

Your details

Title

Dr

First name

Angela

Last name

Maharaj

Email

president@amos.org.au

Address

GPO Box 1289, Melbourne, VIC 3001

Submission details

I am making this submission as

An academic/researcher

Submission type

I am submitting on behalf of my organisation

Organisation making the submission (if applicable)

Australian Meteorological and Oceanographic Society (AMOS)

Your position in the organisation (if applicable)

President

Consent to make submission public

I give my consent for this submission to be made public

Share your experience or tell your story

Your story

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 nuance that may be easily lost in international statements.

AMOS contends that for NSW to meet the challenges of preparedness for dealing with significant bushfires, 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, specifically to the following passages:

"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."

AMOS also asserts that an effort to mitigate future impacts of bushfires must include a 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:

"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 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.

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. Continuing Australian commitment to international coordination on issues of observational standards and data quality, consistency and reliability;
4. Widespread adoption of 'best practice' for attribution and citation of data used in meteorological and oceanographic research;
5. 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;
6. Development and implementation of internationally consistent policies and agreements to ensure maximum possible access to additional data (including historical satellite data and privately acquired 'big data') for public purposes, recognising the ownership rights of the private data providers;
7. Continuing commitment to establishment of a strong and effective partnership between the public, private and academic sectors in Australia;
8. Effective cooperation across the public, private and academic sectors in the development and implementation of new data (including 'big-data') sources for both public and private purposes; and
9. 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."

Terms of Reference (optional)

The Inquiry welcomes submissions that address the particular matters identified in its [Terms of Reference](#).

1.1 Causes and contributing factors

AMOS contends that for NSW to meet the challenges of preparedness for dealing with significant bushfires, it must acknowledge the scientific evidence for the role of anthropogenic climate change on extreme weather and bushfires.

1.2 Preparation and planning

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.

1.3 Response to bushfires

AMOS also asserts that an effort to mitigate future impacts of bushfires must include a strategy for carbon mitigation and curbing the increase in global average temperatures to no more than 1.5°C.

Supporting documents or images

Attach files

- AMOS NSW Bushfire submission.pdf



Australian Meteorological & Oceanographic Society

Australian Meteorological and Oceanographic Society Inc
ABN: 47 970 713 012 - AMOS INC: A00 142 45C
Street Address: Level 9, 700 Collins Street, Docklands VIC 3008
Postal Address: GPO Box 1289, Melbourne, VIC 3001
Mobile: 0404 471 143 - Email: admin_officer@amos.org.au
Website: www.amos.org.au

16th April, 2020

AMOS Submission to the NSW Independent Expert Inquiry into the 2019/20 bushfire season

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:

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*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.

AMOS also asserts that an effort to mitigate future impacts of bushfires must include a 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**:

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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.

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*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.*

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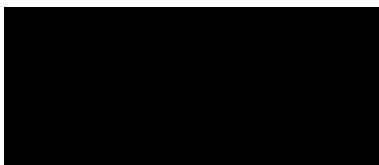
6. Development and implementation of internationally consistent policies and agreements to ensure maximum possible access to additional data (including historical satellite data and privately acquired 'big data') for public purposes, recognising the ownership rights of the private data providers;

7. Continuing commitment to establishment of a strong and effective partnership between the public, private and academic sectors in Australia;

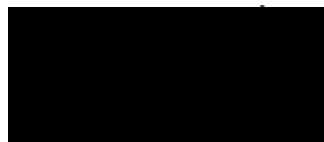
8. Effective cooperation across the public, private and academic sectors in the development and implementation of new data (including 'big-data') sources for both public and private purposes; and

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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/1ruMs2l48rect8oWq5EtS6k0uXOcEV6W9/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>