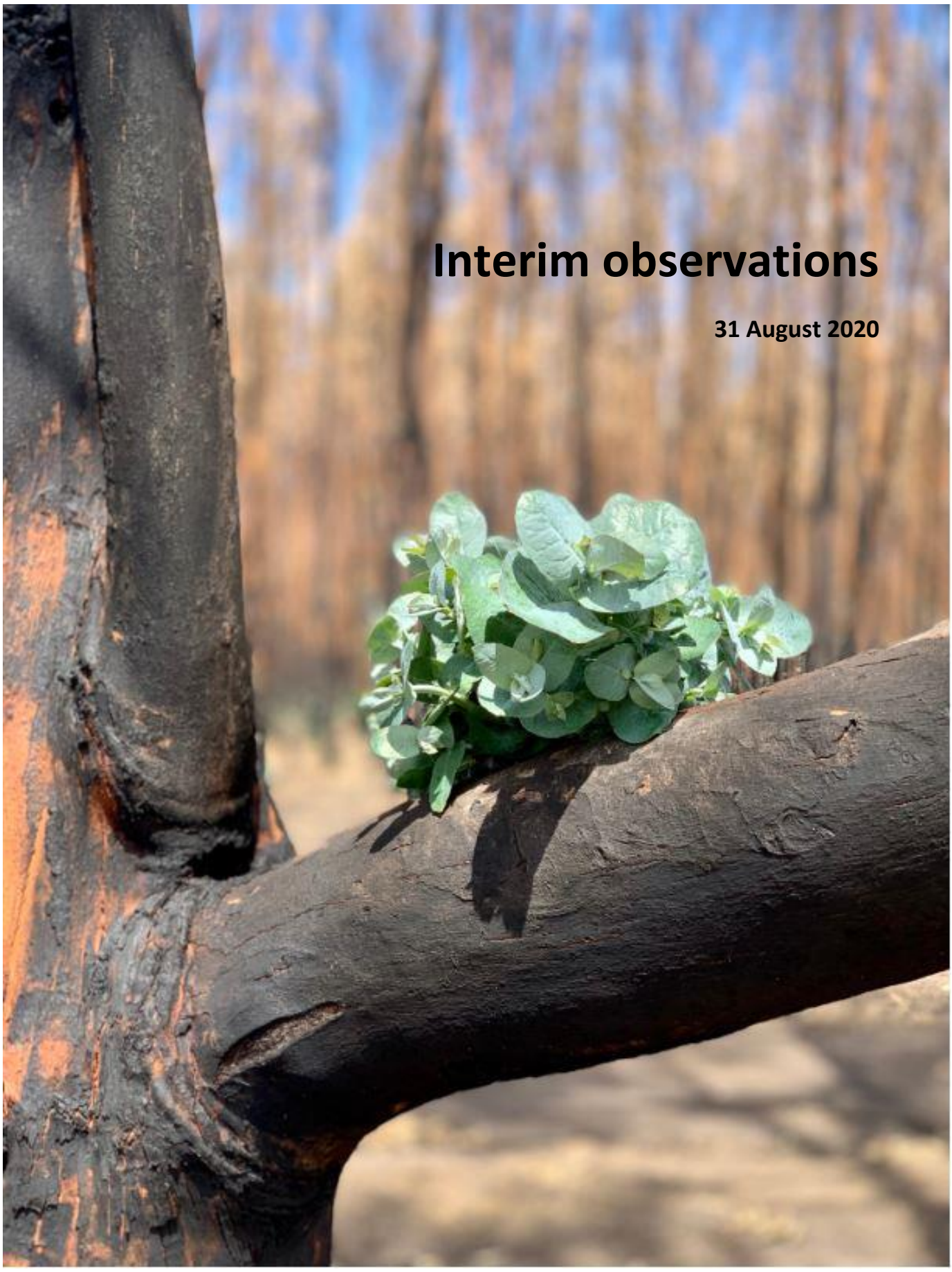
Royal Commission
into National Natural
Disaster Arrangements



Interim observations

31 August 2020

The Royal Commission into National Natural Disaster Arrangements was established on 20 February 2020 in response to the extreme bushfire season of 2019-20 which resulted in devastating loss of life, property and wildlife, and environmental destruction across the nation.

The Letters Patent for the Royal Commission set out the terms of reference and formally appoint Air Chief Marshal Mark Binskin AC (Retd), the Honourable Dr Annabelle Bennett AC SC and Professor Andrew Macintosh as Royal Commissioners.

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Photos taken by staff of the Office of the Royal Commission: cover photo taken at Kangaroo Island, 4 March 2020; photo on last page taken in East Gippsland on 11 June 2020.

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Introduction

1. These are our interim observations from the Royal Commission into National Natural Disaster Arrangements. Our observations relate to some, but not all, of the more pressing issues that we expect to address in our report, which we will present to His Excellency, the Governor-General of the Commonwealth of Australia, and Their Excellencies the Governors of New South Wales, Victoria, Queensland, Western Australia, South Australia and Tasmania, by 28 October 2020.

2. This extended reporting date recognises the impact of the global COVID-19 pandemic, as a result of which, interested parties have prioritised their response to the global health emergency.

3. This is not our final report, nor does it contain draft recommendations. We set out preliminary views to guide those interested in the Commission's work as we approach the final stages of our inquiry including receiving submissions from parties with leave to appear. We continue to consider the extensive evidence before us, including from 290 witness appearances and in well over 2,000 documents, comprising over 50,000 pages, which have been provided to the Commission. We have received over 1,700 submissions, many of which provided invaluable insights into the lived experience of Australians directly affected by the devastating 2019-2020 bushfires.

4. We are also considering the valuable work of past and current inquiries related to natural disasters, while seeking not to duplicate their efforts. A number of reports of state and territory operational inquiries into the recent bushfires have been released this year, and others are expected shortly. Many agencies are also conducting internal reviews of their own response to these bushfires, and appropriately making changes now to better prepare themselves for the next disaster season. We also acknowledge the work of other Royal Commissions now considering the suitability of emergency management arrangements for people in aged care and people with disability.

2019-20 bushfires

5. The 2019-2020 bushfires are still fresh in the minds of many Australians, and were the focus of most submissions to our inquiry. We launched the *Bushfire History Project*[1] to encourage people to record their personal experience, and to share their photos and videos from the bushfires and the ongoing recovery, so that these stories are not forgotten.

6. The 2019-2020 bushfires and the conditions leading up to them were unprecedented. They are no longer unprecedented.

7. The bushfires started in Australia's hottest and driest year on record. Much of the country that later burned had been in drought since January 2018. The Forest Fire Danger Index in 2019 was the highest since national records began. The first of the

[1] Available on the Royal Commission's website, www.naturaldisaster.royalcommission.gov.au/2019-20-bushfire-history-project

season's deadly bushfires started in July. Over the following months, fire burned through millions of hectares of land, variously reported as between 24 and 40 million hectares, threatening and displacing hundreds of communities. While there have been large fire seasons in the past, the 2019-2020 season set a new benchmark for an extreme fire season in Australia's temperate forests. Many communities also suffered hailstorms or flooding.

8. Tragically, 33 people died, and smoke may well have caused many other deaths. Others suffered serious physical and emotional/psychological injuries. It is estimated that nearly 3 billion animals were killed or displaced by the bushfires, and many threatened species and other ecological communities were extensively damaged. Over 3,000 homes and many other buildings were destroyed. For many people, it will take years to recover and rebuild.

9. Estimates suggest the bushfires caused over $2 billion in insured losses alone. The economic impact on tourism, hospitality, agriculture and forestry has been estimated to be around $3.6 billion. There may have been a further $2 billion in health costs, arising, in part, from respiratory illnesses caused by the smoke. These figures are likely to underestimate the true cost of the bushfires.

10. Government agencies and non-government organisations have struggled to provide a full and clear picture of the devastating impact of these bushfires, in part because of inconsistencies in how data about natural disasters are collected, collated and shared across the nation.

Natural disaster risk

11. Our inquiry is not only about bushfires, but also about natural disasters more generally—that is, naturally occurring, rapid onset events that cause serious disruption to a community or region, such as floods, bushfires, earthquakes, storms, cyclones, storm surges, tornados, landslides and tsunami.[2]

12. Australia has a long history of natural disasters. The causes of natural disasters have been shown to be many and complex. Australia's weather and climate agencies have told us that changes to the climate are projected to increase the frequency and intensity of natural disasters in Australia. Further warming over the next 20 years appears to be inevitable. Sea-levels are projected to continue to rise. Tropical cyclones are projected to decrease in number, but increase in intensity. Floods and bushfires are expected to become more frequent and more intense.

13. Additionally, as the 2019-2020 bushfire season demonstrated, bushfire behaviour has become more extreme and less predictable. Catastrophic fire conditions may become more common, rendering traditional bushfire prediction models and firefighting techniques less effective.

14. Natural disaster risk is complex and dynamic, as it is a product of the nature of the relevant hazard, the extent to which communities and other assets are exposed, and the ability of the relevant communities and other systems to cope with and recover from impacts—often referred to as vulnerability. The extent of the damage and harm

[2] Productivity Commission, *Natural Disaster Funding Arrangements* (Inquiry Report No 74, 17 December 2014) xiv.

caused by natural disasters depends on a wide range of factors—such as the intensity and severity of the disaster, where people choose to live, how they build their homes, how both public and private land is managed, and how well people and communities are prepared, supported and cared for during and after disasters. We have heard of the importance of an inclusive, integrated, risk-based national approach to managing natural disasters.

A shared responsibility

15. The central task of our Commission is to inquire into, and report on, *national* natural disaster arrangements. 'National' arrangements are not confined to arrangements involving the Australian Government; it encompasses all levels of government, the private and not-for-profit sectors, communities, families, and individuals.

16. Even the most well-resourced government agencies cannot entirely protect the public from the risks of natural disasters. Some bushfires, for example, will be too large and too widespread; some Australians will live too remotely; and there are only so many firefighters, aircraft and trucks that can be deployed at the same time.

17. All Australians, and particularly those in high-risk areas, must take steps to prepare themselves and their families for natural disasters. It is for this reason that preparation for, response to, and recovery from, natural disasters has been called a 'shared responsibility'— shared between individuals, private enterprise, not-for-profit organisations, and all levels of government.

18. Providing clear and compelling information about the risks people face is one important way in which governments can help individuals protect themselves and their families. We have heard impressive accounts of the diligence and hard work of people preparing well in advance for disasters, and benefiting from their efforts. Others have not been well prepared, and some in the recent bushfires thought they were prepared, but were soon surprised and overwhelmed by the severity of the bushfires. Educating the community about how best to prepare for, and respond to, natural disasters (for example, about how to prepare their homes and land, how and where to evacuate and how to understand emergency warnings) is crucial, and could save lives, livelihoods, and homes.

19. State and territory governments have primary responsibility for managing natural disasters—that is, for preparation, mitigation, response and recovery—for their respective jurisdictions. 'Combat agencies', such as rural fire services and state emergency services, lead the response to natural disasters. It is for state and territory governments to request Australian Government assistance in support of these responsibilities. State and territory governments also have a number of other responsibilities, including managing most public lands within their jurisdictions, such as national parks and state forests.

20. All states have delegated to local governments significant responsibilities for aspects of managing natural disasters. However, the capability and capacity of local governments to do this work appears to depend on their relative size and the resources available to them and varies across Australia. Notwithstanding this delegation, we would expect state governments to ensure that they retain oversight

and understanding of the capabilities and capacity of local government to perform these responsibilities, and to provide support as necessary.

21. Coordination and resource sharing between local governments often rely on regional arrangements and, in some cases, informal understandings. Current processes to facilitate sharing resources between local governments during natural disasters appear beneficial, and warrant greater support.

22. The Australian Government has an important role to play. For example, while state and territory governments can, and do, cooperate among themselves, the Australian Government can play an important national coordination role. We have conducted our inquiry during the COVID-19 pandemic, which has highlighted to us the importance and feasibility of, and public expectation for, national coordination in response to a national crisis.

23. The Australian Government also has capability and capacity not available to the states and territories. Disasters too great for one state or territory to manage alone may become more common. Existing disaster plans, including the National Catastrophic Natural Disaster Plan (NATCATDISPLAN) and the Australian Government Disaster Response Plan (COMDISPLAN), recognise that the Australian Government can assist when a state or territory government becomes significantly incapacitated or its resources are exhausted. Nonetheless, there is clearly an opportunity to refresh and strengthen national disaster planning.

24. The Australian Government can also encourage and facilitate consistency across jurisdictions—for example, by leading the development of national standards. The Australian Government plays an important role in providing information through agencies such as the Commonwealth Scientific and Industrial Research Organisation (CSIRO), the Bureau of Meteorology, Geoscience Australia and research bodies.

National coordination and accountability arrangements

25. Cooperation and collaboration between Australian, state, territory and local governments is vital in national natural disasters, particularly in disasters that affect multiple communities and multiple jurisdictions concurrently. Clarity about the roles and responsibilities of various levels of government is therefore necessary to ensure services are delivered effectively and efficiently, and to ensure appropriate levels of accountability.

26. Over the coming decades, Australia is likely to experience more frequent and intense natural disasters. This will require all jurisdictions to work together to coordinate strategic decision making and share resources across the jurisdictions and the Australian Government.

27. During this inquiry, we heard how a number of forums have evolved to fill gaps in national coordination arrangements between state and territory bushfire and emergency response agencies.

28. At the centre of the Australian Government's coordination of natural disasters is Emergency Management Australia (EMA). Its mission spans disaster risk reduction, disaster preparedness and capability development, critical incident planning, crisis

and security management and disaster recovery. It was first established in 1974, within the Department of Defence. Today, it sits within the Department of Home Affairs.

29. The Australasian Fire and Emergency Service Authorities Council (AFAC) was established in 1993 as a non-government, not-for-profit company—whose 31 members include Australian and New Zealand Fire and Emergency Services agencies. It was formed by its industry to be a national facilitator of common standards, doctrine and resource sharing. In 2003, AFAC established the National Aerial Firefighting Centre (NAFC) to provide a national collaborative arrangement for the provision of aerial firefighting resources for combating bushfires. NAFC's role includes coordinating contract leasing and facilitating the sharing of aerial firefighting resources on behalf of state and territory fire agencies.

30. In May 2013, the Australian New Zealand Emergency Management Committee (ANZEMC), the peak government committee responsible for emergency management, rejected a proposal originating from EMA to establish a representative group of operational emergency management leaders at a national level. By December 2013 AFAC had, in effect, established a group that operated collegially to perform this function, called the Commissioners and Chief Officers Strategic Committee (CCOSC). CCOSC was created by AFAC to provide jurisdictional consideration and representation on behalf of AFAC to the Australian Government. The functions of this group included consideration of strategic issues, progressing national initiatives, and developing fire and emergency services capability.

31. Following the 2014-15 bushfire season, CCOSC took ownership of the Arrangement for Interstate Assistance (AIA), the policy and doctrine underpinning interstate and New Zealand fire and emergency service resource sharing, which had first been developed by EMA. The AIA provides that agencies control the resources being shared, but CCOSC makes 'preliminary decisions' about the fulfilment of requests. However, CCOSC, as a body, cannot direct any jurisdiction. Rather, it is a cross-agency forum for information sharing and collective deliberation. Nevertheless, we have heard different accounts from CCOSC members about CCOSC's authority and capacity to make decisions, and not necessarily limited to those under the AIA.

32. In 2016, AFAC established the National Resource Sharing Centre (NRSC) to implement the resource sharing decisions of CCOSC members and to develop and maintain the AIA, and develop arrangements for international assistance with Canada and the United States of America. These had grown organically over time. Following its establishment, NRSC then coordinated outbound deployments to Canada in 2017, and the USA and Canada in 2018, and resource sharing for Tropical Cyclone Debbie in 2018, the Queensland fires of 2018, and the Tasmanian fires of early 2019.

33. CCOSC's membership, and more importantly its functions, have grown to include a more operational role. Its functions now include coordinating national deployments during significant events, and providing oversight and direction to the NRSC in relation to facilitating interstate and international sharing of resources.

34. CCOSC attendees, including Australian, state and territory officials, have told us of the valuable functions performed by CCOSC, NAFC and NRSC. While AFAC members suggest that CCOSC represents the broader fire and emergency services sector,

CCOSC members emphasised that their primary responsibility was to their own agencies and jurisdictions.

35. CCOSC, NAFC and NRSC, operating under the auspices of a not-for-profit company, were not intended, and may not be well-suited to, determining or giving effect to what is in the national interest in preparing for, and responding to, all natural disasters. AFAC is not subject to the organisational governance principles and public accountability requirements that apply to government agencies.

36. Current arrangements do not provide a clear mechanism to elevate matters to national leaders—that is, the Prime Minister and other First Ministers of states and territories. We appreciate that current arrangements reflect changes that have occurred over time, but, due to an increasing need for better coordination, these arrangements might not be suitable to facilitate national decisions in appropriate circumstances, such as where a natural disaster is considered to amount to a national emergency or where resources need to be prioritised.

37. The 2019-2020 bushfires demonstrated challenges with coordinating resource sharing on a large scale and prolonged responses under current national arrangements. We are examining whether more suitable arrangements can be made to facilitate timely and fully-informed strategic decisions nationally to prepare for and respond to natural disasters.

National Cabinet

38. National Cabinet was established following a meeting of the Council of Australian Governments (COAG) on 20 March 2020 in response to the growing COVID-19 pandemic.

39. The functions of the National Cabinet, or a similar peak intergovernmental decision-making body, could be adopted for the national management of future natural disasters.

40. For national natural disasters, a body like the National Cabinet could receive advice from appropriate intergovernmental bodies, such as the ANZEMC. ANZEMC could in turn be informed by subordinate groups such as CCOSC, the Community Outcomes and Recovery Sub-committee (CORS), and other bodies relevant to the particular natural disaster.

41. This arrangement would be analogous to that between the National Cabinet and the Australian Health Protection Principal Committee and the National COVID-19 Coordination Commission (now the National COVID-19 Commission Advisory Board) in response to the COVID-19 pandemic.

A national recovery and resilience agency

42. The recently created disaster-specific recovery agencies, such as the National Bushfire Recovery Agency, Bushfire Recovery Victoria and the National Drought and North Queensland Flood Response and Recovery Agency, have performed a valuable role in recovery.

43. Rapidly establishing new agencies as a natural disaster is unfolding can be disruptive, delay necessary and immediate assistance, and create confusion. There may be benefit in a single, scalable standing body responsible for natural disaster recovery and resilience at the Australian Government level. Such a body would be responsible for Commonwealth recovery coordination, prioritisation, policy and collation of relevant data.

44. The body could also provide national leadership for broader resilience policy and national programs. It would support the development of skills and expertise in recovery, and foster consistent approaches to recovery and lessons management, including by building resilience in communities. It would work closely with governments and organisations at the state, territory and local levels. This body would require a strong connection with Australian Government preparation and response capabilities and policy making.

Assurance capability

45. Australia has a long history of seeking to understand the causes and impacts of natural disasters, and how disaster arrangements can be improved, with more than 240 previous inquiries being brought to our attention.

46. We have learned that recommendations, findings and directions from the last 20 years of natural disaster inquiries, roadmaps, strategies and frameworks have advocated for consistent disaster risk information, greater investment in national resilience and in mitigation of risk, and improved collaboration. However, it is difficult to determine the implementation status for many recommendations. We observe that many initiatives have not yet been adequately implemented and we question why this is so.

47. We have seen how governance and accountability arrangements have been improved in recent years within emergency management sectors with the introduction of external review and assurance bodies, such as the Inspectors-General of Emergency Management in Victoria and Queensland—two states that have experienced significant natural disasters. These bodies have supported a culture of continuous improvement and collaboration.

48. A level of national consistency in review and assurance functions would likely strengthen the national capability to respond to natural disasters.

49. We continue to consider ways to track the implementation of recommendations of reviews and to monitor and assure the implementation of national plans and frameworks.

Declaration of national emergency

50. The Australian Government can, if it chooses, declare a national emergency. There can be little dispute about this. However, the consequences of a declaration, beyond symbolic, require elaboration, and we continue to consider this issue.

51. A declaration of a national emergency could serve several purposes. It could emphasise the gravity of a situation and galvanise the population in the face of a

national natural disaster. It could signal to Australian Government departments and agencies the need for a state of readiness or action, and mobilise them to support states and territories. It could provide for a better coordinated national approach and action.

52. It might enable or facilitate the securing of international resources to, for example, fight bushfires. It could also facilitate the early deployment of Department of Foreign Affairs and Trade liaison officers to EMA to assist with offers of international assistance.

53. States and territories already have legislated power to make emergency declarations and have done so in respect of a number of natural disasters, including during the 2019-2020 bushfire season and the COVID-19 pandemic. We are considering how any national declaration would 'interact with state and territory emergency management frameworks', and whether the Australian Government should have 'clearer authority' to take action 'in the national interest'.

The Australian Defence Force

54. The contribution of the Australian Defence Force (ADF) in supporting state and territory governments during response and recovery efforts during the 2019-2020 bushfires was without parallel in peacetime. Between September 2019 and March 2020, 'Operation Bushfire Assist' saw some 8,000 defence force personnel assist with the bushfires, including more than 2,500 ADF Reserves. Approximately 500 defence personnel from abroad also helped, from countries including New Zealand, Papua New Guinea, Japan and Fiji.

55. The ADF does not directly combat bushfires, but is an important component of response and recovery for bushfires and other natural disasters. The ADF provides a set of specialist support capabilities. For example, ADF vessels HMAS Choules and MV Sycamore evacuated hundreds of people from fire-affected Mallacoota in Victoria in early January 2020.

56. The involvement of the ADF in natural disasters in Australia is already contemplated in government disaster plans. However, there was some uncertainty about the 'thresholds' that must be met before seeking the assistance of the ADF, and how the thresholds apply. Those thresholds are set out in NATCATDISPLAN, COMDISPLAN, and the Defence Assistance to the Civil Community (DACC) Manual. We understand that the Australian Government is currently working to clarify the thresholds and we support these efforts.

57. Additionally, some state government agencies and some local governments did not understand what tasks the ADF could perform, how to seek ADF assistance, or how best to interact with the ADF once it was deployed, during both the response and recovery phases. It appears this arose from unfamiliarity with working with the ADF in natural disasters and the relevant processes.

58. Separately, some stakeholders questioned the limits of the existing authority to support DACC tasking. It has been said, in the context of the 2019-2020 bushfire season, that the limits of the existing legal framework were 'tested'. We have not yet

reached a view about whether further legislative authority is required, and have sought further information on this issue.

59. We have also heard that the ADF lacks privileges and immunities otherwise afforded to state and territory emergency responders, and that the legislative provisions for the call-out of the ADF Reserve force may not have been sufficiently flexible. We have sought further information on the nature and effect of those challenges.

National information systems

60. Nationally consistent and comparable data and information, when made widely available, can deliver efficiencies, avoid duplication, improve understanding, and facilitate decision making. This includes both standards to promote harmonisation of collection, storage and analysis of data, and national systems to provide particular information services.

61. Currently, Australian, state, territory and local governments have a range of systems, tools and technologies to gather and share data, information and knowledge about natural disasters. This information differs in quality and consistency and much of it is not directly comparable between jurisdictions. As a result, there are gaps and inefficiencies in data collection, sharing, and the use of data in products and services.

62. A better understanding of risk would improve decisions that balance risk reduction against other priorities. For example, risk to the built environment is caused not only by natural conditions, but also by the legacy of decisions that may have been made decades ago about where and how to build. Today's decision makers should have access to easily understandable information and data, and decision frameworks and tools, to support them to make decisions that will affect future risk.

63. Good information and data support decision making during and after a natural disaster. National situational awareness would benefit from a range of technologies, including remote sensing and data visualisation systems, and information from a variety of sources. Real-time decision making needs relevant real-time data.

64. Commonwealth organisations (such as the Bureau of Meteorology, Geoscience Australia, and the CSIRO) provide and continue to develop valuable products and services fulfilling one or more of these functions.

65. Products and services that could further benefit from a national approach include:

- climate information and climate services;
- platforms to store and distribute information, such as map-based tools that identify built and natural environments, systems and risks;
- tools, including modelling, that assist people to take steps to manage the risks and the consequences for which they have responsibility, such as by taking out insurance;
- systems to provide warnings, predictions and real-time monitoring and reporting during a disaster;

- systems to assess the impact of disasters and collect and distribute information during the recovery phase; and
- monitoring and evaluation of risk reduction, response and recovery actions, to help build a national picture of which approaches are most effective.

66. The Australian Broadcasting Corporation, alongside community radio, is acknowledged as a trusted broadcaster of emergency messages and warnings. It is a role that the ABC has fulfilled over many years and in which it has an established reputation. ABC managers are embedded in some but not all emergency centres. To assist with the timely delivery of critical information to the public, we see a need for all state and territory emergency response organisations to consistently embed ABC managers within state and territory emergency management centres.

Air quality

67. During the 2019-2020 bushfires, smoke blanketed large parts of the nation. Poor air quality can have a negative impact on health outcomes. The air quality in some areas was very poor for days on end, and there was high public demand for clear information about air quality and health advice.

68. There is an opportunity to improve the air quality information and associated public health advice that is provided to the community. For example, near real-time information would assist members of the community to take preventative steps to reduce the negative health impacts of smoke.

69. Air quality is reported differently between states and territories, such that air quality might be reported as 'poor' on one side of a border, and 'hazardous' on the other. This undermines the utility of this information, and poses risks to vulnerable members of the community. In considering this issue, we note that steps were taken during the 2019-2020 bushfires to improve air quality information.

70. Helpfully, following a recommendation of the COAG Health Council, since February 2020 Australian, state and territory governments have been working towards national consistency in air quality standards.

National research and emerging technologies

71. There are opportunities to encourage the development and utilisation of technologies in the generation and use of information for, and in the response to, natural disasters. This should not just be through the development of new technology, but also through better use of existing technology (eg, satellites, airborne platforms, sensors, night capabilities, as well as improved modelling and simulation tools).

72. Australian, state and territory governments should fund and support the proposed research centre for natural hazard resilience and disaster risk reduction announced by the Australian Government on 23 July 2020. The centre is intended to deliver on national research priorities that address national knowledge gaps and research needs in respect of all natural hazards, acknowledging that the emergency management

sector is not the only stakeholder in natural hazard resilience and disaster risk reduction.

73. The Australian, state and territory governments should establish effective pathways for interaction between government, government bodies, research institutions, the private sector and entrepreneurs to facilitate and utilise the development of expertise, tools and systems to improve preparedness for, response to, resilience and recovery from natural disasters.

Opportunities for improvements in national mitigation and preparedness arrangements

Emergency planning

74. It is important for emergency planners at all levels of government to have the best available information and input from appropriate experts and organisations. Relevant expertise and, importantly, local knowledge, may be needed from a range of government and non-government sources, including private sector operators, critical infrastructure providers, charities, medical practitioners, and wildlife and stock welfare groups. We have heard that some groups could have been better integrated, at the appropriate level, into natural disaster planning and management.

75. By way of example, local health professionals are an important part of Australia's health care system and local communities. They have valuable knowledge of, and pre-existing relationships with, the local communities they support. However, they do not appear to be systematically included in emergency planning for response, or recovery arrangements.

76. As Australia increasingly faces cascading, concurrent and compounding natural disasters, 'stress testing' disaster plans and evaluating outcomes will be crucial. Joint and national exercises can assist to evaluate plans, develop and assess competence, identify gaps and improvements, and build relationships.

Evacuation planning and shelters

77. There is an opportunity for more work to be done to improve evacuation planning and sheltering options.

78. We have heard that there may be a need for evacuations to better take all relevant factors into account, including tourist populations, access to appropriately prepared evacuation routes, and the identification of appropriate sheltering locations.

79. We heard of confusion in the community about the nature of the different sheltering options—including evacuation centres, Neighbourhood Safer Places and places of last resort—and the level of protection provided by each of these facilities. This confusion could have an adverse impact on safety where the protection offered by the facility does not meet the expectations of those seeking shelter.

80. In some cases, evacuations crossed state and territory borders. In those circumstances, some people may have experienced additional confusion, including due to the differences in terminology used.

81. The evacuation of people from aged care facilities raises particular issues, and we have referred this topic to the Royal Commission into Aged Care Quality and Safety.

Supply chain continuity

82. Natural disasters can have a significant impact on supply chains, leading to shortages of essentials for the community, businesses and emergency services. Some have suggested that domestic stockpiles (eg, fire retardant and consumables) are warranted to ensure supply during these times of most urgent need. This might operate similarly to the national medical stockpile, which was used during the 2019-2020 bushfire season to supply P2 masks to alleviate the widespread smoke effects of the bushfires.

83. To support preparedness, we consider that forming a better understanding of supply chain risks would be of great benefit at each planning level. Understanding these risks would provide sufficient time to consider alternatives and options. For example, governments could harness the private sector to create onshore redundancy for key goods sourced from overseas.

Critical infrastructure and essential services

84. In the context of natural disasters, the understanding of critical infrastructure is not consistent nationally. We have taken critical infrastructure to mean the physical assets (such as power lines, water pumps, roads and mobile towers) that provide everyday essential services such as power, telecommunications, transport and water. Commonwealth, state and territory legislation define, and require registers of, critical infrastructure. However, for a variety of reasons, these definitions are different and critical infrastructure registers are not exhaustive.

85. Critical infrastructure can be publicly and/or privately owned and operated. Planning and preparation should ensure that communities, individuals and businesses are aware of vulnerabilities and take necessary steps in advance of essential service outages, in order to manage cascading effects.

86. There seem to be some deficiencies with integrating critical infrastructure into planning processes. We observed challenges faced by managers of critical infrastructure in coordinating with others during the 2019-2020 bushfires. For example, we heard of difficulties for power providers in identifying who owns telecommunications assets for the purpose of notifying telecommunications providers about power outages. We have also noted inconsistencies in the extent to which the vulnerability of essential infrastructure is accounted for in government emergency planning and risk management.

87. Restoring essential services to communities following an outage takes time, and depends on the scale of the disaster. Risks can be mitigated but, in the course of a natural disaster, some outages are unavoidable. During the 2019-2020 bushfires, businesses and communities were significantly affected by essential service outages.

While power and telecommunications outages were most visible, communities also had limited access to other essential services. Infrastructure owners and operators appeared to have a broad understanding of their own interdependencies. Others seemed less aware of the extent to which their services relied on other services—until an outage occurred. We are considering whether coordination arrangements can be strengthened to improve understanding of these risks.

Public and private land management

88. Land management can reduce some aspects of natural disaster risk (eg, through vegetation fuel management). However, the effectiveness of land management depends in turn on a range of factors, particularly weather. There are also a number of constraints that limit the extent of, and opportunities for, land management, including cost, community awareness, regulatory settings, and the shortening of seasonal windows.

89. States and territories are primarily responsible for regulating land management, including environmental and hazard management activities. However, the practical implementation of land management rests with the land manager—whether an individual, a business, a government or other entity.

90. We have heard of the complexity and variation in approval processes. In some cases, there appears to be a need for practical guidance for land managers and the broader community.

91. There is a strong interest in, and views on, prescribed burning as a bushfire hazard reduction activity. Other activities include mechanical clearing—such as slashing, thinning and mowing—and grazing by animals. All these activities can play an important role in ameliorating bushfire behaviour and increase the potential for suppression. However, these activities will not eliminate bushfire risk.

92. There is a need for further education and research to improve understanding of the effectiveness of these activities under severe to catastrophic bushfire weather conditions.

Indigenous land and fire management

93. There are varying degrees of community understanding of Indigenous land management practices and how they differ from emergency management-driven hazard reduction activities.

94. We have observed the interconnected nature and cultural and environmental significance of Indigenous land management practices in Australia, including traditional fire management.

95. We have heard evidence that Indigenous land and fire management is supported and practised differently across the varied landscapes of Australia. Indigenous groups and communities have different objectives and levels of knowledge, experience, resources and opportunities to undertake Indigenous land and fire management. We have also heard how Indigenous land and fire management incorporates technology, such as satellite data and helicopters.

96. Indigenous land and fire management in northern Australia is practised on a broader scale than in southern Australia. We have heard that these practices can reduce bushfire risk in the north; more research is required as to their role in bushfire risk mitigation in the south. Some jurisdictions are working with Traditional Owners to explore the relationship between Indigenous land and fire management and natural disaster resilience and its integration into a whole-of-community approach. There is a place for Indigenous land and fire management practices to be integrated into the planning and execution of public land management activities across Australia.

Land use planning and building

97. Land use planning and building decisions are a key factor in the extent of exposure, and vulnerability, of households and communities to natural hazards. However, there are gaps in the natural disaster risk information available to decision makers.

98. Decisions about where to locate communities, buildings and services and what conditions to impose or standards to require for new buildings or developments, should be informed by sound risk data. Information about hazards and exposure should be publicly available to ensure that informed decisions can be made. Decision makers may need tools or services to use probabilistic data effectively for the assessment of current and future risk in a changing global climate.

99. We have heard that many hundreds of thousands of Australians live in at-risk areas. The insurance industry reported that, in the 2019-2020 bushfire season, 99% of destroyed and damaged residential buildings were located on, or within 500m of, land declared as 'bushfire prone', and 74% were built before the introduction of the relevant Australian Standard, AS 3959.

100. The extent to which structures and communities are exposed and vulnerable to natural hazards should be identified and communicated, so people can make informed decisions about the risk with which they are willing to live, and the actions they can take to mitigate this risk.

101. Land use planning and building regulations presently apply only to new developments (or significant modifications to existing developments), not to existing developments.

102. We have also heard about issues relating to insurance affordability, coverage, and the ability to understand insurance products. Another question raised was the extent to which insurers recognise actions taken by householders to reduce their risk. Many of these issues are covered in more detail in other inquiries.

Opportunities for improvements in national response arrangements

103. Time-critical decisions need time-critical information. Accurate and timely information allows decisions to be made at the most appropriate level, and empowers the public to make informed decisions about their safety prior to and during events. Inconsistency in information creates confusion, and limits the ability of individuals and agencies to deal with a natural disaster effectively.

Emergency information

104. The Bushfire Warnings System, established in 2009, is a national, three level bushfire alert system. While the warning levels are the same nationally, the symbols used and the corresponding action required under each alert level varies across states and territories (see Figure 1). We have heard that the middle-level warning, 'Watch and Act', causes confusion—could it mean 'wait and see' or 'act now'? The recommended steps to be taken in response to the warning also vary across the nation. An AFAC working group has been tasked with developing a national all-hazard warning system—the Australian Warning System—for some six years. Community research on the proposed AWS has been ongoing since September 2018.

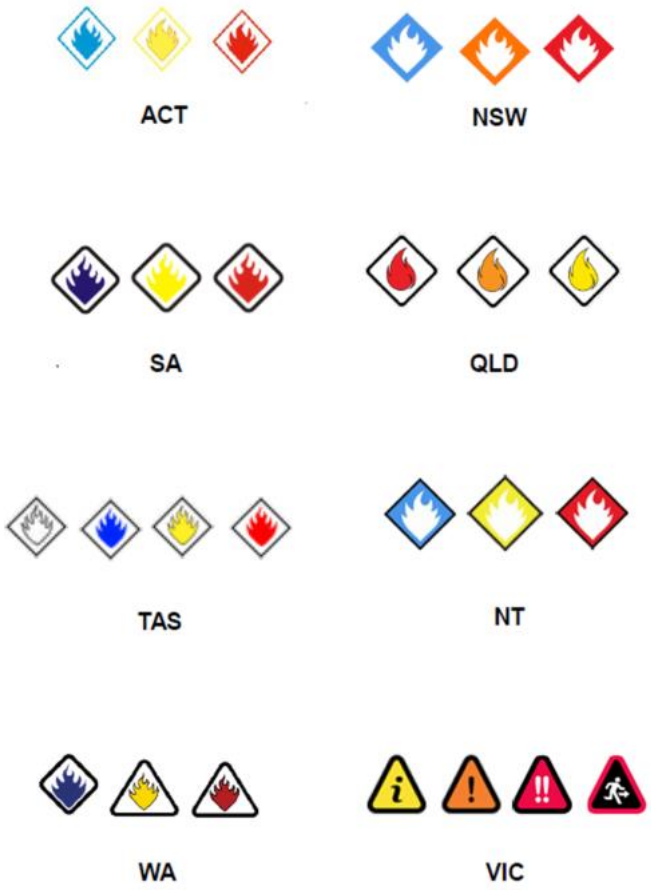

Figure 1: Current Bushfire Warnings System.

105. We recognise AFAC's efforts to pursue consistency in a collegial manner through CCOSC. Nonetheless, for such a critical issue, this work has taken too long and is an example of the need for a clear decision-making process and to elevate matters to national leaders where required. The work on the Australian Warning System should be finished as a priority.

106. Likewise, there are variations in the current fire danger ratings across state and territory fire authorities, and in the guidance on how to react to each level (see Figure 2). For example, in Victoria, 'Catastrophic' is 'Code Red', and in Tasmania 'Catastrophic' is represented by black, not red. Some states show the fire danger

index for each rating and others do not. In 2014, ANZEMC agreed to the development of a new Australian Fire Danger Rating System. Since 2016, AFAC has been leading the development and implementation of the new system, drawing on the latest science and technology to better reflect the effect of forecast environmental and weather conditions on the potential for bushfires. While we appreciate the complexity involved, we are of the view that this needs to be finalised as a matter of priority.

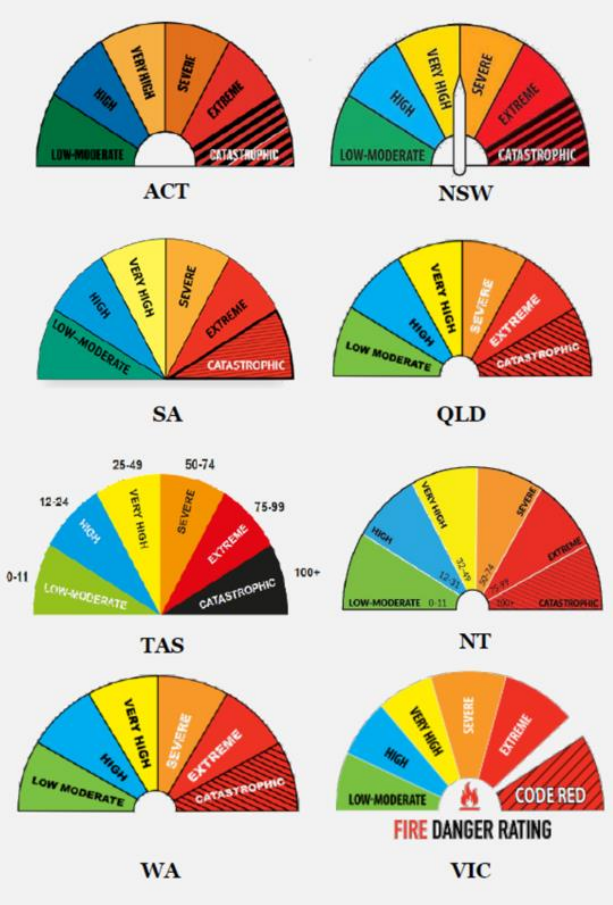

Figure 2: Fire Danger Rating System in each jurisdiction.

107. A national community education campaign should be prioritised following the finalisation of the Australian Warning System and the Australian Fire Danger Rating System.

108. During the 2019-2020 bushfire season, members of the community and first responders used state and territory government operated map-based applications (apps), such as the NSW RFS app 'Fires Near Me' and 'VicEmergency', for emergency information and warnings in their respective areas. The various apps use different terminology, symbols and explanations for the same emergency and do not consistently include the same types of information, or all of the necessary information, to enable informed decisions.

109. While the apps are generally well liked by the community, the inconsistencies and differences in information provided in apps caused some issues during the 2019-2020 bushfire season, especially for border communities and tourists who had to use

multiple apps. We are considering the value of a national approach to apps that can standardise the process of attributing a warning to an emergency, clarify time lags in publishing warnings, and provide all relevant information an individual may need to make an informed decision in relation to all hazards. We are considering the need for a new 'national app' with information about all natural disasters, not just bushfires.

110. Closer collaboration between agencies, and between agencies and the private sector, could help resolve these issues.

Emergency responders

111. Australia is well served by the career and volunteer emergency responders who work together in the service of the nation. As natural disasters become more frequent and intense, there may be greater need for emergency responders to work with other agencies and across the nation. Emergency responders, both career and volunteer, are already being frequently deployed interstate, to provide surge capacity, relief to local workers, and critical expertise.

112. National standards, training and protocols should make the process for interstate deployments and the relocation of responders more efficient and effective. Despite national standards, such as the Public Safety Training Package, standards, training and protocols differ between states and territories. Some differences are understandable, for example differences in training to account for local geography. We are considering whether emergency responders would benefit from greater consistency in standards, training and protocols.

113. The vast majority of people who fight bushfires and respond to floods and cyclones in Australia are volunteers. They played a vital role during the 2019-2020 bushfires, as they have during many previous bushfires, floods and cyclones across Australia. Volunteers are also crucial in helping communities recover from natural disasters.

114. Evidence of volunteers and volunteering organisations emphasised the importance of according volunteers respect and recognition, for their skills, knowledge, hard work and sacrifice. The 2019-2020 bushfire season made extraordinary calls on some volunteer firefighters. Without these volunteers, the bushfires may well have lasted longer, taken more lives and destroyed more homes.

115. During the 2019-2020 bushfires, many volunteers worked for weeks on end, often taking them away from their regular employment. Some support was offered to volunteers, including a government funded volunteer support payment and support from the private sector. We are considering whether all volunteers ought to have the same immunities, and whether volunteers taken away from their regular employment for extended periods would benefit from additional employment protections.

Aerial firefighting

116. The use of aerial firefighting is an integral part of strategies to contain and control bushfires. For example, aircraft are used to gather information, to apply retardant to reduce the progression and intensity of bushfires, and to move emergency responders to strategic locations.

117. NAFC coordinates the procurement of contracted aircraft and services for state and territory agencies. State and territory governments also presently own a small number of emergency response aircraft.

118. Various types of aircraft play valuable but differing roles in aerial response. For example, large and very large air-tankers (LATs and VLATs) have large load capacity and can travel relatively long distances at speed, and deploy across Australia; smaller aerial assets, such as helicopters and small fixed-wing aircraft, have a smaller load capacity, but are capable of operating at higher rates of effort in local responses and from regional locations. There are only a small number of LATs and VLATs in operation globally, with most based in North America. There is only one LAT permanently located in Australia (NSW).

119. Aerial firefighting is not a task directed of the ADF by Government. ADF aerial assets are not generally equipped for firefighting. They are used to support firefighting efforts, such as for evacuations and moving personnel. They are also used for concurrent natural disasters, such as floods and cyclones, and broader national security tasks.

120. Some aerial assets that are relied on as part of the national firefighting capability are based overseas. As fire seasons in both hemispheres increase in length and intensity, and other global issues arise, there is a risk that it will become increasingly difficult to secure overseas aircraft to provide contracted services during the Australian bushfire season.

121. In light of these risks, existing aerial firefighting capability and capacity arrangements require reassessment. This would need to be supported by research and evaluation to inform specific future capability needs, including the desirability for a modest, Australian-based sovereign VLAT/LAT capability. There may also be a need to explore contracting models that encourage Australian industry involvement in the development of future aerial firefighting capability.

Emergency communications and equipment

122. Investing in equipment for fire and emergency services can be expensive. These decisions have long-lasting ramifications, with some in place for decades, requiring long lead times to change. For example, we have heard that the 'refresh' time for firetruck fleets can be as long as 30 years.

123. Effective communication among emergency responders relies on the specific equipment they use. Firefighters and other first responders have repeatedly stressed the importance of their communications equipment being interoperable. An absence of compatible information and communications equipment can make information sharing in the field challenging or impossible. Where people from different jurisdictions are working together to respond to a natural disaster, it is vital that their various technologies also work together.

124. Australian, state and territory governments have long recognised the need to improve the national interoperability of communications equipment. We encourage governments to prioritise and conclude arrangements to deliver more interoperable communications equipment.

Public safety mobile broadband

125. A widely recognised gap in the communications platforms available to emergency responders in Australia is a national public safety mobile broadband (PSMB) capability, which would enable first responders to make better use of internet-based technologies and applications to access video, images, location tracking and other data.

126. We support the need for governments to prioritise, and expedite discussions about, delivering a national PSMB capability, which would confer significant benefits to emergency responders in the states and territories.

127. There are significant spectrum requirements to deliver a PSMB capability. The Australian Government has responsibility for managing the allocation of spectrum, which has significant commercial value. It is unclear to us why the Australian Government should provide this spectrum to the states and territories without contribution from those governments.

Opportunities for improvements in national recovery arrangements

128. Recovery is a complex and multi-layered process that seeks to address the diverse needs of individuals and communities—it is more than simply rebuilding what has been destroyed. The recovery process often commences during the response phase, can run concurrently over multiple disasters, and can continue for years.

129. We have observed that successful recovery is community-centred. It is the role of formal recovery entities—at all levels of government, non-government organisations and the private sector—to provide structured support, communication, and coordination to assist these efforts.

130. Community-led and coordinated recovery relies on effective preparedness and planning processes. These processes should provide a framework and governance for recovery and set out the operational strategies and interventions specific to the affected communities.

Coordinating recovery efforts

131. Despite the goodwill of all parties, there is variability in the level of collaboration and coordination in the delivery of recovery programs and services across jurisdictions. We will continue to consider the evidence relating to broader coordination and planning issues relevant to recovery, including between the Australian Government, state, territory and local governments, charities, non-government organisations, insurance companies and volunteer and community groups. This includes consideration of whether particular needs of individuals, small businesses, primary producers and the environment are appropriately addressed. We will continue to analyse the evidence regarding recovery coordination, including the adequacy of recovery resource sharing arrangements.

Disaster Recovery Funding Arrangements

132. The Disaster Recovery Funding Arrangements 2018 (DRFA) is a joint Australian, state and territory government cost-sharing initiative aimed at alleviating the financial burden on states and territories of certain natural disaster related recovery measures.

133. We have learned of a number of issues, including the scope of 'betterment' initiatives, the eligibility of certain public assets, and administrative requirements (such as preparation of a business case for new recovery programs).

134. We welcome the current review of the DRFA which, in part, seeks to identify pre-agreed recovery programs that can promote quick and effective delivery of recovery assistance to communities.

Sharing of personal information

135. We have heard of the frustration and trauma of people having to tell their story repeatedly to multiple relief and recovery organisations.

136. The Australian Government has the power to make an emergency declaration under the *Privacy Act 1988,* and did so on 20 January 2020. The declaration permitted Australian Government agencies and private sector organisations subject to the Privacy Act to collect, use or disclose personal information, which they might not otherwise be able to do, for purposes related to the emergency or disaster.

137. The declaration did not apply to the collection, use or disclosure of personal information obtained by state and territory agencies, and general awareness of the declaration appears to have been limited.

138. States and territories do not presently provide exemptions from their privacy obligations through an emergency declaration. An exception is the Northern Territory, where such an exemption is limited to sharing information within the Territory's public sector.

139. We observe the need for Australian, state and territory governments to work together to ensure that personal information of individuals affected by a natural disaster is able, legally and technically, to be appropriately shared between all levels of government, agencies, insurers and non-government organisations for recovery purposes.

Mental health

140. Exposure to traumatic events, such as natural disasters, can have a significant effect on emergency responders. More broadly, natural disasters can affect the mental health and wellbeing of individuals in a number of ways and over different periods of time. We have heard evidence of this impact, ranging from mild or transitory symptoms, to mental health disorders that can be delayed in onset and have long-term impacts. We have also received evidence of the particular mental health impacts on vulnerable groups, such as children and the elderly. For those who

experienced the devastation of the 2019-2020 bushfires, the cumulative mental health impact of the COVID-19 pandemic has been particularly acute.

141. Australian, state and territory governments have told us about the mental health and support services offered after the 2019-2020 bushfires. We also note the Productivity Commission inquiry into the role of mental health in supporting economic participation, enhancing productivity and economic growth. We acknowledge the ongoing work of the National Mental Health Commission, in conjunction with the states and territories, in developing the National Natural Disaster Mental Health Framework. We support the work of the Commission on the recognition of the cumulative impact of drought, bushfires and COVID-19 on mental health as a long-term public health issue.

Wildlife management and species conservation

142. The 2019-2020 bushfires have been described as an 'ecological disaster'. We have heard evidence of the extraordinary efforts of individuals, organisations and governments to protect wildlife before, during and after the bushfires.

143. Knowledge of Australia's wildlife and its distribution in Australia was, and remains for many species, disparate, fragmented, incomplete and inaccessible. Through a considerable and coordinated effort, however, a significant amount of information was collated to rapidly assess the impact of the bushfires on wildlife, threatened species and ecological communities, and to develop recovery plans for priority species. Improving knowledge of the impacts of natural disasters on wildlife could support the rapid deployment of wildlife triage and rehabilitation efforts.

144. There remain significant information gaps for more effective wildlife management and species conservation. These are challenging to fix immediately. The 2019-2020 bushfires have highlighted the need for action to ensure greater consistency and collaboration in the collection, storage, access and provision of environmental information.

Impact data

145. We have experienced real difficulties in developing a clear national picture of the impact of the 2019-2020 bushfires across the nation. A number of issues have been raised in relation to impact assessments, including: limited availability of data, technical limitations in systems and platforms, inconsistent and incomplete collection practices, and limited capacity of entities responsible for conducting impact assessments, and barriers in the broad distribution of impact data.

146. Standardised impact data collection and improved data sharing platforms, at all levels nationally, could help improve the delivery of recovery services and facilitate improved assessment of the effectiveness of resilience measures. We are considering the means by which all governments could strive to develop a greater capacity to collate and share standardised and comprehensive disaster impact data.

Next steps

147. These interim observations include our preliminary views on matters raised by the terms of reference in our Letters Patent. Some of the topics in these observations, and a number of other topics, will be canvassed in a separate paper, to be released shortly, that invites comment on a number of propositions from Counsel Assisting the Commission.

148. We thank all of the members of the community, government agencies and non-government entities for the contributions they continue to make to the work of this Commission. We will continue to analyse the extensive evidence before us, as well as views to be provided on the propositions, and information arising from the final block of hearings, to be held in the week commencing on 21 September 2020.