

Submission Number: NND.001.00986

Submission Of: Dr. Angela Maharaj

Your Details

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What is your submission based on? I am making this submission based on my professional knowledge, qualifications or experience or on behalf of a group or organisation

What is your area of professional expertise?

If you are lodging your submission on behalf of a group or organisation, what is the name of the group or organisation? Australian Meteorological and Oceanographic Society

Your Submission

In your experience, what areas of the bushfire emergency response worked well?

In your experience, what areas of the bushfire emergency response didn't work well?

In your experience, what needs to change to improve arrangements for preparation, mitigation, response and recovery coordination for national natural disaster arrangements in Australia?

AMOS contends that for Australia to meet the challenges of preparedness for dealing with significant bushfires, such as seen over the 2019/20 season, it must acknowledge the scientific evidence for the role of anthropogenic climate change on extreme weather and bushfires. We direct you to the AMOS Council endorsed policy statement on the IPCC Special Report on Global Warming of 1.5°C, Supplementary to the Canadian Meteorological and Oceanographic Society (CMOS) Statement (see full submission document).

AMOS also asserts that an effort to mitigate future impacts of bushfires must include a strong strategy for carbon mitigation and curbing the increase in global average temperatures to no more than 1.5°C. We refer again to our Council endorsed policy statement on the IPCC Special Report on Global Warming of 1.5°C, Supplementary to the Canadian Meteorological and Oceanographic Society (CMOS) Statement (see full submission document).

Finally, AMOS wishes to highlight the role of stable ongoing infrastructure and global scientific data sharing for atmospheric and oceanographic monitoring, modelling, data management and prediction, if we expect to meet the challenges of severe weather, highly variable climate, and the likely impacts of climate change either regionally or nationally. In the context of the recent fires there is also a need for a nationally coordinated collection of high-quality fire data.

Is there anything else you would like to tell the Royal Commission?

Along with other countries, Australia would see significant benefits from limiting global warming to 1.5°C. These benefits would include fewer and less intense heatwaves, fewer bushfires, less frequent marine heatwaves and coral bleaching, and less sea level rise. The impacts of drought would be less intense due to reduced temperatures, and changes in extreme rainfall would be reduced relative to warming of 2°C or more.

Do you agree to your submission being published? Yes I agree to my submission being published in my name

Supporting material provided:

AMOS Royal Commission Bushfire submission signed.pdf



Australian Meteorological & Oceanographic Society

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28th April, 2020

AMOS Submission to the Independent review into the Royal Commission into National Natural Disaster Arrangements

The Australian Meteorological and Oceanographic Society (AMOS, <http://www.amos.org.au>) is an independent society representing the atmospheric and oceanographic sciences in Australia. It has over 400 members drawn from the Bureau of Meteorology, CSIRO, the university sector, other State and Federal agencies, as well as the private sector. The Society covers both meteorology and oceanography, noting that:

- ‘meteorology’ in its broadest sense includes the sciences of weather, climate and atmospheric composition; and
- scientific study of ‘climate’ requires integrated study of atmosphere, ocean, land, cryosphere and biosphere.

AMOS Expert Groups develop relevant position and information statements that focus specifically on the needs and interests of Australia to provide a national perspective that may be easily lost in international statements.

AMOS contends that for Australia to meet the challenges of preparedness for dealing with significant bushfires, such as seen over the 2019/20 season, it must acknowledge the scientific evidence for the role of anthropogenic climate change on extreme weather and bushfires. We direct you to the [AMOS Council endorsed policy statement on the IPCC Special Report on Global Warming of 1.5°C, Supplementary to the Canadian Meteorological and Oceanographic Society \(CMOS\) Statement¹](#), specifically to the following passages (italicised):

Australia has a highly variable climate, and our ecosystems, cities and agriculture are extremely vulnerable to long term changes in temperature and rainfall. Since 1910, Australia has warmed more than 1°C, leading to an increase in the frequency of extreme heat events and the severity of drought conditions during periods of below average rainfall (Australian State of the Climate Report, 2018).

There has been a shift towards drier conditions in the southern part of Australia between April and October.

There has also been a long-term increase in extreme fire weather, and in the length of the fire season, across large parts of Australia.

Climate change, including increasing temperatures is contributing to these changes.

AMOS also asserts that an effort to mitigate future impacts of bushfires must include a strong strategy for carbon mitigation and curbing the increase in global average temperatures to no more than 1.5°C. We refer again to our [Council endorsed policy statement on the IPCC Special Report on Global Warming of 1.5°C, Supplementary to the Canadian Meteorological and Oceanographic Society \(CMOS\) Statement¹](#):

Along with other countries, Australia would see significant benefits from limiting global warming to 1.5°C. These benefits would include fewer and less intense heatwaves, fewer bushfires, less frequent marine heatwaves and coral bleaching, and less sea level rise. The impacts of drought would be less intense due to reduced temperatures, and changes in extreme rainfall would be reduced relative to warming of 2°C or more.

*For every additional degree of warming above the natural pre-industrial level, the impacts of warming are more severe. In some cases, thresholds may be passed leading to irreversible changes such as the loss of species or ecosystems. AMOS therefore strongly supports efforts to meet the Paris Agreement target of reducing emissions to prevent average global warming exceeding 1.5°C, while recognising that this represents an enormous challenge. **Australia's current emissions trajectory and the pledged greenhouse gas emissions reductions are insufficient for meeting the Paris Agreement global warming limits** (e.g. <https://www.nature.com/articles/nclimate3186>.)*

Finally, AMOS wishes to highlight the role of stable ongoing infrastructure and global scientific data sharing for atmospheric and oceanographic monitoring, modelling, data management and prediction, if we expect to meet the challenges of severe weather, highly variable climate, and the likely impacts of climate change either regionally or nationally. For example, our numerical weather prediction models and associated forecasting systems could not operate without timely access to reliable global data, some 98% of which comes to us without charge from overseas.

Our recent [Position Statement on International Cooperation and Data Sharing in Meteorology and Oceanography](#)² highlights some crucial points:

*With growing national and international concern about climate change, it is especially important that **Australia maintains and enhances its national climate observing networks and data archives** as part of the comprehensive Global Climate Observing System needed to support the UN Framework Convention on Climate Change. **Observations for climate monitoring need to be of the highest quality and consistency** as they provide the baseline to which more numerous, but often less accurate, observations (such as those from lower quality, amateur and 'big-data' sources) can be anchored. Indeed conventional baseline data are also needed to ensure the calibration of satellite and other observational data essential to the accuracy of numerical weather prediction systems, used for real-time operations, reanalysis and research.*

In the context of the recent fires there is also a need for a **nationally coordinated** collection of high-quality fire data

To this end, AMOS calls for:

- 1. Sustained and stable funding of Australia's basic national meteorological, oceanographic and related terrestrial observing networks and associated infrastructure;**
- 2. All publicly funded Australian observational data, metadata and data analyses to be readily discoverable and universally available, both nationally and internationally, for no more than the incremental costs of their reproduction and delivery;**
- 3. Strong government support for Australian participation in the WMO, IOC, ISC and other institutions and programs that facilitate international cooperation in meteorological, oceanographic and related data acquisition and sharing;**
- 4. Active Australian participation in the ongoing international dialogue on data and related issues among practicing meteorologists, oceanographers, hydrologists, economists, information scientists and other experts through the professional channels provided by the International Forum of Meteorological Societies (IFMS) and related mechanisms.*

Submitted on behalf of the Australian Meteorological and Oceanographic Society by



Dr. Angela M. Maharaj (President)



Dr. Roger Dargaville (Vice-President)

References:

AMOS Council endorsed policy statement on the IPCC Special Report on Global Warming of 1.5°C, Supplementary to the Canadian Meteorological and Oceanographic Society (CMOS) Statement

<https://www.amos.org.au/about/statements/>

<https://drive.google.com/file/d/1ruMs2I48recT8oWq5EtS6k0uXOcEV6W9/view>

AMOS Position Statement on International Cooperation and Data Sharing in Meteorology and Oceanography

<https://www.amos.org.au/about/statements/>

<https://drive.google.com/file/d/1R55aiF0GD99n0mR-kOwiZx04O EZfpB1W/view>

Australian State of the Climate Report 2018: <http://www.bom.gov.au/state-of-the-climate/australias-changing-climate.shtml>

Robiou du Pont, Y., Jeffery, M., Gütschow, J. et al. Equitable mitigation to achieve the Paris Agreement goals. *Nature Clim Change* 7, 38–43 (2017). <https://doi.org/10.1038/nclimate3186>