" heritage horse colt as a disproportionate yearling (belly & barrel look way too big), at right, the same young stallion at five years of age, escorting rescued mares, having fully grown into his body.

A heritage horse is a hardy, intelligent, affectionate, loyal and long lasting companion and in the right hands will never look back. Nor will their owners!

OHHAWA Contacts
Email : wadifarm@bordernet.com.au (Secretary)

Wild Horse Handling ~ Taming/Training Ideas

References : Advice taken from Save The Brumbies (J Carter), Victorian Brumby Association (C O'Brien), OHHAWA (KJ & KA Waddington)

Learning about Fences
Be cautious of putting horses under pressure against fences until they realise a fence is designed to be a 'boundary' they must stay within. One way is to have a large enough paddock for them to acclimatise to then entice them into more confined areas. If space is limited, keep them in high fence yards to adjust to human presence & yard boundaries.

Class Numbers
Select a few horses at a time, so that you can rotate the 'lessons' each day and avoid one horse becoming stale. Working with several horses daily will help identify what seems to work best, and trial alternative techniques each horse may require.

Hands on
Feed hay each day to start gaining trust. After giving the horses a few days to settle in begin regular sessions. Daily hay feeds, getting closer each day. Wild horses class humans as predator because their eyes are in front, not to mention having caught them. So it often helps to not look directly at the horse as you work with them. Then gradually move to direct eye contact, depending on the horses ability to cope.

When the horses stop seeing the handler as a 'predator', their natural inquisitiveness takes over. Enjoy watching them learn for example how to eat hay from a wheelbarrow, see the 'Brumby Crouch' as they oscillate between curiosity & flight.

When the horse is eating out of your hand, in a small yard, gradually introduce them to a long stick. Start on the main body, working up to face contact last. The long stick will reduce human smell and give the handler a safety margin. Progress to hand contact, again from main body area, ending with face contact.

Vet assistance – Gelding etc
Ensure the horse is ready for intensive, close attention, and to be handled by an unfamiliar person.

Ground Handling
Ensure the horse can achieve the actions of, being caught, halter-lead, picking up hooves, feet trimming, loading unloading from a float, worming, tolerant of car/motorbike etc.

Under saddle
Decide if the horse will be sold saddle-trained or not. Some people prefer to train their own horse, some pay an expert to do the job, some may only want the horse as a non riding companion. The longer a horse is kept the more costly for the charity, so work out the best options for your organisation.

Care of your Adopted Brumby

Notes produced by Save The Brumbies (STB)
PO Box 409, Bellingen, NSW 2454
Phone: 02-6655 2224
Email: jan@savethebrumbies.org

Congratulations on choosing a brumby; we hope you and your horse share many happy and useful years together.

We have cared for your horse from the point of capture, transport from a National Park, basic handling and introduction to his new life. Horses like to be around people and brumbies bond closely with their owner, in the wild the herd instinct is very strong, it needs to be, for their survival; now you have become your horse's leader in every way and if you follow a few simple rules your pleasure will increase immensely.

Always **give your horse time to think** when you ask for something, when he chews his lips that shows he's in thinking mode so give him time to work out what you want of him. When you first get your brumby home remember it is all very strange to him so don't crowd his space, let him settle and find his own way around his new surroundings. Make sure he has a friendly and non aggressive companion horse to help him adjust and make him feel at home. He will follow that horse's lead; brumbies are very intelligent, more so, we have found, than domestic horses and they learn very quickly. **Observe your horse** in the paddock, tune in to his body language, he will teach you too, and show you how he is feeling so learn to read his signs as he learns to read yours. Never force him to do something; that is a negative way of training. If you feel frustrated and things are not going as you would wish; retreat, settle yourself down, wait a while and then try again. Horses are very forgiving of your mistakes so be prepared to be forgiving for his too.

We recommend that you have a **small round yard** or similar for ongoing handling in the beginning. Feed your horse in the yard, let him come and go freely; he will soon learn to be comfortable and safe as it becomes his special place. **If he is shy** approach him quietly from his near side shoulder and avoid direct eye contact with him; if he backs away, stand still, don't look at him, wait and then try again. When you are near him, read his signs, if he seems nervous take the pressure away and retreat again. This approach and retreat method builds his confidence and is not threatening. Never chase him; this simply does not work and only frightens him. Remember, he is a prey

animal and sees you, in the beginning, as his predator, teach him to see you as his friend.

Keep your **training sessions short,** no more than l5 to 20 minutes at a time, that way he doesn't become confused with too much, too soon. Do not attempt to tie him up until he is confident and relaxed; we teach this using baling twine which breaks easily if he does get a fright and pulls back and we start this when he is eating his feed.

Horses love to hear you **talk to them**. Keep your voice low and inviting; he will quickly recognize your voice from others and respond accordingly. Food rewards are a good way to his heart but don't overdo it; you don't want him to become pushy and greedy. Horses are like children, each one learns at a different pace; this doesn't mean your horse is different or difficult; it only shows his own unique personality. Some horses progress quicker than others but we have found that all, without exception, given the right handling, become superb horses.

If your horse is just **being a pest** and downright naughty, and some quickly learn how to avoid things they don't particularly like, the best method is to ignore him, send him away from you; horses are inquisitive and like to be noticed, this will hurt his pride and make him think twice. Always reward him when he behaves and reinforce the positive.

Remember, he is your horse and you are the best judge in his welfare. Even inexperienced people can achieve wonders by simply being with their horse and spending a lot of time with them. Try to spend as much time as you can on a regular basis with your horse. There are many 'how to do' horse books on the market, read them but choose your own path, you know your horse best, not the writers of the books.

FEEDING AND GENERAL CARE OF YOUR BRUMBY

Your horse doesn't need a stable but he does need some shelter from the weather. Make sure his paddock has shady trees and somewhere he can get out of the wind. He should always have free access to clean water, if using a trough make sure you keep it clean and well filled at all times. Fresh, good **grass is the best** food you can supply. This is the horse's natural diet and unless he is in regular work that is all he should need. You will need to supplement with good quality hay during winter months and to encourage him, some hay after his lessons goes a long way to establishing a good relationship with him. We don't recommend grain or hard feed. He has been used to grass vegetation only; changing his diet could result in stomach upsets and colic.

Rugging is a matter of personal choice; we do find however, that wearing a rug has benefits, not so much as to keep his coat looking good but the actual putting on and taking off helps him adjust to having his hind legs touched frequently and having things over his back. If rugging, you will need to check him daily to make sure he doesn't get caught up in a fence or has it hanging around his neck in tatters. Being able to handle him and yard him as needed is essential for his wellbeing, particularly if you need to have him checked by your vet. Taking care of your brumby is really no different than any other horse; the more attention you give him the more pleasure you will receive in return.

Finally, common sense rules, make sure his paddock is **clear of debris**, bad fences and things he can hurt himself on. Even so, accidents can, and do happen, that's why it's important that you manage him with confidence. And he does need a companion horse; a solo horse is dejected, depressed and unhappy so give him a mate of his own kind.

We are always happy to help with advice if needed; we get very attached to the brumbies during their stay with us and find it hard to say good-bye. Please keep in touch with us; let us know how your horse progresses; we thank you for choosing a brumby; supporting our work and giving a horse a chance for a happy and contented life. A brumby is special, he will always have that something extra he was born with, that contact with the essence of nature and it is our privilege to share our life with him.

FUNDING SOURCES

Supporting Wild Horse re-homing Charities

Community grants – local governments/Shire can sometimes assist

Business Community Grants

Capitol Grant (Major expenditure)

Seed funding – assist establishment phase

www.philanthropy.org.au

Other Grant Funding – search the internet...there is usually a form of Grants Directory issued annually in each state which outlays almost all available grants

Deductible Gift Recipient (DGR)

To check is an if an organisation has DGR status view www.abr.gov.au

For endorsement as a DGR see Tax Office website

For further advice and information contact :

NSW **Save the Brumbies**
Jan Carter
President
Ph: 02 6655 2224
www.savethebrumbies.org

Victoria **Victorian Brumby Association**
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Ph: 03 5345 1362 mob: 0408 201 107
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WA **Outback Heritage Horse Association**
Katherine Waddington
Secretary
Ph: 08 9756 0709
Email : wadifarm@bordernet.com.au (preferred)
Website http://ohhawa.wildhorses-wa.com/

The Australian Brumby Alliance

ABN : 90784718191

Rehoming Guiding Principles

For

People with Domestic Horse Training Awareness

Introduction - Generations of horses living in the wild posse unique qualities which are impossible to reproduce today. Along with these qualities comes the need to recognise certain evolved characteristics which require initial, knowledgeable and respectful care, in order to enter a full and productive life in our domestic environment.

These guiding principles have been sourced from the Australian Brumby Alliance (ABA) *Rescue & Care for Wild Horses (2010)* and the Victorian Brumby Association's *Australian Brumby Challenge Trainer Resource information*, and ABA Rehoming groups. Information has been written from our experience and offered freely with the best of intentions; how-ever professional advice should always be sought if you have any concerns.

Index for Brumby Rehoming Guiding Principles

1. Transport from Park to Rehomer (Page 1) - Brief notes

2. Rehoming Period (Page 2)

In this document, *rehoming* means a place where the wild horse is taken to adjust to living with humans by skilled and understanding people, before they are ready to be handled by a person with less understanding of the initial 'gentling or rehoming' phase.

2.1 Receiving horses direct from the wild (Page 2)
2.2 Accepting new feed sources (Page 2)
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3. Wild Horse Characteristics (Page 3)
3.1 Wild Horse characteristics (Page 3)
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In this document, *forever home* means where the horse goes after the rehoming period.

4.1 Partnering the Brumby with its new owner (Page 4)
4.2 Handling & care information for the new owner (Page 4)
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4.4 Full potential in domestic life (Page 5)

5. Resources

1. *Transport from Park to Rehomer* – see Brumby Transport Guidelines **att-1**.

Park staff record little information on Brumbies they have trapped. It is recommended that the rehomer records as soon as possible, at a minimum, the following;

- Date trapped, sex, colour and age [Foal, Yearling or Adult],
- Notation of any accidents or injuries to each horse received,
- Photograph of each horse markings, including injuries;
- Date handed the Brumby is becomes the Rehomer's responsibility.

2. *Rehoming Period*

In this document *rehoming period* refers to the period taken for a Brumby to make the transition from wild and unhandled, to accepting basic ground handling, such as being caught in an open paddock, halter led, feet picked up and able to float load.

2.1 Receiving horses direct from the wild Requires;

- Appropriate transport for unhandled horses i.e. cattle trucks with loading ramp,
- Yard/s or small holding paddock/s to download unhandled horses, that are easily accessible for the truck the Brumbies arrive in,
- Yards that allow the handler to check for injuries or behavioral issues etc.; provide space for horses to learn to drink tap water and eat hay; and introduce 'fencing',
- *Note*: In the bush, horizontal flora parts as horses run through it, excluding trees, etc. so when Brumbies first enter yards & paddocks, they may try to run through solid barriers. Brumbies soon learn to respect fences and adjust to staying in a defined area.
- *Note*: The American Bureau of Management (BLM) advise 5ft fence heights for yearlings and at least 6ft fences for adults,
- Yards with room for Brumbies unused to containment to stay in for several days and allow the handler to maneuver Brumbies without direct contact,
- Appropriate access to water and feed and round yard/s,
- A crush or equivalent is preferable.
- Appropriate minerals/salt lick for your area as soon as possible after they arrive then re-apply as needed. *Note*: Wild Horses often lack vitamins and minerals.

2.2 Accepting new feed sources

- Feed good quality *pasture* (grass) or meadow hay.
- *Note*: Over many generations, Brumbies have developed the ability to process large amounts of poor quality feed.
- *Note*: Brumbies are naturally suspicious of new feed and may take several days to watch other horses eat similar feed, or sniffing the feed in the yards, before they try it.
- *Note*: Newly acquired Brumbies often eat much less than domestic horses as less feed is normal for a Brumby.

2.3 Accepting new water sources

- It may take a few days for a recently caught Brumby to learn to drink still water from containers; hay around the container can encourage the transition.
- *Note*; Brumbies in the wild are used to drinking running water at ground level,
- *Note*: Sometimes horses tip water out of containers onto the ground in order to get a drink before they grasp the concept of drinking still water at container level.

3. *Wild Horse Characteristics*

3.1 Wild Horse Characteristics

- Brumbies are by definition hardy (but this does not mean they can tolerate neglect), frugal, (but need feed), sensible (but not immune to mistreatment and definitely not oblivious to their natural instincts),
- They are correct in conformation for soundness and for the type of survival qualities their breeding has developed, although this is not always wanted in the show ring,
- Most Brumbies have iron hooves, big sloping shoulders (even in small horses), gentle, wide set eyes and very big barrels,
- Brumbies are highly protective of new foals, having had to defend their young from Dingoes, so react quicker to perceived threats than domestic mares.
- Young Brumbies with large barrels and big shoulders can seem disproportionate and to be carrying a "worm burden", this minimises as they grow into their adult bodies.
- Brumbies are slow to mature – emotionally as well as physically. It is recommended a Brumby is not ridden hard or regularly until 4–5 years old.
- A wild horse is a hardy, intelligent, affectionate, loyal and long lasting companion and in the right hands will never look back - nor will their owners!

3.2 Brumbies and Human Interaction

- Being raised is social families, Wild horse have evolved an innate ability to read body language so are exceptional quick to read very small changes in body language, more so than most domestic horses.
- While there is no *correct* training method to use, we advise using *least resistance* type methods which build a loving and *respectful* relationship and use natural wild horse behavioural psychology to guide the horse's responses.
- *'Approach & retreat'*, '*Sensitizing & de-sensitizing'*, '*Making the right thing easy and the wrong thing difficult'*, '*Rewarding through release of pressure*', '*Consistency and patience*' and '*Finding the feel*' are all catch phrases of gentle trainers and help keep both Rehomer and Brumby safe while building a strong foundation for future training avenues.
- Brumbies have a well-developed sense of self preservation, so are exceptionally sensitive to their environment and perceived threats, but rarely inherently aggressive or flighty. As Brumbies see humans (eyes in front) as predators, a handler's eye focus will alter pressure.
- A Brumby head bob or nodding can indicate they feel confused but trying to work out what is expected of them. Train within the horses learning ability and avoid prolonged pressure to force the horse to comply with demands it does not understand or cannot tolerate.
- *Note* - A newly arrived wild Brumby can seem quiet; when in fact they may have shut down to ignore unpleasant sensations. This seemingly quiet period will pass, so read the signs and adapt as needed once the shutdown period passes.

3.3 Maintaining Records Suggestions

- Date the horses passed to the rehoming group ownership,
- Photograph each horse on arrival (shows condition & horse identity on arrival)
- National Park/location each horse came from,
- Identifying marks and any injuries, etc.
- Decide whether to freeze brand, microchip, DNA hair sample, when to geld etc. once the horse has adjusted to close human contact,
- Record key Progress Stages for each horse [halter lead, electric fences], etc.,
- Record any treatments [worming, illness, injections] etc.,
- Contact details of new owner, date the horse goes to its new home.

4. *Forever home and follow-up*

In this document, *forever home* means where the horse goes after the rehoming period

4.1 Partnering the Brumby with its new owner

- *Forever* owners able to spend time with their Brumby at the rehomer's property will help smooth the transition to the *forever* home and sort any teething concerns.
- Check the new owner's property has appropriate fencing, paddocks and another horse for company. A Brumby used to a family mob feels insecure without other horses.

4.2 Handling & care information for the new owner, *suggestions*;

- Congratulations on choosing a Brumby; we hope you and your horse share many happy and useful years together. We have cared for your horse since he arrived from a National Park, basic handling and introduced to him to a new life.
- Brumbies bond closely with an owner they respect. In the wild the herd instinct is very strong, it needs to be, for their survival; now you have become your horse's leader so by following a few rules your pleasure will increase immensely.
- Give your new brumby arrival just enough time to take in his new surroundings before developing his basic training in the direction you want to go,
- Observe your horse in the paddock, tune in to his body language, he will teach you and show how he's feeling so learn to read his signs as he learns to read yours.
- Your Brumby doesn't need a stable or to be rugged as he is used to living in a range of environments, but he does need some shelter from the weather.
- Fresh, good grass is the best food as this is his natural diet in the wild and he is 'feed efficient', having learnt to cope on lower protein requirements
- Introduce any diet change gradually to avoid colic or stomach upsets.
- Correct trimming and barefoot is a great for Brumbies. They have natural iron hooves.
- Avoid forcing him to do something; that is negative training. If things are not going as wanted; retreat, wait a while and try again. Horses are very forgiving of your mistakes so be prepared to be forgiving for his too.
- Never chase him as this only frightens him. Remember, he sees you as a predator.
- Brumbies learn your voice so teach him yours so he can respond accordingly.
- If your horse is avoiding something they don't like, distance him from you; horses are inquisitive and like to be noticed, this will hurt his pride and make him think twice.
- Reinforce the positive, spend time with him, anyone with empathy can achieve plenty,
- Each Brumby learns at a different pace; this doesn't mean your horse is different or difficult; it only shows his own unique personality.
- Catch, handle and yard your Brumby on a regular basis so he does not slip back in the early months of getting to know you. Regular handling is essential for his wellbeing and to ensure he maintains a healthy respect for you as his *leader*.
- There are many 'how to do' horse books on the market, read them but choose your own path, you know your horse best, not the writers of the books.
- *Parasite Control* - Check your Brumby regularly for worms in the first 12 months, there after same rate as other domestics.
- *Toxic plants* - Usual precautions for toxic plants, even though Brumbies have a natural tendency to avoid toxic plants problems can still occur.
- *Sand Colic* - Brumbies are more stoic with ill health, but this innate toughness means Brumbies sometimes don't show symptoms until they are very ill indeed.

4.3 Periodic progress updates

- We encourage the new owner to ring with any concerns they may have and initiate contact as needed to smooth the transition phase,

3.4 Full potential in domestic life

- Brumbies are able to do a wide range of domestic horse riding activities, and are great for children's ponies, trail & endurance riding, show ring activities, jumping, obstacle races, camp drafting, i.e. anything they could have been doing naturally in the wild.

A Brumby is special; he will always have that something extra he was born with, that contact with the essence of nature and a privilege sharing our life with him.

6. *Training Resources*

Websites

Wild Horse Mentors – big site, with lots of wild horse specific information: http://www.whmentors.org/

Mustangs 4 us – this site has a lot of information on a variety of wild horse topics: http://www.mustangs4us.com/ and more specifically, a great booklet for new adopters/ trainers of wild horses here: http://www.mustangs4us.com/gentling_&_training.htm

Lauman training - Kitty and her husband Rick have trained more mustangs than most, use fabulous methods which our own training is heavily based on and are all about the mustangs. Their website is well worth a look: http://www.laumantraining.com

Frank Bell – Frank has been gentling mustangs for a long time. There is a lot of good info on his site and he also has a great gentling DVD (see below): http://www.horsewhisperer.com/fishing_for_mustangs.html

Joe Kamp - The Soul of a Horse. There is nothing on Joe's website that isn't worth reading. Joe's ability to see 'the way it has always been done' and find the way that horses would have it done is amazing. http://thesoulofahorse.com

Australian Brumby Alliance - Rescue & Care of Wild Horses in Australia which gives general set-up notes for a Wild Horse Re-homing organisation and for Wild Horse rescue in Australia. http://australianbrumbyalliance.org.au/wp-content/uploads/2012/09/8.0-Rescue-Care-of-Wild-Horses-In-Australia.pdf

Papers:

Equine Behaviour. Patricia Evans, Utah State University: http://www.mustangheritagefoundation.org/media/pdf/Equine_Behavior.pdf

An introduction to handling your Mustang by the Mustang Heritage Foundation: http://www.mustangheritagefoundation.org/media/pdf/An_Introduction_to_Understanding_Your_Mustang.pdf

Wild Horses; the stress of captivity. Bruce Nock: http://dl.dropboxusercontent.com/u/42742685/Stress%20of%20Captivity-Bruce-Nock.pdf

DVDs:

Wild to Willing – Core training, Kitty trains Mustangs, her DVD is easy to follow and she demonstrates on three adult mustangs. http://www.laumantraining.com/mercantile

The First Touch. By Lesley Neumann. A fabulous DVD. Lesley trains mustangs for the BLM and does training displays across America. http://www.lesleyneuman.com/video.htm

Pole Gentling the Wild Horse. By Frank Bell and John Sharp. More great viewing of a terrific method. The best part of this DVD is that the mustang didn't react in the expected way, so you get to see the problem solving that we all know is an integral part of training any horse: http://www.horsewhisperer.com/horse_training_videos.htm#Pole

Books:

Working with Wild Horses. Can be downloaded for $7.74: http://www.lulu.com/spotlight/nancyatmustangs4usdotcom

The Wild Horse; An Adopters Manual. By Barbara Eustis-Cross and Nancy Bowker. This well written book is out of print, but you can often get it on e-Bay. It is for people taking on their first wild horse (most USA/BLM mustangs are rehomed totally wild and unhandled.

The Soul of a Horse Blogged and also ***Born Wild; the Soul of a Horse***. By Joe Kamp. Has a strong Mustang emphasis, see Joe's website: http://thesoulofahorse.com

Trust n Horses. By Franklin Levinson - Well priced e-Book about Franklins trust based system. http://www.wayofthehorse.org/Testimonials/review-ebooks.php

Jill Pickering,
President, Australian Brumby Alliance Inc.
www.australianbrumbyalliance.org.au
16 April 2015

Attachment 1: Brumby Transport Guidelines

Note: This paper was provided to the Independent Technical Reference Group, reporting to the NSW, National Parks & Wildlife Service review of Kosciuszko National Park Wild Horse management 2015.

PROTECTION OF THE ALPINE NATIONAL PARK

DRAFT
Feral Horse Action Plan
March 2021




Parks VICTORIA

VICTORIA State Government

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Protection of the Alpine National Park:

Feral Horse Action Plan

DRAFT

March 2021

Disclaimer

This plan is prepared without prejudice to any negotiated or litigated outcome of any native title determination applications covering land or waters within the plan's area. It is acknowledged that any future outcomes of native title determination applications may necessitate amendment of this plan; and the implementation of this plan may require further notifications under the procedures in Division 3 of Part 2 of the *Native Title Act 1993* (Cwlth).

The plan is also prepared without prejudice to any future negotiated outcomes between the Government/s and Traditional Owner Communities. It is acknowledged that such negotiated outcomes may necessitate amendment of this plan.

Every effort has been made to ensure that the information in this plan is accurate. Parks Victoria does not guarantee that the publication is without flaw of any kind and therefore disclaims all liability for any error, loss or other consequence that may arise from you relying on any information in the publication.

Iterations

The first iteration of this plan was approved by Parks Victoria in June 2018, as *Protection of the Alpine National Park: Feral Horse Strategic Action Plan [2018-2021]*.

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Parks Victoria 2021. *(Draft) Protection of the Alpine National Park: Feral Horse Action Plan 2021*. Parks Victoria: Melbourne, Australia.

Photo credits

Front cover:
Feral horses grazing in an unburnt stream running through an area burnt during Black Summer bushfires, eastern Alps, Alpine National Park.
Alpine Water-skink, *Eulamprus kosciuskoi*, Graeme Worboys
Tooarrana (Broad-toothed Rat), *Mastacomys fuscus mordicus*, David Paul, Museums Victoria
Alpine Tree Frog, *Litoria verreauxii alpina*, David Paul, Museums Victoria
Alpine Spiny Crayfish, *Euastacus crassus*, David Paul, Museums Victoria

Page 4: Mount Nelse, Henrik Wahren

Page 6:
Alpine Water-skink, *Eulamprus kosciuskoi,* Bodowski, (creative commons license CC BY-NC 4.0)
Alpine Tree Frog, *Litoria verreauxii alpina,* David Paul, Museums Victoria

Page 7:
Tooarrana (Broad-toothed Rat), *Mastacomys fuscus mordicus*, David Paul, Museums Victoria
Alpine Water-skink, *Eulamprus kosciuskoi*, David Paul, Museums Victoria
Alpine Bog Skink, *Pseudemoia cryodroma*, (a) Luis Mata, (creative commons license CC BY-NC 4.0)
Alpine Bog Skink, *Pseudemoia cryodroma,* (b) Owen Lishmund, (creative commons license CC BY-NC 4.0)
Alpine Spiny Crayfish, *Euastacus crassus*, David Paul, Museums Victoria
Guthega Skink, *Liopholis guthega*, DH Fischer, (creative commons license CC BY-NC 4.0)

Back cover:
Native Cat Flat, Alpine National Park in March 2021 - showing the effects of overgrazing and trampling by feral horses, with grassy vegetation grazed down to the ground surface, streambank vegetation completely removed, trampling evident along the complete length of the stream, and the only remaining habitat for wetland-dependent fauna occurring within the fenced exclosures.

Executive summary

Feral horses are causing serious long-term damage to alpine, subalpine, montane and floodplain environments. The population of feral horses in these environments is rapidly increasing and urgent action is required to halt the dramatic escalation in the feral horse population and rate of ecosystem decline.

This damage includes the destruction of habitat critical to many threatened plant and animal species, damage to waterways, degradation of fragile vegetation, and soil disturbance that results in erosion or compaction. To prevent further impacts and enable impacted areas to recover, and meet obligations under the *National Parks Act 1975* (Vic.), *Flora and Fauna Guarantee Act 1988* (Vic.) (the FFG Act), and the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth) (the EPBC Act) horse populations need to be reduced significantly, with some populations removed entirely. This plan outlines Parks Victoria's approach to this urgent issue and describes progress over the last three years.

Feral horse management is a part of an integrated approach to reducing the impacts of a range of introduced animals in the Alpine National Park including deer, pigs and other non-native species. The goals of feral horse management are to reduce the severe impacts of horses on threatened alpine vegetation communities and fauna habitats, particularly to riverine wetlands, alpine peatlands and streambanks; protect Aboriginal cultural heritage; and conduct horse management humanely and safely.

Implementing the *(Draft) Protection of the Alpine National Park: Feral Horse Action Plan 2021* will enable the achievement of the strategy set out in the *Greater Alpine National Parks Management Plan (2016)*, for the humane control of feral horses to reduce their impacts; including removing small, isolated populations and preventing spread into new areas using the most humane, safe and effective techniques, including lethal and non-lethal methods.

The *(Draft) Feral Horse Action Plan 2021* follows the *Protection of the Alpine National Park – Feral Horse Strategic Action Plan 2018-21,* and focuses on how feral horses will be managed in the Alpine National Park, and adjacent State forests from 2021. Since the original Action Plan was released in June 2018, significant changes to the context of the managing feral horses in the Victorian Alps have occurred, requiring reconsideration of the methods for their management.

These changes have included (i) a very low interest and uptake from the community in feral horse rehoming, despite repeated advertising and direct approaches by Parks Victoria calling for expressions of interest from people or organisations to take on rehomed horses; (ii) the bushfires over the 2019-20 summer having greatly impacted large areas of the Victorian Alps, resulting in significant loss of threatened native alpine wildlife and unique habitats and increasing their vulnerability to the impacts of feral horses; and, (iii) the 2019 Australian Alps aerial feral horse survey finding that horse numbers in the Victorian section of the Australian Alps had doubled in the five-year period from 2014 to 2019, from around 2,300 to 5,000 horses.

In the context of these changes, and to achieve the goals outlined above for humane feral horse control, Parks Victoria will:

- continue to trap feral horses for rehoming to the extent that suitable rehoming applicants can be found.
- implement the most humane, safe and effective horse control techniques, including using professional shooters, to remove feral horses ranging across areas of high conservation value.
- conduct all horse management operations according to strict standards for animal welfare and public safety.
- periodically repeat surveys of feral horse populations in the eastern Alps and in the Bogong-Cobungra area.
- monitor the condition of sensitive vegetation and habitats including alpine mossbeds, peatlands and streambanks.

Heavily pugged peatland alongside an eroding stream, with grassy vegetation mown down to ground level by feral horses, Forlorn Hope, Alpine National Park. Typical of the type of damage caused by feral horses, and the loss of habitat for other fauna critically reliant on complex habitat structure adjoining streambanks and wetlands.

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Healthy, complex vegetation protected from grazing by a fenced vegetation plot, Bogong High Plains, Alpine National Park

1 Introduction

The purpose of this plan is to improve the management of feral horses in the Alpine National Park, and reduce the damage they cause to vulnerable natural and cultural values, and water and catchment qualities of the Victorian Alps. The need for a revision of the 2018-21 Action Plan is also driven by recent increases in the size and distribution of feral horse populations, the impact on habitats from the Black Summer bushfires, and the limitations to date of management methods that have been used.

This plan addresses the intent of future management over the next 10 years, identifying the additional actions required to address these changes as well as to achieve the 15-year goals of feral horse management in the Victorian Alps described in the *Greater Alpine National Parks Management Plan (2016)*. These are to: reduce the severe damage caused by feral horses to threatened alpine vegetation communities and the native flora and fauna they support, particularly riverine wetlands, alpine peatlands and streambanks; protect Aboriginal cultural heritage; and, conduct feral horse management humanely and safely. During this plan's 10-year timeframe, it may be necessary to adapt these actions. This will be done on the basis of the best scientific evidence and advice.

The overarching purpose, strategy, outcomes and actions are outlined in this section and further detail about the approach, background and control methods are described in subsequent sections.

1.1 Plan purpose

The purpose of this plan is to:

- describe the desired conservation outcomes, and specify the management actions required to achieve them;
- summarise the damage caused by feral horses on the environment, and why they need to be humanely managed;
- describe the available methods for feral horse control and how they will be used to safely and humanely reduce feral horse populations and their impacts; and
- summarise the process for monitoring, evaluation and review on the implementation of feral horse control.

1.2 Strategy

The strategy for humane feral horse control that the *Greater Alpine National Parks Management Plan (2016)* sets out is to:

- prevent new populations of feral horses establishing across the planning area;
- remove isolated populations of feral horses where eradication is feasible;
- contain and reduce feral horse numbers in core, larger populations in the Alpine National Park to prevent spread and minimise impacts on high-value vegetation communities and fauna habitats;
- consider all control options and use the most humane, safe and effective techniques, including lethal and non-lethal methods; and
- cooperate with the Department of Environment Land Water and Planning and NSW National Parks and Wildlife Service to remove populations from adjacent forest areas and Kosciuszko National Park.

1.3 Objectives for conservation and humane feral horse control

To protect the environment from the impacts of feral horses, control programs will be focussed on achieving defined conservation and animal welfare outcomes. The long-term conservation outcomes and horse control objectives are specified below, as well as a summary of the indicators, measures and deliverables for humane feral horse control. These remain consistent with those specified in the 2018-21 Action Plan and are the basis for monitoring and evaluation (see *Section 6 – Monitoring, evaluation and review*).

Outcomes:

Successful implementation of the plan will contribute to the following long-term outcomes:

- Regeneration or recovery of alpine peatlands and streambanks.
- Improved distributions and abundances of vulnerable or threatened native fauna and flora species.
- Protection of Aboriginal cultural sites and places.
- Horse management conducted safely and humanely.

Measuring progress:

Progress in achieving the required levels of protection for natural values and animal welfare can be evaluated using the following **indicators**:

- A significant reduction in the established eastern Alps feral horse population, removal of isolated populations and prevention of new populations of feral horses becoming established.
- The most humane, safe and effective horse control methods available will be used.

The effectiveness of control programs can be assessed using the following **measures:**

- Reduction in pugging and streambank collapse caused by feral horses.
- Reduction in grazing damage on significant, regenerating or restored vegetation.
- Minimise adverse impacts on horse welfare in the design and application of the selected horse control methods.

Deliverables:

The following **outputs** will be delivered to contribute to achieving the identified outcomes:

- Removal of all feral horses from the Bogong High Plains.
- Significant reduction in the eastern Alps population through annual removals, particularly in areas of high conservation value.
- Populations prevented from spreading (contained), through surveillance and targeted removals of new mobs.
- Maximise animal welfare outcomes through clear standard operating procedures and monitoring of on ground activities.
- Meet community demand in providing captured horses to rehoming locations that comply with suitable standards for animal welfare.

Late snow patch areas and site of the Small Star-plantain (*Plantago glacialis*), Mount Nelse, Bogong High Plains, Alpine National Park

2 Threats from feral horses

Australia has an estimated 400 000 feral horses, the world's largest wild population. In Victoria, feral horses are present in a widespread population occurring in the eastern Alps extending into the northwest section of the Snowy River. A separate smaller population occurs on the Bogong High Plains with a population of unknown size in the adjacent Cobungra Crown land to the south-east of the Bogong High Plains. These populations, while situated predominantly within the Alpine National Park, extend into adjacent parks, State forests, reserves and private land.

As large animals with big, hard hooves, feral horses cause immense ecological damage, particularly in the fragile high country of the Australian Alps. The impacts of feral horses on environmental values are described in some detail in Sections 6 and 8 of the *Protection of the Alpine National Park – Feral Horse Strategic Action Plan 2018-21* and by the Australian Academy of Science (Worboys et al. 2018). These impacts, and risks to Aboriginal cultural heritage values, are summarised below.

2.1 Traditional Owners

Aboriginal people have lived in the high country of Victoria for tens of thousands of years. Physical evidence of occupation along with stories, language and memories continue to link Aboriginal people to the alpine parks and lands. The Bidawal, Dhudhuroa, Gunaikurnai, Jaithmathang, Taungurong and Nindi-Ngudjam Ngarigu Monero are the First Peoples of the mountains and the rivers of the Alpine National Park, and through their cultural traditions, they still identify it as their Traditional Country.

Aboriginal cultural heritage values

Areas occupied by horses can be rich in Aboriginal cultural values. Aboriginal cultural values may be both tangible (visible) and intangible (lore) and are a significant part of the Greater Alpine parks. Over 600 places and associated objects are recorded from the Victorian Alps in Aboriginal Victoria's site registry. Following the 2003 Great Alpine Fire, large areas of bush that had previously proven difficult to penetrate for Aboriginal cultural heritage surveys became accessible and an extensive site survey of locations was commissioned. The archaeological work teams found extensive tangible evidence at 350 new sites spread across fourteen alpine areas (Freslov et al. 2004). These sites exist as part of the landscape and are managed in their original place. As most of these sites are not publicised, protection from human intrusion comes from the confidentiality of the locations. The alpine high plains and river flats within the planning area are very important to Traditional Owners. Feral horses pose an ongoing risk to those landforms and more broadly to the health of Country.

2.2 Ecosystems at risk

Australia's ecosystems have evolved over hundreds of thousands to millions of years in the absence of the heavy, hard-hooved animals (feral horses and deer) that have been introduced in the last two centuries. Such animals can cause significant damage to soils, vegetation communities, stream and river banks, and wetland zones (Dyring 1990, Clemann 2009, Walter 2003, Driscoll et al., 2019, Robertson et al. 2019). Damage to sensitive alpine ecosystems include selective grazing, trampling, pugging, degradation of waterways and water quality, removal of vegetation and exposure of bare ground, soil compaction, stream-bank slumping, opening tracks through vegetation, distribution of weeds and resultant loss of habitat for native wildlife. A combination

of climate change effects, recreation activities, and other invasive species puts significant additional pressures on these natural, but now changing, landscapes (SAC 2011).

Vegetation communities in the Victorian Alps are diverse and complex. They include grasslands, snow-gum woodlands, heathlands, and peatland communities, all of which are damaged by feral horses. The *Greater Alpine National Parks Management Plan (2016)* defines five broad ecosystems for the planning area, with feral horse populations considered a high priority threat to four of these ecosystems. The alpine and subalpine communities are very rare in Australia and support many species that are rare and endemic to the parks, including state and nationally threatened vegetation communities such as snow patch communities, alpine sphagnum moss peatlands, and associated wetland bogs. Feral horses are a known threat to these vegetation communities and the individual species they support.

Alpine mossbeds and peatlands are an endangered and specialised community occurring mostly on the high plains, occupying permanently wet sites along drainage lines and valley floors or surrounding seepage areas on hillsides. Most of the alpine mossbeds in the Victorian Alps occur in the Alpine National Park, and are scattered across the park. The greatest concentration is found on the Bogong High Plains, however, other significant examples are found in association with high elevation streams and wetlands across the eastern and southern Alps. They generally cover about 1 to 10 hectares but are widely scattered. Peat, which comprises decomposed plant matter, develops very slowly under the sphagnum moss, with deep beds of peat commonly dated at 3–4000 years old.

Alpine mossbeds slow water flows and retain water, with the moss itself holding large volumes of water. They provide slow seepage and filtration for water that feeds the tiny mountain streams in the headwaters of the Murray River. Undisturbed, these damp areas are naturally fire resistant because of their extremely high moisture content. The mossbeds and surrounding grassy tussock areas provide fragile habitats for a wide range of native wildlife species, including a number of endangered species.

The physical impact of horses on the structure of alpine sphagnum mossbeds causes damage that cannot be repaired in the presence of horses. Even in the absence of horses, restoration and recovery of these habitats can take decades, due to slow rates of vegetation growth and organic matter accumulation (McDougall 2005).

Striking difference between healthy vegetation in a grazing exclusion plot and the high impact pugging of the surrounding snowplain wetland, Native Cat Flat, Alpine National Park.

Feral horse presence in these areas crushes the mosses, pugs the soil and channels the water. Pugging is the repeated incision of small deep pits in soft soil caused by hard hooves, exposing and compacting soil structure. Muddy depressions are created where moss and other vegetation cover is removed, and the hydrology of these areas is changed from a slow, soaking seepage, to a quick flow of water that erodes the soils. As a result, the mossbed is drained, and becomes dry and more fire-prone. Ultimately, horses cause the alpine mossbeds to become hard-packed soils that support neither the original plants nor the vegetation structure needed by resident threatened wildlife species. Direct grazing of vegetation and trampling damage also degrades habitats that are important for the survival of many threatened species and communities. Specific examples of the threatened species impacted by feral horses are illustrated below and on the next page.

The detailed evidence of the environmental damage of feral horses is well-documented. The impacts on a range of threatened species and communities led to the listing of "Degradation and loss of habitats caused by feral Horses (*Equus caballus*)" as a potentially threatening process under the *Victorian Flora and Fauna Guarantee Act 1988* (see *Appendix 2*).

At a conference co-convened by the Australian Academy of Science on 8 November 2018, leading Australian scientists presented scientific evidence clearly demonstrating that feral horses in alpine national parks have already caused widespread and, in some cases, irreparable damage to wetlands and streams (Worboys et al. 2018). Vegetation structure has been damaged, stream morphology degraded, alpine wetlands drained, populations of Broad-toothed Rat (Tooarrana) eliminated, and habitat for populations of native fish negatively impacted (ibid). This has followed the long interest and involvement of the Australian Academy of Science in the scientific significance and conservation protection of the Australian Alps, since the publication of a catchment condition report (AAS 1957), which called for the removal of all stock animals in catchments above 1,350m.

The critically endangered Alpine Water Skink, *Eulamprus kosciuskoi*, is dependent on alpine sphagnum peatland, in and under which it creates its burrow systems to survive when winter snows cover the area.

The critically endangered Alpine Tree Frog, *Litoria verreauxii alpina*, relies on alpine sphagnum peatlands and ponds for feeding and reproduction. Trampling of these areas by heavy, sharp horse hooves creates a muddy morass unsuitable for feeding. The destruction of submerged vegetation on which the Alpine Tree Frog eggs are laid makes it impossible for the frogs to reproduce.

Endangered Tooarrana, *Mastacomys fuscus*

Critically endangered Alpine Water Skink, *Eulamprus kosciuskoi*

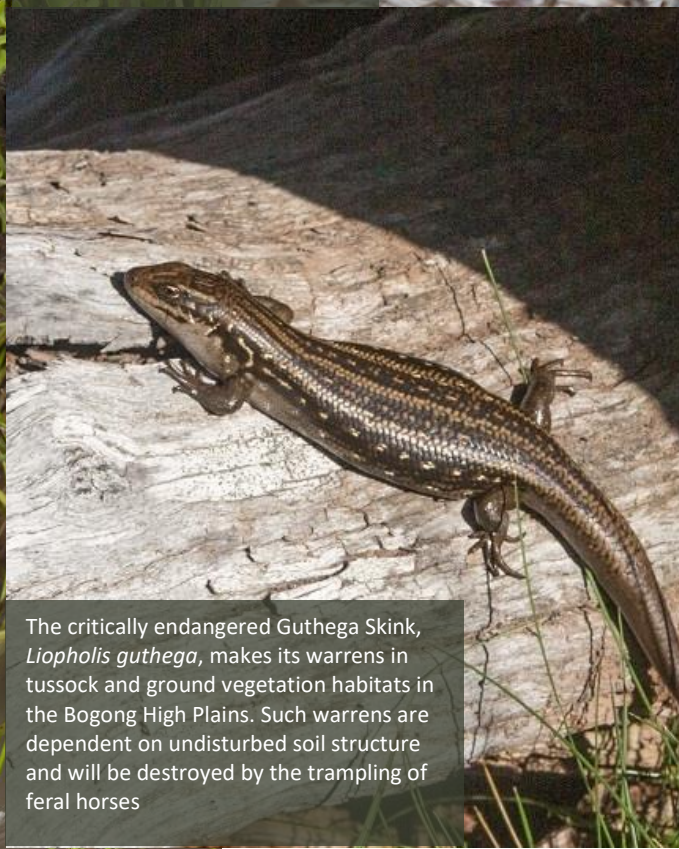
The grassy tussocks surrounding the delicate high-altitude waterways and wetlands are crucial habitat for small native mammals, such as the endangered Tooarrana, as well as reptiles, such as the endangered Alpine She-oak Skink, *Cyclodomorphus praealtus*, and the Alpine Bog Skink, providing shelter, protection and food.

In areas that are subject to snow cover, small species like the Tooarrana rely on the above ground vegetation structure to provide airspace in which to survive. Feral horses trampling and grazing on the grassy tussocks will result in the removal of the tussocks from the habitat. If grazing removes the tussock grass down to ground level, local populations of the Tooarrana will be at risk of extinction.

Endangered Alpine Bog Skink, *Pseudemoia cryodroma* (a)

Endangered Alpine Bog Skink, *Pseudemoia cryodroma* (b)

Threatened Alpine Spiny Crayfish, *Euastacus crassus*, that live in streams in these areas cannot survive in muddy and channelised streams that become polluted with horse manure.



The critically endangered Guthega Skink, *Liopholis guthega*, makes its warrens in tussock and ground vegetation habitats in the Bogong High Plains. Such warrens are dependent on undisturbed soil structure and will be destroyed by the trampling of feral horses

2.3 Catchments at risk

The Australian Alps provides an annual average of 9600 gigalitres of high-quality water to the Murray-Darling Basin, contributing an ecosystem service of national economic, social and environmental importance. It was estimated in 2005 that the value of water flowing from the Victorian Alpine National Park's catchments, when all social and production benefits were considered, was worth as much as $110 million annually (PV 2015).

In 2010, a catchment condition assessment of the Australian Alps was undertaken (Worboys & Good 2011). The assessment identified that the existing effects of climate change, as well as soil erosion, pest animals and weeds were degrading the natural condition of the catchments and thus water quality, water yield and water flow regimes. The 2010 catchment condition assessment found that without substantial management interventions to deal with these threats, the provision of high-quality water was likely to be compromised, with the Australian Alps catchments delivering water of poorer quality and often in large sudden flows rather than gradual releases.

Climate change projections predict that by mid-century, maximum temperatures in the Ovens-Murray region are expected to show a median increase of 2.4°C, with a median of 25% decrease in annual rainfall totals (under a high emissions scenario) (Clarke et al. 2019). A warmer climate is also expected to bring more heavy rainfall events. Under these conditions, the ability of natural vegetation cover and forest litter to hold soils in place, to allow water infiltration, and to provide stability to steep mountain slopes is critical.

Vegetation in a natural condition helps prevent rapid run-off, soil erosion and slope instability and assists in maintaining water quality through filtration. In the alpine area, damaged vegetation can lead to rapid incision, undercutting, tunnelling and headwater erosion of the alpine humus soils. The erosion caused by populations of feral horses, feral pigs, and deer occurring in the Alps catchments is thus of particular concern.

This concern has been validated by the most extensive study to assess the impacts of horses throughout public land in the Australian Alps, undertaken by Robertson et al. (2019). Their study demonstrated that feral horses are significantly degrading the condition of drainage lines across this range. Almost all sites assessed within the broad feral horse distribution showed evidence of horse presence, and all of the sites in poorest condition were occupied by horses. They found that on average, about 28 metres of the streambed in each 50-metre site they measured had a moderate to high sediment load in horse-present sites, compared to horse-free sites where banks were stable due to the presence of undisturbed fringing vegetation.

The study concluded the loss of stability, modification of stream banks and vegetation structure caused by feral horses not only have a direct negative impact on water quality, they also have significant negative impacts on the conservation of fauna dependant on these habitats.

Streambank collapse, with damaged fringing vegetation and high sediment load reducing water quality, source of the Murray River, in the Alpine and Kosciuszko national parks

2.4 Geographic scope

Bogong–Cobungra area

The Bogong-Cobungra area includes the Bogong High Plains (including Mount Nelse) in the Alpine National Park, and State forest to the south and south east of the Bogong High Plains in the Cobungra and Victoria river valleys (see *Appendix 1, Map 1)*. Feral horse populations are continuous across the different public land tenures of this area.

The Bogong High Plains contains a large proportion, 28%, of the high-altitude wetlands ecological vegetation division occurring across the Victorian Alps. This comprises some of Victoria's most endangered ecological vegetation classes, as well as comprising the FFG-listed Alpine Bog Community and Fen (Bog Pool) Community and the EPBC-listed Alpine Bogs and Associated Fens.

Mount Nelse is a high point on the northern side of the Bogong High Plains, and contains Alpine snow patch herbfields, a threatened ecosystem in the International Union for Conservation of Nature (IUCN) Red List of Ecosystems (IUCN-CEM 2016; Williams et al 2015). Alpine snow patch herbfields are very important as refugia for dwarf alpine plant species in the face of climate change. Feral horses have been expanding their range on the Bogong High Plains, with a population establishing in the Mount Nelse area since 2016. As an implementation priority of the 2018-21 Action Plan for protecting snow patch and also to prevent further spread, this population has now been removed.

An aerial double-count survey undertaken by Parks Victoria in May 2018 estimated that 109 feral horses were present in the southern Bogong High Plains. Another feral horse population survey of the Bogong High Plains will be conducted in April-May 2021 (see *Section 6*).

Since the 2018 survey, given limited levels of removal and ongoing horse population growth, it is likely that the population is still around 100. Even low densities of horses can cause substantial damage in a short time, as demonstrated by the substantial damage caused by feral horses during their presence in the Mount Nelse area (Tolsma and Shannon 2018). To prevent this damage to high-altitude wetlands and snow patch herbfields across the Bogong High Plains, it is essential that feral horses are completely removed from this area.

Bogong High Plains, Alpine National Park

The complete removal of feral horses from the Bogong High Plains eliminates future horse-related damage to the environment and limits any welfare impacts from managing feral horses to the number removed over a short time frame, rather than treating animals in perpetuity. Removing the whole population is highly feasible due to the low numbers.

However, since the feral horse populations are continuous across the Bogong-Cobungra area, adjacent populations in State forest in the Cobungra area bounding the Alpine National Park are likely to reinvade the Bogong High Plains without ongoing control. It is likely this will require coordinated action across tenure. This would also protect the high-altitude wetlands that occur in State forests, some of which are subject to restoration efforts, as well as FFG-listed species and communities that have been protected with exclusion fencing.

Ultimately, complete removal of feral horses from across the Bogong-Cobungra area would achieve permanent protection of environmental values across this area.

Restoration efforts to mitigate waterway and streamside vegetation damage caused by feral horses, Cobungra State Forest

Eastern Alps

The horse-occupied area of the eastern Victorian Alps extends from Tom Groggin in the north, to the Nunniong Plains in the south, and to the eastern extremity of the Alpine National Park with occasional observations as far as the Deddick Valley (see *Appendix 1, Map 2)*. Feral horses occur across the Alpine National Park and adjoining State forests.

Horses favour wetlands and streams at certain times of the year because of the availability of the 'green pick' vegetation or the accessibility of stream bank vegetation not covered by winter snow. In the wet areas of the eastern Alps, where there are many horses, pugging is a commonly observed impact. It creates incisions that are microhabitats for weed invasion, and accelerates drying out and erosion. In bogs, peatlands and floodplains, streambank slumping and vegetation loss leads to waterway degradation and streambank collapse as an eventual consequence of horse movements through these areas.

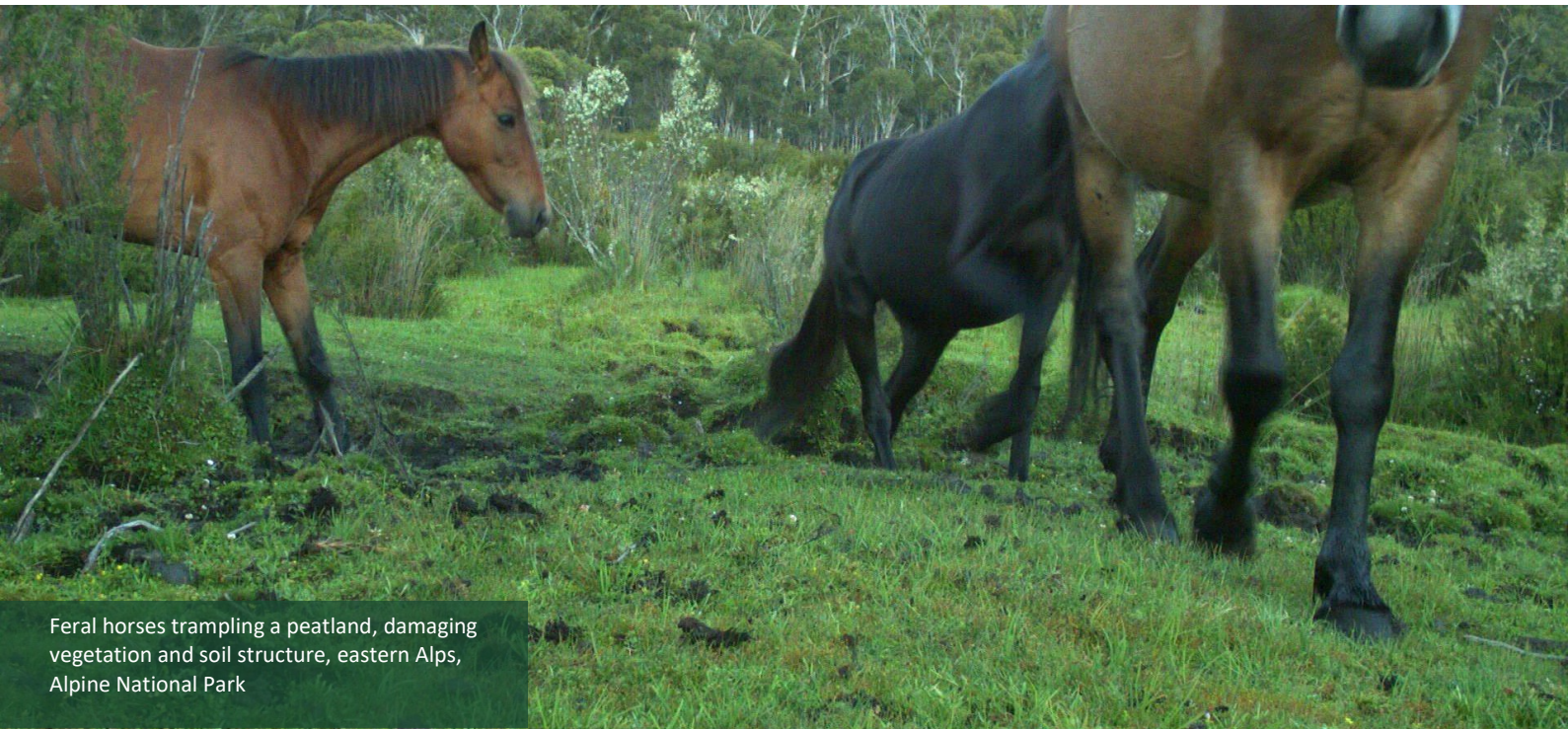
The muddied waters created from waterway erosion and the removal of filtering vegetation negatively impacts alpine and riverine aquatic species including the diverse invertebrates that a wide range of native fishes, frogs, reptiles and native spiny crayfish rely on for food.

To examine the magnitude and extent of feral horse damage to alpine streams and wetlands, a survey technique known as 'Ephemeral Drainage Line Assessment' (Tongway and Ludwig 2011) has been adapted by Robertson et al. (2019) to assess condition across treeless alpine drainage lines, both ephemeral and perennial, and inclusive of grasslands, bogs, fens, and other wetlands across the Australian Alps. Nine indicators (variables) were measured, all relating to soil and stream stability, and vegetation cover. The baseline condition of all variables related to soil and stream stability was significantly worse in horse-present sites than in horse-free sites.

A survey of feral horse abundance across the Australian Alps in 2019 found that over the period 2014 – 2019, the population occurring across the eastern Victorian Alps and the southern part of Kosciuszko National Park almost doubled, from 4316 to 8518 (Cairns 2019).

Damage to high-altitude wetlands and streams was already being documented in 2011-2013 when the fieldwork for the alpine drainage line assessment was being done, a few years before the feral horse population was estimated to be 4316, in 2014. Therefore, to reduce measures of active erosion and damage to streambanks and wetlands, the annual rate of feral horse removal in the eastern Alps needs to be significantly increased, to reduce the population to numbers below those recorded in the area prior to 2014.

To ensure horse removal is based on the best possible information and data, another feral horse population survey of the eastern Alps will be conducted in April/May 2021 (see *Section 6*) to understand current population and further inform management.



Feral horses trampling a peatland, damaging vegetation and soil structure, eastern Alps, Alpine National Park

Mount Feathertop from the Razorback, Alpine National Park.

3 Background to this plan

3.1 Legislative and planning context

Parks Victoria has obligations under Victorian and Commonwealth legislation in the management of feral horses in the Alpine National Park. Parks Victoria was established as a public authority on 3 July 1998 under Section 4 of the *Parks Victoria Act 1998* (Vic), which gives Parks Victoria direct responsibility for the land it manages, as well as for preparing land management plans. Parks Victoria also has obligations under other statutes. Under the *National Parks Act 1975* (Vic) (s 17(2)(a)), Parks Victoria has the control and management of each National park and State park, and must ensure that each such park is controlled and managed in a manner that will (among other things):

(i) preserve and protect the park in its natural condition for the use, enjoyment and education of the public;
(ii) preserve and protect indigenous flora and fauna in the park; and
(iii) exterminate or control exotic fauna in the park.

The Alpine National Park is reserved under Schedule 2 of the *National Parks Act 1975* (Vic.). Section 17(2)(d) of the National Parks Act also requires Parks Victoria to prepare a plan of management in respect of each National park and State park. To meet this obligation for the Alpine National Park, and other national parks in the planning area, Parks Victoria prepared the *Greater Alpine National Parks Management Plan* (the management plan), which was adopted in December 2016, having been tabled in the Victorian Parliament on 1 September 2016. Section 4.1.1 of the management plan sets out a strategy for humane feral horse control, to reduce their impacts, including removing small, isolated populations and preventing spread into new areas, as detailed at *Section 1.2*.

For Victoria's 500 000-hectare Alpine National Park, the management plan is also the overarching land management plan. As is also the case for other large national parks, there are several single issue or thematic subsidiary strategies, action plans, policies and guiding documents that sit under this plan. For the Alpine National Park, this includes the *Protection of the Alpine National Park – Feral Horse Strategic Action Plan 2018-21* and the subsequent *(Draft) Feral Horse Action Plan 2021.*

The control of feral horses, as directed by the management plan, is necessary because of the significant damage they cause to the alpine environment. These adverse impacts are recognised in the formal listing of 'Degradation and loss of habitats caused by feral horses (*Equus caballus*)' as a Threatening Process under the *Flora and Fauna Guarantee Act 1988* (Vic), and as a component of the listing of 'Novel biota and their impact on biodiversity' as a Key Threatening Processes under the *Environment Protection and Biodiversity Conservation Act 1999* (Cwlth).

Feral horses are exotic fauna, and damage the environment in two broad ways: via direct herbivory (consumption of native plants), in particular grazing impacts on threatened species and ecological communities; and through degradation of natural habitats, including fouling of waterholes, accelerating erosion and trampling and consuming native vegetation.

The management of feral horses is intended to protect threatened ecosystems, habitats and species, including those listed under the EPBC Act 1999 or the FFG Act (as well as others listed on the Victorian Advisory and IUCN lists).

The control of feral horses is consistent with Australia's current national strategy, *Australia's Strategy for Nature 2019–2030* (CoA 2019). As Australia is a Party to the (international) Convention on Biological Diversity, the national biodiversity strategy and action plan is Australia's national plan to implement the Convention's Strategic Plan and the Aichi biodiversity targets. Reducing the severe damage caused by feral horses to natural heritage values will also contribute to the Victorian Government's goals for *Protecting Victoria's Environment – Biodiversity 2037*: "Victoria's natural environment is healthy, and has functioning plant and animal populations, improved habitats and resilient ecosystems, even under climate change" (DELWP 2017). It is also consistent with Victoria's *Invasive Plants and Animals Policy Framework* (DEPI 2010; *Appendix 3*) which presents the overarching Victorian Government approach to the management of existing and potential invasive species within the context of the *Biosecurity Strategy for Victoria* (DEPI 2009).

The Australian Alps National Parks and Reserves (12 national parks and other reserves) are collectively included on the National Heritage List and protected in accordance with the values (and locations) identified in the listing under the EPBC Act (CoA 2008). This listing recognises the Australian Alps as having outstanding heritage value for both natural and cultural features, including the features related to the pioneering history of the high country.

On 8 May 2020, the Federal Court of Australia delivered its judgement (FCA 2020) on whether the removal of horses by Parks Victoria compromised cultural heritage values associated with horses in the Alpine National Park, as defined by the Australian Alps National Parks National Heritage Listing. The judgement accepted that feral horses had severe impacts on the biodiversity values of the Victorian Alps and decided that the removal of feral horses would not have a significant impact on the national heritage values of the Australian Alps.

Planning for the management of feral horses in the Victorian Alpine National Park occurs in the context of the management of feral horses across the Australian Alps. Currently, this is occurring in the form of: early detection and removal of any feral horses entering the Namadgi National Park in the Australian Capital Territory (EPSDD 2020); and post-bushfire removal of the wild horse population of the fire-affected northern plains of the Kosciuszko National Park in New South Wales (EES 2020).

The application of feral horse control methods is governed by legislation including the *Prevention of Cruelty to Animals Act 1986* (Vic) and the *Livestock Management Act 2010* (Vic), and various codes of practice and standard operating procedures. These are discussed in more detail in *Section 4 – Feral horse control methods*.

3.2 Black Summer (2019 – 2020) Bushfires

Australia's warmest year on record was 2019, with the annual national mean temperature 1.52°C above average. It was also the country's driest year on record since 1900, with national total rainfall 40% below the 1961–1990 average. Serious multi-year rainfall deficiencies also impacted many parts of Australia including eastern Victoria (BOM 2020). In the lead up to Black Summer, all states and territories set record high values for fire weather risk as measured by the Forest Fire Danger Index (BOM 2019).

Burnt grassland/peatland mosaic with bleached mossbeds, Forlorn Hope Plain, Alpine National Park

The Black Summer bushfires impacted 130 000 hectares of the Alpine National Park. About 44% of the total horse-occupied area in the Alpine National Park of 179 000 hectares was fire affected (*see App. 1 - Map 3*).

Many native alpine species that were already threatened will have had both their numbers and areas of occupancy significantly reduced by the bushfires. The fires have placed additional pressures on both unburnt and recovering fire-affected areas and their resident native species and habitats.

The damage being caused to critically endangered native alpine plants and wildlife by, in particular, feral horses and deer, is now being significantly increased and compounded in the aftermath of the bushfires. This is occurring in at least the following three ways:

- In unburnt areas, remaining threatened native plants, animals and ecological communities now have much higher conservation significance, as they now represent greatly reduced populations of already threatened species. Therefore, any damage is also of greater significance.
- Feral horses and deer are concentrating in and/or moving into the reduced areas of unburnt vegetation and compounding damage caused to waterways, threatened species and habitats.
- As burnt alpine areas slowly recover, waterways and native plant and animal species and their habitats are highly vulnerable to trampling and grazing pressures. However, feral horses and deer are moving back into these recovering areas as green returns to these landscapes.

Increased vulnerability of threatened alpine wildlife species due to the bushfires has been formally recognised by ecological experts. In a rapid analysis of impacts of the bushfires on animal species and the prioritisation of species for management response undertaken by the federal Wildlife and Threatened Species Bushfire Recovery Expert Panel (DAWE 2020), the Tooarrana (Broad-toothed Rat), Guthega Skink and Alpine She-oak Skink were all rated as being at an increased risk of decline as a consequence of the bushfires. Other rare and endangered species, such as the Alpine Bog Skink, were similarly assessed to be more at risk of decline.

Remnant unburnt habitats, particularly along sensitive high-altitude alpine waterways, are extremely important to the landscape in its recovery from the bushfires. If these habitats survive, they will be primary sources for flora and fauna repopulation of habitats in areas that were burnt during the bushfires. Further, the maintenance of unburnt refuges in the best possible condition makes the landscape more resilient to other climate-related threats.

As to the burnt habitats, alpine streamsides and sphagnum mossbeds that have been burnt are highly vulnerable to feral horse incursions and can be highly attractive as new growth regenerates. This new growth represents recovering vegetation structure that is critical for the persistence and recolonisation of ground-dwelling fauna, including threatened reptiles and native mammals. The post-fire recovery of these habitats will be severely impeded by the presence of feral horses and other pest species.

Following the Black Summer Bushfires, Parks Victoria communicated its intention to commence using professional ground shooters to target free-ranging feral horses in areas of high conservation value, particularly targeted towards areas recovering from bushfire impacts and forming refuge for remaining threatened species, with emergency habitat protection the key priority.

Suspended mud and poor water quality, Cowombat Flat, Alpine National Park

Extensive pugging, Murray River, Cowombat Flat, Alpine National Park

Waterway prior to bushfires showing the rich habitat and water filtration provided by sphagnum moss, grasses and sedges growing over the valley floor, Davies Plain, Alpine National Park.

Highly vulnerable fire-impacted waterways, Davies Plain, Alpine National Park, 27 February 2020

3.3 Feral Horse Strategic Action Plan 2018-21

From 2008 to 2018, between 150 and 200 horses were removed annually from the Alpine National Park. This was not sufficient to reduce the overall annual population or mitigate the damage caused by feral horses in the Alpine National Park and other contiguous areas.

In June 2018, the *Protection of the Alpine National Park – Feral Horse Strategic Action Plan 2018-21* (the 2018-21 Action Plan) was released. The 2018-21 Action Plan described the damage feral horses exert on the environments of the park and outlined conservation objectives and outcomes to be achieved and the key management actions of an expanded horse control program. The plan was intended to deliver cross-tenure management of feral horses on public land as proposed in the management plan, through an increased level of feral horse removal in the eastern Alps and Bogong High Plains-Cobungra area.

The 2018-21 Action Plan was developed following several years of engagement with community-based advisory groups, interviews with key peak and regional interest groups, a Victorian community perception survey, and the release of information sheets and background papers. The draft plan was released for public consultation between 22 December 2017 and 16 February 2018.

Implementation of the plan

Substantial challenges to implementation were encountered during the first two years of the 2018-21 Action Plan, from July 2018 to June 2020, limiting achievement of the objectives and Year One and Year Two targets of the 2018-21 Action Plan.

Constraints and delays

1. During the 17-month period which began on 13 December 2018 while Federal Court of Australia (Melbourne) considered the legal action brought against Parks Victoria, a Court Order limited Parks Victoria to the capture of a small (<20) isolated mob of horses in the northern Bogong High Plains at Mount Nelse, and a maximum of 200 horses to be taken from the eastern Alps. A decision in Parks Victoria's favour was handed down on 8 May 2020 (FCA 2020).

2. In the summer of 2019/20 bushfires burnt ~750 000 hectares between the North-East and Gippsland DELWP fire regions, with large fires burning 130 000 hectares across north and eastern sections of the Alpine National Park. Feral horse capture was limited during, and following, the bushfire season as contractors' access to some capture sites in the North-East and Gippsland was restricted.

3. Further court cases occurred in May-June 2020 requiring the suspension of operations for capture and removal, and suspending the proposed use of highly skilled professionals to ground shoot free-ranging feral horses in the fire affected area of the Alpine National Park. The Supreme Court of Victoria dismissed the challenge to Parks Victoria's introduction of lethal control on 29 May 2020, and leave to appeal the decision was subsequently denied in the Victorian Supreme Court - Court of Appeal on 25 June 2020 (VSCA 2020).

4. COVID-19 pandemic: following on from the bushfires the rapid development of COVID-19 and subsequent mandatory health controls, a cautious approach was taken by Parks Victoria and its contractors to any further feral horse capture and removal and agreed operational protocols were established to ensure consistency with directives of the Chief Health Officer.

Results

During the period of the 2018-21 Action Plan to February 2021:

- 57 feral horses were removed by trapping, from Mount Nelse and the eastern Alps;
- 83 feral horses were removed by roping from the eastern Alps.

Between December 2019 and September 2020, there were three rounds of public advertisement seeking expressions of interest (EOIs) to rehome feral horses. In response, Parks Victoria received over 300 enquiries which manifested in 10 completed EOIs from suitable applicants, and offers to rehome between 38 and 51

feral horses per year (between both Alpine and Barmah national parks). As a result of the invitation to express interest in the rehoming of feral horses Parks Victoria is aware of other horse groups and individuals interested in taking a small number of horses from the Bogong High Plains and other Victorian Alps locations.

The results of the five-yearly Australian Alps national parks (AAnp) feral horse aerial population survey were published in October 2019. The survey methods and analysis were independently reviewed and validated by the CSIRO and St Andrews College in Scotland (international experts in the analytical techniques used) prior to the final report publication. The survey indicated that the overall Australian Alps feral horse population is large, widespread and continues to increase in size, with the estimated overall feral horse population within the combined surveyed areas more than doubling in the five years between the 2014 and 2019 surveys. One of the survey areas, the Byadbo-Victoria block, covers the feral horse-occupied area across the eastern Victorian Alps and the southern part of the NSW Kosciuszko National Park. In this area, the feral horse population increased from 4316 to 8518 indicating an annual rate of increase of 15% (Cairns 2019). With 60% of this area occurring in Victoria, the 2019 eastern Alps population was estimated to be approximately 5000.

While it is not known what level of mortality may have occurred in the Victorian feral horse population during the bushfires over the 2019-20 summer, following the bushfires, large numbers of feral horses were observed and photographed foraging on severely grazed treeless plains and congregating in very narrow strips of unburnt habitat along sensitive high-altitude waterways, where suitable feed for feral horses remained available. In the Kosciusko National Park, post-bushfire surveys estimated a reduction in the population compared to a year earlier, possibly due to effects of bushfire and drought, movement of animals out of the park, and differences in survey technique (EES 2020). At an estimated 14 000 animals, the population of wild horses in the Kosciusko National Park remains significant, despite recent periods of severe drought and extreme bushfires. In Victoria following the fire, large numbers of feral horses were observed and photographed on severely grazed treeless plains and congregating in very narrow strips of unburnt habitat along sensitive high-altitude waterways, where suitable feed for feral horses remained available.

3.4 Control of deer and feral pigs

Parks Victoria is currently implementing the *Integrated Management Plan for Feral Pigs in the Greater Alpine National Parks* (ENRM 2018), designed to provide clear direction and priority actions for the management of feral pig populations across the Greater Alpine National Parks. Feral pig trapping and shooting programs are ongoing.

On 30 October 2020, the Victorian Government released the Victorian Deer Control Strategy to address the impacts of deer on key environmental, agricultural and Aboriginal cultural heritage values and public safety.

Deer control in the Alpine National Park is primarily managed using professional shooters or accredited volunteer hunters under the direction of Parks Victoria, as part of a strategic control program. Such programs currently focus on protecting key biodiversity values from the impacts of deer. While ground shooting has mainly been used to control deer, aerial shooting is also now being used in Victoria to deliver deer control in inaccessible and remote terrain where ground shooting is impractical. An integrated approach that utilises professional ground and aerial shooting is required to deliver effective deer control over varied landscapes.

As part of the Victorian Government's bushfire biodiversity response and recovery program, Parks Victoria completed two aerial shooting campaigns in late 2019 and early 2020 and continues its large-scale ground shooting removing deer, feral pigs and foxes from high biodiversity-value locations within nine fire-affected parks, including the Alpine National Park. Over 4300 deer were removed across more than 200 000 hectares to support the recovery of threatened species and habitats. These programs are continuing. However, feral horses are not included in these aerial shooting operations.

Endangered in Victoria, the Curled Leek Orchid, *Prasophyllum retroflexum*, is found at only a single location on the Nunniong Plains, where it is protected from grazing and trampling by exclusion fencing.

Trap yard, Bogong High Plains, Alpine National Park

4 Feral horse control methods

A range of potential methods exist for the control or removal of feral horse populations, including non-lethal methods such as removal of horses for domestication, exclusion fencing or fertility control, and lethal methods such as in-situ shooting or removal for slaughter in an abattoir or knackery. Historically, trapping, shooting and brumby running (roping) have been used in the Victorian Alps to control feral horse populations since their introduction to the region in the nineteenth century.

In deciding which methods should be applied in the contemporary control or removal of feral horses from the Alpine National Park, various factors need to be considered, including humaneness, efficacy, cost, practicality, operator and public safety, and environmental impact.

4.1 Humaneness of feral horse control methods

In Victoria, animal welfare standards are regulated through the *Prevention of Cruelty to Animals Act 1986* and *Prevention of Cruelty to Animals Regulations 2019*. The *Code of Practice for the Welfare of Horses* (DJPR 2019) has been developed to provide information to improve good welfare practices, encourage the considerate treatment of horses, and set the minimum level of conduct required to avoid cruelty to horses.

The *Australian Animal Welfare Standards and Guidelines — Land Transport of Livestock* (AHA 2012) also provides relevant standards for horse transport. Other standard operating procedures (SOPs) are created as guides for applying various control techniques, addressing animal welfare issues applicable to each technique.

Consideration of animal welfare in the management of invasive animals is essential to ensure that control techniques are performed humanely. The 'humaneness' of a pest animal control method refers to the overall welfare impact that the method has on an individual animal. A relatively more humane method will have less impact than a relatively less humane method. Humaneness is assessed according to the *Model for assessing the relative humaneness of pest animal control methods* (Sharp and Saunders 2011), which assesses overall welfare impact based on five domains:

1. Thirst/hunger/malnutrition
2. Environmental challenge
3. Injury/disease/functional impairment
4. Behavioural/interactive restriction
5. Anxiety/fear/pain/distress

The model uses a two-part assessment to examine (A) (for lethal and non-lethal methods) the impact of a control method on overall welfare and the duration of this impact; and (B) (for lethal methods only) the effects of the killing method on welfare by evaluating the intensity of suffering and duration of suffering caused by the technique.

The humaneness of feral horse control methods were assessed in 2015 by a Humaneness Assessment Panel (HAP 2015), which found that all potential methods for the control of feral horses have some adverse impact on horse welfare. Choosing appropriate methods therefore requires careful consideration of how to mitigate those impacts. Where culling is assessed to be necessary based on a scientific understanding of the environmental impacts, and the relative benefits and disadvantages of various control options, the most humane methods must be employed (AVA, 2013).

As new technologies or best practice emerge, Parks Victoria will consider their adoption depending on their humaneness, efficacy, cost, practicality, operator and public safety, and environmental impact.

4.2 Capture and removal of live horses

Trapping

Trapping involves establishing temporary or semi-permanent trap yards at water points or by salt or feed as an enticement. Once horses are inside the trap yard, a tripwire triggers the closure of the entry gate. Trap yards are established in areas with trees and shade to provide shelter for captured horses. Trapping can be an appropriate method of capture where trapping locations, times and conditions provide reasonable accessibility for horse transport and when suitable rehoming opportunities have been secured.

It requires a high level of effort to erect and monitor trap sites and requires trained, experienced operators with good local knowledge of horse behaviour and movement patterns. It is difficult to implement in areas of rough terrain and it is not considered an effective method for large-scale reduction of widely dispersed horse numbers. Alpine sites of conservation significance damaged by feral horses include many sites that are typically remote and seasonally closed. Their remoteness increases the difficulty of setting and operating traps for feral horses, and transporting feral horses from these sites would take an excessively long time, risking poor animal welfare outcomes.

Due to the stresses of being captured (and potentially separated from other members of the horse band), held in trap yards, loaded into stock crates for the first time, and subject to transport over long and potentially rough journeys, this removal method is considered to have a moderate impact on horses, in the domains of (4) Behavioural/interactive restriction and (5) Anxiety/fear/pain/distress, assuming it is conducted in accordance with the standard operating procedure *HOR004: Trapping of feral horses* (Sharp 2011d). However, the severity of the potential impact is increased if transport from the trap site involves long periods over very rough roads, increasing the risks from jarring and injuries from slips and falls. Given the combined impacts of loading, transport over long and potentially rough journeys, lairage and slaughter, using trapping to capture horses to transport them to a knackery or abattoir cannot be justified.

The level of trapping effort in the Alpine National Park will remain wholly dependent on the capacity of approved rehomers to house, feed and sell or transfer trapped feral horses (see *Rehoming* below).

Under prescribed circumstances, horses will need to be humanely put down within or close to trap yards by shooting under strict protocols. These circumstances are:

- When the horses are injured, ill, of very poor body condition and/or too aged for successful rehoming
- When the pre-arranged rehoming partner fails to take the horse(s)
- When the number of horses trapped is surplus to the present demand or not to the specific husbandry needs of approved rehomers.

Roping

Roping (also called brumby running) involves skilled horse riders chasing targeted feral horses on horseback, capturing them by placing a rope over the horse's head, pulled up by the rider and led back to camp after fitting a halter to the captured horse. They are then tied with a short rope (not tethered) to a tree allowing the captured horse sufficient room for movement and to feed, but not sufficient for the horse to injure itself.

Roping has been a useful approach where poor road access or seasonal conditions otherwise precluded trapping. Over many years, roping has progressively transitioned from an informal activity, to a formal service to Parks Victoria, governed by a standard operating procedure, with removal targets and contractual terms and conditions governing the practice. Historically, roping has been used by Parks Victoria contractors to remove more horses than trapping.

As a horseriding activity, roping carries a high risk to riders of death, serious injury or serious illness occurring (Ball et al. 2007; Havlik 2010). This includes riders falling, being crushed by their horse or during loading and transport, head and/or spinal injuries, broken bones, puncture wounds, lacerations and exposure to the elements. As roping involves a pursuit, at times at high speed, over uneven, unpredictable and often heavily vegetated terrain, even the most skilled riders could not adequately mitigate these risks to allow their conduct in the workplace.

Under the *Occupational Health and Safety Act 2004*, Parks Victoria has a responsibility for providing and maintaining a working environment that is safe and free of risks to health, so far as is reasonably practicable, for its staff, contractors and volunteers. Following a reconsideration of the safety risks associated with roping and the duties held by Parks Victoria to ensure a safe workplace, Parks Victoria can no longer include roping as part of the suite of feral horse control methods used in National Parks by staff, contractors or volunteers, especially as other techniques of feral horse capture and removal, with lower levels of risk, are available for reducing environmental damage caused by feral horses.

Roping does not comply with the standards for health and safety that can be permitted by Parks Victoria and will therefore not be used as a control method.

Mustering

Mustering involves using horse riders, ground vehicles or helicopters, or a combination of these, to gather and move groups of feral horses into a yard. Mustering has not been used for controlling feral horses in the Victorian Alps. Mustering operations are best suited to open and relatively flat terrain and would not be feasible in the many parts of the Victorian Alps that are dominated by rugged or forested terrain.

It requires operators (i.e. pilots, horse-riders, stock handlers and transporters) who have a good understanding of horse behaviour and movement patterns, and to be trained, experienced and competent. Well positioned yards and wing fences designed to expedite the movement of horses into the yards must be able to be suitably located and constructed.

This removal method is considered to have a moderate impact on horses, in the domains of (4) Behavioural/interactive restriction and (5) Anxiety/fear/pain/distress, assuming it is conducted in accordance with the standard operating procedure *HOR003: Mustering of feral horses* (Sharp 2011c). Similar to trapping, the combined impacts of loading, transport over long and potentially rough journeys, lairage and slaughter, mean that using mustering to capture horses to transport them to a knackery or abattoir cannot be justified.

With a limited number of locations where mustering could be a safe, effective and humane method for removing feral horses, coupled with the absence of rehoming opportunities for larger numbers of horses, there are no plans to employ this technique.

Rehoming

To enable successful rehoming to occur, Parks Victoria will build a cooperative partnership with groups or individuals that have an interest and appropriate skills in rehoming captured horses. Potential rehoming partner organisations or individuals will need to demonstrate their ability to accommodate the horses with appropriate land and facilities, and meet animal welfare standards. As Parks Victoria will not manage holding properties for captured horses, it is critical to understand capacity for rehoming within the community. The capacity of groups and individuals to accept and rehome captured horses has been tested over the last 12 months and has been demonstrated to be low relative to the large number of feral horses available.

The trapping capture of horses from the Alpine National Park will be dependent on Parks Victoria having secured rehoming opportunities for those horses. Assessment of suitability of horses for rehoming will be undertaken using equine veterinary advice. If the pre-arranged rehoming partner fails to take the horse(s), the horses may be humanely put down onsite. The rehoming partner will be required to microchip rehomed horses to enable monitoring and tracking of the surrendered horses.

There are a range of guiding and legislative documents regarding animal, and horse-specific, welfare and safety. Parks Victoria adheres to these standards, and has also developed standard operating procedures that draw upon these, to ensure the management of horses from the Alpine National Park is humane, safe, and effective.

The following principles will be applied to the management of captured horses:

1. Animal welfare outcomes will be optimised through appropriate expectations, protocols and oversight and monitoring.
2. Transport and holding times for captured horses will be minimised.
3. Mares and dependent foals will not be separated during trapping or transport.
4. The Approved Rehomer assumes full duty of care for the horses upon receiving them.

Parks Victoria will continue to meet community demand in providing captured horses to rehoming locations that comply with standards for animal welfare. However, it is unlikely that capture and rehoming will contribute significantly to the required reduction in feral horse populations in the eastern Alps.

4.3 Population reduction

Fertility control

Fertility control can in some circumstances be used to help reduce population growth, however it is not suitable for reducing large populations spread over a large, rugged and in many places, inaccessible landscape. Treating horses with fertility control will not have any effect on existing levels of damage caused by a feral horse population; reduction of population size must be achieved by other methods.

There is a range of different fertility control techniques that are suitable for reducing reproduction in horses including: surgical procedures (sterilisation), contraceptive drugs (subcutaneous implants in mares) and immunocontraception (uses immune response to disrupt reproductive function). Surgical implants generally require the capture and restraint of wild horses. Immunocontraceptive vaccines, such as porcine zona pellucida (PZP) vaccine (eg. SpayVac®) and gonadotrophin- releasing hormone (GnRH) vaccine (eg. GonaCon™) can require repeated booster shots at 1-3 year intervals (Hobbs & Hinds 2018). Injecting the vaccines may also require horse capture and restraint, but can potentially be delivered using a projectile syringe or bio-bullet at close range (less than 20 metres), which is not possible for most feral horses in the Victorian Alps.

Fertility control agents can only be successful in reducing reproduction rates of individual horses if the agent can be administered effectively and individual horses can be identified and re-treated when required. Reducing population growth requires that a significant proportion of the population is effectively treated. This

technique has been used overseas and is generally only practical in small confined populations where an immediate reduction of environmental impacts is not required (Hobbs & Hinds 2018).

Due to the large population sizes of feral horses in the Victorian Alps, difficulty in delivering the control agent effectively in the field for large numbers of uncontained and unidentified animals, the need for repeat administration to known animals, and the inability for the technique to reduce populations over the short term, fertility control is not being considered for horse control in Victorian parks.

Ground shooting

Ground shooting involves a shooter quietly approaching a group of horses on foot with the intention of culling all the animals in the group. Shooting can be a humane method of destroying feral horses when it is carried out by experienced and skilled professional shooters, the animal can be clearly seen, is within range, and the correct firearm configuration, ammunition and shot placement are used.

This removal method is considered to have a mild impact on the welfare of horses (HAP 2015), in the domains of (3) Disease, injury, functional impairment, (4) Behavioural/interactive restriction and (5) Anxiety/fear/pain/distress, assuming it is conducted in accordance with the standard operating procedure *HOR001: Ground shooting of feral horses* (Sharp 2011a). As a lethal technique, ground shooting is assessed by evaluating the intensity of suffering and duration of suffering caused by the technique, and therefore the instantaneousness of death is critical.

Welfare outcomes are highly dependent on the skill of the shooter, and their ability to make accurate decisions about whether the shot can be successfully placed. Parks Victoria only use highly accredited and qualified professional shooters to ensure that welfare outcomes are maximised.

Findings from ground shooting programs for kangaroos are instructive for ground shooting of feral horses. In an assessment of the welfare outcomes of ground shooting eastern grey kangaroos (Hampton & Forsyth 2016), high levels of accuracy were observed, resulting in a 98% instantaneous death rate. For those animals not killed instantaneously, the median time to death was 12 seconds. The wounding rate of zero.

Relative to other methods, ground shooting of free-ranging horses has been identified as the most humane, safe and effective method available due to:

- its mild impact on the welfare of feral horses relative to other potentially more impactful techniques such as trapping, roping and mustering;
- its ability to remove complete social groups of horses from remote and fragile ecosystems, with minimal disturbance to ecological values;
- live capture and transport with an ultimate destination of culling at a knackery or abattoir being neither humane nor efficient/cost effective;
- live capture methods not being appropriate for controlling feral horse numbers in remote areas, rugged terrain or where lengthy transport of trapped horses would be required.

Experts consider ground shooting as the most humane, safe and effective method available and is an acceptable technique for the removal of individual, or small groups of horses from a location, when performed by skilled operators who hold the appropriate licences and accreditation.

Aerial shooting

Aerial shooting is an active control method that is conducted from helicopters. It is considered to be an effective method for reducing the abundance of wild horse populations at landscape scales, and where wild horse densities are high. It allows shooters to locate and get in close range to the wild horse (even in remote terrain), quickly cull animals, and if necessary, pursue and kill wounded animals (Norris & Low 2005). While aerial shooting has not been practiced for feral horse control in NSW, Victoria or the ACT for 20 years, it remains a primary control method for extensive feral horse populations in Northern Territory (NTG 2015), Queensland (QGBQ 2016) and Western Australia (KRBA 2016).

An assessment of animal welfare outcomes of helicopter shooting programs in central Australia (Hampton et al. 2017) found that shooter skill was the most important determinant of whether or not a horse had an instantaneous death. This removal method is considered to have a moderate impact on horses (HAP 2015), in the domains of (3) Disease, injury, functional impairment and (5) Anxiety/fear/pain/distress, assuming it is conducted in accordance with the standard operating procedure *HOR002: Aerial shooting of feral horses* (Sharp 2011b), and if conditions relating to shooter and pilot skill, point of aim, terrain, ambient temperatures, and horse group size, are met (HAP 2015).

There may be circumstances where aerial shooting of feral horses is the most effective technique: for example, during bushfire recovery operations when horses and deer are congregating in streambanks and wetlands or other high value habitats requiring protection; when feral horses in remote or inaccessible areas are suffering from injury or malnutrition, and euthanasia is required; or to remove the last remaining horses in an eradication area, where ground-based methods have failed. Aerial control may also be applied if ground-based removal techniques are demonstrated to have failed to remove sufficient horses to reduce damage to streamsides and wetlands or other high value habitats requiring protection.

Any use of aerial culling of feral horses in Victoria will draw on efficacy and accuracy data from other aerial animal control programs, consideration of the application of the standard operating procedure and the assessment of animal welfare outcomes of helicopter shooting programs in central Australia (Hampton et al. 2017).

As aerial shooting can be performed to standards that minimise animal suffering, aerial shooting may be applied in exceptional circumstances, or if other methods fail to remove sufficient horses to reduce ecological impacts.

4.4 Fenced exclusion

Feral horses are widely distributed across the Victorian Alps, and the habitats and vegetation communities they impact are widely scattered along drainage lines and valley floors or surrounding seepage areas on hillsides. Exclusion fencing requires significant capital investment as well as ongoing inspection and maintenance. It can also restrict native animal movements, potentially act as a trap or snare to species such as turtles, introduce a flight danger to some birds, and is visually intrusive in the natural landscape.

It is therefore impractical to consider the wide-scale protection of these values from feral horse damage by using fences to exclude them. However, in the short term, until feral horse numbers are brought under control, fenced exclusion plots may be appropriate for the protection of populations of rare or threatened flora species of limited distribution, that are at risk of extinction from the grazing or trampling impacts of feral horses.

Exclusion fencing can only feasibly protect small areas, and is limited to sites that are accessible for maintenance or have low maintenance requirements, or where feral horse exclusion is part of the monitoring and evaluation of feral horse damage.

The threatened Mountain Burr-daisy occurs at only one location (Spring Creek) where it is protected by a fenced exclosure, preventing it from being grazed and trampled by feral horses.

Mountain Burr-daisy, *Calotis pubescens*

Feral horses at impact site undergoing restoration works, Bogong High Plains, Alpine National Park.

5 Management actions

The following actions are designed to achieve the conservation goals of reducing the severe damage to vulnerable alpine vegetation communities and fauna habitats, particularly to riverine wetlands, alpine peatlands and streambanks, and to protect Aboriginal cultural heritage. The relationship between the actions specified below and the outcomes, outputs and measures specified at *Section 1.3* are summarised in *Table 6.1.*

5.1 Control of feral horses

Control of small and isolated populations

In accordance with the *Greater Alpine National Parks Management Plan (2016)*, isolated populations of horses, including any deliberately released horses, will be removed where feasible. This is to prevent further spread, and to protect vulnerable biodiversity values in the greater Victorian Alps.

Action:	Maintain active surveillance programs to detect the emergence of populations of feral horses in new locations
Action:	Immediately remove any feral horses that have invaded, or have been released to new areas outside their current distribution in the Alpine National Park.

The Bogong High Plains population of around 100 horses poses a significant threat to the significant number of high-altitude wetlands that occur in this area, as well as the rare snow patch communities with their specific plant associations that are adapted to prolonged snow cover. Reduction of this population to zero horses within three years is a management objective for this plan. There is a risk that horses may persist in low numbers in the Bogong High Plains through potential re-invasion from adjacent Crown lands in the Cobungra and Victoria river valleys, possible illegal release and/or escape of horses into the park, and this may require coordinated action across tenure. Ultimately, complete removal of feral horses from across the Bogong-Cobungra area would achieve permanent protection of environmental values across this area.

Action:	Remove the Bogong High Plains population, monitor for reinvasion, and undertake further removals as required.
Action:	Apply coordinated cross-tenure feral horse control with the Department of Environment, Land, Water and Planning in the Cobungra and Dinner Plain areas to prevent re-invasion of the Bogong High Plains and to protect environmental values.

Control of the established population in the eastern Alps

In the eastern Alps, feral horses are well established and are considered beyond eradication using currently available control methods. It is likely that populations will persist in this area (including the Alpine National Park, adjacent Victorian State forests and adjacent NSW alpine areas), even under increased management.

Over the coming years, management effort in the eastern Alps will be focused on reducing the damage caused by feral horses on vulnerable peatlands and streambanks (asset-based protection). Management of horses will target those areas that are damaged and are the most vulnerable, or are in good condition but have the potential to be impacted by the threat.

While small numbers of feral horses have been removed from the Alpine National Park over several years, an increased scale of removal is required. The scale and intensity of removal is ultimately determined based on whether horse impacts to peatlands and streambanks have been reduced to a level that can allow for recovery, while the rate of removal is constrained by the effectiveness of methods that can be employed safely and humanely.

To reduce measures of active erosion and damage to streambanks and wetlands, the annual rate of feral horse removal needs to be significantly increased. An adaptive approach will need to be applied, with enough horses removed to adequately protect park values and achieve a sufficiently low residual population in the eastern Alps. In the first year up to 500 feral horses may be removed. Following this, annual removal targets will be developed based on feral horse population surveys and monitoring and evaluation of feral horse damage to sites of high conservation value sites, including mossbeds, peatlands and streambanks.

Action:	Increase the annual rate of removal of horses from the eastern Alps, particularly from areas of high conservation value.
Action:	Apply coordinated cross-tenure feral horse control with the Department of Environment, Land, Water and Planning where required for the protection of environmental values.

Fenced exclusion

In the short to medium term, until feral horse numbers are brought under control, small fenced exclusion plots may be required for the highly localised protection of rare or threatened flora species that are at risk of extinction from the grazing or trampling impacts of feral horses, or where feral horse exclusion is part of the monitoring and evaluation of feral horse damage.

Action:	Establish and maintain small fenced exclusion sites where required for highly localised protection of species at high risk of extinction, or for monitoring and evaluation of feral horse damage.

Selected removal methods

The reduction of feral horse numbers will primarily be delivered through two control methods: (i) passive trapping and rehoming where appropriate recipients are secured, and (ii) ground shooting of free-ranging horses using professional shooters. The sequencing of implementing trapping and rehoming, and the deployment of ground shooting may depend on environmental conditions, park accessibility and the extent of available rehoming opportunities.

Action:	Conduct feral horse control according to established codes of practice and standard operating procedures.

Trapping and rehoming

Horses will only be trapped when appropriate rehoming recipients have been secured prior to any trapping activities and where horses can be transported safely and humanely, in accordance with relevant codes and standard operating procedures. Horses will only be trapped in areas where transport from the trap site can be done safely and humanely.

Parks Victoria will actively seek to work with horse interest groups to identify willing and appropriately skilled and equipped horse recipients. Rehoming opportunities will be offered through an annual expression of interest (EOI) process, open to suitably experienced horse rescue organisations or individuals that are willing to take receipt of and responsibility for captured horses.

Horses for rehoming will be captured primarily using passive trapping. Trap operators will ensure that Parks Victoria's strict operating standards and animal welfare conditions are met. Captured horses will be transported offsite to rehoming partners. The rehoming partner will be required to microchip rehomed horses and provide details to Parks Victoria, to enable monitoring and tracking of the surrendered horses.

Action:	Continue implementing the Expression of Interest process and rehoming register to identify rehoming opportunities in advance of trapping horses.
Action:	Undertake trapping, and provide horses to organisations or individuals that are able to demonstrate they can provide suitable care for them.

Shooting

In terms of minimising animal suffering, shooting of feral horses by contracted professional shooters has been proposed by a number of stakeholders and welfare organisations as a more humane approach than methods involving capture, transport and being put down as a final outcome (e.g. at a knackery). Professional shooters will be engaged to use specialist equipment to cull free-ranging horses by ground shooting under strict operational procedures. Shooting operations will be audited by independent expert equine veterinarians and strictly managed in terms of humane animal welfare and public safety standards.

Action:	Implement feral horse removal by ground shooting using professional shooters, particularly in high priority conservation areas, to reduce environmental damage and minimise the potential for poor animal welfare outcomes.

As aerial shooting can be performed to standards that minimise animal suffering, aerial shooting may be applied in exceptional circumstances, or if other methods fail to remove sufficient horses to reduce ecological impacts.

Action:	Apply aerial shooting in response to exceptional circumstances as required, or if other methods cannot meet objectives.

Expert advice, guidance and review on the use of shooting (and other control methods) will form part of operational planning, and advice will be obtained from animal welfare experts, technical specialists, scientists and Parks Victoria's Feral Horse Technical Reference Group.

Action:	Seek and review expert advice on the use of shooting and other control methods to ensure best available practices are employed.

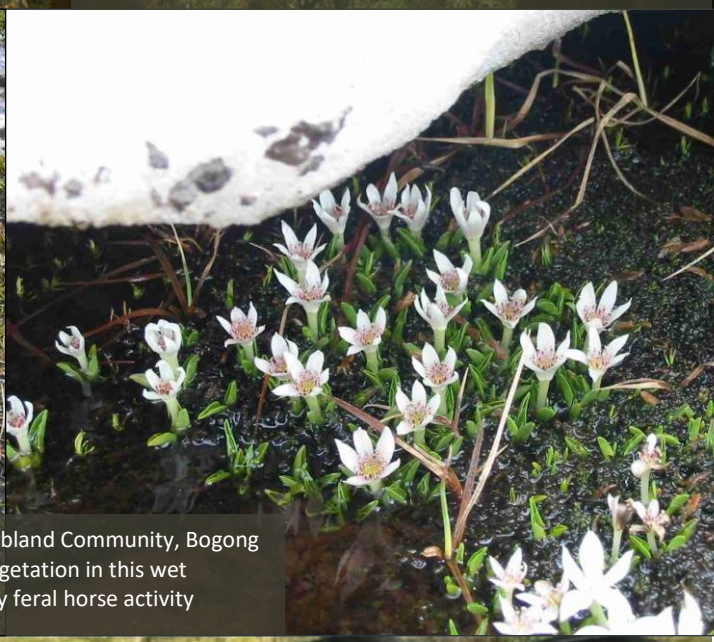
5.2 Euthanasia

Defined as the practice of intentionally ending a life in order to relieve pain and suffering, euthanasia is not a population control method, however it is applicable in some circumstances for park management.

Euthanasia of free-ranging or captive horses may be required when horses are injured, ill, or are in very poor body condition. Population reduction will reduce the likelihood of this occurring. Should euthanasia be required, Parks Victoria will:

- work with expert equine veterinarians to accurately assess feral horse condition to identify animals requiring euthanasia;
- use appropriately accredited and supervised Parks Victoria staff and/or professional shooters to carry out the shooting;
- conduct euthanasia consistent with the standard operating procedure for euthanasia in field conditions (Sharp 2016).

Emaciated feral horse, December 2019, Forlorn Hope, Alpine National Park



FFG-listed *Psychrophila introloba* Herbland Community, Bogong High Plains, Alpine National Park. Vegetation in this wet community can be easily dislodged by feral horse activity

Feral horses wallowing in and damaging wetland vegetation, Mount Nelse, Bogong High Plains, Alpine National Park

Horse exclusion plot and grazing impacts (fenced protection on left, horse impacts on right), Cowombat Flat, Alpine National Park

6 Monitoring, evaluation and review

6.1 Monitoring and evaluation

Parks Victoria is committed to an evidence-based approach to the management of natural and cultural values. Monitoring and evaluation are fundamental to that approach, helping to ensure that decisions are based on the best information available and that the effectiveness of management improves over time as knowledge increases. Monitoring provides the information necessary for evaluating how successful management has been, as well as identifying where changes in the management approach or resourcing are needed. Monitoring and evaluation of the feral horse management program will be structured according to the natural, cultural and animal welfare outcomes, the indicators and measures of change, and the deliverables (outputs) of humane feral horse control that are specified at *Section 1.3*.

The monitoring, evaluation and review (MER) actions are summarised in Table 6.1 below, classified by the themes of the feral horse control strategy set out in the *Greater Alpine National Parks Management Plan (2016)*, and the outcome measures and outputs set out in *Section 1.3* of this action plan.

An understanding of the **efficiency** of management will be gained from documenting the time, money and other resources invested, and the extent of management activities this has allowed, and will inform the resource needs for future management.

Changes in the size of feral horse populations will generally be more rapid than changes in the status of natural and cultural values. Monitoring horse populations provides short-term feedback on the **effectiveness of management**, indicating whether desired longer-term outcomes are likely to be met.

To determine the population size of most free-ranging animals over large landscapes, it is impossible to directly count the entire population by searching the entire area. Instead, a survey (sampling) approach must be used. Results of the survey are then analysed to estimate the size of the population in the landscape. To ensure that we have the most accurate and precise estimate for feral horse population surveys in 2014 and 2019, the surveys over the eastern Alps employed the same operational and statistical methodology, and the methods of this survey and analysis were independently reviewed by the CSIRO and St Andrews College in Scotland (international experts in estimating wildlife abundance). The Bogong High Plains population is also surveyed by helicopter, but uses a sight-resight (mark-recapture) survey method, which has been repeated every 2-3 years since 2005 (PV 2018a, Dawson & Miller 2008). Localised monitoring of horse numbers (or an index of abundance) will also be established at selected sites as part of long-term monitoring.

Ultimately, it is the condition of the natural and cultural values that Parks Victoria aims to protect through managing feral horse populations that is the fundamental test of the **effectiveness of management**, indicating whether longer-term conservation goals are being achieved. Although a wide range of natural assets in the eastern Alps and Bogong areas are affected adversely by feral horses, the current monitoring program is predominantly focused on the assessment of peatlands and streambanks. Monitoring will be implemented to determine the status of these natural values and how they change over time in association with any management implemented. Where possible, Parks Victoria will utilise or complement any existing monitoring programs or research.

The Victorian Alps have a rich cultural heritage that is important to Traditional Owners and the broader Victorian community. Heritage values include the physical as well as intangible attributes of the landscape, both of which may be damaged by feral horses. Culturally important sites such as middens, artefact scatters and burial sites are sensitive to disturbance, and feral horse management activities will be assessed prior to commencement of works, to ensure adequate management and protection measures are in place to mitigate the risk of harm to Aboriginal cultural heritage.

6.2 Review

An annual review of operations will be undertaken to determine progress in the delivery of the management actions outlined in this plan, and the extent to which conservation and welfare objectives are being met.

To provide technical advice on the management approach and the evaluation of effectiveness, the existing *Feral Horse Technical Reference Group* will remain in place and will continue to provide review and further guidance for feral horse management operations.

The *Feral Horse Technical Reference Group* provides advice to Parks Victoria on management approaches, targets and control strategies, and has provided a technical review of the action plan's proposals. Its members are independent experts (outside Parks Victoria) specialising in animal welfare, invasive species management, veterinary science, alpine ecology, Aboriginal cultural heritage, and social science. The advice of the group has been considered in development of this plan (FHTRG 2017).

Table 6.1: Summary of monitoring, evaluation and review (MER) actions, classified by the themes of the feral horse control strategy, and the outcome measures and outputs

Monitoring, evaluation and review actions across each of the strategy themes		
Prevent new populations establishing and remove isolated populations where feasible	**Contain and reduce feral horse numbers in core, larger populations**	**Use the most humane, safe and effective horse control methods**
MANAGEMENT ACTIONS:		**MANAGEMENT ACTIONS:**
Action: Maintain active surveillance programs to detect emerging populations of feral horses in new locations	**Action:** Increase annual rate of removal of horses from the eastern Alps, particularly areas of high conservation values.	**Action:** Conduct feral horse control according to codes of practice and standard operating procedures.
Action: Immediately remove any feral horses that have invaded, or have been released to new areas outside their current distribution in the Alpine National Park.	**Action:** Apply coordinated cross-tenure feral horse control where required for the protection of environmental values with DELWP.	**Action:** Continue implementing the Expression of Interest process and rehoming register to identify rehoming opportunities in advance of trapping horses.
Action: Remove all feral horses from the Bogong High Plains, monitor for reinvasion, and undertake further removals as required.	**Action:** Establish and maintain exclusion fencing where required to protect species at high risk of extinction or for monitoring and evaluation of feral horse damage.	**Action:** Undertake trapping, and provide horses to organisations or individuals that are able to demonstrate they can provide suitable care for them.
Action: Apply coordinated cross-tenure feral horse control with DELWP in the Cobungra and Dinner Plain areas to prevent re-invasion of the Bogong High Plains and to protect environmental values.	**Action:** Apply aerial shooting in response to exceptional circumstances as required, or if other methods cannot meet objectives.	**Action:** Implement feral horse removal by ground shooting using professional shooters, particularly in high priority conservation areas reduce environmental damage and minimise potential for poor animal welfare outcomes.
OUTPUTS:		**OUTPUTS:**
OUTPUT: Prevent establishment of any additional feral horse populations or any further extension of range.		**OUTPUT:** Maximise animal welfare outcomes through clear standard operating procedures and monitoring of onground activities.
MER actions: • Seek, collate and validate field observations of feral horses from staff, researchers, park users • Targeted surveillance, including aerial search, to detect new populations or expansion of area occupied by feral horses. • Establish and maintain a register of feral horse occurrence observations		**MER actions:** • Collate and analyse welfare records for all removals • Evaluate results against standard operating procedures
OUTPUT: Removal of all feral horses from the Bogong High Plains.	**OUTPUT:** Significant reduction in the eastern Alps population through annual removals, particularly in areas of high conservation value.	
MER actions: • Conduct aerial survey of Bogong Cobungra area in 2021 and prepare report including temporal records from previous surveys. • Targeted investigation to confirm presence or absence of feral horses • Periodically repeat aerial survey.	**MER actions:** • Establish localised feral horse abundance monitoring at selected sites with and without horse removal. • Conduct aerial survey of eastern Alps area in 2021, (as per methods used in 2014 and 2019), and report including temporal records from previous surveys. • Periodically repeat aerial survey.	

Monitoring, evaluation and review actions across each of the strategy themes

Prevent new populations establishing and remove isolated populations where feasible	Contain and reduce feral horse numbers in core, larger populations	Use the most humane, safe and effective horse control methods
OUTCOME: Regeneration or recovery of alpine peatlands and streambanks		**OUTCOME: Horse management conducted safely and humanely**
MEASURE: Reduction in pugging and streambank collapse caused by feral horses (across Bogong High Plains and eastern Alps).		**MEASURE:** Minimise adverse impacts on horse welfare in the design and application of the selected horse control methods
MER actions: • Repeat relevant peatland sites and streambank segments from 2012 Australian Alps-wide assessment and/or 2020 rapid assessment* • Establish an ongoing stream morphology monitoring program. • Repeat monitoring of feral horse exclosures and unfenced control plots at Cowombat Flat and Native Cat Flat in 2024 [last completed 2019 (Wild Ecology 2019)]. • Ongoing mossbed monitoring (focussing on feral horse impacts). • Ongoing Australian Alps-wide mossbed condition assessment program (already established). * Note: previous work [Robertson et al. (2019); Tolsma & Shannon (2018)] provides a basis for comparison to assess temporal changes.		**MER actions:** • Collate and analyse welfare records for all removals • Evaluate results against standard operating procedures • Seek and review expert advice on the use of shooting and other control methods to ensure best practices are employed
		MEASURE: Optimise overall cost, efficiency and appropriateness of control methods
		MER actions: • Collate and analyse cost and efficiency data for control methods
MEASURE: Reduction in grazing damage on significant regenerating or restored vegetation.		
MER actions: • Establish vegetation composition and structure monitoring program, including alpine mossbeds. • Investigate using existing remotely sensed imagery to assess broad changes in vegetation cover/productivity. • 2024 Monitoring of feral horse exclosures and unfenced control plots at Cowombat Flat and Native Cat Flat. * Note that existing exclosures/fenced areas across the Victorian Alps may provide additional opportunity to document effects of horse grazing		
MEASURE: Improved distributions and abundances of vulnerable or threatened fauna species.		
MER actions: • Addressing site occupancy and abundance of focal fauna species variation over time will rely on research and monitoring projects being done by other organisations. • Assessments of variation in the condition of habitat for focal fauna species over space and time will be addressed through abovementioned MER actions relating to 'Regeneration or recovery of alpine peatlands and streambanks' and to 'Reduction in grazing damage on significant regenerating or restored vegetation'.		

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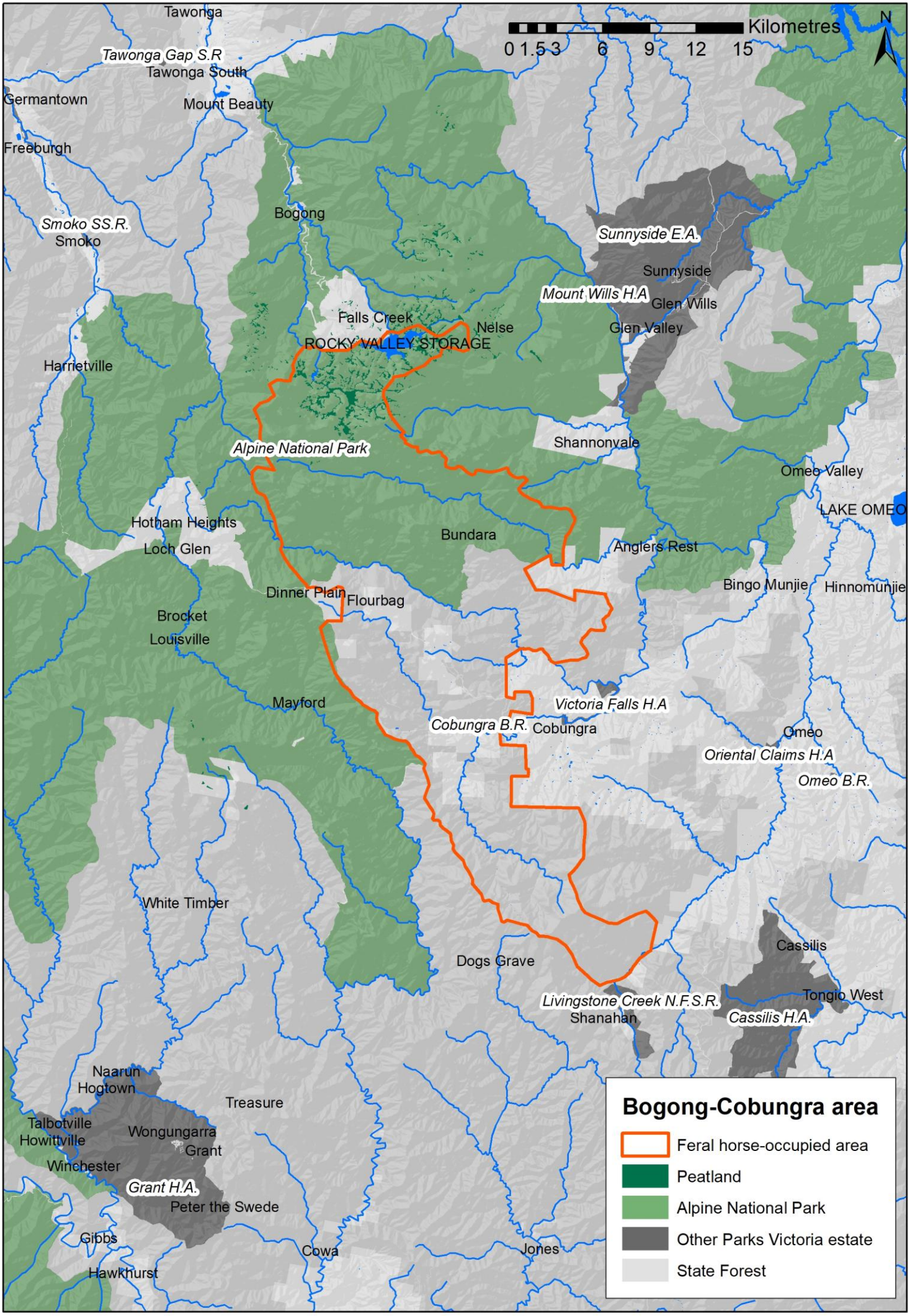
Evidence of wetland damage by feral horses, south of Davies Plain, Alpine National Park.

Appendix 1 - Maps

Maps 1 & 2 – Locality maps – Bogong-Cobungra and Eastern Alps

Map 3 – Burn severity (across feral horse-occupied area)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Tawonga Gap S.R
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Germantown
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Freeburgh
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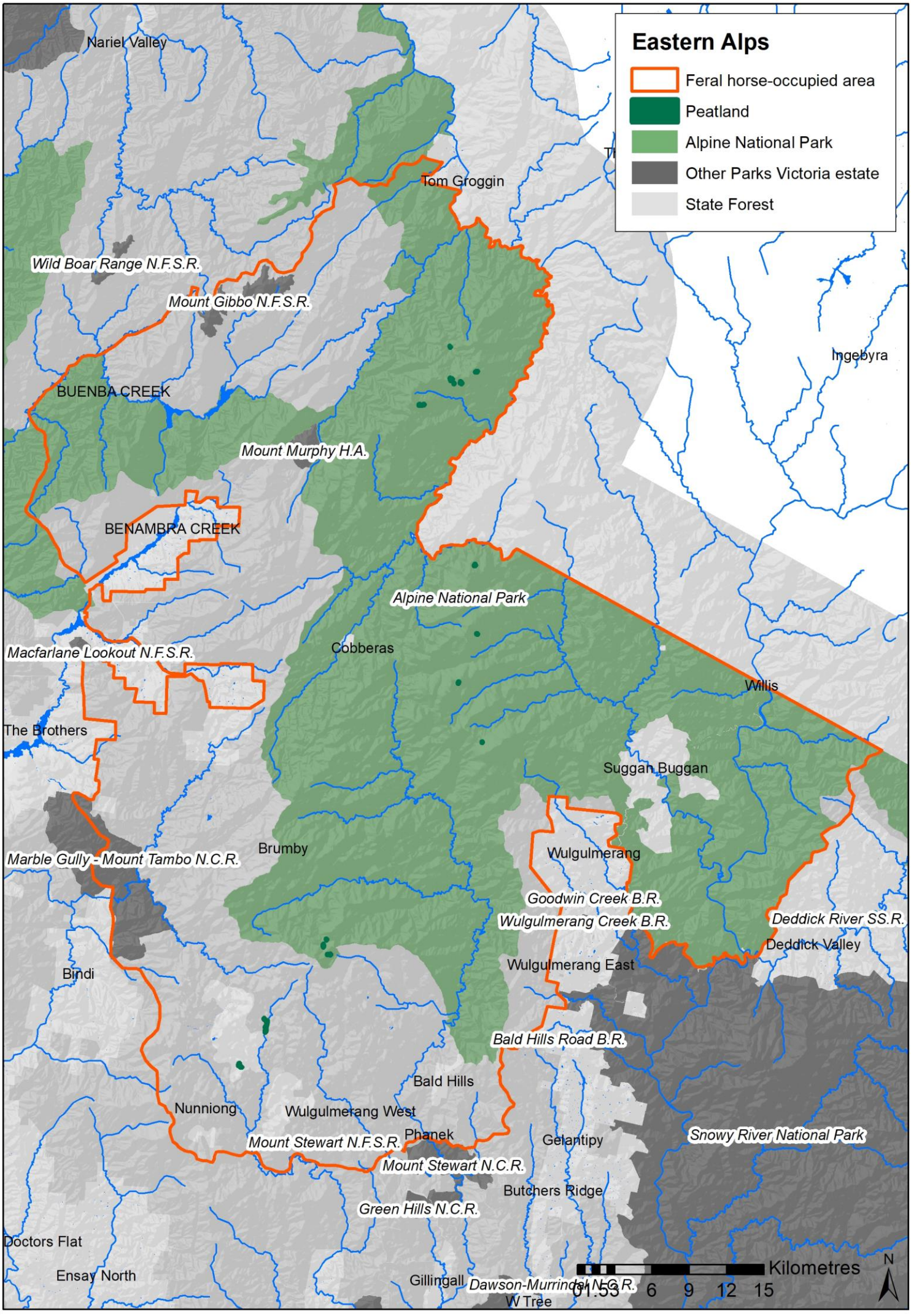
Smoko
Bogong
Sunnyside E.A.
Sunnyside
Mount Wills H.A
Glen Wills
Glen Valley
Falls Creek
Nelse
ROCKY VALLEY STORAGE
Harrietville
Alpine National Park
Shannonvale
Omeo Valley
LAKE OMEO
Hotham Heights
Loch Glen
Bundara
Anglers Rest
Bingo Munjie
Hinnomunjie
Dinner Plain
Flourbag
Brocket
Louisville
Mayford
Victoria Falls H.A
Cobungra B.R.
Cobungra
Omeo
Oriental Claims H.A
Omeo B.R.
White Timber
Dogs Grave
Cassilis
Livingstone Creek N.F.S.R.
Shanahan
Tongio West
Cassilis H.A.
Naarun
Hogtown
Treasure
Talbotville
Howittville
Wongungarra
Grant
Winchester
Grant H.A.
Peter the Swede
Gibbs
Cowa
Jones
Hawkhurst
Bogong-Cobungra area
Feral horse-occupied area
Peatland
Alpine National Park
Other Parks Victoria estate
State Forest


Eastern Alps
Feral horse-occupied area
Peatland
Alpine National Park
Other Parks Victoria estate
State Forest
Nariel Valley
Tom Groggin
Wild Boar Range N.F.S.R.
Mount Gibbo N.F.S.R.
Ingebyra
BUENBA CREEK
Mount Murphy H.A.
BENAMBRA CREEK
Alpine National Park
Macfarlane Lookout N.F.S.R.
Cobberas
Willis
The Brothers
Suggan Buggan
Brumby
Marble Gully - Mount Tambo N.C.R.
Wulgulmerang
Goodwin Creek B.R.
Wulgulmerang Creek B.R.
Deddick River SS.R.
Deddick Valley
Wulgulmerang East
Bindi
Bald Hills Road B.R.
Bald Hills
Nunniong
Wulgulmerang West
Phanek
Mount Stewart N.F.S.R.
Gelantipy
Snowy River National Park
Mount Stewart N.C.R.
Butchers Ridge
Green Hills N.C.R.
Doctors Flat
Ensay North
Gillingall
Dawson-Murrindal N.C.R.
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Kilometres
0 1.5 3 6 9 12 15
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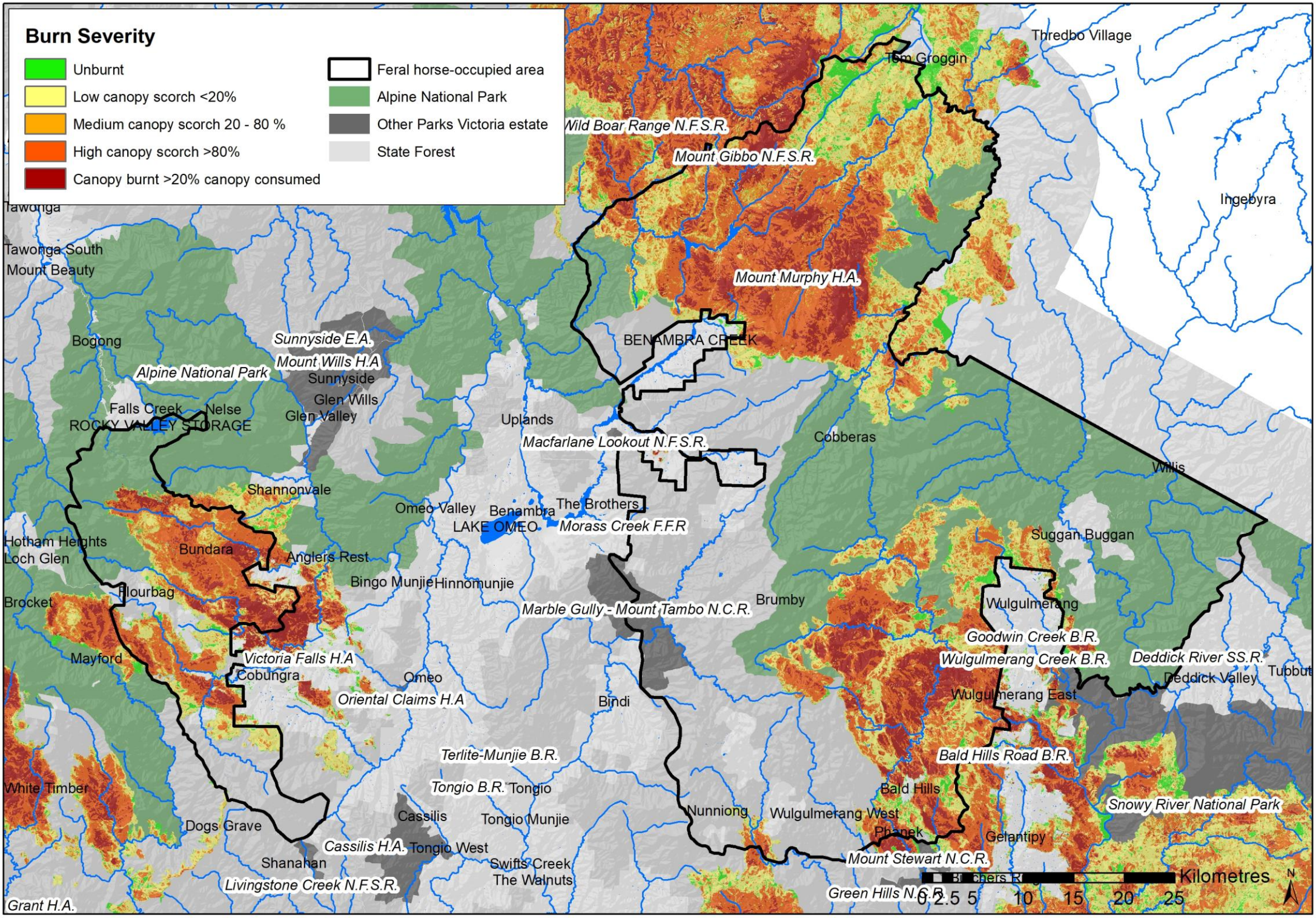
Burn Severity
Unburnt
Low canopy scorch <20%
Medium canopy scorch 20 - 80 %
High canopy scorch >80%
Canopy burnt >20% canopy consumed
Feral horse-occupied area
Alpine National Park
Other Parks Victoria estate
State Forest
Thredbo Village
Tom Groggin
Wild Boar Range N.F.S.R.
Mount Gibbo N.F.S.R.
Ingebyra
Tawonga
Tawonga South
Mount Beauty
Mount Murphy H.A.
Bogong
Sunnyside E.A.
Mount Wills H.A
Alpine National Park
Sunnyside
Glen Wills
Glen Valley
Falls Creek
Nelse
ROCKY VALLEY STORAGE
BENAMBRA CREEK
Uplands
Macfarlane Lookout N.F.S.R.
Cobberas
Willis
Shannonvale
Omeo Valley
Benambra
The Brothers
LAKE OMEO
Morass Creek F.F.R
Suggan Buggan
Hotham Heights
Loch Glen
Bundara
Anglers Rest
Bingo Munjie
Hinnomunjie
Flourbag
Brocket
Marble Gully - Mount Tambo N.C.R.
Brumby
Wulgulmerang
Goodwin Creek B.R.
Wulgulmerang Creek B.R.
Deddick River SS.R.
Deddick Valley
Tubbut
Mayford
Victoria Falls H.A
Cobungra
Omeo
Oriental Claims H.A
Bindi
Wulgulmerang East
Terlite-Munjie B.R.
Bald Hills Road B.R.
White Timber
Tongio B.R.
Tongio
Bald Hills
Snowy River National Park
Nunniong
Wulgulmerang West
Cassilis
Tongio Munjie
Dogs Grave
Phanek
Gelantipy
Cassilis H.A.
Tongio West
Mount Stewart N.C.R.
Shanahan
Swifts Creek
The Walnuts
Livingstone Creek N.F.S.R.
Green Hills N.C.R.
Grant H.A.
Kilometres
0 2.5 5 10 15 20 25
N

Appendix 2

Threatened species and communities

Threatened species and communities potentially at risk from feral horse activity in the eastern Victorian high country.

Sourced from: *Final Recommendation on a Nomination for Listing under the Flora and Fauna Guarantee Act 1988 (Potential Threatening Process): Degradation and Loss of Habitats Caused by Feral Horses* (Equus caballus) (Nomination No. 813) (SAC 2011).

EPBC = Commonwealth *Environment Protection and Biodiversity Conservation Act* 1999;

FFG = Victorian *Flora and Fauna Guarantee Act* 1988.

Table A2.1: Victorian floristic communities threatened by feral horse activity.

Floristic Community or Ecological Vegetation Class	EPBC status	Victorian status (FFG)	Main impacts of feral horse activity
Alpine Bog Community	Endangered*	Listed	Trampling (DEWHA 2009[1]), disruption of plant regeneration, selective grazing leading to compositional changes, weed invasion, soil loss and loss of hydrological function.
Fen (Bog Pool) Community	Endangered*	Listed	Trampling (DEWHA 2009[1]), disruption of plant regeneration, selective grazing leading to compositional changes, weed invasion and loss of hydrological function.
Alpine Snowpatch Community		Listed	Severe trampling, soil loss, displacement of vegetation, weed invasion, selective grazing leading to compositional changes.
Caltha (Psychrophila) introloba Herbland Community		Listed	Soil loss, displacement of vegetation, weed invasion
Montane Swamp Complex Community		Listed	Severe trampling, soil loss, displacement of vegetation, weed invasion, smothering by dung piles, selective grazing leading to compositional changes.
White Box-Yellow Box-Blakely's Red Gum Grassy Woodland and Derived Native Grassland	Critically Endangered		Soil loss, displacement of vegetation, weed invasion, selective grazing leading to compositional changes, interference with regeneration. There are high numbers of feral horses in the White Box Woodlands around the upper Snowy River.

* Alpine Bog and Fen Pool communities are combined in the EPBC listing

[1] DEWHA (2009) *Alpine Sphagnum Bogs and Associated Fens, a Nationally Threatened Ecological Community, EPBC Policy Statement 3.16.* Department of the Environment, Water, Heritage and the Arts, Canberra.

Table A2.2: Officially listed or threatened fauna species potentially at risk from feral horse activity in the eastern Victorian high country.

Species	EPBC / FFG status	DSE 2013[2]; 2009[3])	Main impacts of feral horse activity
Alpine Water Skink (*Eulamprus kosciuskoi*)	– / Listed	critically endangered	Loss and degradation of habitat - alpine bog and fen communities. Trampling by feral horses is listed as a threat in the FFG Action Statement.
Alpine Bog Skink (*Pseudemoia cryodroma*)	– / Listed	endangered	Loss and degradation of habitat - alpine bog and alpine fen (bog pool) communities, woodlands and heathlands
Alpine She-oak Skink (*Cyclodomorphus praealtus*)	Endangered / Listed	critically endangered	Loss and degradation of habitat - alpine tussock grasslands, alpine low heathlands. Trampling is listed as a threat in the FFG Action Statement.
Guthega Skink (*Liopholis guthega*)	Endangered / -	critically endangered	Loss and degradation of habitat - alpine heathland
Mountain Skink (*Liopholis montana*)	– / –	data deficient	Loss and degradation of habitat - alpine woodlands
Alpine Tree Frog (*Litoria verreauxii alpina*)	Vulnerable / Listed	critically endangered	Loss and degradation of habitat - alpine and subalpine wetlands, riparian zones and ephemeral pools.
Smoky Mouse (*Pseudomys fumeus*)	Endangered / Listed	endangered	Degradation of habitat - heathlands and montane woodlands. Increased access by foxes and wild dogs.
Broad-toothed Rat (*Mastocomys fuscus mordicus*)	Vulnerable / Listed	endangered	Loss and degradation of habitat - dense wet heathlands and grasslands. Increased access by foxes and wild dogs.
Alpine Spiny Cray (*Euastacus crassus*)	– / Listed	rare	Loss and degradation of habitat - alpine streams. Trampling and water turbidity are threats in the FFG Action Statement.
Alpine Stonefly (*Thaumatoperla alpina*)	Endangered / Listed	vulnerable	Loss and degradation of riparian zones and degradation of instream habitat. Declines in water quality – direct bank erosion and sediment inputs to streams causing siltation, nutrient enrichment and other changes to water quality (e.g. dissolved oxygen, pH).
Mount Stirling Stonefly (*Thaumatoperla flaveola*)	– / Listed	vulnerable	

[2] DSE (2013) = *Advisory List of Threatened Vertebrate Fauna in Victoria – 2013*

[3] DSE (2009) = *Advisory List of Threatened Invertebrate Fauna in Victoria – 2009*

Table A2.3: EPBC-listed, FFG-listed, or VROT plant species potentially at risk from feral horse activity in the eastern Victorian high country. (AROT = Australian Rare or Threatened status, VROT = Victorian Rare or Threatened status.)

Species	EPBC (AROT) / FFG status	VROT status[4]	Main impacts of feral horse activity
Slender Parrot-pea (*Almaleea capitata*)	– / Listed	vulnerable	Trampling of habitat - sub-alpine heathlands and stream fringes
Bogong Apple-moss (*Bartramia subsymmetrica*)	– / Listed	endangered	Trampling, particularly of bogs and fragile stream edges in subalpine heathlands, bogs, and creeklines. In Victoria this species is restricted to the Bogong High Plains area.
Austral Moonwort (*Botrychium australe*)	– / Listed	vulnerable	Trampling and loss of habitat - subalpine grassland and margins of bogs and streams. Intolerant of disturbance.
Dwarf Sedge (*Carex paupera*)	Vulnerable / Listed	vulnerable	Trampling and loss of habitat in alpine wet heathlands and bogs. Palatable to stock.
Marsh Tree-moss (*Climacium dendroides*)	– / Listed	vulnerable	Trampling, particularly of bogs and fragile stream edges in bogs, swampy depressions and creeklines. Known only from 3 sites from near Dargo and the Bogong High Plains.
Cushion Rush (*Juncus antarcticus*)	– / Listed	vulnerable	Trampling and loss of habitat - Caltha introloba Herbland Community, Alpine Snowpatch Community and bog margins
Snow Daphne (*Kelleria laxa*)	Vulnerable / Listed	endangered	Trampling of damp grass
Hump Moss (*Meesia muelleri*)	– / –	rare	Trampling and damage to habitat - boggy grasslands
Marsh Leek-orchid (*Prasophyllum niphopedium*)	– / Listed	endangered	Trampling and loss of habitat - alpine wet heathlands and bogs. Observed to be directly impacted (Coates et al. 2002[1].) Trampling and grazing are listed as threats in the FFG Action Statement.

[1] Coates F, Jeanes J, Pritchard A (2002) 'Recovery Plan for Twenty-five Threatened Orchid Taxa of Victoria, South Australia and New South Wales 2003-2007.' Department of Natural Resources and Environment, Heidelberg.

[4] Advisory list of rare or threatened plants in Victoria -2014

Appendix 3

Biosecurity approach

A principle in invasive species management throughout Australia, whether the target species be plant or animal, is the identification of the level of threat. Management objectives can be determined using a *biosecurity approach* that directs investment to one of four levels of action: prevention, eradication, containment and asset protection. This is a model approach advocated in Victoria's Invasive Plants and Animals Policy Framework (DEPI 2010 - Figure A3).

Prevention involves preventing an invasive species from establishing in an area and offers the most cost-effective approach to managing the threat posed by a high-risk invasive species.

Eradication involves removing every individual of the target species from an area and preventing re-colonisation. Eradication is generally only feasible for small isolated populations, often in the early stages of establishment.

Containment involves implementing measures to eradicate outlying (satellite) infestations and preventing spread beyond the boundaries of core infestations (those that are too large and well established to eradicate).

The ***Asset protection*** approach involves focussing the management of an invasive species in areas where reducing its adverse effects provides the greatest benefits for protecting and restoring specific high value assets.

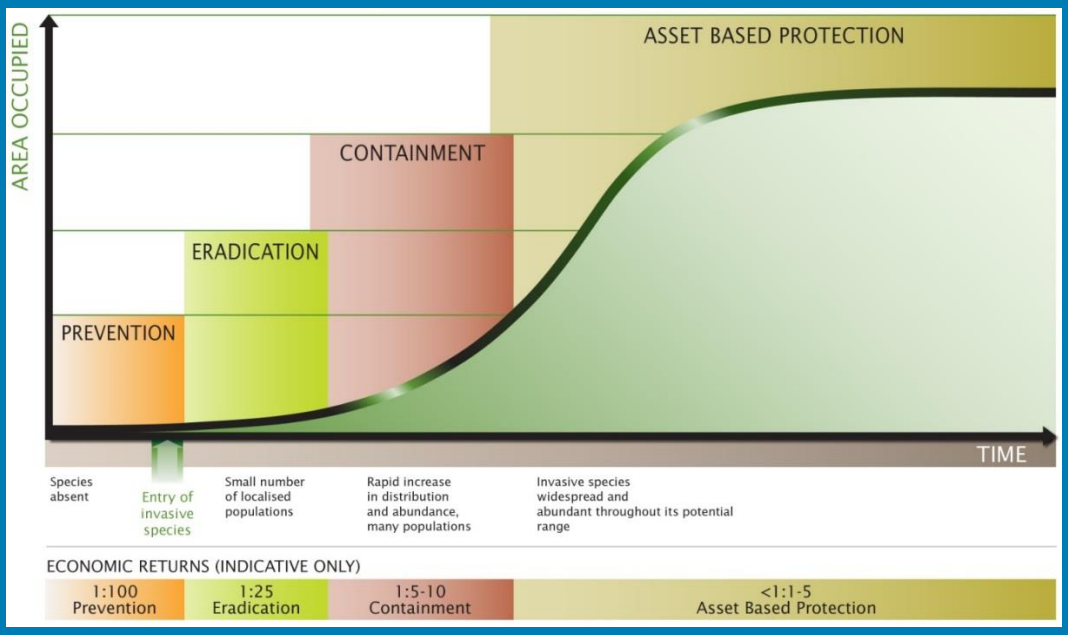

Figure A3.1: The generalised invasion curve showing objectives appropriate for each stage of invasion/establishment and the reduction seen in the economic returns of managing an invasive species as it becomes more widespread and established (DEPI 2010).

A combination of prevention, removal or eradication of small populations where feasible, containment and asset protection will be used in feral horse management in the Alpine National Park. In the eastern Alps, asset protection will take the form of localised removal of horses from areas of high biodiversity or catchment value and a generalised reduction in population abundance.

Back Cover:

Native Cat Flat in March 2021, showing the effects of overgrazing and trampling by feral horses, with grass mown down to the ground surface, streambank vegetation completely removed, trampling evident along the complete length of the stream, and the only remaining habitat for wetland-dependent fauna occurring within the fenced exclosures.


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State
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