

Chapter 4

Financial, human and mechanical resources

4.1 This chapter examines the financial, human and mechanical resources that were available and provided in response to the 2016 bushfires in the Tasmanian Wilderness World Heritage Area (TWWHA).

Available firefighting resources

4.2 In Australia, state and territory governments are primarily responsible for protecting life, property and environment within their jurisdiction. This includes responding to bushfires.¹ Tasmania's emergency management arrangements comprise a mix of state and regional planning (for example, the Tasmanian Emergency Management Plan), as well as interagency arrangements.²

4.3 The states and territories also have inter-jurisdictional arrangements. In addition to bilateral agreements, *Arrangements for Interstate Assistance* (AIA) enables the timely and meaningful exchange of capabilities during significant incidents (fire services, emergency services and land management agencies). The AIA is the primary arrangement for mutual assistance in emergency management activities conducted by Australian and New Zealand agencies.³

4.4 The Australian Government provides assistance only when a state or territory decides that its resources will not be able to effectively manage an incident. A formal request for assistance can be made to Emergency Management Australia (EMA), a division within the Attorney-General's Department (AGD), to activate the Australian Government Disaster Response Plan (COMDISPLAN).⁴

National Aerial Firefighting Centre

4.5 In 2003, the states and territories formed the National Aerial Firefighting Centre (NAFC) to provide a national arrangement for the provision of aerial

1 Attorney-General's Department (AGD), *Submission 2*, p. 5.

Also see: Mr Mark Crossweller, Director General, Emergency Management Australia, AGD, *Committee Hansard*, Canberra, 1 November 2016, p. 10.

2 Australasian Fire and Emergency Service Authorities Council (AFAC), [*AFAC Independent Operational Review, A review of the management of the Tasmanian fires of January 2016*](#) (2016 Independent Operational Review), Prepared for Tasmania Fire Service, Forestry Tasmania and Parks and Wildlife Service Tasmania, April 2016, pp. 17–18, https://www.fire.tas.gov.au/userfiles/tym/file/misc/1604_tasfirereport_final1.pdf (accessed 15 November 2016).

3 Tasmanian Government, *Submission 24*, p. 21. A request for assistance is made to the Commissioners and Chief Officers Strategic Committee, the national body responsible for coordinating operational matters during significant incidents.

4 AGD, *Submission 2*, p. 2. The Australian Government also provides financial assistance to help eligible individuals and communities recover from major disasters (such as Natural Disaster Relief and Recovery Arrangements): pp. 3–4.

firefighting resources. One of its roles is to coordinate the leasing of a national fleet of highly specialised firefighting aircraft, which are made available to fire agencies to supplement the fleets leased or owned by individual jurisdictions. The NAFC explained:

One of the main benefits of these national arrangements is the ability of states and territories to access increased capacity, or "surge" capacity, for aerial fire suppression at times of peak bushfire activity. It is not practical, sensible or cost-effective for each individual state and territory to maintain the necessary specialised resources for all situations.⁵

4.6 The NAFC is jointly funded by the Australian, state and territory governments. The fixed (standing) costs of the leased national fleet are largely met by the states and territories, with the Australian Government making an annual contribution of \$14.8 million toward this cost. The operational costs are met by the state and territories that utilise the contracted aircraft for bushfire suppression.⁶

4.7 The NAFC's submission noted:

Australian Government funding has been a significant factor in catalysing the success of the NAFC arrangements. The Australian Government funding is, however, forecast to diminish in real terms, whereas the cost of providing aerial resources will rise. This may lead to a reduction in access to aerial resources in the future.⁷

4.8 During the 2015–2016 bushfire season, the leased national fleet comprised 127 aircraft, most of which were based in Australia. Mr Richard Alder, General Manager of the NAFC, explained that the larger aircraft (20–25) tend to be contracted from the Northern Hemisphere (for example, the United States of America and Greece), where the fire seasons are largely complementary.⁸

4.9 In view of climate change predictions, and changing demographics and land use, the NAFC submitted that the demand for aerial firefighting resources is likely to increase. Therefore:

There is an imperative to continue the current, collaborative national arrangements to ensure efficient use of resources and to provide reliable access to surge capacity. There will also be a need to consider the provision of enhanced capabilities necessary to meet forecast increased demand.⁹

5 National Aerial Firefighting Centre (NAFC), *Submission 18*, p. 3.

6 NAFC, *Submission 18*, p. 3; Mr Richard Alder, General Manager, NAFC, *Committee Hansard*, Launceston, 2 November 2016, p. 5.

7 NAFC, *Submission 18*, p. 5.

8 Mr Richard Alder, General Manager, NAFC, *Committee Hansard*, Launceston, 2 November 2016, pp. 1, 4–5 and 7; AGD, answer to question on notice, Attachment A, received 9 November 2016; NAFC, answer to question on notice, pp. 6–10, received 11 November 2016.

9 NAFC, *Submission 18*, p. 5.

Resources provided in response to the 2016 bushfires

4.10 Submitters and witnesses acknowledged that the scale of the 2016 bushfires in Tasmania was unprecedented, and paid tribute to the efforts of all agencies and personnel involved in suppressing those fires.¹⁰

4.11 The Australian and Tasmanian Governments were especially complimentary. AGD submitted that the response had been 'significant and collaborative', emphasising that all jurisdictions had offered assistance under the AIA.¹¹ Similarly, the Tasmanian Government described these efforts as 'extraordinary' in terms of the dedicated financial, human and mechanical resources:

In total, more than 5,600 Tasmanian volunteer and career firefighters, over 1,000 interstate and international firefighters, and as many as 40 aircraft were deployed. It is of great credit to Tasmania's emergency management arrangements across prevention, preparedness, response and recovery, and the professionalism of our fire agencies, that the response was successful in protecting the community and minimising damage to infrastructure and the natural environment.¹²

4.12 The Australasian Fire and Emergency Service Authorities Council (AFAC) had earlier praised the firefighting efforts, with its independent report into management of the 2016 bushfires concluding:

Overall, we think that the way in which the fires were managed is a tribute to the Tasmanian fire agencies, their leadership and all personnel involved in this incident. We also recognise the very significant effort of interstate and international fire agencies that came to Tasmania's aid in circumstances that the State could not hope to manage effectively by itself.¹³

Concerns about the availability and provision of resources

4.13 Some submitters and witnesses argued however that the resources had not been adequate, with fire conditions having foreshadowed well in advance a need for additional resources in the TWWHA.¹⁴ Some commentary focused on future resource requirements for multiple or extensive bushfires in remote wilderness areas, while most submitters and witnesses directed their arguments toward operational matters (see below).

10 See for example: Mr Greg Cooper, Branch Secretary, United Firefighters Union of Australia–Tasmania Branch (United Firefighters Union (Tasmania), *Committee Hansard*, Launceston, 2 November 2016, p. 25; Mr Vica Bayley, Campaign Manager, The Wilderness Society Tasmania, *Committee Hansard*, Launceston, 2 November 2016, p. 37.

11 AGD, *Submission 2*, p. 5.

12 Tasmanian Government, *Submission 24*, p. 5. Also see: NAFC, *Submission 18*, p. 4; McDermott Aviation, *Submission 15*, p. 1.

13 AFAC, 2016 Independent Operational Review, Prepared for Tasmania Fire Service, Forestry Tasmania and Parks and Wildlife Service Tasmania, April 2016, p. 4 (accessed 4 November 2016).

14 See for example: Mr Rob Blakers, *Submission 21*, p. 2; Tasmanian Greens, *Submission 22*, p. 4.

Future human resource capacity

4.14 The committee heard that there is a need to enhance Tasmania's firefighting capacity in remote wilderness areas. The United Firefighters Union of Australia–Tasmania Branch (United Firefighters Union (Tasmania)) described a limited capacity for the Tasmania Fire Service (TFS) to 'respond to major incidents such as the bushfires of Jan 2016'. It argued that the situation is exacerbated by the loss of permanent field-based Forestry Tasmania employees.¹⁵

4.15 Dr Thornton, Chief Executive Officer of the Bushfire and Natural Hazards Cooperative Research Centre (BNH CRC), noted that professional and volunteer firefighters 'only have a finite number of hours over the summer period to give and...these need to be managed with care lest they be spread too thinly'.¹⁶

4.16 Mr Vica Bayley, Campaign Manager for The Wilderness Society (Tasmania), contended that volunteer firefighters could be further utilised in remote area firefighting:

Volunteerism is obviously deeply ingrained in our fire service across the state, with country volunteer fire brigades. And there is absolutely no reason that could not be extended to volunteer crews. With the right training, there are adequately fit, knowledgeable and passionate Tasmanian people who know these places and who, with the right training and the right guidance, could contribute to the remote area firefighting efforts as do volunteers in an urban or a country sense.¹⁷

4.17 Mr Greg Cooper from the United Firefighters Union (Tasmania) advised that there are about 3000 volunteer firefighters in Tasmania, with capacity to respond to bushfires. However, he also highlighted that is not reasonable to expect these firefighters to commit to extending firefighting operations:

You can expect somebody that is getting paid to be committed, because when their time comes they change over and someone else tags in and off they go...A volunteer firefighter is somebody that has a job, probably. They may be retired but normally they have a job. And they have a family. They commit their time to be a volunteer. You cannot expect them to commit over time—like does happen—for weeks on end to be able to do this type of work.¹⁸

15 United Firefighters Union (Tasmania), *Submission 34*, pp. 3, 19 and 28. Also see: Mr Greg Cooper, Branch Secretary, United Firefighters Union (Tasmania), *Committee Hansard*, Launceston, 2 November 2016, p. 26.

16 Dr Richard Thornton, Chief Executive Officer, Bushfire and Natural Hazards Cooperative Research Centre (BNH CRC), *Committee Hansard*, Launceston, 2 November 2016, p. 21.

17 Mr Vica Bayley, Campaign Manager, The Wilderness Society Tasmania, *Committee Hansard*, Launceston, 2 November 2016, p. 41.

18 Mr Greg Cooper, Branch Secretary, United Firefighters Union (Tasmania), *Committee Hansard*, Launceston, 2 November 2016, p. 27. Also see p. 25. Mr Cooper queried also the number of volunteers, whose physical and mental fitness levels would be comparable to professional firefighters: see p. 29.

4.18 The United Firefighters Union (Tasmania) supported the engagement of additional TFS personnel for three new brigades.¹⁹ In contrast, Professor David Bowman, a Tasmanian-based fire ecologist, suggested that additional trained firefighters might be sourced from environmental NGOs, environmental organisations and land managers from the Tasmanian Aboriginal Communities.²⁰

4.19 Forico, manager of Tasmania's largest private landholding, suggested that adjoining land owners could also contribute more to fire management operations. Forico's submission highlighted how its involvement with various Incident Management Teams had provided critical industry intelligence, especially when those teams were staffed from interstate agencies with minimal local knowledge.²¹

4.20 Mr Bayley indicated that capacity for remote area firefighting is a much broader issue, suggesting that the Australian Government should 'get creative' about increased national capacity:

This is not a problem that is unique to remote areas in Tasmania; there are fires in, and there are going to be fires in, remote areas all around Australia. There is absolutely a legitimate opportunity to look at a nationally-based remote area firefighting team that can be urgently deployed to emergency situations in remote areas, irrespective of where they are, but particularly if they are in a World Heritage area.²²

4.21 Similarly, Friends of the Earth submitted that the committee should consider:

...whether a new national remote area firefighting unit or capacity needs to be created, which is able to be deployed to fires in the national park and WHA estate in Australia, and Tasmania in particular.²³

4.22 The committee notes the relevant findings of the 2016 Independent Operational Review:

...that in all but exceptional seasons, the domestic capability of Tasmanian services to mount a remote area response is adequate, as demonstrated by the historical record. It is reasonable, and in accordance with national

19 United Firefighters Union (Tasmania), *Submission 34*, pp. 3 and 19.

20 Professor David Bowman, *Submission 13*, p. 3. The submission noted that training could be provided by the University of Tasmania in partnership with land management agencies, and should include 'vulnerability of the vegetation and soils in the Tasmanian Wilderness'. Also see: Mr Vica Bayley, Campaign Manager, The Wilderness Society (Tasmania), *Committee Hansard*, Launceston, 2 November 2016, p. 41, who suggested that volunteer firefighters could augment the remote area firefighting capability.

21 Forico, *Submission 14*, p. 2.

22 Mr Vica Bayley, Campaign Manager, The Wilderness Society (Tasmania), *Committee Hansard*, Launceston, 2 November 2016, p. 42.

23 Friends of the Earth Australia, *Submission 19*, p. 4.

industry practice, to turn to interstate reinforcements in the case of unusually large events such as that of early 2016.²⁴

Tasmanian Government response

4.23 The Tasmanian Government advised that its firefighting resource level has not changed and that the number of dedicated staff has increased in the last five years. The Tasmanian Government went on to note that all of the TFS professional firefighters (312) are trained to fight fires in remote areas:

For fires in remote areas that cannot be accessed by ground:

- If aircraft can land the TFS has maintained 190 career firefighters with appropriate training for working around aircraft.
- If aircraft cannot land the TFS has maintained 80 career firefighters with the skills enter and exit from an aircraft that is hovering.²⁵

4.24 Mr Gavin Freeman, Deputy Chief Officer of the TFS noted that, during the 2016 bushfires, Tasmania's highly specialised remote area firefighting capacity was exhausted, necessitating interstate assistance:

Because it is such a specialist area we do not expect everybody to do everything. Having said that, our career firefighters and, in fact, our volunteer firefighters are very highly trained in managing wildfires, so the actual firefighting on the ground, providing they are properly supervised and led, is not that difficult. The difficult part is getting them in and having the right level of fitness to actually undertake the task. We exhausted those and...we did have approximately 1,340 remote area firefighters come in to the state from New South Wales.²⁶

Australian Defence Force assistance

4.25 Noting that 'international firefighters' also assisted with the 2016 bushfires response, the committee examined the human resource assistance provided by the Australian Government under COMDISPLAN.²⁷

4.26 The AGD submitted that Australian Defence Force (ADF) personnel do not possess specialised firefighting skills, and assisted the Tasmanian 2016 bushfires

24 AFAC, 2016 Independent Operational Review, Prepared for Tasmania Fire Service, Forestry Tasmania and Parks and Wildlife Service Tasmania, April 2016, p. 47 (accessed 15 November 2016). Also see p. 36.

25 Tasmanian Government, Department of Premier and Cabinet, answer to question on notice, p. 2, received 11 November 2016.

26 Mr Gavin Freeman, Deputy Chief Officer, Tasmania Fire Service (TFS), *Committee Hansard*, Launceston, 2 November 2016, p. 63.

27 COMDISPLAN provides for non-financial Australian Government assistance, including in the form of Australian Defence Force (ADF) support. ADF support is made available only when civilian resources are inadequate, unavailable or cannot be mobilised in time, and is limited to the current qualifications, skills and resources of the personnel: AGD, *Submission 2*, p. 2.

effort only by transporting a portable base camp to house approximately 250 interstate firefighters in north-western Tasmania.²⁸

4.27 Mr Mark Crowweller, Director General of Emergency Management Australia, acknowledged assistance from New Zealand military personnel. His evidence emphasised that this was not indicative of a lack of Australian resources, rather an 'interstate engagement' designed to share research, knowledge and capability (through the AIA):

It is part of that mutual exchange and cooperation that goes on...what it does not indicate is that it is expertise that Australia does not have. Australia absolutely does have it. We do not rely on New Zealand for their expertise. Some may say we do. I would challenge that. But I do understand the nature of the relationship and the need to engage New Zealand from time to time in Australian operations. From a Commonwealth perspective, we are comfortable with it because, as I said, it is seen through the lens of, really, an interstate deployment assistance arrangement. It is not organised through Foreign Affairs. It does not come through the Commonwealth government. It is an agency-to-agency relationship.²⁹

4.28 Mr Freeman from the TFS later clarified that the New Zealand Fire Service, not the New Zealand Defence Force, responded to the request for assistance, choosing to send personnel who were also defence reservists:

Our requests to New Zealand were through the same forum as our requests to all the other states: the chief officers and commissioners forum. That came through New Zealand Fire Service, and I found out later that there were some defence reservists that were embedded within their teams. That is a matter for New Zealand, if they do that. I think they were there as firefighters first.³⁰

4.29 Mr Crowweller noted that there is a great discrepancy between Australia and New Zealand's firefighting capacity, where Australia has a significant weight of attack that does not exist in New Zealand:

Australia's fire and emergency services personnel, both volunteer and career, account for approximately one per cent of the population, with 240,000-odd people engaged in fire and emergency services. That is a substantial resource. It is simply not necessary to train our military on something that is so well resourced in Australia. The New Zealand

28 AGD, *Submission 2*, pp. 2 and 5.

Also see: AFAC, 2016 Independent Operational Review, Prepared for Tasmania Fire Service, Forestry Tasmania and Parks and Wildlife Service Tasmania, April 2016, p. 38, accessed 15 November 2016, which found that the ADF contribution had been 'appropriate'.

29 Mr Mark Crowweller, Director General, Emergency Management Australia, AGD, *Committee Hansard*, Canberra, 1 November 2016, p. 16.

30 Mr Gavin Freeman, Deputy Chief Officer, TFS, *Committee Hansard*, Launceston, 2 November 2016, p. 66.

authorities do not have the volunteer capacity that Australia has, nor does New Zealand have the fire intensities or fire problem that Australia has.³¹

4.30 The committee notes evidence given by Dr Tony Press, Chair of the Tasmanian Wilderness World Heritage Bushfire and Climate Change Research Project, that the expertise of Tasmanian fire agencies is paramount to remote area firefighting in the TWWHA:

...not only do you need physical capability but you also have to have the skills inside the agencies to be able to make a proper assessment and to respond...developing those skills is actually a long-term investment. It takes about a decade to get somebody up to the capability of being able to say, 'I can take command of this crisis and I should be able to deliver the best outcome.'

The training that is required to do that, the understanding of the area, the understanding of the values, the understanding of the fire behaviour and the understanding of how you interact with all of the other agencies is not something that you can just pick up in one place and plop it straight into the middle of the world heritage area. Even if those capabilities become available in the future inside the army or elsewhere in Australia, you still need the expertise on the ground in the [Parks and Wildlife Service, Tasmania (PWS)] and in the Tasmanian Fire Service.³²

4.31 The committee also notes the observations of Mr Stuart Ellis AM, Chief Executive Officer of AFAC, about the need to 'keep the [TWWHA] as pristine as possible' and his reservations about the need to provide for a reserve capacity of ADF personnel trained for remote area firefighting:

...why would we seek to train soldiers to be firefighters when we have a capacity of firefighters three times the size of the ADF across the country and in that two-month period we did not exhaust that capacity? My other very severe concern is that we have killed 408 firefighters operationally in Australia. If the ADF have that spare capacity...to gain those competencies, that would need to be a very strong requirement and they would need to retain those skills and be practised in order that we do not put those people in jeopardy.³³

31 Mr Mark Crowweller, Director General, Emergency Management Australia, AGD, *Committee Hansard*, Canberra, 1 November 2016, p. 16.

32 Dr Tony Press, Chair, Tasmanian Wilderness World Heritage Bushfire and Climate Change Research Project, *Committee Hansard*, Launceston, 2 November 2016, p. 19.

33 Mr Stuart Ellis AM, Chief Executive Officer, Australasian Fire and Emergency Services Authorities Council, *Committee Hansard*, Launceston, 2 November 2016, p. 53. Mr Ellis conceded however that 'it would be fantastic if the ADF could come on board as well', noting that NSW has a full-time employed remote area firefighting capacity.³³

Future aerial resource capacity

4.32 Submitters and witnesses commented generally on the use of aerial firefighting resources, including in Tasmania during the 2015–2016 bushfire season. According to the NAFC, more than 40 specialised aircraft—such as large fixed-wing airtankers, scooping firebombing aircraft (AirTractor 802F, with a capacity of 3200 litres) and intelligence gathering aircraft equipped with infrared sensing and mapping equipment—supported firefighting efforts.³⁴

4.33 Mr Chris Arnol, Chief Officer of the Tasmania Fire Service, explained that the classic strategy for remote area firefighting is the use of aircraft for initial attack: the aircraft hold the fire 'so that we can get the boots on the ground'. Mr Arnol advised that this national approach was used during the 2016 bushfires in the TWWHA.³⁵

4.34 Mr Alder from the NAFC noted that the early use of aircraft maximises their benefits. He described particular challenges to the use of aircraft in Tasmania arising from the highly variable nature of fire seasons, and the sensitive vegetation types and organic soils found in the TWWHA.³⁶

4.35 Despite these challenges, the NAFC submitted that investment in the newer generation of large fixed-wing airtankers would improve bushfire protection and provide a 'valuable capability that is complementary to existing arrangements':

Larger airtankers...provide a capability that is effective in bushfire situations where other resources may not be available, deployable or effective. This is a critical concern as these are the often fires that are likely to spread and threaten communities and environmental values. It should be recognised however, that aircraft alone will generally not extinguish small or large fires and ground resources will also be required.

...

Importantly, large fixed-wing airtankers are extremely mobile and able to quickly deploy across the country or operate effectively in multiple jurisdictions in the one day.

Given suitable funding, there is an opportunity to develop, in future years, a sophisticated national large airtanker capability for Australia.³⁷

4.36 Mr Crosweller noted that the industry is always keen to explore the latest technologies and capabilities, but cautioned that these may not always be as suited to the Australian landscape. For example, 'the use of scooping aircraft...is a little more

34 NAFC, *Submission 18*, p. 4; NAFC, answer to question on notice, pp. 6–10, received 11 November 2016.

35 Mr Chris Arnol, Chief Officer, TFS, *Committee Hansard*, Launceston, 2 November 2016, p. 56.

36 Mr Richard Alder, General Manager, NAFC, *Committee Hansard*, Launceston, 2 November 2016, pp. 1–3.

37 NAFC, *Submission 18*, pp. 4–5. The submission noted that the benefits to Tasmania during the 2015–2016 bushfire season have not yet been formally assessed. Also see: Dr Bob Brown, *Submission 8*, p. 1, who supported the provision of Canadian-style water bombing aircraft.

prohibitive in Australia—Bass Strait is not normally calm and the lakes on the map of Australia are usually pretty dry'.³⁸

Concerns about the Tasmanian Government's response

4.37 Submitters and witnesses expressed concern with several aspects of the Tasmanian Government's response to the 2016 bushfires in the TWWHA. These concerns are summarised below and cover matters such as timeliness, requests for assistance, and communications with stakeholders.

Timeliness of the response

4.38 Submitters stated that the Tasmanian Government was slow to respond to a clear and unfolding crisis that had been foreshadowed by fire conditions and a history of dry lightning strike in the TWWHA.

4.39 The Wilderness Society (Tasmania) and Greenpeace Australia Pacific (Wilderness Society (Tasmania) and Greenpeace) contended that the threat to Outstanding Universal Values (OUV) in the TWWHA was 'severe and the consequences potentially catastrophic'. Consequently:

The Tasmanian Government should...have been on heightened alert for a break-out of remote-area bushfires caused by lightning strikes in the TWWHA and other remote regions in January and February 2016.³⁹

4.40 As a landholder, Forico advised that it maintains a Fire Action Plan, and in the past three fire seasons has responded to over 270 bushfires. Forico submitted that its experienced fire staff observed several opportunities to more proactively manage the 2016 bushfires in the first fortnight—such as through active back burning and after hours fire suppression. Significantly, 'a number of opportunities to consolidate fire boundaries...were not utilised in a timely fashion, if at all'.⁴⁰

4.41 Mr Rod Blakers submitted that the lack of a timely response allowed the bushfires to gain momentum, rather than being suppressed at the earliest opportunity:

When the fire reached the Central Plateau at Lake Mackenzie the prospects for its control were dramatically improved. The fire was no longer burning uphill, winds were generally light and temperatures mild, and the fuel load was a fraction of that on the forested slopes of the Fisher Valley. And yet...the fire was allowed to burn unchecked across the alpine zone for ten days, before being fortuitously extinguished by exceptionally heavy rain on the evening of 28th January.⁴¹

38 Mr Mark Crossweller, Director General, Emergency Management Australia, AGD, *Committee Hansard*, Canberra, 1 November 2016, p. 18.

39 The Wilderness Society (Tasmania) and Greenpeace Australia Pacific (The Wilderness Society (Tasmania) and Greenpeace), *Submission 27*, p. 9. Also see: p. 10. The submission noted that these indicators were consistent with predicted effects of climate change.

40 Forico, *Submission 14*, pp. 1–2.

41 Mr Rob Blakers, *Submission 21*, p. 2.

4.42 Other submitters similarly commented on a combination of factors that prevented the 2016 bushfires from inflicting more damage than that which was sustained—such as rainfalls at the end of January and in late February, and determined firefighting efforts. For example, The Wilderness Society (Tasmania) and Greenpeace stated:

The efforts of firefighters played a significant role in eventually controlling the fires. However, had fire conditions in late January and February worsened with the hot, dry, strong northerly winds typical of that season, nothing would have stopped the island's most beautiful and ancient stands of alpine vegetation and rainforest from being incinerated.⁴²

4.43 In contrast, some submitters and witnesses described how the Tasmanian Government had anticipated and prepared for an early fire response, particularly in terms of firefighting aircraft. Mr Alder, NAFC, told the committee that, at the start of the fire season, the government had sought access to additional aerial resources as it was 'looking like a season that had some potential'.⁴³

4.44 McDermott Aviation, which supplied standing and additional aircraft to the NAFC, submitted that it had been called upon by the Tasmanian Government to provide an expedited and timely response during the fires:

On the evening of the 15 Jan we were asked to remain on standby at Hobart Airport past our normal standby time of 1800 to until sunset at 2050. The dry lightning hit as predicted at about 1900 and we were airborne shortly after. We all flew until sunset and were able to contain up to 6 lightning strikes in that time with effective initial intervention.

We were briefed on our return that the next day would likely be busy so to be organised early. We were soon tasked in the morning responding to further lightning strikes in the Derwent Valley, eventually overnighing in Zeehan. Over the following weeks we were tasked to various fires up and down the west coast of Tasmania.

In particular the fires that we attended in the world heritage areas were well organised by TasFire and Forestry Tasmania personnel. We were utilised in an effective and timely manner in support of ground personnel. Daily briefings, including areas of concern, names of ground personnel, radio chat frequencies and targets for the day were all discussed so that we were clear on our mission for the day.

Progress was slow but methodical. Trees were tall and the bush was thick, there was a lot of fuel on the ground and in many areas peat to contend with. We used WD881 foam in our buckets when we could, but due to the sensitive nature of the flora and fauna this was limited. We were most effective in knocking down the running fire and then providing spot drops in support of the ground crew walking the fire line in following up.

42 The Wilderness Society (Tasmania) and Greenpeace, *Submission 27*, p. 15. Also see: Tasmanian National Parks Association, *Submission 16*, p. 2.

43 Mr Richard Alder, General Manager, NAFC, *Committee Hansard*, Launceston, 2 November 2016, p. 4.

The ground crews commented on the effectiveness of the size of bucket and the maneuverability of the helicopters in getting water through the canopy in these forested areas. This was especially evident in fires in the peat soils requiring large amounts of water (up to 20,000L in some spots) to extinguish fires burning underground.⁴⁴

4.45 Mr Ellis observed that a fire's location must be known before fire suppression can commence. His evidence was that fires in the TWWHA were discovered progressively over an extended period. In addition, many of these fires were 'extremely inaccessible', meaning that firefighters were limited in terms of access for fire suppression activities.⁴⁵

Requests for assistance

4.46 Some submitters questioned particularly the amount of time that it had taken the Tasmanian Government to request interstate and federal assistance.⁴⁶

4.47 The Wilderness Society (Tasmania) and Greenpeace referred to a press release issued by the Tasmanian Government on 21 January (one week after the commencement of dry lightning strikes in the TWWHA), wherein Premier Will Hodgman indicated that the government had made its first request for interstate support.⁴⁷ The Wilderness Society (Tasmania) and Greenpeace Australia Pacific submitted:

...the request for specialist help to fight fires in wilderness areas was not made until eight days after the ignitions, and six days after government agencies knew that there were many fires in dispersed, remote terrain. The actual deployment of these interstate fire-fighters did not occur until nearly two weeks after the ignitions.⁴⁸

4.48 Dr Bob Brown from the Bob Brown Foundation argued that, had assistance been requested earlier, the 2016 bushfires in the TWWHA might have been contained before they could escalate.⁴⁹

44 McDermott Aviation, *Submission 15*, pp. 2–3.

45 Mr Stuart Ellis AM, Chief Executive Officer, AFAC, *Committee Hansard*, Launceston, 2 November 2016, p. 51.

46 See for example: Tasmanian Greens, *Submission 22*, p. 3.

47 The Hon Will Hodgman, Premier, and The Hon Rene Hidding, Minister for Police and Emergency Management, '[Interstate support to assist Tasmanian fire fighters](http://www.premier.tas.gov.au/releases/interstate_support_to_assist_tasmanian_fire_fighters)', joint media release, 21 January 2016, http://www.premier.tas.gov.au/releases/interstate_support_to_assist_tasmanian_fire_fighters (accessed 21 October 2016). Resources were scoped, projected and in principle support given for inter-jurisdictional assistance on 19 January: United Firefighters Union of Australia–Tasmania Branch, *Submission 34*, pp. 12–13.

48 The Wilderness Society (Tasmania) and Greenpeace, *Submission 27*, p. 17. Also see: Friends of the Earth Australia, *Submission 19*, p. 4.

49 Dr Bob Brown, Bob Brown Foundation, *Submission 8*, p. 1.

4.49 Friends of the Earth Australia suggested that, in severe and extended fire seasons, it might even be necessary to pre-emptively request interstate assistance to protect fire sensitive vegetation:

While this is clearly expensive to maintain, this summer's fires highlight the catastrophic costs of uncontrolled fires in fire sensitive vegetation. This may require changes in how each Australian state assesses requests for support. This in turn may require intervention and co-ordination through the federal Environment Department.⁵⁰

4.50 Mr Ellis advised that fire agencies project forward as much as possible and perhaps the focus on doing that was not as strong as it could have been during the 2016 bushfires. However, he also noted that, while interstate support is becoming mainstream, there is an expectation (or practice) that one state will not activate the mechanism until it has fully committed or exhausted its own resources.⁵¹

4.51 The 2016 Independent Operational Review found that the extent and magnitude of the bushfires should have been apparent by 16 January (at the earliest).⁵² However, there was no evidence that the course of the fires would have been changed by an earlier request for interstate assistance:

Tasmania has its own, not insignificant 'first strike' capability for remote area firefighting that was deployed in a timely fashion. We have also noted that making a request for resources is one thing: receiving those resources and then deploying them to the fireline, is another.

Weather conditions on the 19th and 20th January were such that the fires already burning in the landscape expanded rapidly and indeed, a significant proportion of the damage done by the fires was done by 21 January, with fire boundaries already extensive by the 19th...Photography of the aftermath of the fires demonstrates that they burned with an intensity such that direct attack on the fires during the 19th–20th would have been impossible in many cases regardless of the resources available. Interstate resources in fact started to arrive on 23rd January, so that if the process had been brought forward by three days (the maximum we think realistic), they would not have been in Tasmania before the major run of the fires.⁵³

50 Friends of the Earth Australia, *Submission 19*, p. 5.

51 Mr Stuart Ellis AM, Chief Executive Officer, AFAC, *Committee Hansard*, Launceston, 2 November 2016, pp. 51 and 55.

52 AFAC, Independent Operational Review, Prepared for Tasmania Fire Service, Forestry Tasmania and Parks and Wildlife Service Tasmania, April 2016, p. 35, accessed 15 November 2016.

53 AFAC, Independent Operational Review, Prepared for Tasmania Fire Service, Forestry Tasmania and Parks and Wildlife Service Tasmania, April 2016, p. 36 (accessed 15 November 2016).

Government responses

4.52 Mr Freeman (who had then been Acting Chief Officer) told the committee that an alarm bell rang on 14 January when he received a report about the number of dry lightning strikes:

We had the potential for a lot of fire. The focus was very much on: what have we got and let's resource that, which we did...We needed to identify what else we had, and that just took time...we started ramping up, and it was not until around the 18th or the 19th when we had the bad fire. It took a run to Lake Mackenzie and we thought, 'This has actually got bigger than we anticipated.' We were also getting reports...saying, 'Well, we found another three fires'. It just kept mounting up, and we said, 'Okay, we've got to pull the trigger on interstate resources.'⁵⁴

4.53 Mr Freeman and Mr Arnol clarified that the TFS had begun considering the need for interstate assistance within 48 hours of the first dry lightning strikes. It was then apparent that such assistance would be required:

So preliminary interstate support notifications occurred. As further fires revealed themselves, the scale of the event became fully apparent and interstate support was formally requested [on 21 January].⁵⁵

4.54 Mr Freeman acknowledged that a pre-emptive request for interstate assistance could have been made. However, he advised that interstate firefighters could not then have been safely deployed:

We did not have plans and we did not know where all the fires were, nor the aircraft and the ability to fly those aircraft to get the people in.⁵⁶

4.55 Mr Freeman reflected also the evidence given by Mr Ellis, AFAC, about the exhaustion of state resources preceding a request for interstate assistance:

...we needed to make sure we exhausted our own firefighters first, our own resources. Remember, there were fires still in Victoria; there were fires in South Australia at that point. In New South Wales it was a little bit quieter. Western Australia had fires. Responsibly, each chief officer needs to make sure that they really need those resources before they ask for them. We still had resources available. The other backlash that we can sometimes get, as an aside, and we got it this time: you bring in interstate resources and you have the volunteers saying, 'What about me?' There was that balance.⁵⁷

54 Mr Gavin Freeman, Deputy Chief Officer, TFS, *Committee Hansard*, Launceston, 2 November 2016, p. 69.

55 Mr Chris Arnol, Chief Officer, TFS, *Committee Hansard*, Launceston, 2 November 2016, p. 56. Also see: Mr Gavin Freeman, Deputy Chief Officer, TFS, *Committee Hansard*, Launceston, 2 November 2016, p. 66.

56 Mr Gavin Freeman, Deputy Chief Officer, TFS, *Committee Hansard*, Launceston, 2 November 2016, p. 67.

57 Mr Gavin Freeman, Deputy Chief Officer, TFS, *Committee Hansard*, Launceston, 2 November 2016, p. 67.

4.56 Mr Crowweller considered that the Australian Government's response was in line with an efficient set of arrangements that respect and anticipate severe to catastrophic conditions. Mr Crowweller added:

We had anticipated early before the season had started; we had engaged the jurisdiction in a conversation. We had put in comprehensive national arrangements in anticipation of these events that three years ago we could not see. Those arrangements were accessed and utilised—I think, to full effect—and then we stood by ready to assist the Tasmanian authorities. The minute that they put in a request, we responded. We reprioritised assets and mobilised substantial equipment very quickly to provide that assistance.⁵⁸

4.57 The Tasmanian Government first requested assistance from the Australian Government on 13 February, with COMDISPLAN activated that same day.⁵⁹ Mr Crowweller explained that the Australian Government was approached after Tasmania had utilised significant interstate resources:

...Tasmania [was] well positioned for this. I think the planning that they had put into this fire early understood its nature, its campaign nature. They had pulled in significant resources from other states and territories to assist in planning and logistics...The conversations that were being had at the national level with commissioners and chief officers were always very much about a long campaign...it would have been surprising to see an earlier request for Commonwealth assistance, because the industry, generally speaking, regards campaign operations as fairly routine business. The capacity for logistics and supply of firefighters is quite well rehearsed.⁶⁰

4.58 The committee notes Mr Crowweller's view that the lessons to be learned from the 2016 bushfires in the TWWHA do not arise from 'incompetence, a lack of attention or a lack of duty of care'. The committee notes also Mr Crowweller's view that the Australian Government 'did everything we could do'.⁶¹

Communications with stakeholders

4.59 The Tasmanian Government primarily communicated with stakeholders on the progress of the 2016 bushfires and firefighting efforts through the TFS website. Submitters and witnesses questioned the accuracy of this information and argued that the government should have been more proactive in its communications.

58 Mr Mark Crowweller, Director General, Emergency Management Australia, AGD, *Committee Hansard*, Canberra, 1 November 2016, p. 17. Also see p. 11.

59 Mr Robert Cameron, Assistant Secretary, Crisis Management Branch, Emergency Management Australia, AGD, *Committee Hansard*, Canberra, 1 November 2016, p. 14.

60 Mr Mark Crowweller, Director General, Emergency Management Australia, AGD, *Committee Hansard*, Canberra, 1 November 2016, p. 13.

61 Mr Mark Crowweller, Director General, Emergency Management Australia, AGD, *Committee Hansard*, Canberra, 1 November 2016, pp. 17–18.

4.60 For example, The Wilderness Society (Tasmania) and Greenpeace stated that the TFS website did not present a complete picture of firefighting efforts:

...conservationists were anxiously scanning the TFS website, seeking information about the progress of fire-fighting efforts in key parts of the Mersey cluster of fires, such as the February Plains and Lake Bill. Day after day, the website indicated that no efforts were being made to contain these fires, which posed potentially catastrophic threats to Athrotaxis and other alpine vegetation in the Walls of Jerusalem and near the Overland Track....

At a briefing by PWS initiated by the Tasmanian Greens on 28 January, the Wilderness Society learned that the Lake Bill fire had been fought during this period with teams of remote-area firefighters 'and five choppers every day for the last two weeks'. It was explained that the TFS website did not 'talk' to other agencies, and so did not present a complete picture of fire-fighting efforts. TWS and [Greenpeace] found this to be an extraordinary breakdown in communications with the public.⁶²

4.61 The Tasmanian National Parks Association representative expressed his frustration with 'the absence of any media coverage coming spontaneously from the government'.⁶³ Mr Geoff Law from The Wilderness Society (Tasmania) suggested:

...the state government should take more of a role in informing the public of what is going on, particularly when it comes to this fire-sensitive vegetation, and having a sense of the fact that there are a lot of Tasmanians who are deeply concerned about wilderness areas and the things that make Tasmania unique.⁶⁴

4.62 The 2016 Independent Operational Review acknowledged these concerns, finding that a significant lesson from the bushfires concerned community engagement generally and the identification of the 'community' in that context.⁶⁵ In particular, the Review Team considered that more could be done to enhance environmental and conservation groups understanding of 'what firefighting tactics could achieve in wilderness areas and what responsible and safe incident management in these cases would look like'. This led to two principal conclusions:

Firstly, by engaging with these communities in advance of the fire season (should they be willing to be involved), their understanding could be improved and their feedback sought on certain issues on which they might hold expertise. Information exchange of this nature may be of value to firefighting agencies in developing incident control strategies including identifying values at risk...

62 The Wilderness Society (Tasmania) and Greenpeace, *Submission 27*, pp 18–19.

63 See for example: Mr Nicholas Sawyer, Vice President, Tasmania National Parks Association, *Committee Hansard*, Launceston, 2 November 2016, p. 35.

64 Mr Geoff Law, Consultant, The Wilderness Society Tasmania, *Committee Hansard*, Launceston, 2 November 2016, p. 39.

65 AFAC, *Independent Operational Review*, Prepared for Tasmania Fire Service, Forestry Tasmania and Parks and Wildlife Service Tasmania, April 2016, p. 40 (accessed 15 November 2016).

The second of our conclusions related to information flow while incidents are happening. Necessarily, priority needs to be given to safety-critical messaging. But if, as was suggested to us, there was some point of contact that could take inquiries about why certain things were or were not being done—or proactively could push this information out—that could go a long way to answering questions about fire suppression, the use of interstate resources and the like that in some cases seem to us still not to have been publicly addressed to date.⁶⁶

4.63 The Wilderness Society (Tasmania) and Greenpeace noted that there was a TFS liaison officer who could have resolved misunderstandings created by the TFS website. However, 'the Wilderness Society was not on its communications list...it was not approached for briefings or proactively added to distribution lists'.⁶⁷

4.64 However, at the Launceston public hearing, The Wilderness Society (Tasmania) expressly acknowledged that it has now had productive discussions with the TFS and PWS. Representatives commended these agencies for improving their communications and engagement with environmental organisations. Mr Bayley added:

There are very much things that we can learn from 2016, but we are not in the space of criticising and unpacking that as a motivation; we are more about learning from them so that we can do better into the future. And it is undoubtable and undeniable that we are going to need to do better because climate change is real.⁶⁸

Public health impact

4.65 Some submitters and witnesses expressed concerns about the public health impact of fires across Tasmania and in the TWWHA. These participants stated that the serious effects of smoke inhalation are under-recognised and the Tasmanian Government should do more to protect the community from these health impacts.

4.66 Cleanairtas submitted that Tasmania's health related problems are among the highest in Australia and argued that, in the case of the 2016 bushfires, long-term suffering by susceptible groups could have been significantly reduced had there been early fire suppression.⁶⁹

4.67 Dr Nicole Anderson, a rural medical practitioner in north-western Tasmania, described the physical and mental health impacts on the community:

66 AFAC, *AFAC Independent Operational Review, A review of the management of the Tasmanian fires of January 2016*, Prepared for Tasmania Fire Service, Forestry Tasmania and Parks and Wildlife Service Tasmania, April 2016, pp. 40–41 (accessed 21 October 2016).

67 The Wilderness Society (Tasmania) and Greenpeace, *Submission 27*, p. 20.

68 Mr Vica Bayley, Campaign Manager, The Wilderness Society (Tasmania), *Committee Hansard*, Launceston, 2 November 2016, p. 37. Also see: Mr Geoff Law, Consultant, The Wilderness Society (Tasmania), *Committee Hansard*, Launceston, 2 November 2016, pp. 38 and 44; Mr Rod Blakers, Consultant, The Wilderness Society (Tasmania), *Committee Hansard*, Launceston, 2 November 2016, pp. 39–40.

69 Cleanairtas, *Submission 29*, p. 2.

The fact that the fires were allowed to continue to burn meant that the area was fumigated, more or less, for about 40 days with toxic bushfire smoke. This directly impacted the health of people who had existing diseases, such as lung and heart diseases. There were people who had to move out of the area due to their illness being severely affected by the bushfire smoke...This type of bushfire smoke contains chemicals that are irritants upon contact, so healthy people who previously have not had asthma, for example, will suffer asthma. We saw quite a lot of people with eye irritation, upper mucosal irritation and lung irritation. This is something that impacted the healthy people and was a significant burden on unhealthy people in this district...That was just the physical side. Now you have the mental health side. It is well known that these events can cause PTSD, anxiety and depression, particularly if there has been significant economic loss.⁷⁰

4.68 Dr Richard Thornton commented that, although the 2016 bushfires had little direct impact on urban areas, rural communities were affected:

There was major disruption to small rural communities' road and [other] transport networks and to industries such as tourism and agriculture...The dispersion of smoke impacted on communities far beyond the actual fire zone. All of this had an economic cost, mostly not easily quantified. How many tourists cancelled their holidays in Tasmania? Are 2015 wine vintages written off because of smoke-tainted grapes? What is the cost of short- and long-term health impacts from the smoke?⁷¹

4.69 Dr Anderson told the committee that, apart from the standard public health alert, there was no official communication with local medical services. She commented:

Closer collaboration with local medical services directly involved in front-line activities is not only a professional courtesy but is essential for effective management of the event, including on-the-ground real-time feedback to headquarters.⁷²

Government response

4.70 Mr Freeman responded to the concerns about communications, informing the committee that the TFS did what it believed was sufficient but now recognises that there is room for improvement:

...since 2009, fire agencies have recognised that we need to engage the community...they have to be involved. That is certainly our intention and,

70 Dr Nicole Anderson, *Committee Hansard*, Launceston, 2 November 2016, p. 49. Also see p. 50.

71 Dr Richard Thornton, Chief Executive Officer, BNH CRC, *Committee Hansard*, Launceston, 2 November 2016, p. 21. Also see: Dr Nicole Anderson, *Committee Hansard*, Launceston, 2 November 2016, pp. 47 and 49.

72 Dr Nicole Anderson, *Committee Hansard*, Launceston, 2 November 2016, p. 48.

going forward, we will work with all interested groups to make sure that we get it right.⁷³

Prioritisation of environmental assets

4.71 Submitters and witnesses did not question the absolute prioritisation of human life but contended that the environmental assets of the World Heritage property—such as the Pencil Pine forest in the Central Walls—should have been given greater priority.⁷⁴

4.72 Friends of the Earth Australia argued that insufficient resources were available to firefighters, consequently they prioritised human assets:

...firefighting authorities—who did an incredible job of bringing these bushfires under control—needed to prioritise human assets like townships at the height of the fires. This, in turn meant that insufficient resources were available to contain many remote area fires while they were relatively small (including at Lake Mackenzie, Lake Ball and the February Plains), resulting in major damage to vegetation which is not fire adapted.⁷⁵

4.73 Other submitters considered that environmental assets were not prioritised due to a lack of information about the value of those assets. An oft-cited example was back burning at Sandy Lake (near Lake Macquarie) to protect a replica hut.

73 Mr Gavin Freeman, Deputy Chief Officer, TFS, *Committee Hansard*, Launceston, 2 November 2016, p. 60. Also see p. 66.

Also see: Mr Chris Arnol, Chief Officer, TFS, *Committee Hansard*, Launceston, 2 November 2016, p. 66.

74 See for example: Mr Nicholas Sawyer, Vice President, Tasmania National Parks Association, *Committee Hansard*, Launceston, 2 November 2016, p. 35.

75 Friends of the Earth Australia, *Submission 19*, p. 1.

Figure 4.1: Back burning to protect the replica Sandy Lake Hut



Source: Rob Blakers, Submission 21, p. 7.

4.74 The Wilderness Society (Tasmania) and Greenpeace argued that this incident appeared to be:

...a disturbing case of easily replaced, partially-built infrastructure with zero heritage value being prioritised over ancient fire-sensitive trees that are part of the Outstanding Universal Value of the TWWHA. If so, it is a violation of the Management Plan for the Tasmanian Wilderness...and a deeply concerning example of misguided priorities, misdirected resources and lack of appreciation of what values constitute World Heritage and require protection efforts.⁷⁶

4.75 Mr Rob Blakers also suggested that the Sandy Lake back burn demonstrated a lack of knowledge and appreciation of World Heritage values, rather than a lack of resources:

The Sandy Lake Hut back burn highlights the perverse priorities of the fire suppression effort, where significant effort was made to protect a small, unremarkable and replaceable structure, whilst adjacent pines of great antiquity were left to burn.

⁷⁶ The Wilderness Society (Tasmania) and Greenpeace, *Submission 27*, p. 21.

It is apparent that the fire agencies, both at the command centre in Hobart and on the ground, had little or no understanding of the inestimable natural values of the vegetation that was under threat. Advice on natural values was being sought from ecologists within the Tasmanian bureaucracy fully a week after the fire was first reported.⁷⁷

Government response

4.76 The TFS maintained that 'it is wrong to assume that response activities were singly focused on life and property'. Mr Arnol stated that the response was based on risk assessment methodology that considered the potential growth of fires, and the assessments included high value conservation areas, as well as tourism assets and critical infrastructure.⁷⁸

4.77 In relation to the Sandy Lake hut, Mr Freeman advised that a local divisional commander had assessed the situation to the best of his ability with all available knowledge. His evidence emphasised that the adjoining vegetation was already alight and not able to be saved when firefighters arrived on site:

...they had some crews in the area on a reconnaissance fight and noticed a hut and some vegetation alight. Their assessment was that the vegetation that was alight was gone, or going to go, and the hut would go as well. They could not do much in the time frame that they had—they could not do anything about the vegetation, but they thought, 'There's a structure there. If we run a bit of a line around that, we can probably stop it.' They did not stay there with it; they just did that and left.

He said at the time it was essentially a snow gum. He had no evidence of any conifer type or pencil pines there that he could see, and so they essentially did that. His assessment was that, if they had done nothing, everything was gone anyway, so he just took the opportunity to save the hut.⁷⁹

4.78 The 2016 Independent Operational Review concluded that there was no evidence of institutional ignorance or disregard for environmental values in the conduct of the Tasmanian fire agencies:

Overall...the Review team is confident that Tasmanian fire agencies were appropriately sighted throughout on the need to preserve environmental and wilderness areas during the 2016 fires. This is to be expected, given the role that the PWS plays in multi-agency fire suppression planning and operations. We were impressed by the detailed knowledge of and commitment to these values demonstrated by PWS and [Forestry Tasmania]

77 Mr Rob Blakers, *Submission 21*, p. 8.

78 Mr Chris Arnol, Chief Officer, TFS, *Committee Hansard*, Launceston, 2 November 2016, p. 56.

79 Mr Gavin Freeman, Deputy Chief Officer, TFS, *Committee Hansard*, Launceston, 2 November 2016, pp. 71–72.

staff and shared by them with staff from other Tasmanian agencies and visiting interstate firefighters.⁸⁰

4.79 More generally, the Tasmanian Government explained that it uses a state-wide landscape-scale risk assessment tool (the Bushfire Risk Assessment Model (BRAM)). It discussed BRAM in the following terms:

BRAM identifies the likelihood and consequence of a fire at a particular point. The risk is determined through a qualitative risk matrix, incorporating likelihood and values at risk (consequences). The process identifies actual, not perceived, risk at a particular point. The output is represented as spatial layers that show the likelihood, values at risk and actual risk. The model uses four major elements to calculate risk:

- fire behaviour potential: the manner in which fuel ignites, flame develops, and fire spreads and exhibits other related phenomena (likelihood)
- ignition potential: the probability or chance of fire starting as determined by the presence of causative agents (likelihood)
- suppression capability: the factors and limitations that are related to the ability to contain a bushfire upon detection (likelihood)
- values at risk: a specific or collective set of natural resources and manmade improvements and/or developments that have measurable or intrinsic worth, and which could potentially be destroyed or otherwise altered by fire in any given area (consequence).⁸¹

4.80 A representative from AGD agreed that 'environmental impacts were a substantial part' of the risk assessment process for TFS. In contemporary conversations:

...never did I get a sense that [the Acting Chief Officer] did not understand or fail to appreciate the value of the wilderness area. It was very high on his priority list. I think he understood the sensitivities. He also understood the operational challenges and the risks of inserting people into that wilderness area, which is pristine and beautiful, but incredibly rugged and potentially very dangerous.⁸²

Valuing environmental assets

4.81 At the Launceston hearing, TFS representatives referred to the risk assessment methodology that is used to determine resource allocation for fire suppression activities. The committee also sought evidence from other witnesses as to how environmental assets are valued within this matrix.

80 AFAC, Independent Operational Review, Prepared for Tasmania Fire Service, Forestry Tasmania and Parks and Wildlife Service Tasmania, April 2016, p. 27 (accessed 15 November 2016).

81 Tasmanian Government, *Submission 24*, p. 23.

82 Mr Mark Crossweller, Director General, Emergency Management Australia, AGD, *Committee Hansard*, Canberra, 1 November 2016, pp. 13–14.

4.82 Dr Thornton advised that there is no evidence base or agreed methodology to put a value on ecological and heritage values:

One of the things that became very clear in the early days, even at the Bushfire CRC, is the economics of hazards in general—what are the things we value and why do we value them—is actually fairly poorly done in Australia. It is done better in some other jurisdictions. It is about the way in which we can put a value on intangibles. We can put a value on a house. We know what it costs. We know what it is worth and what it is going to take to rebuild. We can put a value on a road, and we can put a value on a crop that might get burned. Where we really struggle is: how do we value environmental services—the importance of soils, the importance of water catchments and the importance of the carbon mitigation issues of forests, for example.⁸³

4.83 Other witnesses' evidence illustrated this lack of agreement with reference to the TWWHA as a practical example. The TFS indicated that significant high-risk environmental assets—such as the Lake Bill fires—were given a higher rating than some other areas;⁸⁴ Mr Ellis, AFAC, considered that property and environment assets were equally rated in the prioritisation matrix.⁸⁵ The United Firefighters Union (Tasmania) considered that the TFS 'did the best it could in defining what was important and providing that response' but more work is required to determine what is important: 'it is a little bit subjective but we need to have that done, because Tasmania is unique'.⁸⁶

4.84 The BNH CRC is developing a decision support tool that will enable governments to disaggregate elements of their decision-making and to try to display all the trade-offs. Models of the tool have been trialled in South Australia and Victoria, but Dr Thornton noted 'we do not know which one is going to work well'.⁸⁷

4.85 Professor Bowman agreed that there is a need to 'enhance current decision support tools to help *prioritise* where fire-fighting efforts are best directed'. He added that decision-making teams should include ecological experts, to identify areas potentially threatened by fires and vulnerable to impacts by fire-fighting programs.⁸⁸

83 Dr Richard Thornton, Chief Executive Officer, Bushfire and Natural Hazards Cooperative Research Centre (BNH CRC), *Committee Hansard*, Launceston, 2 November 2016, p. 23. Also see p. 20.

84 Mr Gavin Freeman, Deputy Chief Officer, TFS, *Committee Hansard*, Launceston, 2 November 2016, p. 69.

85 Mr Stuart Ellis AM, Chief Executive Officer, AFAC, *Committee Hansard*, Launceston, 2 November 2016, pp. 52–53.

86 Mr Greg Cooper, Branch Secretary, United Firefighters Union (Tasmania), *Committee Hansard*, Launceston, 2 November 2016, p. 27.

87 Dr Richard Thornton, Chief Executive Officer, BNH CRC, *Committee Hansard*, Launceston, 2 November 2016, p. 24.

88 Professor David Bowman, *Submission 13*, p. 3 (emphasis in the original).

Environmental input into risk assessment process

4.86 The Department of the Environment and Energy (DEE) has previously told the Senate Environment and Communications Legislation Committee that PWS has significantly contributed to the Tasmanian risk assessment process:

...it has contributed in two ways to the decisions about the allocation of resources to fight the fires. Firstly, it has informed the Tasmanian Fire Service as to which of those—and these are my terms—'high-value environmental assets' need to be prioritised for protection based on their sensitivity to fire, and also modelling about where fire fronts are going to be moving. And, secondly, informing decisions about where the firefighting effort needs to be deployed on the basis of those same sensitivities. So looking to both the protection of assets and looking to deal with the fires posing the most imminent threat to significant environmental assets.⁸⁹

Assessment of the environmental impact

4.87 Some submitters expressed concern about the Tasmanian Government's assessment of the environmental impact of the 2016 bushfires. These submitters argued that the threat to the TWWHA was more serious than suggested by the government, as is the damage from the fires.

4.88 The Wilderness Society (Tasmania) and Greenpeace submitted that there 'appeared to be no acknowledgment of the crisis or threat' until conservationists aired their concerns in the media on 23 January 2016.⁹⁰ Further, there were (initially) no public briefings by PWS and 'Government responses to public concerns about World Heritage attributes were defensive, hostile and at times sought to provoke political division'.⁹¹

4.89 The Wilderness Society (Tasmania) and Greenpeace went on to comment:

The state government sought to downplay the seriousness of the threat to World Heritage attributes by saying that the fires had burnt less than 2% of the World Heritage Area...The use of such figures demonstrated a wilful misunderstanding of the crisis. The issue being debated was not fire within the World Heritage Area per se (fire is part of the ecology of many types of vegetation within the property). The issue was the threat to ancient, fire-sensitive and irreplaceable vegetation such as *Athrotaxis*. The Tasmanian Government never seemed to understand, or at least acknowledge this point.⁹²

89 Mr Stephen Oxley, First Assistant Secretary, Wildlife, Heritage and Marine, DEE, *Estimates Hansard*, 8 February 2016, p. 156.

90 Also see: Tasmanian National Parks Association, *Submission 16*, p. 2; Mr Greg Cooper, Branch Secretary, United Firefighters Union (Tasmania), *Committee Hansard*, Launceston, 2 November 2016, p. 28.

91 The Wilderness Society (Tasmania) and Greenpeace, *Submission 27*, p. 20.

92 The Wilderness Society (Tasmania) and Greenpeace, *Submission 27*, p. 20.

4.90 The Wilderness Society (Tasmania) and Greenpeace stated that the fires impacted some of Tasmania's most important stands of palaeoendemic vegetation species whose OUV is protected under the Convention Concerning the Protection of World Cultural and Natural Heritage and which are not fire-adapted.⁹³ The submission noted 'if burnt by intense fires, they will not recover. The palaeoendemic species will be replaced by more fire-adapted species'.⁹⁴

4.91 Professor Bowman told the committee that 'worse, these trees [Pencil Pines] are really going to struggle in a warming climate'. He warned that the cumulative impact of fires in the TWWHA will be the loss of vulnerable species:

...the harder thing to comprehend about the damage will be the fact that you have multiple fires, like this, as we would predict. That is what the climate change projections are showing us. Even if you do not have the one disastrous big fire, you will gradually start eating away at these vulnerable plant communities.⁹⁵

4.92 The Australian Conservation Foundation submitted that the damage to the TWWHA was a tragedy and a 'major climate-related loss of Australia's iconic natural heritage'. The Australian Conservation Foundation added:

The fires engulfed ancient rainforests, killed native animals and destroyed sensitive alpine ecosystems and the deep peat soils on which they depend. They also polluted massive amounts of greenhouse gas emissions into the atmosphere and destroyed precious carbon sinks, contributing more to the climate change that caused them in the first place.⁹⁶

4.93 The Wilderness Society (Tasmania) and Greenpeace highlighted also that the 2016 bushfires may have affected cultural heritage within and adjoining the TWWHA (the latter of which may at some point form part of the TWWHA): 'concerns about the impacts of these very intense fires on Aboriginal heritage have been expressed by the Tasmanian Aboriginal Community'.⁹⁷

Government response

4.94 The Tasmanian Government presented some broad estimates of the potential impact of the bushfires on 'threatened native vegetation communities' in the TWWHA (see chapter 1). The government emphasised that this data is based on a preliminary analysis and further investigative work is required to fully understand how the fires have affected the TWWHA values:

It is likely that the total area of affected Threatened Vegetation Communities will reduce. This is because there are patches of unburnt

93 The Wilderness Society (Tasmania) and Greenpeace, *Submission 27*, pp. 13–15.

94 The Wilderness Society (Tasmania) and Greenpeace, *Submission 27*, p. 12. Also see: BNH CRC, *Submission 4*, p. 4; Tasmanian Greens, *Submission 22*, p. 5.

95 Professor David Bowman, *Committee Hansard*, Launceston, 2 November 2016, p. 10.

96 Australian Conservation Foundation, *Submission 20*, p. 2.

97 The Wilderness Society (Tasmania) and Greenpeace, *Submission 27*, p. 11.

vegetation within the fire boundary and, in relation to impacted areas, not all have been burnt at the same level of intensity.⁹⁸

Committee view

4.95 The committee recognises that the Tasmanian Government is primarily responsible for responding to Tasmanian bushfires, and has a complex set of intra- and interstate, as well as national and international, arrangements to enhance its firefighting capacity. The committee heard that these arrangements were effective in responding to the 2016 bushfires in the TWWHA.

4.96 Of particular note, submitters and witnesses praised the Tasmanian fire agencies, all firefighters and support personnel for their efforts. The committee wishes also to formally acknowledge this invaluable contribution and indeed, the commitment of all fire agencies and firefighters who participate in fire management and suppression activities to protect life, the environment and property throughout Australia

4.97 In relation to lessons learned, participants argued that Tasmania needs to enhance its remote area firefighting capability. The committee agrees that, with the increasing impact of global warming, there will be a need for enhanced capability. However, rather than focus on one jurisdiction, and bearing in mind the impressive national arrangements for resource sharing, the committee considers that it would be more useful to create a dedicated national remote area firefighting capacity to supplement and work in conjunction with Australian fire agencies. The committee sees no reason why this capacity cannot be met by professional and volunteer firefighters, subject to the provision of appropriate training, equipment and support.

Recommendation 3

4.98 The committee recommends that the Australian Government, in conjunction with state and territory governments, investigate a national remote area firefighting capability, to support Australian fire agencies.

4.99 The committee accepts that the early use of aerial resources can be invaluable to remote area firefighting. Although there are challenges to the use of aircraft in such areas, the national aerial firefighting arrangements appear sufficiently flexible to accommodate environmental and jurisdictional differences.

Recommendation 4

4.100 The committee recommends that the Australian Government commit to long-term funding for the National Aerial Firefighting Centre of an amount that is at least equal to the government's current contribution, rising in line with the Consumer Price Index.

4.101 Participants provided useful comment on the Tasmanian Government's management of the 2016 bushfires. The committee does not intend to remark on operational matters, which are not encompassed by the terms of reference. However,

98 Tasmanian Government, *Submission 24*, p. 7.

the committee urges the Tasmanian Government to consider the matters raised and take remedial actions where necessary, if not already addressed.

4.102 Several submitters and witnesses questioned whether the environmental assets of the TWWHA were appropriately prioritised during the 2016 bushfires. The committee is not persuaded that Tasmanian fire agencies disregarded certain assets but relied instead upon a risk assessment methodology and tool that have significant limitations. The committee reiterates its view that there is a critical need for an evidence-based fire assessment and modelling capacity in Tasmania, and the TWWHA in particular, as well as a need to better determine how environmental assets are valued.

4.103 In the context of resourcing, the committee notes the damage to fire sensitive vegetation species and organic soils in the TWWHA, with evidence received suggesting that they are not likely to recover from the damage inflicted by the fires. Combined with climate change predictions, and its implications for fire conditions across Australia, the committee considers that the Australian and Tasmanian Government should prioritise efforts to protect and conserve the World Heritage values including through increased resource funding.

