

Submission on the Independent Review into South Australia's 2019-2020 Bushfire Season.

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Healthy planet, healthy people.

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Doctors for the Environment Australia

Doctors for the Environment Australia (DEA) is an independent, self-funded, non-Government organisation of medical doctors in all Australian States and Territories. Our members work across all specialties in community, hospital and private practices. We work to prevent and address the diseases - local, national and global - caused by damage to our natural environment. We are a public health voice in the sphere of environmental health with a primary focus on the health harms from pollution and climate change.

Introduction

Doctors for the Environment welcomes the opportunity to make this submission to the Independent Review of SA's 2019-2020 bushfire season.

Importantly, while this review's Terms of Reference is focussed on "Prevention, Preparation, Response, and Recovery", it does not include any reference to health. DEA considers this a serious omission. Nor is there any reference to the role of climate change as an important predictor of future risk and preparedness.

Australia is now the world's largest exporter of coal and gas. With the opening up of new gas fields and coal mines for export, Australia is a significant contributor to the rise in global greenhouse gases.^{1 2} No review into bushfires is complete without consideration of mitigation strategies, including rapid reduction of emissions. This summer's bushfires have exposed Australia's particular vulnerability to global warming.

DEA Recommendations

- Acknowledgement of the ongoing impact of climate change and its capacity to create increased demands on health services
- Acknowledgment of the significant short-term and long-term health impacts of bushfires and bushfire smoke
- Assessment of the physical and mental health impacts on firefighters and affected communities.
- That greater awareness and improved monitoring of bushfire smoke hazard be implemented.
- That hazard reduction burning may itself create health problems, particularly in relation to bushfire smoke, and these must be figured into any such initiatives.
- That health services to effected communities be strengthened through liaison with local GPs and health clinics and the Department of health to anticipate an increase in demand.
- That the findings of the Victorian Bushfire Royal Commission form part of this review.

¹ <https://theconversation.com/why-australia-must-stop-exporting-coal-9698>

² <https://www.climatecouncil.org.au/australia-worlds-largest-gas-exporter/>

Prevention

Reducing bushfire ignitions.

A common response of emergency service personnel was that these bushfires were “unprecedented” in both their extent and intensity. This leads to the question of whether they were completely unheralded or totally unexpected. While Australia has always had bushfires, in the last 30 years extreme fire weather has increased, and bushfires have been larger and more difficult to control.³ The February 2009 Victorian fire was Australia’s deadliest natural fire disaster, killing 173 people. The associated heat waves in the preceding weeks was responsible for over 300 extra deaths.⁴

The McArthur Forest Fire Danger Index (FFDI), developed in the 1960s measures the weather conditions associated with fire danger. The Index, from low (0-11) to extreme (75-99), was revised after the Victorian fires, introducing a new level of “catastrophic” for values over 100⁵. A number of studies on future fire activity indicate the frequency of severe fire weather days and severe fires is predicted to increase.^{6 7 8}

Bushfires require heat, dry conditions, fuel and an ignition source. 2019 was Australia’s hottest and driest on record. For South Australia it was the driest and second hottest on record.⁹ This comes on the end of the second major drought of this century and is consistent with warnings from the Bureau of Meteorology and the CSIRO that there is a long-term drying trend across southern Australia.¹⁰

In 2008, drawing on evidence from the Intergovernmental Panel on Climate Change and other sources economist Ross Garnaut, in a report to the government of the day, warned Australia would face more frequent and intense fire seasons by 2020 without action on climate change.¹¹

Arson, machinery, fuel loads, and lightning strikes.

Claims that most fires were started by arsonists have been refuted by emergency service personnel and fire experts alike.¹² Estimates of the number of fires started deliberately are less than 1%. In a tinderbox environment fires accidentally ignited by machinery or cars are a risk which can be mitigated by public education but not

³ <https://www.climatecouncil.org.au/not-normal-climate-change-bushfire-web/>

⁴ https://www.dea.org.au/wp-content/uploads/2020/01/DEA-Fact-Sheet_HeatwavesWEB.pdf

⁵ Joelle Gergis: Sunburnt Country page 193

⁶ <https://www.climatecouncil.org.au/not-normal-climate-change-bushfire-web/>

⁷ <https://www.climatechangeinaustralia.gov.au/en/publications-library/technical-report/>

⁸ <https://ieeexplore.ieee.org/document/7326042?reload=true&arnumber=7326042> Zhu Q, Yang X and Yuc Q (2015) Climate change impact on bushfire risk in New South Wales, Australia. 2015 IEEE International Geoscience and Remote Sensing Symposium (IGARSS), pp 1413–1416.

⁹ media.bom.gov.au/releases/739/annual-climate-statement-2019-periods-of-extreme-heat-in-2019-bookend-australias-warmest-and-driest-year-on-record/

¹⁰ <https://www.newscientist.com/article/2019-2019-was-australias-hottest-and-driest-year-on-record/>

¹¹ <https://www.abc.net.au/news/2020-01-08/economic-bushfires-billions-ross-garnaut-climate-change/11848388>

¹² <https://www.abc.net.au/news/2020-01-11/australias-fires-reveal-arson-not-a-major-cause/11855022>

eliminated. Lightning strikes, particularly from “dry lightning” are thought to be responsible for the majority of the fires, especially forest fires.

It is claimed that hazard reduction burning is the most important measure in reducing bushfire risk. Rural Fire Service Chief of NSW, Shane Fitzsimmons has stated that hazard reduction burns have a place but are “not the panacea”.¹³ He is backed by his counterparts in Queensland and Victoria who have pointed to the limitations of hazard reduction burning, namely a shortened window of opportunity and unsuitability of some areas.

There is an important medical issue around hazard reduction burns which is being overlooked. Bushfire smoke is a source of particulate matter, benzene, formaldehyde and polycyclic aromatic hydrocarbons PACs, all of which are known to be detrimental to health.¹⁴ A large body of evidence shows that long term exposure to fine particulate matter and other air pollutants leads to diseases of multiple organ systems. A higher incidence of asthma, chronic lung disease, heart attack, stroke, dementia, kidney disease, birth prematurity and underweight babies has appeared where pollution levels are high.^{15 16 17} Less is known about the long-term health impacts of short-term exposure to bushfire smoke or smoke from hazard reduction burning. However, short term impacts are understood by health authorities who have noted a rise in emergency admissions caused by the bushfire smoke.¹⁸

Hazard reduction burning is a complex process which must proceed only with the best guidance by experts, which could include indigenous rangers who understand cultural practices. It should not happen in a way which causes further ecological damage or increases the health burden of smoke pollution which can travel long distances and pool in airsheds under certain meteorological conditions.¹⁹

Preparation

Community Preparation and resilience

The scale and intensity of the recent bushfires was unprecedented, but the loss of life was mercifully less than in previous bushfires, notably the Victorian bushfires of 2009. While a full analysis will be some time coming it is certain that much has been learned from that experience.

Community preparation will require a recognition that the bushfire season will be longer and more intense in the years to come under the influence of climate change with more hot days increasing the risk. *“CSIRO and BOM projections estimate that the average number of days over 35 degrees C could increase by 180% by 2090 without strong climate policies”.*²⁰

¹³ <https://www.smh.com.au/national/hazard-reduction-burns-are-not-the-panacea-rfs-boss-20200108-p53poq.html>

¹⁴ <https://www.epa.gov/burnwise/wood-smoke-and-your-health>

¹⁵ <https://www.dea.org.au/bushfires-and-health-in-a-changing-environment-fact-sheet/>

¹⁶ <https://www.dea.org.au/media-releases/health-experts-call-for-stronger-national-air-pollution-standards-to-save-lives/>

¹⁷ <https://www.dea.org.au/wp-content/uploads/2014/05/DEA-Policy-Ambient-Air-Pollution-June-2017.pdf>

¹⁸ <https://www.dea.org.au/media-release-major-health-groups-declare-bushfire-smoke-a-public-health-emergency/>

¹⁹ <https://epa.tas.gov.au/epa/air/air-quality-in-tasmania/reducing-air-pollution/how-weather-affects-air-quality>

²⁰ [https://www.tai.org.au/sites/default/files/P666%20Heatwatch%20Adelaide%20\[WEB\]%20.pdf](https://www.tai.org.au/sites/default/files/P666%20Heatwatch%20Adelaide%20[WEB]%20.pdf)

Climate policy in Australia, and in other countries, is failing to adequately address the accumulation of greenhouse gases in the atmosphere. The Intergovernmental Panel on Climate Change (IPCC) warned in their 2019 Emissions Gap Report that with current nationally determined commitments the world is on track to 3.2 degrees of warming, with devastating effect.^{21 22} The implications of this warning for bushfires is clear.

Firefighters

Human resources during the recent bushfires were stretched to the limit. Firefighters reported extremes of fatigue and were exposed to extreme danger. Tragically, three people lost their lives, but that this number is low is testament to the skill of the firefighters and experience gained from previous bushfires.

The Australian Institute of Occupational Hygienists called on the COAG Health Council for a long term study into the health and well-being of firefighters, pointing out that many had been exposed for months to “smoke, heat, noise, and toxic substances, yet there were few, if any, measures in place to monitor the exposure”.²³ While P2 mask provide some protection from particulates it is clear from television footage and anecdote that they are difficult to work with and maintain in the correct position. They also do not protect against volatile toxic gases.

Asbestos exposure was revealed as a risk both during the bushfires and in the subsequent clean up phase.²⁴

Many of the firefighters were themselves victims of the destruction wrought by the bushfires and lost stock, property or their homes. The mental health of firefighters and their communities must be a high priority in any review of this disaster. Injury or loss of loved ones and friends, loss of livelihood or property, loss of pets, the need to euthanise badly burned stock and the fear induced by fire can lead to anxiety, depression, post-traumatic stress disorder and relationship problems.^{25 26}

Many of the firefighters worked for some months, losing time at work and leisure time with their families. With longer and more intense fire seasons expected that situation is not tenable in the future. DEA recommends the findings of the Victorian Bushfires Royal Commission, including a retreat and resettlement strategy in areas of unacceptably high bushfire risk (VBRC 2011 Recommendation 46).

Health

DEA Recommends, under Part 4, *State Emergency Management Plan including Extreme Heat Planning, review of emergency planning arrangements*, that the Department of Health be involved at an early stage. The heat waves generally associated with high bushfire risk are also associated with higher rates of non-fire related mortality, cardiac arrest, and emergency hospital admissions.²⁷ At a time when health emergency services are under strain, bushfires compound the problems. In 2019, the Victorian government developed a health heat plan in response to recent heatwaves.²⁸

²¹ <https://www.unenvironment.org/news-and-stories/story/10-things-know-about-emissions-gap-2019>

²² <https://wedocs.unep.org/bitstream/handle/20.500.11822/30798/EGR19ESEN.pdf?sequence=13>

²³ <https://www.abc.net.au/news/2020-02-26/call-for-health-study-into-bushfire-smoke-effect-on-firefighters/11999694>

²⁴ <https://www.asbestossafety.gov.au/news/asbestos-safety-after-bushfires>

²⁵ <https://www.abc.net.au/news/2020-01-14/mental-health-trauma-of-bushfires-lasts-for-years-yarloop-fire/11864194>

²⁶ <https://www.dea.org.au/new-daily-burning-anxiety--the-new-normal-isnt-just-the-fire-its-the-fear/>

²⁷ https://www.dea.org.au/wp-content/uploads/2020/01/DEA-Fact-Sheet_HeatwavesWEB.pdf

²⁸ <https://www2.health.vic.gov.au/about/publications/policiesandguidelines/heat-health-plan-for-victoria>

Response

Links to public Information and Warnings

The media, and especially the ABC, in keeping the public informed, played a vital role in minimising loss and deaths during the bushfires. There was, however, little information provided to the wider community about the health effects of bushfire smoke which persisted for some time. A useful public health measure would be to include the air quality index and health warnings in the nightly weather bulletins on radio and television.²⁹

Recovery

The health and well-being of those impacted by the bushfires must be a priority of this review. In this context DEA recommends that health services in these communities be strengthened through liaison with local doctors and the Department of Health. The longer term physical and mental health impacts must be monitored and catered for.

²⁹ <https://www.dea.org.au/media-release-major-health-groups-declare-bushfire-smoke-a-public-health-emergency/>