



Premier of Western Australia

Our Reference: 59-198500/NC

Senator Tim Ayres
Chair
Senate Finance and Public Administration
Committees
PO Box 6100
Parliament House
CANBERRA ACT 2600

Dear Senator Ayres and members of the Committee

Thank you for the opportunity to contribute to the Senate Inquiry entitled *Lessons to be learned in relation to the preparation and planning for, response to and recovery efforts following the 2019-20 Australian bushfire season*.

The attached submission was prepared on behalf of the Government of Western Australian by the Department of Fire and Emergency Services, as the Hazard Management Agency for Fire in Western Australia.

The submission was prepared with other State agencies who have varying roles in the prevention, preparedness, response and recovery phases of bushfire management in Western Australia.

This submission outlines opportunities for the Commonwealth to better support Western Australia, which is one of the world's largest emergency management jurisdictions. This includes funding allocations and resources in the areas of prevention of, preparedness for, response to and recovery from bushfire.

Yours sincerely //

/ /

Mark McGowan MLA
PREMIER

Att

- 8 JUL 2020

Western Australian Government's submission to the Senate Standing Committees on Finance and
Public Administration Inquiry – Lessons to be learned in relation to the Australian Bushfire Season
2019-20

Background – the Western Australian context

- While 2019-20 was a relatively average southern summer bushfire season for Western Australia (WA). Large scale and intense bushfires did impact the State, however there was no loss of life and limited asset loss. Western Australia's resources were still tested and stretched in supporting other jurisdictions and responding to Western Australian bushfires, cyclones and flooding events during this period.
- WA is the largest jurisdiction in Australia, roughly one third of the area of Australia. Nearly 93 percent of WA's land is designated as bush fire prone.
- The State has a high population distribution in the forested southwest, high value assets across the state including agriculture in the south east, midwest and goldfields and mining and gas operations and infrastructure across the vegetated desert landscape. This makes fire a persistent challenge across WA.
- WA has experienced a warming climate trend of 1°C¹ and drying trend of an annual rainfall decline of 20 percent in the southwest over the past 50 years², which has seen the increase in frequency and intensity of bushfires.
- The warming and drying trend has led to the overlap of the WA northern bushfire season and southern bushfire season in 2019-20, for the first time in recorded history.
- WA continues to develop its bushfire management strategies to suit its unique context, informed through experience and the more than 15 bushfire inquiries since 2011. Recent significant bushfires include:
 - Norseman Bushfire Complex in 2020 (648,500 ha) across 3 shires, causing the closure of the critical west-east transport lifeline, the Eyre Highway, for 12 consecutive days.
 - Waroona fire (January 2016) resulting in the loss of two lives, over 160 homes and the devastation to the town of Yarloop.
 - Esperance fire (November 2015) resulting in the loss of four lives, 16 homes, significant crop, stock and fertile land losses; and
 - Parkerville fire (2014) in the Perth Hills forested rural-urban interface, destroying 57 homes.
 - Large landscape scale fires (more than 500,000 hectares) in the Pilbara and Kimberley regions throughout the warm and drier winter periods each year.
- WA has a unique structure to its legislative framework governing bushfire that fosters collaboration and a shared responsibility.
- Of the three ingredients that support fire (oxygen, fuel and heat) only the level of fuel available can be managed in the context of bushfires. There is a suite of activities used in WA to reduce fuel including slashing, mulching, spraying, thinning and planned burning. Planned burning remains one of the most effective tools for mitigating bushfire risk and provides training opportunities for firefighters.
- WA uses a large body of scientific and experiential evidence (Boer *et al.* 2009³, Burrows and McCaw 2013⁴, Cheney 2010⁵, Gould *et al.* 2007⁶, McCaw 2013⁷, McCaw *et al.* 2008⁸,

¹ Bureau of Meteorology. Australian climate variability & change - Trend maps <http://www.bom.gov.au/cgi-bin/climate/change/trendmaps.cgi?map=tmean&area=wa&season=0112&period=1950>. Accessed 24/02/2020.

² Bureau of Meteorology. Australian climate variability & change - Trend maps. <http://www.bom.gov.au/cgi-bin/climate/change/trendmaps.cgi?map=rain&area=wa&season=0112&period=1950>. Accessed 24/02/2020.

³ Boer, M.M., Sadler, R.J., Wittkuhn, R.S., McCaw, L. and Grierson, F.P. 2009, Long-term impacts of prescribed burning on regional extent and incidence of wildfires – Evidence from 50 years of active fire management in SW Australian forests, *Forest Ecology and Management*, 259 (2009): 132-142

⁴ Burrows, N. and McCaw, L. 2013, Prescribed burning in southwestern Australian forests, *Frontiers in Ecology and Environment*, 11 (online Issue 1): e25-e34.

⁵ Cheney, N.P. 2010, Fire behaviour during the Pickering Brook wildfire, January 2005 (Perth Hills Fires 71-80), *Conservation Science W. Aust.*, 7(3): 451-468 (2010).

⁶ Gould, J.S., McCaw, W.L., Cheney, N.P., Ellis, P.F., Knight, I.K. and Sullivan, A.L. 2007, *Fire in dry eucalypt forest fuel structure, fuel dynamics and fire behaviour*, Ensis-CSIRO, Canberra, and Department of Environment and Conservation, Perth.

⁷ McCaw, L. 2013, Managing forest fuels using prescribed fire: A perspective from southern Australia, *Forest Ecology and Management*, 294: 217-224.

⁸ McCaw, W.L., Gould, J.S. and Cheney, N.P. 2008, Quantifying the effectiveness of fuel management in modifying wildfire behaviour, Paper presented at the 2009 AFAC Conference, Gold Coast, Australasian Fire Authorities Council and Bushfire Cooperative Research Centre, Melbourne.

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Sneeuwjagt 2008⁹) to support the application and effectiveness of planned burning. Boer *et al.* 2009 demonstrates that the beneficial effect of planned burning on the incidence and extent of unplanned fires in south-western forests continues for around six years. The work undertaken by McCaw *et al.* (2008) suggesting that lightning ignitions are less likely to develop rapidly or to exhibit uncontrollable fire intensity in young fuels.

- Planned burning also provides a critical role as a training ground for firefighters to build their appreciation for fire and understanding of fire behaviour enhancing their ability to safely combat fires and successfully execute back burning operations during bushfires.¹⁰
- Western Australia has been unsuccessful in receiving timely Commonwealth support when required during incident response, specifically aircraft during cyclone and bushfire events. Western Australia uses its role on the suite of national committees and networks to advocate for equitable access to Commonwealth resources and funding to support the jurisdiction's management of bushfire.

(a) Advice provided to the Commonwealth Government prior to the 2019-20 bushfires

- WA provides advice on seasonal conditions and discusses bushfire risk and what is being undertaken to mitigate that risk through two primary mechanisms.
- The Fire and Emergency Services Commissioner (FES Commissioner) is a member of the Australasian Fire and Emergency Services Authorities Council's (AFAC) Commissioners and Chief Officers Strategic Committee (CCOSC) which meets quarterly and discusses preseason preparation and preparedness. The Co-chair of the Committee is the Director General of Emergency Management Australia (EMA). Other Commonwealth Government agencies represented on CCOSC are Airservices Australia and the Bureau of Meteorology (BoM) as an observer.
- WA, through the WA Fire Weather Subcommittee (BoM, Department of Biodiversity Conservation and Attractions (DBCA), Department of Fire and Emergency Services (DFES) and Western Australia Local Government Association) of the Interagency Bushfire Operations Committee, provides advice to the Bushfire and Natural Hazards Cooperative Research Centre (BNHCRC) on the regions of above average bushfire potential and average bushfire potential. This is provided twice a year for inclusion in the BNHCRC seasonal bushfire forecast published in April¹¹ and August¹². This publication is promulgated through mainstream media informing both the Commonwealth Government and community of the areas of higher risk.

Lesson identified: consideration of how the Commonwealth Government gathers and shares seasonal advice to inform preparedness for any upcoming seasonal challenges would be of benefit. WA is of the view that this will optimise the utilisation of Commonwealth resources when required by jurisdictions. This could include pre-emptively allocating EMA liaison officers to jurisdictions and forward basing Commonwealth resources to more readily service WA.

(b) Roles and responsibilities of different levels of government, and agencies within government, in relation to bushfire planning, mitigation, response, and recovery

Federal

- Commonwealth policies and programs that support bushfire emergency management are outlined below at (d).

State (including local government)

⁹ Sneeuwjagt, R.J. 2008, Prescribed Burning: How effective is it in the control of large forest fires?, Paper presented at the 2008 AFAC - Bushfire CRC Conference, Adelaide, Australasian Fire Authorities Council and Bushfire Cooperative Research Centre, Melbourne.

¹⁰ Back burning is a term used during bushfires for the use of planned fire to vegetation to burn back against the prevailing wind into the fire. This produces a slower moving fire and thus the fire becomes more manageable.

¹¹ <https://www.bnhcrc.com.au/hazardnotes/71>

¹² <https://www.bnhcrc.com.au/hazardnotes/63>

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- Responsibility for bushfire management, across the preparedness, prevention, response and recovery (PPRR) spectrum is allocated in WA to various state agencies under the *Fire Brigades Act 1942* (FB Act), *Fire and Emergency Services Act 1998* (FES Act), *Bush Fires Act 1954* (BF Act) and the *Emergency Management Act 2005* (EM Act).
- Under the *Bush Fires Act 1954* (BF Act), responsibility for the management (including control) of bushfire is distributed amongst local government, DBCA and DFES on the basis of land tenure.
- Hazards and the Hazard Management Agencies (HMA) are prescribed under the *Emergency Management Act 2005* (EM Act) and *Emergency Management Regulations 2006* (EM Regulations). There are 28 prescribed hazards in WA. The FES Commissioner is prescribed as the HMA for the hazard of fire for the whole of the State.
- The HMA's responsibilities includes preparing and reviewing State Hazard Plans (SHP). These cover the emergency management arrangements in WA for specified hazards and describe PPRR arrangements for a hazard. The SHP - Fire¹³ outlines roles and responsibilities of WA agencies for the hazard of fire.
- A key element of the FES Commissioner's role as the HMA for fire is fostering collaboration across the emergency management sector which includes local government, land management agencies and organisations, and support agencies.
- WA is seeking to replace the *Bush Fires Act 1954* (BF Act), *Fire Brigades Act 1942* (FB Act) and *Fire and Emergency Services Act 1998* (FES Act) with one Consolidated Emergency Services Act to support effective emergency services into the future.

Local government

- The *Local Government Act 1995* governs the business of the 137 mainland local governments and the local governments of Cocos and Keeling Islands and Christmas Island.
- Local government perform roles across the PPRR phases as outlined in SHP – Fire.
- Local government have a large function under the *Bush Fires Act 1954* (BF Act) including administering day to day provisions of the *Bush Fires Act 1954* (BF Act), varying the delegated and restricted burning times in response to local conditions, managing fire break requirements, enforcing the *Bush Fires Act 1954* (BF Act) offences within the local government district.
- Local governments have progressively been developing Bushfire Risk Management Plans (BRMPs), identifying assets of value to the community and applying a tenure blind¹⁴ assessment of bushfire risk to those assets. A negotiated process between the local government and the land owner/occupier then determines a suite of options to mitigate the bushfire risk. The program is supported by DFES and funded through \$15 million to support local government resources develop the BRMP and more than \$35 million (over 4-years) of ongoing funding for mitigation activities. Thirty-nine local governments have DFES endorsed BRMPs and a further 17 local governments are currently working towards endorsement.
- Local government also have responsibility for planning in their local communities to ensure that local planning controls are consistent with objectives and requirements set by the Western Australian Planning Commission (WAPC).

Other legislation and roles supporting bushfire management across the PPRR phases include:

Planning/building

- The *Planning and Development Act 2005* creates the statutory framework that enables planning to mitigate the risks posed by natural disasters such as bushfire and authorises the creation of strategic documents (such as State Planning Policies) and planning schemes, which are statutory instruments regulating the development and use of land.

¹³ <https://semc.wa.gov.au/emergency-management/plans/state-hazard-plans/Documents/StateHazardPlanFire.pdf>

¹⁴Tenure blind is an approach where multiple land parcels are considered as a whole, regardless of individual ownership

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- The WAPC creates State Planning Policies, the highest form of land use planning policy in the State.
- State Planning Policy 3.7: Planning in Bushfire Prone Areas and the associated guidelines govern bushfire considerations in the planning context.
- The Planning and Development (Local Planning Scheme) Regulations (LPS Regulations) set out the form for planning schemes in WA. Instruments that regulate planning (like planning schemes or policies) must give due regard to State Planning Policies, as must proposals for the use of land (subdivision or development).
- Local planning schemes govern development and contain a series of mandatory bushfire planning provisions, as required by the LPS Regulations (part 10A, Schedule 2). A local planning scheme (or amendments thereto) is prepared by a local government and examined by the WAPC, before it is submitted to the Minister for Planning, who can approve the scheme, require amendments before approval, or refuse. Policies created by local governments under their local planning schemes, must not conflict with State Planning Policy requirements without the approval of the WAPC.
- The building control process is governed by the *Building Act 2011* (the Building Act), the *Building Services (Complaint Resolution and Administration) Act 2011* and the *Building Services (Registration) Act 2011*.
- The Building Act and *Building Regulations 2012* (Building Regulations) controls the application of building standards for the design and construction of buildings and incidental structures and sets out when a building permit is needed for building work. The Building Regulations adopt the Building Code of Australia (BCA) as the primary applicable building standard for new building work. The BCA contains bush fire performance requirements that apply to certain residential buildings¹⁵ constructed in designated bush fire prone areas.
- The BCA ensures a new building located in a designated bush fire prone area is designed and constructed to a standard¹⁶ to reduce the risk of ignition from a bushfire through burning embers, radiant heat and flame.
- The Building Act generally requires a building permit from the permit authority (usually local government but can be the State for certain buildings) prior to building work commencing and ensures building work complies with the applicable building standards.
- Designation of bush fire prone areas is the responsibility of the FES Commissioner under section 18P of the *Fire and Emergency Services Act 1998* (FES Act).

Land

- The *Land Administration Act 1997* delegates on-ground management responsibilities such as those concerned with the mitigation of fire risk to third parties via a range of applicable land tenures.
- In the absence of any form of granted tenure, vast areas of Unallocated Crown Land (UCL) and Unmanaged Crown Reserves (UMR) remain in WA. The Minister for Lands (and the Department of Planning, Lands and Heritage (DPLH)) have negotiated agreements with other state agencies who have the expertise and some capacity, to assess, prioritise and physically mitigate the risks posed by bushfire, to human life, property and the environment (in that order) on these untenured lands.
- Two agreements are in place with DFES and DBCA. The first covers the mitigation of bushfire risks on UCL/UMR within the Perth Metropolitan Area and the regional towns across WA. The second covers the mitigation of these same risks on parcels of UCL/UMR located outside the Perth Metropolitan Area and regional towns. DPLH also plays a more direct role in ensuring that fire risks are mitigated on the range of lands having previously been purchased by the WAPC. The latter includes various regional parks and other lands set aside for future development of key state infrastructure.
- DPLH continues to oversee the administration of \$15 million of mitigation funding, established in late 2016-2017, to provide a more coordinated, holistic response to the

¹⁵ Includes Class 1 buildings (such as dwellings, bed and breakfasts), Class 2 buildings (such as residential apartment buildings) and Class 3 buildings (such as hotels, motels and accommodation for the aged, children or people with a disability).

¹⁶ Australian Standard (AS) 3959 – Construction of buildings in bushfire-prone areas (AS 3959); National Association of Steel Housing (NASH) Standard – Steel Framed Construction in Bushfire Areas (NASH Standard)

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mitigation of bushfire risk on State-owned land. The funds are allocated in accordance with various risk-based assessment processes, including the BRMP framework.

Environment

- Under the *Conservation and Land Management Act 1984*, DBCA manages more than 20 million hectares of land, including national parks, conservation parks, regional parks, State forests, timber reserves and nature reserves. Management, prevention, and control of fire, whether for community protection or biodiversity conservation, is a key responsibility of DBCA on lands for which it has statutory management responsibility.
- The *Environmental Protection Act 1986* provides exemptions from clearing regulations for the purposes of clearing to support bushfire prevention and mitigation. The Department of Water and Environmental Regulation (DWER) administers the EP Act.

Water

- As the State's water resource manager, DWER ensures there is no restriction on landholders in their preparation for bushfires. DWER's water regulation support landholders or occupants in 'at risk' bushfire areas with groundwater bores and access to surface water from rivers, streams and creeks. This includes those with access to scheme water, which the government advises should not be relied upon in times of bushfire.
- Water licensees (under the *Rights in Water and Irrigation Act 1914*) and unlicensed water users with domestic garden bores and/or riparian rights to stock and domestic water, can prepare for a bushfire by taking and storing water as part of their bushfire emergency plan. Landholders factoring water availability in a fire plan need to make sure water is accessible and address other issues such as emergency power to run bores and pumps.
- Landholders also need to be aware that bores and dams can also be utilised by DFES, DBCA and local government during bushfire emergencies.

Health

- Bushfires can cause a variety of public health issues including smoke, water quality impacts and in the instances of structural fire, potential exposure to asbestos and other contaminants.
- The Department of Health (DoH) is prescribed as a combat agency¹⁷ under section 26 of the *Emergency Management Regulations 2006* (EM Regulations), responsible for the provision of health services.
- The State Health Emergency Response Plan (SHERP) and associated plans and policies outlines both the strategic intent and how the WA health system will respond to any emergency or disaster within the jurisdiction of WA. This includes responses to mass casualties involving burns and/or trauma
- Under the SHERP, the DoH may be requested to provide specialist advice and assistance where a hazard(s) poses an imminent threat to the health of humans and the environment. During a bushfire and in recovery this includes water and food safety, and hazardous material contamination. For the control or abatement of a serious public health risk, the Chief Health Officer may authorise the use of serious public health incident powers under Part 11 of the *Public Health Act 2016*.
- The SHERP also provides linkages to relevant Commonwealth Government plans, where a multi-jurisdictional response is required.

(c) The Commonwealth Government's response to recommendations from previous bushfire Royal Commissions and inquiries

- Following the 2009 Victorian Bushfires Royal Commission and in light of similar recommendations arising out of the 2004 report to the Council of Australian Governments

¹⁷ Combat agency is a public authority prescribed by the regulations responsible for performing an emergency management activity prescribed by the regulation in relation to that agency. A combat agency undertakes response tasks at the request of the controlling agency in accordance with their legislative responsibilities or specialist knowledge.

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(COAG), titled the National Inquiry on Bushfire Mitigation and Management, a National Bushfire Management Policy Statement for Forests and Rangelands¹⁸ was approved by COAG in 2014. This policy integrates principles from the Indicative National Bushfire Principles included in the 2004 report and complements the 1992 COAG released National Forest Policy Statement and Australia's Biodiversity Conservation Strategy 2010 – 2030.

(d) The adequacy of the Commonwealth Government's existing measures and policies to reduce future bushfire risk

Policies

- The National Bushfire Management Policy Statement for Forests and Rangelands was developed on the basis of several key strategic Commonwealth Government policies and reflects persistent challenges also witnessed during the 2019-20 bushfire season. In following the spirit of the policy statement, WA has worked to align its bushfire management strategies.
- While considered adequate, there is currently no Commonwealth reporting framework to provide an understanding of the effectiveness of the policy statement. The absence of this may be limiting the efficiency and effectiveness of Commonwealth funding and resource allocation to support jurisdictional management of bushfire.
- The capacity of natural and human systems to adapt to climate change is relative to the severity of that change. As a result, Australia's resilience in the context of bushfire risk can best be assured by improving how we prepare for and manage bushfires and by reducing greenhouse gas emissions to limit global warming.
- The Commonwealth Government has primary responsibility for targets and policy frameworks to support emissions reduction and the WA Government has called on the Commonwealth Government to provide reassurances that Australia is on track to meet its targets under the Paris Agreement.¹⁹

Lesson identified: The Commonwealth Government does not have a consistent framework for gathering data from States in the context of Bushfires. This includes measures jurisdictions are implementing under policies such as the National Bushfire Management Policy Statement for Forests and Rangelands. WA welcomes the opportunity to participate in providing advice on an appropriate framework to assess the efficacy of the policy and its programs.

Programs

- Several Commonwealth programs have and continue to support the mitigation of bushfire risk. The Emissions Reduction Fund has been effective in funding projects that use planned fire to reduce bushfire risk and protect environmental, cultural, social and economic assets in the Kimberley Region of WA. They have also delivered benefits in building knowledge of and capacity for bushfire management and delivered indirect social and health outcomes.
- The Commonwealth Government's support to jurisdiction and provision of resources when requested is critical. This includes funding the former National Bushfire Mitigation Programme (NBMP), funding of the National Resource Sharing Centre²⁰ and National Aerial Firefighting Centre (NAFC)²¹ and resource support through the Defence Aid to Civil Community (DACC).
- All current DFES firefighting aircraft are contracted on a seasonal basis through NAFC, determined on the seasonal and strategic needs of DFES and DBCA. NAFC facilitate aircraft resource sharing arrangements between the jurisdictions. WA has requested access to additional aircraft, but has largely been unsuccessful. There is currently limited flexibility in the allocation of aircraft to support changing jurisdictional requirements as

¹⁸ <https://knowledge.aidr.org.au/media/3936/national-bushfire-management-policy-statement-web.pdf>

¹⁹ <https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>

²⁰ NRSC supports the sharing and exchange of state, territory and international resources to support bushfire efforts in Australia and overseas.

²¹ NAFC coordinates the procurement and allocation of aerial firefighting resources to states and territories prior to each summer bushfire season.

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seasonal conditions vary during the lease period. This requires further consideration to ensure that the resource arrangements are delivering the best results for all jurisdictions.

- Indirectly, WA benefits from Commonwealth funding of research and resource hubs such as the BNHCRC and Australian Institute of Disaster Resilience (AIDR) to inform bushfire (and other hazard) management policy and programs. Additionally, grant funding provided through the National Disaster Resilience Plan also provides a basis to target mitigation.
- However, there remains strong competition for limited funding and as such many of the state priorities are overlooked through centralised research hubs or Australian Research Council (ARC) models. A national level collaboration between WA, Victoria, Tasmania University of Adelaide and University of Technology of Sydney focusing on finding financially viable alternatives to bushfire fuel management was unsuccessful through the latest round of ARC grant funding.
- **Lesson identified:** There is an opportunity to review jurisdictions access to Commonwealth resources in a timely and equitable manner. This will also limit potential duplication between Commonwealth and jurisdictional resources.
 - An understanding of what resources the Commonwealth Government has at its disposal to support the response and recovery phases including their location, would be beneficial to jurisdictions. Having this knowledge-base would assist jurisdictions to prioritise its investment in new resources.
 - Direct Commonwealth funding to WA to support bushfire management priorities (i.e. training, research, mitigation) would complement state funding and enhance the management of bushfire.

(e) Best practice funding models and policy measures to reduce future bushfire risk, both within Australia and internationally

- The provision of Commonwealth funding to complement state funding has proven to be the most effective mechanism in the local level management of bushfire risk. This also provides the most benefit at a state level in the context of bushfire management programs and activities across the PPRR phases.
- In WA, state funding has been allocated across agencies to support a range of programs that mitigate the impact of bushfire risk in the short, medium and longer term in WA. These include:
 - mapping bushfire prone areas and the development of associated State Planning Policies to inform future planning and development in bushfire prone areas,
 - funding programs to mitigate bushfire risk through an established \$15 million BRM Planning program with local governments in WA,
 - ongoing \$35 million (over 4-year) funding derived through an Emergency Services Levy and \$15 million from existing programs to undertake mitigation activities,
 - \$42 million until 2022-23 for DBCA to deliver an Enhanced Planned Burning Program across the south-west forests of WA.
- The \$15 million Federally funded NBMP (2015-2018), of which WA was the recipient of \$0.9 million, provided a flexible funding arrangement for the broad application of mitigation activities across WA. The Commonwealth Government's contribution matched by the proponent in either cash and/or in-kind (dollar-for-dollar) ensured a high level of delivery with only one of the 41 funded projects being withdrawn.
- The legislative establishment of a state lead agency (and designated support agencies) for bushfire (and other hazards) is proving effective in WA.
- Currently the Commonwealth Government has several agencies or non-government organisations that perform varied roles across the PPRR spectrum (EMA, National Bushfire Recovery Agency (NBRA), BNHCRC and AIDR). As the risk of natural hazards increase across Australia, there is an opportunity to consider what State data provision may enhance the Commonwealth Government's support to state and territory jurisdictions.

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Lesson identified: As identified in (d), jurisdictions have become effective in collaborating on mutually beneficial projects through a researcher and end-user model promoted through the BNHCRC. However, jurisdictions still need to compete (more often unsuccessfully) for limited funding through either the BNHCRC or ARC. Western Australia has recently established a Bushfire Centre of Excellence²² with a focus on bushfire management training at a local, regional, state and national level and a research/knowledge hub. This hub will support the development of research priorities for the sector. The provision of Commonwealth support directly to the jurisdictions for research would improve the nation's contemporary knowledge of bushfire management. This research would be of significant benefit to inform policy and programs.

Lesson identified: Having a flexible funding program (such as the NBMP) to support mitigation activities through a dollar-for-dollar match between the Commonwealth Government and proponent has been advantageous for jurisdictions. The proponent contribution being a mix between cash and in-kind has proven useful to encourage land owners and land managers to subscribe to and fund activities that may fall outside existing state funded programs such as the BRMP.

Lesson identified: Commonwealth support through resources (in addition to funding) is critical for bushfire (and other hazards). WA's access to Commonwealth resources through the DACC has been challenging and require review.

(f) Existing structures, measures and policies to assist communities to recover from the 2019-20 bushfires

- The principal of Commonwealth support for recovery above and beyond a threshold is important. The 2019-20 bushfire season and establishment of the NBRA provides an opportunity to discuss the effectiveness of the existing mechanisms, the level of these, gaps between state and Commonwealth assistance and the necessary enhancements to support community recovery post impact.
- WA has been an active participant in the State and Commonwealth Bushfire Recovery Coordinator Forum to ensure currency of information and opportunity to learn through the activities of other jurisdictions. While the focus of the NBRA is on the east-coast, WA sees benefit in the development of equitable access to all Australians affected by bushfire.
- The Disaster Recovery Funding Arrangements (DRFA) are a complex mechanism to support states and territories recover from disasters. The states and jurisdictions have or are developing their own mechanisms to support the triggering of Commonwealth assistance under the four categories and the ability to draw funding to support betterment.
- The Commonwealth's Department of Home Affairs, through Emergency Management Australia, has commenced a review of DRFA. The review aims to - in collaboration with the states and territories - review how the arrangements are applied, efficiencies that can be invoked and scope the need for common approaches while acknowledging the unique needs of each jurisdiction. WA supports this approach.

(g) The role and process of advising Government and the Commonwealth Parliament of scientific advice

- The Commonwealth Government agency with responsibility for receiving reported scientific advice pertaining to bushfires and undertaking/managing necessary action is unclear.
- The AIDR has developed a National Disaster Risk Reduction Framework²³ which recognises the increasing risk of natural hazards and identifies a broad suite of elements and actions to be undertaken from 2019-2023. Critical to the implementation of this

²² <https://www.dfes.wa.gov.au/bushfirecoe/Pages/index.html>

²³ <https://www.homeaffairs.gov.au/emergency/files/national-disaster-risk-reduction-framework.pdf>

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document is a contemporary strategy and action plan that articulates how the objectives of the framework can be achieved.

- Bushfire management remains and should remain a State jurisdictional responsibility. However, following the 2019-20 summer bushfire season it is evident that a greater level of support and preparedness from the Commonwealth Government may assist State's during the response and recovery phases of significant bushfires.
- The BNHCRC bi-annual bushfire seasonal forecast²⁴ is generated by each state and territory based on agreed scientific metrics to determine the above normal seasonal bushfire outlook and hence inform discussion within and between jurisdictions.

Lesson identified: WA agencies and some Commonwealth agencies and non-government organisations currently report to DFES on an annual basis regarding fuel management activities. While only reporting on fuel mitigation, knowledge of the metrics and process could assist in defining the measures that could be defined to collect data consistently across jurisdictions and the implementation plan to source data and report on the effective implementation of national policies.

Lesson identified: The Chief Officers and Commissioners Strategic Committee (CCOSC) hosted by AFAC with jurisdictional and Commonwealth Government representation could be the appropriate committee to advise the Commonwealth Government of preseason preparedness arrangements.

(h) Physical and mental health impacts of bushfires on the population, and the Commonwealth Government's response to those impacts

- The DoH records smoke exposure injuries and deaths in its administrative datasets (hospital morbidity dataset and death registry) according to the relevant International Classification of Diseases code. There is no specific policy to examine these deaths and injuries after bushfires.
- Indirect health effects, such as excess deaths and hospitalisations due to smoke haze, are not examined for specific bushfires or bushfire seasons.
- The Department of Communities (DoC) is the prescribed support organisation with responsibility for providing personal support in an emergency, including the initial psychological counselling. Where overwhelming and/or sustained numbers of people seek mental health assistance, which is beyond the resources of DoC, the delegate of the Director General DoH may be requested by DoC to provide additional mental health practitioners to augment the early provision or psychological support and crisis counselling.
- There is an expectation of an increased need for mental health and alcohol and other drug services resulting from the heightened anxiety associated with a natural disaster.
- Communities and individuals affected by bushfire can experience a range of thoughts, feelings and behaviours that can be intense, confusing and frightening. These are common reactions²⁵ to an extraordinary situation.
- Key stressors include - experience of trauma, loss and grief, direct loss of personal property, homelessness, damage to businesses, increased financial stress, unemployment and poorer family relationships.
- Natural disaster events may also exacerbate existing mental health conditions or give rise to new conditions. Those with current mental health concerns are especially vulnerable during emergencies and can experience barriers to accessing the appropriate medical and mental health care they need resulting in decline, relapse or other negative mental health outcomes. In short, vulnerable people become more vulnerable post disaster.
- There is also a risk of deterioration in the mental health of front line responders actively involved in responding to the disaster event.

²⁴ <https://www.bnhcrc.com.au/hazardnotes/63>

²⁵ <https://www.beyondblue.org.au/the-facts/bushfires-and-mental-health/>

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- Population groups who have been previously impacted by natural disasters are also particularly vulnerable during subsequent events (such as COVID-19). It is important to consider these experiences and reactions through a trauma-informed lens.
- Indicators of declining mental health in the general population include:
 - alcohol and other drug consumption - quantum and patterns,
 - increased call outs for family and domestic violence,
 - increased suicide/suspected attempts,
 - absenteeism from employment/school,
 - increased gambling,
 - increased calls to help lines, and
 - increased Mental Health/Police co-response call outs.
- An Australian study²⁶ published in 2014 found that, about three years after the 2009 Victorian Black Saturday bushfires that killed 173 people and impacted many small communities, more than 15 percent of survey respondents in heavily affected areas reported probable Post Traumatic Stress Disorder (PTSD) associated with the fires, while 13 percent reported depression and almost 25 percent reported heavy drinking. Of the 10 percent of respondents who said they had “severe” psychological distress, a third said they had not seen a mental health professional in the month prior.
- Following a natural disaster event, there is also a risk that suicide rates may rise as a result of the economic and social impacts. For example, preliminary modelling by the Brain and Mind Centre²⁷ in relation to COVID-19 links suicides to unemployment rates. The modelling suggests that if the unemployment rate was around 11 percent, this could cause up to 750 extra suicides a year in Australia. Should unemployment peak at around 16 percent, suicides could double to an additional 1500 a year. In the Yarloop report²⁸, following the 2016 Waroona fire, community consultation indicated that lost income as a result of the fire affected 32 percent of participants exacerbating their mental health pressures.

Commonwealth Government response

- On 12 January 2020, the Commonwealth Government²⁹ announced \$76 million to support the mental health and wellbeing of individuals, families and communities, including first responders.
- As part of the announced package, \$500,000 will be provided over the next two years to develop a National Natural Disaster Mental Health Response Framework in conjunction with jurisdictions. WA recommends that the outcomes of the Senate Inquiry should be provided to the National Mental Health Commission for consideration in the development of the Framework.

Lessons identified:

- Community consultation with the town of Yarloop and surrounding areas following the 2016 Waroona fire indicated that providing spaces and places such as men's sheds or communal areas for people to come together was integral to emotional healing.
- Prepare general practitioners (GPs) to support people impacted by bushfires and other natural disasters. This includes resources for GPs³⁰ to support their own wellbeing, to assist in assessing the mental health of clients and to assist clients and their families.
- PTSD interventions³¹ are required, including improved awareness-raising among health care professionals so that they can identify PTSD early and intervene.

²⁶ https://journals.sagepub.com/doi/full/10.1177/0004867414534476?url_ver=Z39.88-2003&rft_id=ori%3Arid%3Aacrossref.org&rft_dat=cr_pub%3Dpubmed&

²⁷ <https://www.abc.net.au/news/2020-05-07/national-suicide-register-needed-coronavirus-surge/12208668>

²⁸

[https://www.parliament.wa.gov.au/publications/tailedpapers.nsf/displaypaper/3914784af2c4c2e9120d900e48258050004c05ae/\\$file/4784.pdf](https://www.parliament.wa.gov.au/publications/tailedpapers.nsf/displaypaper/3914784af2c4c2e9120d900e48258050004c05ae/$file/4784.pdf)

²⁹ <https://www.health.gov.au/health-topics/emergency-health-management/bushfire-information-and-support/australian-government-mental-health-response-to-bushfire-trauma>

³⁰ <https://www.phoenixaustralia.org/resources/bushfires/resources-for-general-practitioners/>

³¹ <https://www.beyondblue.org.au/the-facts/anxiety/types-of-anxiety/ptsd>

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- Preparedness programs (for areas that are seasonally at risk of bushfires) to enhance expectations of recovery and provide education about adaptive coping strategies to reduce adverse impact of a traumatic experience are essential to decrease the impact of PTSD.
- Considering the frequency of social and personal upheaval that occurs following disasters, including economic problems, employment difficulties and family stressors, alleviating these stressors can play an important role in reducing psychological problems post-disaster.
- There is a need to strategically target regions that have a high risk of persistent mental distress and ensure that adequately trained and supported health professionals can provide the services required. Further, the role of social and community support in long-term adjustment is recognised.
- Reliable data on the social impacts of an event is always a challenge following a natural disaster. Data sources following future bushfire events could be improved by:
 - more qualitative data rather than just quantitative data, and
 - more surveys, noting richer information is gleaned from appropriately worded surveys.

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Glossary

AFAC	Australasian Fire and Emergency Services Authorities Council
AIDR	Australian Institute of Disaster Resilience
ARC	Australian Research Council
BCA	Building Code Australia
BNHCRC	Bushfire and Natural Hazards Cooperative Research Centre
BRMP	Bushfire Risk Management Plan
COAG	Coalition of Australian Governments
COCSG	Chief Officers and Commissioners Strategic Committee
DACC	Defence Assistance to the Civil Community
DBCA	Department of Biodiversity, Conservation and Attractions
DFES	Department of Fire and Emergency Services
DOC	Department of Communities
DOH	Department of Health
DPLH	Department of Planning, Lands and Heritage
DRFA	Disaster Recovery Funding Arrangements
DWER	Department of Water and Environmental Regulation
EMA	Emergency Management Australia
EP Act	<i>Environmental Protection Act 1986</i>
LPS	Local Planning Scheme
NBMP	National Bushfire Mitigation Programme
NBRA	National Bushfire Recovery Agency
PPRR	Prevention, Preparedness, Response and Recovery
PTSD	Post-Traumatic Stress Disorder
SHERP	State Health Emergency Response Plan
UCL	Unallocated Crown Land
UMR	Unmanaged Reserve
WA	Western Australia
WALGA	Western Australian Local Government Association
WAPC	Western Australian Planning Commission