Friends of the Earth Australia

Environment and Communications References Committee

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Inquiry into the response to, and lessons learnt from, recent bushfires in remote Tasmanian wilderness

Friends of the Earth (Australia) is a national, membership-based environmental NGO, which has been active for more than 40 years.

We appreciate the fact that the Senate is holding this inquiry and welcome the opportunity to make a submission. It is essential that we learn from the experience of the wildfires that happened in Tasmania over the summer of 2015/16.

As has been widely documented, this summer's fire season has been one of the worst in recent decades. What is of great concern is the fact that climate change now appears to be playing a role in the frequency and intensity of fire regimes in Australia, especially in central and western Tasmania, with obvious implications for Gondwanic ('Relictual') vegetation types which are very fire sensitive.

It is clear that there were insufficient resources available to the Tasmanian Fire Service, Forestry Tasmania and the Parks and Wildlife Service to contain the fires in the World Heritage Areas (WHA) including the Central Plateau, Cradle Mountain Lake St Clair National Park, Walls of Jerusalem, and Franklin – Gordon Wild Rivers National Parks.

This meant that 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.

We would like to make some points and recommendations in response to a number of the terms of reference.

(a) the impact of global warming on fire frequency and magnitude;

There is substantial evidence that climate change may have made this seasons fires worse, because of the warmer and drier than average conditions in western Tasmania that lead to the scale of the fires. Additionally, it appears that climate change is influencing the frequency of lightning strike in Tasmania.

Research carried out for the National Parks Service shows an increase in 'dry lightning' strikes in recent years, which is consistent with predictions from climate scientists.

As noted in the report 'Fire management in the Tasmanian Wilderness World Heritage Area' (p 10):

"The fire data for the TWWHA from the past 20 years suggest that the fire regimes in the TWWHA are changing, both from planned and unplanned fires. … Fires started by dry lightning now appear to be the main threat to the TWWHA. However, it is too early to know whether a shift in climate may be contributing to a long-term increasing trend in dry lightning activity in summers.

Although a view may be put that lightning fires are natural and therefore the impact of these fires should be considered natural, PWS does not support this view… these lightning fires may not be entirely natural if human-induced climate change is a contributing factor" [1].

In responding to this summer's fires, a number of experts have made comments about possible links with climate change, including:

David Bowman, a professor of environmental change biology at the University of Tasmania, who says that climate change is to blame. "We are in a new place. We just have to accept that we've crossed a threshold, I suspect. This is what climate change looks like." [2]

Climate scientist Professor **Will Steffen** says that extreme fire weather risk in Tasmania has increased over the last 30 years due to the influence of climate change. Although the climate of western Tasmania has not changed very much, as yet, as a result of global warming, the incidence of dry lightning strikes has increased markedly from last century to the present.

According to **David Lindenmeyer**, a professor of ecology and conservation biology at the Australian National University, lightning was expected to increase under climate modelling. This has been the case in recent decades in Tasmania, so much so that a fire risk assessment of the World Heritage Area (WHA) warned that lightning fires should no longer be viewed as "natural" because of the influence of climate change. It concluded that lightning fires were now the main threat to the survival of the WHA[3].

[1] http://www.parks.tas.gov.au/file.aspx?id=35224
[2] http://www.theguardian.com/environment/2016/jan/27/world-heritage-forests-burn-as-global-tragedy-unfolds-in-tasmania
[3] http://www.parks.tas.gov.au/file.aspx?id=35224

According to the **Climate Council** "annual rainfall (has been) below average for Tasmania, indicative of a two - decade drying trend likely influenced by climate change (CSIRO and BoM 2015) […] Climate change is likely a contributing factor to the observed rainfall declines via its influence on the southward shift of the rain bearing fronts from the Southern Ocean, which normally account for much of the cool-season rainfall in southern Australia" [4].

Dr **Michael-Shawn Fletcher**, University of Melbourne:
"My conviction is that the current trend [in Tasmania] is evidence of anthropogenic forces." [5]

As the climate becomes drier and warmer, fire seasons can be expected to start earlier and last longer. This has implications for the overall resourcing of all volunteer and professional firefighting agencies, not just remote area capacity.

The presence of climate change enhanced fire regimes needs to be considered the new reality of managing the WHA, with obvious implications for resourcing of firefighting agencies and approaches to managing fires when they do occur. Part of the response needs to involve a stronger focus on protecting those ecological assets which are most vulnerable to the effects of fire. Fire sensitive vegetation in Tasmania is mapped, and information about priority ecosystems must form a core part of decision making when fire responders are allocating resources, both at the state wide and local levels.

Recommendations

The Committee should recommend that the federal government:

- Provide financial resources for additional research into the relationship between climate change, bushfires and ecology in Australia, and the Tasmanian WHA in particular
- Bolster its efforts to research, model and tackle climate change

- The Committee must accept that without acting decisively to radically reduce Australia's contribution to climate change, we will face ever worse fire seasons like the one experienced in Tasmania in early 2016. The federal government should set its policy on energy and energy exports accordingly, and continue to play a key role in global efforts to reduce humanities contribution to greenhouse pollution as a matter of urgency.

The federal government needs to proactively work with the Tasmanian government to do the following:

- In view of the evidence that climate change is now impacting on fire regimes in Tasmania, it will be necessary to review, modify and publish action plans

[4] https://www.climatecouncil.org.au/uploads/a7c207eabe95f3284262766c13e29cce.pdf
[5] http://www.abc.net.au/news/2016-02-24/study-links-tassie-fires-to-human-induced-climate-change/7193830

for responding to outbreaks of wildfires and include these in the Tasmanian WHA property's revised management plan. This needs to include plans which identify how key areas of fire sensitive vegetation will be protected in the case of wildfire

- develop and publish long-term plans for ameliorating threats to the Outstanding Universal Value and other natural and cultural attributes of the WHA.

b) the availability and provisions of financial, human and mechanical resources;

Based on this years' experience, it is clear there are inadequate resources available to Tasmanian firefighting authorities in fire seasons where there are extensive fires in western, north western and central Tasmania at the same time. This is shown by the fact that interstate and federal resources were needed to bring the fires under control.

For instance:
- Military personnel and equipment was needed to assist with logistics: Australian air force planes were used to transport fire-fighters from interstate and assist with the establishment of base camps near the fires.
- Large aircraft from mainland Australia were needed to tackle the fires from the air: At least three 'Large Air Tankers' (LAT) in the form of a DC10-Bomber and two C130-Bombers were deployed to bomb the fires with water and fire retardant.
- interstate fire crews were needed to get all fires under control. While it is standard practise for firefighting authorities to support each other where possible, the delay in getting interstate crews into remote area fires meant they were not able to be contained while they were small, resulting in significant loss of communities that are not fire adapted, especially stands of Pencil Pines (Athrotaxis cupressoides) and cushion plant communities.

Because interstate remote area crews were not deployed in the field until the fires had been burning for 10 days, the Committee needs to consider whether there was an error made in assessing the scale of the fires, and whether the decision making processes around requesting interstate support were adequate.

In particular, the Inquiry 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.

There is a clear role for the federal government to intervene and provide additional resources to fight future fires because the Minister for the Environment is the Minister responsible for World Heritage properties.

Without a national assessment of the growing scale, intensity and frequency of wildfire across Australia, there is a real chance that individual firefighting agencies will be increasingly overwhelmed in their attempts to contain fires in their state or territory, with obvious implications for their ability to assist other jurisdictions.

Recommendations

The Inquiry should consider whether additional resources (staff and equipment) need to be deployed to Tasmania on a permanent basis to fight future fires. Given that the TFS says it has sufficient resources at present, it is likely that this new capacity will need to come from the federal government.

We recommend that the federal government:

- Recognise the catastrophic threat to key Outstanding Universal Values of the Tasmanian Wilderness and other major natural attributes posed by fire
- Report on wild fires as a routine part of its State of Conservation reports
- Provide coordination and financial support to enable the Tasmanian Government to develop and implement a long-term bushfire response plan designed to protect Outstanding Universal Value and other environmental attributes in Tasmania
- Oversee the review of the Management Plan for the Tasmanian Wilderness to ensure wildfires and their threats to Outstanding Universal Values are adequately addressed

(c) the adequacy of fire assessment and modelling capacity;

Fire sensitive vegetation communities

As noted above, the fire sensitive vegetation communities in Tasmania's WHAs are mapped, allowing land management and firefighting agencies to develop plans to protect them as a matter of priority when fires do break out. In severe and extended fire seasons, where resources may be stretched, there may be a heightened need to make an early call for assistance in firefighting capacity from interstate, with a view to have crews in the state but not in active deployment. 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.

Climate change impacts on the continental scale

There is also the broader issue of climate change and how it will impact on fire in remote areas and fire sensitive ecosystems in coming decades across Australia. The expected heightened fire conditions and longer seasons will be felt in each of the States and Territories where fire needs to be contained where it threatens natural assets like WHAs and other parts of the conservation estate. For example, if Tasmania and Victoria experience longer fire seasons at the same time, it will lessen the ability of the states to provide support to each other unless each state increases its firefighting capacity.

It is clear that, in these fire sensitive ecosystems, government authorities will need to

intervene more aggressively in fighting fires soon after ignition, rather than adopting a containment strategy.

More severe fire seasons could well be a problem not just for the remnant Gondwanic vegetation communities.

Many of the less fire resilient Eucalypt communities – for instance, snow gum (Eucalyptus pauciflora) woodland and alpine ash (Eucalyptus delegatensis) forests, have already been badly impacted by recent wildfire in the Australian Alps. While these species are fire adapted, they are also fire sensitive where the frequency of fire events becomes more common or more intense. In the case of alpine ash, the mature individuals of the species are 'invariably killed' by high intensity fire. The next generation of trees grows from seed. However, when alpine ash regenerates from seed, it takes roughly 15 years before the trees are old enough to have their own seeds. This means the population of saplings is somewhat vulnerable to disturbance during that period[6]. In some parts of the Australian Alps, there have been three major fires in the same area in little more than ten years. Over time this is impacting on a number of species (for instance in the case of Alpine Ash in north east Victoria). In some of these forests there is a real risk that we will see transition to new vegetation types as a result of more frequent fires. Research by the University of Melbourne[7] suggests that large areas (>6,000 hectares) of alpine ash burnt in 2003 and 2013 in north east Victoria could possibly not recover because the regenerating trees did not mature to the point where they had produced seed.

It is quite likely similar patterns will emerge in the montane forests of the Tasmanian WHA. E delegatensis, known as gum-top stringy bark in Tasmania, is a common species in sub-alpine areas in the state.[8] Hence an assessment of risks to these systems should be included in the review of firefighting capacity.

The scale and frequency of fire

It is clear that the frequency and intensity of fire seasons is growing. Despite our growing ability to fight fires with technology, the scale of fire continues to grow. For instance, in Victoria, the frequency of large fires (greater than 100,000 hectares) has grown significantly over the past century.

19th century: 2 mega fires
1900 – 1950: 4 mega fires
1951 – 2000: 7 mega fires
2001 – 2015: 6 mega fires [9]

It is difficult to imagine this trend will be reversed when we consider the clear messages from climate scientists.

[6] https://theconversation.com/ash-to-ashes-what-could-the-2013-fires-mean-for-the-future-of-our-forests-12346
[7] http://www.sciencedirect.com/science/article/pii/S0378112712002113
[8] http://www.utas.edu.au/dicotkey/dicotkey/MYRTS/sEucalyptus_delegatensis.htm
[9] http://www.ayton.id.au/gary/History/H_Aust_bushfires.htm, http://www.depi.vic.gov.au/fire-and-emergencies/managing-risk-and-learning-about-managing-fire/bushfire-history

Larger fires are, of course, harder to fight because of the larger perimeters and the possibility the fires will generate their own weather which will enhance the fire.

The impacts of this summer's fires will be felt for decades, if not centuries. It is imperative that we learn from them and ensure there is adequate protection for WHA in future fire seasons.

Yours sincerely,

Cam Walker

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