



2019–20 Bushfires

Quick Guide

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Introduction

This Quick Guide provides a short overview of the 2019–20 fire season and government responses to date, as Parliament resumes for 2020. It includes an overview of bushfire inquiries that have been conducted over the past two decades and highlights the considerable information collated by recent inquiries relating to two of the major issues linked with this fire season, **prescribed burning** and **climate change**.

The 2019–20 fires have occurred on an extensive national scale. The impacts suffered by Victoria are therefore considered here in relation to the national emergency. Some figures are presently only available at a national level.

A list of further reading material can be found at the end of this briefing paper.

Overview

The 2019–20 bushfires have been described by various experts and commentators as ‘the worst bushfires in our history,’ ‘exceptional in size and impact,’ ‘unprecedented,’ and ‘by far Australia’s costliest natural disaster’.¹

Major fires have been burning across Queensland and New South Wales since early September 2019. Fires ignited in the Northern Territory and Western Australia later that month, and across Tasmania and South Australia by late October. By late November, every state was alight when fires broke out in Victoria, following lightning strikes in East Gippsland.²

Human life

The total bushfire death toll is now at 33.³ This figure includes five Victorians, three South Australians and 25 people from NSW, spanning the ages of 28 to 78.⁴ Among the victims were five firefighters, including three from the United States who died when their waterbomber aircraft crashed in northern NSW after losing contact with control crews.⁵ While destroying more property than previous major fires, the 2019–20 fires have claimed fewer lives than Victoria’s 2009 Black Saturday (173 deaths) and 1983 Ash Wednesday (75 deaths).⁶

Property

At last count, over 2,500 homes have been destroyed, with more than 300 in Victoria, 2,000 in New South Wales and 100 in other states.⁷ In terms of homes lost, this has been Australia’s most destructive

¹ See N. Feik (2020) ‘A national disaster: On the PM’s catastrophically inept response to Australia’s unprecedented bushfires’, *The Monthly*, 7 January; Department of Environment, Land, Water and Planning (2020) *Victoria’s bushfire emergency: Biodiversity response and recovery*, Melbourne, DELWP, p. 2; T. Griffiths (2020) *Savage Summer*, *Inside Story*, 8 January; P. Read & R. Denniss (2020) ‘With costs approaching \$100 billion, the fires are Australia’s costliest natural disaster’, *The Conversation*, 17 January.

² F. O’Mallon & E. Tierman (2010) ‘Australia’s 2019-20 bushfire season’, *Canberra Times*, 10 January.

³ (2020) ‘Mothers, daughters, fathers, sons: the victims of the Australian bushfires’, *The Guardian*, 2 January.

⁴ *ibid.*

⁵ C. Woods (2020) ‘Tributes flow for deceased US firefighters’, *Crikey*, 24 January.

⁶ Australian Government (2016) ‘Disaster Events with Category Impact and Location’, Australian Government website.

⁷ See S. Ilanbey, ‘Crews to be pulled from fire zones as heavy rains tipped to lash state’, *The Age*, 19 January; (2020) ‘Over 2000 homes destroyed by brutal bushfires in NSW this season’, *Sky News*, 14 January; (2019) ‘Adelaide Hills bushfire destroyed 86 homes, SA Premier says’, *ABC News*, 23 December.

fire season on record, with previous major bushfire events—Ash Wednesday (1983) and Black Saturday (2009)—destroying 2,000 and 2,029 homes, respectively.⁸

Environment

As well as leaving thousands of people displaced, the fires have burnt approximately 19.4 million hectares across Australia since 1 July 2019.⁹ This area is larger than that destroyed by recent fires in the Amazon and California combined; greater than the entire surface area of South Korea, Scotland and Wales.¹⁰ In Victoria, more than 1.2 million hectares have been burnt—making it the largest bushfire since 1939, where 1.5–2 million hectares were destroyed.¹¹ Fires in Victoria with the greatest coverage (hectares) on record are the Black Thursday fires, which took place in 1851, which burnt around five million hectares.¹²

According to the Department of Environment, Land, Water and Planning (DELWP) preliminary bushfire report summary, the fires (as at 11 January 2020) have impacted at least 60 per cent of over 50 national parks and nature reserves in Victoria.¹³ The report states that ‘given that a significant area of habitat across Victoria has now burnt multiple times since 2000, this could result in regeneration failure for Alpine Ash’.¹⁴ It lists the Warm Temperate Rainforest in Victoria to be of ‘immediate concern’, with 70 per cent ‘within the current fire extent’.¹⁵ For an in-depth breakdown of Victorian communities caught within the current fire extent, see [Victoria’s bushfire emergency: Biodiversity response and recovery preliminary report](#).

Animals

With vast swathes of natural habitat destroyed, and fires mostly in areas with high biodiversity, many rare or threatened Victorian species have been impacted in the emergency.¹⁶ Species impacted in Victoria are said to number 170, including 19 mammal species, 13 frog species, ten reptile species, nine bird species, 29 aquatic species and 38 plant species.¹⁷ At the national level, experts estimate that more than one billion animals have died.¹⁸ Federal Minister for the Environment, the Hon. Sussan Ley, has voiced her concern that koalas could now be endangered in some areas, and an ecologist from the University of Sydney has warned that some species may face ‘imminent extinction’.¹⁹ One biology professor suggested that, if smaller creatures and insects affected by the fires are included, around 700 animal species may be ‘pushed to the brink of extinction’.²⁰

Emissions and air quality

Data extrapolated from NASA’s Global Fire Emissions Database show that the current bushfires have expended more than two-thirds of Australia’s annual emissions budget, with 350 million tonnes of

⁸ See Australian Institute for Disaster and Resilience, ‘*Black Saturday bushfires: counting the cost*’ report prepared by Mehmet Ulubasoglu and Farah Beaini, Melbourne, 2019; Country Fire Authority (2009) ‘*Major Fires*’, CFA website.

⁹ N. Evershed et al. (2020) ‘*How big are the fires burning in Australia? Interactive map*’, *The Guardian*, 24 January

¹⁰ P. Read & R. Denniss (2020) *op. cit.*

¹¹ N. Evershed et al. (2020) *op. cit.*

¹² Department of Sustainability and Environment (2008) ‘*Major Bushfires in Victoria*’ DSE website.

¹³ Department of Environment, Land, Water and Planning (2020) *op. cit.*

¹⁴ *ibid.*

¹⁵ *ibid.*

¹⁶ Department of Environment, Land, Water and Planning (2020) ‘*Victoria’s bushfire emergency: biodiversity response and recovery*’, DELWP website.

¹⁷ D. Andrews, Premier (2020) ‘*Immediate Support For Victoria’s Wildlife And Biodiversity*’, media release, 23 January.

¹⁸ L. Cox ‘*A billion animals: some of the species most at risk from Australia’s bushfire crisis*’, *The Guardian*, 14 January.

¹⁹ E. Elsworth et al. (2020) ‘*Government pledges \$50m for wildlife impacted by bushfires as koalas may become endangered*’, *ABC News*, 13 January; C. Dickman (2020) ‘*Australians are opening their homes to wildlife injured and orphaned in the bushfires*’, *ABC 7.30*, Transcript, 8 January.

²⁰ M. Ketchel (2020) ‘*Australia’s bushfires could drive more than 700 animal species to extinction. Check the numbers for yourself*’ *The Conversation*, 14 January.

carbon dioxide released into the atmosphere as at 2 January 2020.²¹ According to one NASA space agent, the fires have sent such huge plumes of smoke into the stratosphere that they are likely to do ‘one full circuit of the globe’.²² Consequently, the bushfires have caused severe air quality issues.

According to the Swedish air quality monitoring service AirVisual—which measures air quality against the US EPA National Ambient Air Quality Standard—Victoria’s worst exposure to air pollution occurred on 13 and 14 January 2020.²³ On these days, air quality received scores of 212 and 255 respectively, meaning ‘very unhealthy’ on the air quality index (AQI).²⁴ In these conditions, wearing pollution masks and avoiding the outdoors is recommended.²⁵ From October to December, Sydney broke into the top ten most-polluted major cities.²⁶ Canberra also ranked among the top ten most-polluted cities in the last two weeks of December 2019 until 2 January 2020, with air pollution levels fluctuating between ‘unhealthy’ and ‘hazardous’—the highest level of toxicity within the AQI’s valuation bands.²⁷

Cost projections

Predictions as to the cost of the bushfires (for the Victorian and Federal Governments) are not yet confirmed. However, climate criminologist Paul Reid and economist Richard Denniss have speculated that this will be Australia’s costliest natural disaster.²⁸ In comparison with the Black Saturday fires, which damaged 450,000 hectares and cost \$4.4 billion, the current fires have burned approximately 19.4 million hectares across Australia, including over 1.2 million hectares in Victoria. According to the Department of Agriculture, the fires have impacted 19,000 farmers, foresters and fishers.²⁹ In light of this, experts predict a greater loss in output than what followed Black Saturday.³⁰ On 7 January 2020, it was reported that consumer confidence ‘slumped to its lowest level in four years’.³¹

In addition to damage in the agricultural sector, the tourism industry has reportedly suffered around \$2 billion in losses, with a further \$4.5 billion in projected losses.³² The Insurance Council of Australia has reported that over 20,000 claims relating to bushfires have been received since 8 November 2019; current loss estimates are at \$1.65 billion.³³

Responses

Victoria

According to a media release from the Premier on 27 January 2020, the Victorian Government has invested \$250 million towards affected communities.³⁴ A key response has been the establishment of

²¹ NASA (2020) ‘Worldview database’ NASA website; M. Foley, ‘Bushfires spew two-third of national carbon emissions in one season’, *The Sydney Morning Herald*, 2 January.

²² (2020) ‘Australia’s fires: Smoke to make ‘full circuit around globe, Nasa says’ *BBC News*, 14 January.

²³ IQ Air AirVisual (2020) ‘Explore the air quality anywhere in the world’ AirVisual website.

²⁴ *ibid.*

²⁵ IQ AirVisual (2020) ‘What’s an AQI?: Guide to understanding the Air Quality Index’ AirVisual website.

²⁶ IQ Air AirVisual (2020) *op. cit.*

²⁷ *ibid.*

²⁸ P. Read & R. Denniss (2020) *op. cit.*

²⁹ See J. Derwin (2020) ‘The bushfires are set to cost Australia billions of dollars, as the government’s long-touted budget surplus looks to go up in smoke’, *Business Insider Australia*, 6 January; D. Crowe & A. Livingston (2020) ‘Higher prices for food, but supermarkets warned to help farmers’, *The Sydney Morning Herald*, 14 January.

³⁰ R. Henderson (2020) *Counting the costs of our scorched*, *Australian Financial Review*, January 16

³¹ R. Henderson (2020) *op. cit.*; V. Poljak & H. Wootton (2020) ‘Job ads plummet as fires torch confidence’, *Australian Financial Review*, 7 January.

³² (2020) ‘Why was Australia’s government so ill-prepared for the bushfires?’ *The Economist*, 11 January.

³³ S. Wright (2020) ‘\$2b damages bill for storm, fire disasters’, *Saturday Age*, 25 January.

³⁴ D. Andrews, Premier (2020) ‘More tax relief for fire affected communities’, media release, 27 January.

a new agency—[Bushfire Recovery Victoria](#) (BRV)—to work closely with local communities impacted by the fires.³⁵ BRV is overseeing several funding packages and initiatives.

Bushfire clean-up program

BRV is currently administering Victoria's bushfire clean-up program, which is being delivered by construction company Grocon on the Government's behalf. To fund the program, \$75 million will be jointly provided by the Victorian and Commonwealth governments.³⁶ At no cost to eligible property owners, the program will undertake the demolition and disposal of all buildings damaged beyond repair in the fires.³⁷

Wildlife and tourism

To support Victoria's wildlife and biodiversity, the Government has pledged an initial \$17.5 million rescue package.³⁸ According to one news article, the funding will go towards food drops, rehabilitating habitats and research, among other initiatives.³⁹ DELWP, in collaboration with other partners, has also developed a long-term plan to help biodiversity recover from the fires, which will continue to be updated as the bushfire situation progresses.⁴⁰

On 20 January 2020, the Business and Sport for Bushfire Recovery program was announced, with over 115 organisations pledging to invest their time and money in regional Victoria. In addition, \$500,000 grants will be provided to regional industry groups and chambers of commerce to facilitate networking events and tourism.⁴¹

Emergency payments, concessions and tax relief

On 9 January 2020, a joint media release from the Federal and Victorian governments announced that assistance of up to \$1,960 per family would be extended in 14 Victorian council areas.⁴² On 27 January, the Victorian Government announced a \$64 million package to help fire-affected communities recover.⁴³ Among its many concessional benefits, those eligible will receive a 50 per cent concession on stamp duty and waived water rates for 12 months, as well as immediate payroll tax relief for employers.⁴⁴

Victorian Bushfire Appeal

In partnership with Bendigo Bank and the Salvation Army, the Victorian Government launched a new fund—[The Victorian Bushfire Appeal](#)—to provide support for Victorian bushfire survivors.⁴⁵ After the fund was opened on 5 January 2020, the Premier announced that the monies will be used 'to meet the most urgent needs of local families ... from a grocery shop to replacing school uniforms'.⁴⁶ By 25 January 2020, the Victorian Bushfire Appeal had raised \$24 million.⁴⁷

³⁵ D. Andrews, Premier (2020) '[New dedicated agency to guide bushfire recovery](#)', media release, 6 January.

³⁶ D. Andrews, Premier (2020) '[Immediate bushfire clean-up at zero cost to communities](#)', media release, 19 January.

³⁷ Victorian Government (2020) '[Bushfire recovery programs and Initiatives](#)', State Government of Victoria website.

³⁸ M. Iaria & M. Banger, '[Vic wildlife gets \\$17.5m rescue package](#)', *Northern Daily Leader*, 23 January; D. Andrews, Premier (2020) op. cit.

³⁹ *ibid.*

⁴⁰ Department of Environment, Land, Water and Planning (2020) op. cit.

⁴¹ Victorian Government (2020) op. cit.

⁴² D. Littleproud, Minister for Water Resources & L. Neville, Minister for Police and Emergency Services (2020) '[Disaster assistance extended for bushfire affected communities in Victoria](#)', media release, 9 January.

⁴³ D. Andrews, Premier (2020) op. cit.

⁴⁴ *ibid.*

⁴⁵ D. Andrews, Premier (2020) '[Dedicated fund to support Victorian bushfire survivors](#)', media release, 5 January.

⁴⁶ *ibid.*

⁴⁷ Bendigo Bank (2020) '[Victorian Bushfire Appeal funds distributed to those who need it most](#)', media release, 25 January.

Community Recovery Package

In a jointly-funded initiative under the Commonwealth-State Disaster Recovery Funding Arrangements, impacted Victorians will have access to an \$86 million Bushfire Community Recovery Package. Among its initiatives, the package is set to provide emergency mental health services, community recovery hubs for recovery services in remote areas, as well as recovery and resilience grants.⁴⁸

Independent investigation

On 14 January, the Victorian Government announced an independent investigation into the 2019–20 fire season.⁴⁹ To be led by the Inspector-General for Emergency Management, the inquiry will look at Victoria's preparedness for, and response to, the current fire season, as well as review Victoria's recovery effort. Preliminary recommendations are due on 31 July 2020.

Federal

The Federal Government has promised \$2 billion towards a national bushfire recovery fund.⁵⁰ Initial reports have indicated a \$100 million commitment providing grants to help farmers' immediate needs, \$50 million towards an emergency fund to address the loss of wildlife, \$75 million (jointly provided with Victoria) for clean-up, as well as \$76 million towards mental health services for victims.⁵¹

Furthermore, the fund has committed a \$76 million package to stimulate tourism in bushfire-devastated communities, \$5 million for medical research into the effects of bushfire smoke, as well as \$200 a day for all volunteer firefighters and \$400 for bushfire-affected parents.⁵²

On 4 February 2020, Prime Minister Scott Morrison confirmed that he will seek to establish a royal commission into the bushfire crisis.⁵³ In his condolence speech to Parliament on 4 February, Mr Morrison confirmed that he had written to premiers and chief ministers for their feedback on draft terms of reference for a royal commission.⁵⁴

Private individuals and charities

Although not a definitive figure, a reported \$500 million has been donated towards the bushfire relief effort so far.⁵⁵ The pool comprises multi-million-dollar celebrity donations, company donations, and numerous small-scale individual donations.⁵⁶

As at 4 February 2020, the Australian Red Cross had received \$127 million since July.⁵⁷ According to its website, the Red Cross is providing payments of \$20,000 to the 'identified next of kin to people who

⁴⁸ D. Littleproud, Minister for Water Resources & L. Neville, Minister for Police and Emergency Services (2020) op. cit.

⁴⁹ D. Andrews, Premier (2020) 'Independent Investigation Into Fire Season', media release, 14 January.

⁵⁰ S. Martin (2020) 'Coalition promises \$2bn for bushfire recovery as it walks back from budget surplus pledge', *The Guardian*, 6 January.

⁵¹ See D. Crowe & A. Livingston (2020) op. cit.; E. Elsworthy et al. (2020) op. cit.; J. Garland, 'Helping clean up bush fire affected properties', *Hamilton Spectator*, 23 January.

⁵² S. Masige (2020) 'Tourism Australia has launched a \$20 million bushfire recovery ad campaign, encouraging Aussies to holiday locally', *Business Insider Australia*, 23 January; S. Borys (2020) 'Federal Govt to inject \$5m into health research amid bushfire haze', *ABC News*, 15 January.

⁵³ S. Morrison, Prime Minister (2020) 'Condolences: Bushfire condolence motion', *Debates*, Canberra, House of Representatives, 4 February.

⁵⁴ *ibid.*

⁵⁵ J. Derwin (2020) '\$500 million has been donated for bushfire relief, but only a fraction has reached victims. Here's why', *Business Insider Australia*, 24 January.

⁵⁶ Noteworthy donations include: Andrew and Nicola Forrest (\$70 million), Celeste Barber Facebook fundraiser (\$51.2 million) and Paul Ramsay Foundation (\$30 million).

⁵⁷ J. Derwin (2020) op. cit.

have died in the fires', and \$10,000 emergency grants to 'individuals who have lost their house'.⁵⁸ Other charities that have attracted large sums include the Salvation Army (\$40 million) and the St Vincent de Paul Society (\$12 million), as recorded on 23 January 2020.⁵⁹

Amidst the outpouring of generosity from both Australian and international communities, incidences of scams and fake fundraisers, ranging from illegitimate door-knocking to fraudulent crowdfunding pages, have been widely reported.⁶⁰ In response, a dedicated hotline has been set up by the Australian Competition and Consumer Commission, which has since received hundreds of alerts.⁶¹ There has also been a push for better scrutiny of charity spending by institutions, given the size of some of these donations.⁶²

Bushfire investigations

In addition to the Victorian Government's investigation and the Commonwealth Government's proposed royal commission, the New South Wales and South Australian Governments have also announced they will be conducting inquiries into the 2019–20 bushfire season.⁶³

These inquiries extend a long history of reviewing Australian bushfire seasons. The effectiveness of a Commonwealth royal commission has attracted scrutiny, from both experts and firefighters, given the extensive range of recommendations and management plans already available.⁶⁴ Other fire experts have been more supportive of a national inquiry.⁶⁵ Around 300 reviews have been conducted into disaster management over the past 75 years—with over 100 into bushfires specifically, including 57 formal public inquiries. Between 2009 and 2017, 55 disaster management inquiries have handed down 1,336 recommendations.⁶⁶ The recently announced inquiries should be considered in this broader context.

A list of official post-event reviews and inquiries into bushfires across all jurisdictions can be found [here](#).

See the [SLV](#) for resources on the 1851, 1898, 1939, 1944, 1983, 2002–3, 2006–7, 2009 and 2019–20, fires.

Major Victorian inquiries

While the most significant inquiry into Victorian bushfire disasters this century was the 2009 Victorian Bushfires Royal Commission, several other major investigations have been conducted in the past two decades. Prior to 2009, this included the Report of the Inquiry into the 2002–03 Victorian Bushfires

⁵⁸ Australian Red Cross (2020) 'Australian bushfires: how we're using funds', Australian Red Cross website.

⁵⁹ A. Snowden & L. Moffet Gray (2020) 'Bushfires: Charities' funds must get to communities', 23 January.

⁶⁰ T. Cowle (2020) 'GoFundMe bid to stamp out scams', *The Age*, 15 January.

⁶¹ Australian Competition & Consumer Commission (2020) 'Bushfires and scams', ACCC website.

⁶² D. Cuthbertson & J. Irvine (2020) 'Charities on notice as fire aid tops \$450m', *Sunday Age*, 19 January.

⁶³ NSW Government (2020) [NSW Independent Bushfire Inquiry: Terms of Reference](#). Online; S. Marshall (2020) [Independent review into South Australia's 2019/20 bushfire season](#), media release, 28 January.

⁶⁴ K. Tolhurst (2020) 'We have already had countless bushfire inquiries. What good will it do to have another?' *The Conversation*, January 16; R. Gredley (2020) 'Furies at odds over federal bushfire probe', *Canberra Times*, 15 January; P. Marshall (2020) 'The last thing we need is a new royal commission', *The Age*, 20 January.

⁶⁵ D. Bowman & R. Bradstock (2020) 'Australia needs a national fire inquiry - these are the 3 areas it should deliver in', *The Conversation*, January 23.

⁶⁶ See the Bushfire & Natural Hazards CRC's [Disaster Inquiries: Data Discovery Resource](#).

(with Government response);⁶⁷ ministerial taskforces into the 2002–03 and 2005–06 fires;⁶⁸ Country Fire Authority (CFA) operational debriefs into the 2005–06, 2006–07 and 2008–09 fire seasons;⁶⁹ and a coronial inquest investigated deaths into the 1998 Linton Wildfire.⁷⁰

Since 2009, reports have included: the Emergency Services Commissioner review of the 2011 Tostaree fire;⁷¹ post-season review reports by a state debrief group into the 2011–12, 2012–13, 2013–14 seasons;⁷² an operational review of the 2012 Westmeadows grassfire;⁷³ 2014 Hazelwood Mine Fire Inquiry report;⁷⁴ the 2015 Lancefield-Cobaw fire investigation;⁷⁵ and the 2015 Wye River-Jamison Track fire.⁷⁶

The Report of the 2009 Victorian Royal Commission summarised its findings around the following major areas of investigation:

1. Responding to bushfire: a critique of Victoria’s bushfire safety policy, colloquially known as ‘stay or go’ and emergency and incident management, and warning categories and alert messaging systems;
2. Reducing the number of fires: electricity asset failures and arson;
3. Reducing the damage caused by fire: planning and building; land fuel management, with a critique that too little prescribed burning was occurring; and
4. Building on current knowledge: organisational structure, research and evaluation, and implementation.

The Royal Commission made 67 recommendations, all of which the Victorian Government supported.⁷⁷

A new agency, the Bushfire Royal Commission Implementation Monitor (BRCIM), was established to report on the delivery of these recommendations. These were covered in five reports between 2010 and 2014.⁷⁸ In 2011, a separate taskforce investigated the link between powerlines and bushfire

⁶⁷ B. Esplin (2003) *Report of the Inquiry into the 2002–03 Victorian Bushfires*, Melbourne, The Inquiry. The Inquiry report stated it to be the fifth major inquiry resulting from significant bushfire events in Victoria, following the 1939 (Black Friday) and the 1944 Streeton Royal Commissions, the 1977 (Black Saturday) Elser Barber Board of Inquiry and the Inquiry conducted by the Chief Commissioner of Police and Coordinator of the Victorian State Disaster Plan, S.I. Miller, following the Ash Wednesday fires of 1983. Department of Premier and Cabinet (2003) *Victorian Government response to the Report of the Inquiry into the 2002-03 Victorian Bushfires*, Melbourne.

⁶⁸ Victoria Ministerial Taskforce on Bushfire Recovery (2003) *Regenerate, renew, rebuild: Final report from the Ministerial Taskforce on Bushfire Recovery*, Melbourne, Victorian Government; Victoria Ministerial Taskforce on Bushfire Recovery (2006) *2006 Report from the Ministerial Taskforce on Bushfire Recovery*, Melbourne, Victorian Government.

⁶⁹ R. Smith (2006) *Debrief Outcomes: Significant Victorian Fires December 2005 and January 2006*, Melbourne, Fire Forest Management Victoria; R. Smith (2007) *Key Issues Identified from Operational Reviews of Major Fires in Victoria 2006/07*, Melbourne, DSE; J. Fox & R. Dunnalls (2009) *Operational Debrief Report 2008/09 Fire Season*, Melbourne, DSE.

⁷⁰ State Coroner (2002) *Report of the Investigation and Inquests into a Wildfire and the Deaths of Five Firefighters at Linton on 2 December 1998*, Melbourne, State Coroner’s Office.

⁷¹ Emergency Services Commissioner (2011) *Review of the Tostaree Fire*, Melbourne, Office of the Emergency Services Commissioner.

⁷² Comprising representatives of the Country Fire Authority (CFA), the Department of Sustainability and Environment (DSE), the Fire Services Commissioner Victoria, the Metropolitan Fire and Emergency Services Board (MFB) and the State Control Centre (SCC). See reports: Fire Services Commissioner Victoria (2012) *2011/12 Post Season Fire Review Report*, Melbourne, DSE; Fire Services Commissioner Victoria (2013) *Post Season Operations Review. Fire Danger Period 2012/13*, Melbourne, DSE; Emergency Management Victoria (2014) *Post Season Operations Review. Fire Danger Period 2013/14*, Melbourne, Department of Environment and Primary Industries.

⁷³ Fire Services Commission Victoria (2012) *Operational Review: Westmeadows Grassfire, 24 January 2012*, Melbourne, DSE.

⁷⁴ B. Teague (2014) *Hazelwood Mine Fire Inquiry Report*, Melbourne, Victorian Government.

⁷⁵ M. Carter (2015) *Independent Investigation of the Lancefield-Cobaw Fire*, Melbourne, Department of Environment, Land, Water and Planning.

⁷⁶ Inspector-General for Emergency Management (2016) *Review of the initial response to the 2015 Wye River – Jamieson Track fire*, Melbourne, Victorian Government.

⁷⁷ B. Teague, R. McLeod & S. Pascoe (2010) *Final Report: Summary. 2009 Victorian Bushfire Royal Commission*, Melbourne, Victorian Government; Victorian Government (2011) *Implementing the Government’s response to the 2009 Victorian Bushfires Royal Commission*, Melbourne, Victorian Government.

⁷⁸ Bushfire Royal Commission Implementation Monitor (2010) *Delivery Report*, Melbourne, Government Printer; Bushfire Royal Commission Implementation Monitor (2011) *Progress Report*, Melbourne, Government Printer; Bushfire Royal Commission Implementation Monitor (2012) *Final Report*, Melbourne, Government Printer; Bushfire Royal Commission Implementation Monitor (2013) *Annual Report 2012-13*,

safety.⁷⁹ In 2012, the White Paper on Victorian Emergency Management Reform outlined a transformation of the emergency response structures, with the establishment of the Emergency Management Commissioner in 2014.⁸⁰

In 2014, the BRCIM was replaced by a general officer, the Inspector-General for Emergency Management (IGEM), who continued to monitor the implementation of recommendations in 2015 and 2016 reports.⁸¹

From 2014–16, the Legislative Council Environment and Planning Committee conducted an Inquiry into Fire Season Preparedness, producing an interim and final report, the latter again focusing heavily on the issue of prescribed burnings.⁸²

Forest management and hazard reduction

Prescribed burning (also known as hazard reduction burning, controlled burning or planned burning) has been a major issue this fire season. Experts and commentators have debated the importance, effectiveness, and alternative models of prescribed burning, as well as learning from Indigenous land management techniques.⁸³ This is not a new issue of contention but has been debated since at least the 1939 Royal Commission.⁸⁴

Prescribed burning has been among the most widely reviewed issues by bushfire policymakers for several decades now. A Code of Practice for Fire Management on Public Land was written in 1995, under the *Conservation Forests and Lands Act 1987*, and was subsequently revised in 2006 and 2012.⁸⁵ In this period, the Code specifically, and prescribed burning of public land generally, have been subject to reviews by the Department of Natural Resources and Environment in 1999,⁸⁶ the Auditor-General in 2003,⁸⁷ the Department of Sustainability and Environment in 2004,⁸⁸ and 2005,⁸⁹ the Emergency Services Commission in 2005,⁹⁰ and a parliamentary committee in 2008 (with a government response).⁹¹

Melbourne, Government Printer; Bushfire Royal Commission Implementation Monitor (2014) *Annual Report 2013-14*, Melbourne, Government Printer.

⁷⁹ Powerline Bushfire Safety Taskforce (2011) *Final Report*, Melbourne, The Taskforce.

⁸⁰ Victorian Government (2012) *Victorian Emergency Management Reform*, White Paper, Melbourne, Victorian Government.

⁸¹ Inspector-General for Emergency Management (2015) *Progress Report Victorian Bushfires Royal Commission Implementation of recommendations and actions*, Melbourne, Victorian Government; Inspector-General for Emergency Management (2016) *Progress Report: Victorian Bushfires Royal Commission Implementation of recommendations and actions*, Melbourne, Victorian Government.

⁸² Legislative Council Environment and Planning Committee (2016) *Inquiry into fire season preparedness: Interim report*, Melbourne, Parliament of Victoria; Legislative Council Environment and Planning Committee (2017) *Inquiry into fire season preparedness: Final report*, Melbourne, Parliament of Victoria.

⁸³ For a cross section of expert opinion, see: R. Keenan (2020) 'There's only one way to make bushfires less powerful: take out the stuff that burns', *The Conversation*, 6 January; Z. Cumpston (2020) 'To address the ecological crisis, Aboriginal people must be restored as custodians of Country', *The Conversation*, 31 January; J. Alexander & D. Bowan (2020) 'There's no evidence 'greenies' block bushfire hazard reduction but here's a controlled burn idea worth trying', *The Conversation*, 7 January; E. Kinsella & W. Jackson (2020) 'What are hazard reduction burns, are we doing enough of them, and could they have stopped Australia's catastrophic bushfires?', *ABC News*, 10 January.

⁸⁴ D. May (2020) 'To burn or not to burn is not the question', *Inside Story*, 17 January 2020; P. A. Carbines, Sir. F. W. Mann, L. E. B. Stretton (1939) *Report of the Royal Commission to Inquire into the Causes of and Measures Taken to Prevent the Bush Fires of January*, Melbourne, Government Printer.

⁸⁵ DSE (2006) *Code of Practice for Fire Management on Public Land*, Revision No 1. Melbourne, DSE; DSE (2012) *Code of Practice for Fire Management on Public Land*, Melbourne, DSE.

⁸⁶ K. Tolhurst & N. P. Cheney (1999) *Synopsis of the Knowledge Used in Prescribed Burning in Victoria*, Melbourne, Depart of Natural Resources and Environment.

⁸⁷ Auditor-General of Victoria (2003) *Fire prevention and preparedness*, Melbourne, Auditor-General's Office.

⁸⁸ Fire Ecology Working Group (2004) *Guidelines and procedures for ecological burning on public land in Victoria*, Melbourne, DSE.

⁸⁹ DSE (2005) *Review of code of practice for fire management on public land: discussion paper*, Melbourne, DSE.

⁹⁰ Emergency Services Commissioner (2005) *Examination of prescribed Burning Practices*, Melbourne, The Commissioner.

⁹¹ Environment and Natural Resources Committee (2008) *Inquiry into the Impact of Public Land Management Practices on Bushfires in Victoria*, Melbourne, Parliament of Victoria; DSE (2008) *Victorian Government's response to the Environment and Natural resources Committee's Inquiry into the impact of public land management practices on bushfires in Victoria*, Melbourne, DSE.

The 2009 Royal Commission recommended a planned burning target of five per cent of public land to reduce bushfire risk. However, in its 2012 Final Report, the BRCIM concluded that this target was not achievable, affordable or sustainable, and advocated that the Government reconsider the hectare-based target. In May 2015, the BRCIM's successor, the IGEM, released a report endorsing this conclusion, and recommended that the Victorian Government replace the hectare-based target with a risk-reduction approach, where the most at-risk areas are measured and prioritised for fuel reduction operations.⁹² Later in 2015, a separate *Independent Investigation of the Lancefield-Cobaw Fire*, where a prescribed burn broke control lines and caused significant damage, offered its own recommendations on prescribed burning practices.⁹³

The Victorian Government accepted the recommendations of both reviews, which were embedded in a 2015 policy statement, *Safer Together: A new approach to reducing the risk of bushfire in Victoria*.⁹⁴ Building on recommendations from the 2009 Royal Commission, the [Safer Together](#) program divides the state into seven Bushfire Risk Landscapes or bushfire 'catchments'. Each catchment is graded a percentage score out of 100 for its 'fire risk'.⁹⁵ Each has developed strategic bushfire management plans to implement a risk-based approach to public lands.⁹⁶

From 1 July 2016, DELWP introduced the risk reduction target to maintain bushfire risk at, or below, 70 per cent of Victoria's maximum bushfire risk. The implementation of these recommendations was monitored in an October 2017 report by the IGEM.⁹⁷ A separate audit of burning standards was also conducted.⁹⁸ From [2015–16](#), DELWP began to adjust its annual Fuel Management Reports (which it began publishing in [2012–13](#))⁹⁹ away from reporting a hectare-based target metric and towards the residual risk target. This transition was fully in place by the time of its [2016–17](#) report.

To carry out the Safer Together program, in October 2018 the [Joint Fuel Management Plan](#) was launched as a state-wide program of works to manage fuel on public and private land. The Plan outlines where Forest Fire Management Victoria and the CFA intend to carry out fire management operations on public and private land over three-year cycles. It is updated yearly, and builds on longer-term [Strategic Bushfire Management Planning](#). Burning schedules are planned in consultation with local councils, wineries, tourism operators, beekeepers and flora and fauna specialists, as well as incorporating knowledge from local communities, including Traditional Owners and key stakeholders. These are divided into six regions: Barwon South West, Gippsland, Grampians, Hume, Loddon Mallee and Greater Melbourne.

In May 2019, the [Victorian Traditional Owner Cultural Fire Strategy](#) was launched.

These state-level developments have evolved in parallel with attempts to establish a national fire management framework. In the aftermath of Black Saturday, fire managers from state and territory government agencies prepared a *National Bushfire Management Policy Statement for Forests and Rangelands*.¹⁰⁰ The policy statement was signed off by all Council of Australian Governments (COAG) members in early 2012 and published in 2014. It states 14 national goals, including maintaining

⁹² Inspector-General for Emergency Management (2015) *Review of performance targets for bushfire fuel management on public land*, Melbourne, DSE.

⁹³ M. Carter (2015) *Independent Investigation of the Lancefield-Cobaw Fire*, op. cit.

⁹⁴ DELWP (2015) *Safer Together: a new approach to reducing the risk of bushfire in Victoria*, Melbourne, DELWP.

⁹⁵ For a definition of the Department's process for calculating 'fire risk', see: <https://www.safertgether.vic.gov.au/understanding-risk>

⁹⁶ See the plans for: [Alpine and Greater Gippsland](#); [Alpine and North East](#); [Barwon Otway](#); [East Central](#); [Mallee and Murray Goulburn](#); [South Western](#); [West Central](#).

⁹⁷ Inspector-General for Emergency Management (2017) *Annual Report: implementation of recommendations on bushfire fuel management*, DSE.

⁹⁸ GHD Advisory (2016) *Compliance Audit Approval and Oversight of Planned burns*, report prepared for the Department of Environment, Land, Water and Planning, Melbourne.

⁹⁹ For the annual reports see: [2013/14](#) (2nd report), [2014/15](#) (3), [2015/16](#) (4) [2016/17](#) (5), [2017/18](#) (6), [2018/19](#) (7).

¹⁰⁰ Forest Fire Management Group (2014) *National Bushfire Management Policy Statement for Forests and Rangelands*, Canberra, Council of Australian Governments.

appropriate fire regimes, promoting Indigenous knowledge of fire management, and creating employment, workforce education and training in bushfire management.

Bushfires and climate change

The inquiry announced by the New South Wales Government into the 2019–20 bushfire season is notable as the first to include climate change in its terms of reference. The inquiry will be led by Professor Mary O’Kane AC, Independent Planning Commission Chair and former NSW Chief Scientist and Engineer, alongside Dave Owens, former Deputy Commissioner of NSW Police. No previous government bushfire inquiry has included climate change in its scope, including the 2009 Royal Commission.

Numerous independent and expert reports have considered the link between climate change and Australian bushfires since the early 2000s. In 2005, a CSIRO-Bureau of Meteorology report, *Climate change impacts on fire-weather in south-east Australia*, predicted an increase in fire weather risk throughout most of south-eastern Australia over the coming decades, with ‘very high’ and ‘extreme’ fire danger ratings likely to increase in frequency by 4–25 per cent by 2020 and 15–70 per cent by 2050.¹⁰¹ In 2007, the now-defunct Bushfire Cooperative Research Centre¹⁰² was commissioned by the Climate Institute of Australia to investigate *Bushfire Weather in Southeast Australia: Recent Trends and Projected Climate Change Impact*.¹⁰³ This report predicted an increase in annual average fire danger of up to 30 per cent by 2050, and a potential trebling in the number of days per year, with the largest changes predicted for the interior of New South Wales and northern Victoria.

In 2008, *The Garnaut Climate Change Review* noted that ‘recent projects of fire weather (Lucas et al, 2007) suggest that fire seasons will start earlier, end slightly later, and generally be more intense. This effect increases over time but should be directly observable by 2020’.¹⁰⁴ In 2011, Garnaut was commissioned by the Commonwealth Government to update the findings to include economic impacts.¹⁰⁵

In 2014, the Climate Council released a report, *Be prepared: Climate change and the Victorian bushfire threat*. Its findings were updated in 2017, and in November 2019 the Council released a related briefing paper, *This is Not Normal: Climate change and the escalating bushfire risk*.¹⁰⁶

In 2014, the Intergovernmental Panel on Climate Change reported on the impacts of climate change in Australasia. The report announced an expected increase in the number of days with very high and extreme fire weather, longer fire seasons in high-risk areas, higher incidence risk, exacerbation of respiratory conditions and increasingly challenging fire management conditions. It reported that few changes in management were being driven by climate change adaptation.¹⁰⁷

¹⁰¹ K. Hennessy, C. Lucas, N. Nicholls, J. Bathols, R. Suppiah & J. Ricketts (2015) *Climate change impacts on fire-weather in south-east Australia*, report prepared for the CSIRO, Aspendale, Victoria, p. 5.

¹⁰² Ceased in 2014. Replaced by the [Bushfire & Natural Hazard CRC](#). The Bushfire CRC was made up of all the fire and land management agencies in Australia and New Zealand, CSIRO, the Bureau of Meteorology, the Attorney General’s Department and several other fire related organisations.

¹⁰³ C. Lucas, K. Hennessy, G. Mills & J. Bathols (2007) *Bushfire Weather in Southeast Australia: Recent Trends and Projected Climate Change Impacts*, Consultancy Report prepared for The Climate Institute of Australia, Bushfire Cooperative Research Centre.

¹⁰⁴ R. Garnaut (2008) *The Garnaut Climate Change Review: Final report*, Melbourne, Cambridge University Press, p. 118.

¹⁰⁵ R. Garnaut (2011), *The Garnaut Review 2011: Australia in the Global Response to Climate Change*, Melbourne, Cambridge University Press.

¹⁰⁶ L. Hughes (2014) *Be Prepared: Climate Change and the Victorian Bushfire Threat*, report prepared for the Climate Council of Australia; L. Hughes and D. Alexander (2017) *Climate Change and the Victoria Bushfire Threat: Update 2017*, Sydney, Climate Council of Australia; Climate Council of Australia (2019) *This is Not Normal: Climate change and escalating bushfire risk*, Briefing Paper, 12 November.

¹⁰⁷ A. Reisinger & R. L. Kitching, ‘Australasia’, in C. B. Field & V. R. Barros (eds.) (2014) *Climate Change 2014: Impacts, Adaptation, and Vulnerability, Part B: Regional Aspects*, Cambridge, Cambridge University Press, p. 1400.

In 2015, a technical report published by the CSIRO and the Bureau of Meteorology found extreme fire days had increased at 24 out of 38 Australian sites between 1973 and 2010 due to warmer, drier conditions. The report also projected warming and drying in southern and eastern Australia, creating fuels that are drier and more ready-to-burn, and increasing the number of days with severe fire danger.¹⁰⁸

Further Reading

As with every disaster, these fires have raised significant policy questions and debate. Scholarly commentary on *The Conversation* website alone has covered topics including the [unprecedented nature](#) of this bushfire season; [climate change](#) and [drought conditions](#); [smoke inhalation](#) and [safety measures](#); [drinking water safety](#); [Indigenous land management techniques](#); [rebuilding strategies](#), [building codes](#) and [urban design](#); [insurance](#); [firefighters' mental health](#) and [volunteer strain](#); [animal habitat destruction](#) and [animal species extinction](#); [native plant regeneration](#) and [biodiversity recovery](#); online misinformation, especially regarding [arson](#) and [mapping](#); [political leadership](#); and the need for a [coordinated, national disaster plan](#).

¹⁰⁸ P. Whetton (ed.) (2015) *Climate Change in Australia: Technical Report*, CSIRO, Number 8, p. 139.

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