

Frequent extreme bushfires are our new reality: We need to learn how to live with smoke-filled air

November 6 2020, by Gabriel Da Silva



Credit: Kenan Babayiğit from Pexels

As fires ravaged large sections of the Australian bush last summer, cities and towns all along the coast were blanketed in toxic smoke. Air pollutants were measured at [unheard of levels](#) across the country.

Hazardous air descended on cities hundreds of kilometers away from the fires themselves. This air was the most dangerous to breathe [on the planet](#).

The [bushfire royal commission](#) was tabled on October 30, with some sobering findings about fires and air pollution. Unfortunately, it showed that as a nation we were not prepared to deal with this public health emergency.

These disasters are inevitable under [climate change](#), and while we need to urgently act on climate change to protect [future generations](#), we also need to make changes now to mitigate the risks that already face us.

Australia must get better at communicating how to identify and then stay safe in hazardous air. A national set of air quality categories would go a long way to achieving this.

Over 400 deaths attributed to bushfire smoke

The royal commission heard that air pollution from the summer fires likely caused more than 400 deaths. Thousands of additional hospital admissions put added strain on our hospitals. All up the added burden to our health system was estimated at [almost A\\$2 billion](#).

Even in the absence of extreme natural disasters, air pollution is one of Australia's biggest public health concerns. Pollution from all sources causes [thousands of deaths per year](#). This includes emissions from [coal-fired power stations](#), diesel cars and wood-fired heaters.

Better preparing ourselves to deal with bushfire smoke will have flow-on benefits in tackling these problems.

Different state, different health advice

The royal commission found "there is an urgent need for national consistency in the categorisation of air quality." At the moment, every state has their own system to categorize air quality and communicate it to the public.

But there are major discrepancies with how different states identify the worst air quality.

Air quality is the sum impact of the concentration of various unhealthy chemicals in the air. These include ozone, nitrogen and sulfur oxides, and fine particulate matter. To communicate this to the public, most countries convert these chemical concentrations into an Air Quality Index (AQI).

[In the US](#), there is a standardized AQI categorisation for the whole country.

The Air Quality Index (AQI) in the US

In the US, the AQI is standardised across the country, and communicated clearly.

Daily AQI Color	Levels of Concern	Values of Index	Description of Air Quality
Green	Good	0 to 50	Air quality is satisfactory, and air pollution poses little or no risk.
Yellow	Moderate	51 to 100	Air quality is acceptable. However, there may be a risk for some people, particularly those who are unusually sensitive to air pollution.
Orange	Unhealthy for Sensitive Groups	101 to 150	Members of sensitive groups may experience health effects. The general public is less likely to be affected.
Red	Unhealthy	151 to 200	Some members of the general public may experience health effects; members of sensitive groups may experience more serious health effects.
Purple	Very Unhealthy	201 to 300	Health alert: The risk of health effects is increased for everyone.
Maroon	Hazardous	301 and higher	Health warning of emergency conditions: everyone is more likely to be affected.

In Australia, the situation is very different. Every state has its own bands,

with their own color codes. These bands trigger at different pollutant levels and carry different health advice. The Royal Commission told us this needs to be standardized, and now.

For example, [in NSW](#) the worst air quality category is "Hazardous," which triggers at an AQI of 200. [South Australia](#), however, only recognizes "Very Poor" as the worst class of air quality, with an AQI of 150 and above.

During the summer bushfires, [AQI values as high as 5,000](#) were measured. It's clear the highest bands of [air pollution](#) are no longer appropriate.

We need a national air quality system

We have faced a similar problem before. After Victoria's Black Saturday fires in 2009, we recognized that our fire danger ratings were inadequate.

The [Black Saturday royal commission](#) found we needed a higher category for the most dangerous fire conditions. The "Catastrophic" category ("CODE RED" in Victoria) was added. It carried clear advice about what to do in such dangerous conditions, instructing people to safely leave as early as possible.

Something similar now needs to happen with air quality ratings.

When facing future extreme bushfires, we need a way to identify when catastrophic conditions have led to air so unhealthy that everyone should take precautions, such as staying indoors and wearing masks. We then need to get clear health advice out to the public.

A national air quality rating system could achieve this, and would also

help address other important recommendations of the Royal Commission: That we need improved means of getting reliable information out to the public, along with better community education around what to do when air quality plummets.

There's work to do

An Australian AQI should be featured on national weather reports and forecasts, providing important health information to the public every day of the year. At the same time it would familiarize Australians with air quality measures and actions that need to be taken to protect ourselves from unhealthy air.

But there is work to do. First, we need to develop a new set of air quality categories that work for the entire country, and reflects both the everyday hazards of industrial pollution and the extreme dangers of bushfires. These categories also need to be matched with sound health advice.

And if we are going to report these measures more widely then we also need to get better at measuring and predicting air quality across the nation—two other important royal commission recommendations.

Achieving all of this won't be easy. But if we can get it right then we will be much better placed to deal with smoke risk the next time severe bushfires inevitably happen.

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