

# HAZARD REDUCTION SMOKE



## WHAT ARE HAZARD REDUCTION BURNS?

Bushfires occur across fire-prone vegetation types when high fuel loads, ignition sources and adverse weather inevitably coincide. Hazard reduction burning (HRB) is widely used in Australia to reduce the severity of bush fires and minimise their potential impacts on life, property and the environment (Figure 1).

In New South Wales, the *Rural Fires Act 1997* (the Act) requires local governments with bush fire prone land to have a Bush Fire Management Committee made up of a range of stakeholders including fire services, volunteer firefighters, land managers and council. These committees prepare bush fire risk management plans, with hazard reduction activities a treatment option in such plans. The Act provides for public participation and plans are publically displayed.

Hazard reduction lighting for bush fire management

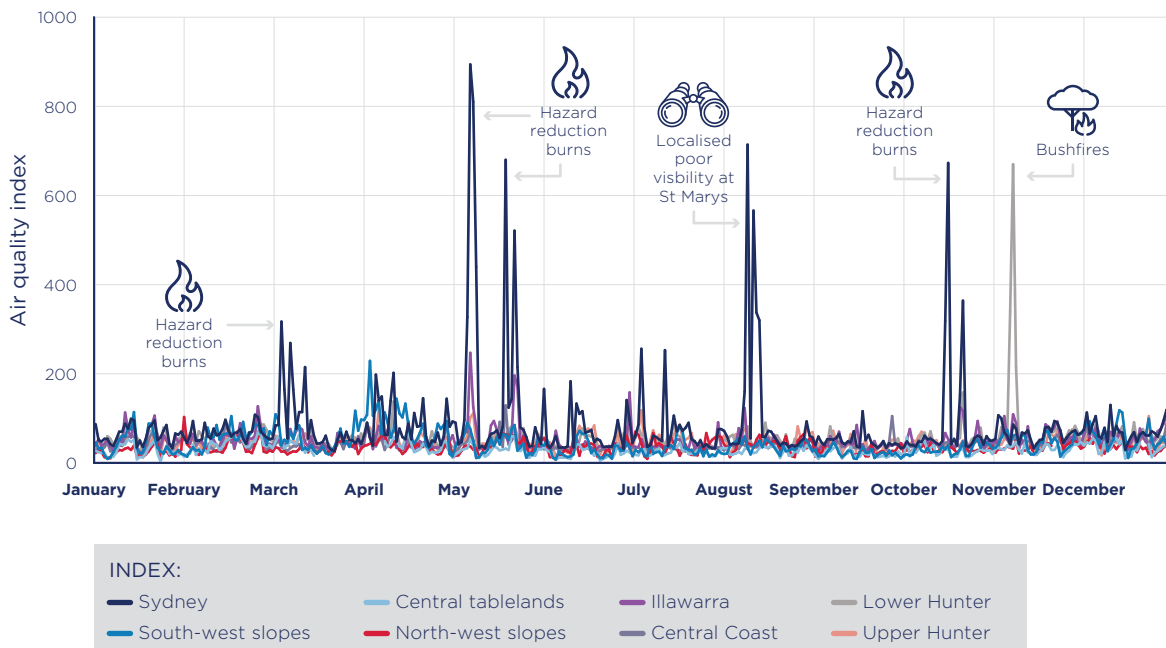


## HOW DOES SMOKE FROM HAZARD REDUCTION BURNS AFFECT COMMUNITIES?

Some regions in NSW experience high particle pollution associated with wildfires and planned burns, and episodes of smoke pollution also occur in the Sydney basin potentially affecting large numbers of people. Exposure to smoke can have adverse health impacts, ranging from eye and throat irritation and asthma symptoms to hospitalisations and premature deaths.

The impacts of HRB smoke on local communities is recognised by fire management agencies and measures are implemented to assess and manage such impacts. Nevertheless, the need to reduce bushfire risks by hazard reduction burning can sometimes lead to significant smoke events affecting large populations, such as occurred in May 2016 (Figure 2).

### AIR QUALITY INDEX TIME SERIES FOR NSW REGIONS DURING 2016



Air Quality Index (AQI) values summarise overall air quality based on all air pollutants measured. An AQI of 100 or above indicates an exceedance of national air quality standards. AQI values above 200 indicate that air quality is in the hazardous category, and people sensitive to air pollution are advised to avoid all outdoor physical activities.

**Source: Office of Environment and Heritage, Towards Cleaner Air, NSW Air Quality Statement 2016**





## WHO HAS ROLES AND RESPONSIBILITIES TO PROTECT THE COMMUNITY?

Each agency or land manager conducting hazard reduction burning has requirements for consideration of smoke management from that burn as part of the planning process.

The NSW Rural Fire Service (RFS) coordinates hazard reduction activities, reporting and information across the state. Its responsibilities under the *Rural Fires Act 1997* include preventing and suppressing bush and other fires; co-ordinating bushfire fighting; and protecting people, property, infrastructure and environmental, economic, cultural, agricultural and community assets from fires. The NSW RFS coordinates the public notice of bush fire hazard reduction works, compiling a list of planned burns which it publishes weekly. This list may change due to weather conditions. When planned burns are likely to impact a community, the NSW RFS may carry out smoke plume modelling, issuing results via the media, social media and on the NSW RFS website. Fire management agencies are also able to request modelling from the NSW RFS State Operations Centre. Where there is, or is likely to be, a significant amount of smoke, the NSW RFS may produce a Smoke Advisory on its website with information provided about the source of the smoke and users directed to health and environmental information provided by other agencies. The NSW RFS works closely with NSW Health and other bodies such as the Asthma Foundation in the event of predicted poor air quality due to hazard reduction burning, and includes reference to possible smoke issues in its communications.

Fire and Rescue NSW (FRNSW) is responsible for taking all practicable measures for preventing and extinguishing fires and protecting life and property in case of fire in any fire district, with life given the highest priority.

NSW Health issues Air Pollution Alerts when advised by the Office of Environment and Heritage (OEH) that poor air quality is forecast. OEH forecasters assess the likelihood of poor air quality taking into account the list of planned burns, and smoke modelling results from the NSW RFS, weather forecasts from the Bureau of Meteorology, data from the NSW Air Quality Monitoring Network and in house smoke modelling. The Environment Protection Authority (EPA) communicates risks posed by HRB smoke by retweeting smoke advisories and air pollution alerts through social media, updating information on the EPA website and directing people to the NSW RFS, OEH and NSW Health websites for further information.

## ADDRESSING HAZARD REDUCTION IMPACTS

While committed to carrying out hazard reduction burning as a public safety tool, the Government recognises the need to minimise the associated air quality impacts on NSW communities through continued improvements in smoke management practices. As part of the *Clean Air for NSW* strategy the Government is investigating ways to better manage smoke impacts from hazard reduction burning and wildfires in NSW. Cross-agency collaboration is working to establish HRB Smoke Management and Communication protocols and targeted research to improve smoke modelling and impact assessment capabilities to better understand and manage risks to human health and the environment. Government is also seeking to expand research into health impacts of smoke and management measures to reduce exposure to smoke from planned burning and bushfires, and to improve communication and awareness of air quality and health impacts from smoke with a focus on people who are most vulnerable to smoke impacts, such as children, the elderly and people with respiratory disease.