



INFORMATION BULLETIN

BUSHFIRES AND AIR QUALITY

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Smoke from bushfires can lead to significant deterioration in air quality with increased levels of fine particles and reduced visibility being the main concerns. With extended drought conditions, this year is predicted to be a bad year for fires. Widespread impacts from bushfire smoke may be expected to occur throughout the summer, depending on fire and weather conditions.

Smoke is made up of a complex mixture of gases and fine particles produced when wood and other organic matter is burnt.

Fine particles, known as PM₁₀ (particulate matter smaller than 10 µm in diameter), can impact on people's health. These fine particles can get into your eyes and respiratory system where they can cause effects such as burning eyes, sore throat and runny nose. In healthy people these effects resolve quickly once the smoke is no longer present.

People who have existing respiratory or heart conditions (such as congestive heart failure, angina, chronic obstructive pulmonary disease, emphysema or asthma) are more sensitive to the effects of smoke. Exposure to particles can aggravate these conditions and you may experience symptoms at lower smoke levels than healthy people. Existing symptoms may get worse when you are exposed to smoke.

Children and the elderly may also be more sensitive to the effects of smoke than healthy people.

Whether you are healthy or fall into a sensitive group, it is always a good idea, where practical, to avoid breathing smoke.

Assessing air quality

EPA Victoria routinely monitors air quality in Melbourne, Geelong and the Latrobe Valley. Mobile laboratories are also located in some regional areas from time to time. If required, EPA will temporarily establish additional air quality monitoring facilities in bushfire-affected areas to assist in monitoring impacts from fires on local communities. Data from EPA's monitoring sites is available on at www.epa.vic.gov.au/air/bulletins.

Even though EPA maintains a significant air monitoring network, air quality monitoring data will not always be available for all locations that may be impacted by smoke from fires.

EPA will provide advice about air quality in regions affected by fires where possible, based on monitoring data and visual assessment.

Monitoring data

Together with the Department of Human Services (DHS), EPA has developed a system to categorise air quality measurements and provide advice on possible impacts on people's health. Table 1 provides advice on air quality categories.

Where air pollution monitoring data is available (see www.epa.vic.gov.au/air/bulletins) the measurements should be used to determine the applicable air quality category and identify what actions you can take to reduce the risk of health effects arising from exposure to particles in the smoke. The actions advised for each category are listed in Table 2.

Table 1: Bushfire alert categories based on particle monitoring and visibility

| Bushfire smoke alert level | Categories | 24-hour PM ₁₀ µg/m ³ | 1-hour PM ₁₀ µg/m ³ | Visibility |
|----------------------------|-----------------------|--|---|-------------------------------------|
| None | Healthy | Less than 50 | Less than 80 | More than 20 km |
| Low | Unhealthy – sensitive | 51–65 | 81–175 | Less than 20 km but more than 10 km |
| High | Unhealthy – all | 66–155 | 176–300 | Less than 10 km but more than 5 km |
| | Very unhealthy | 156–310 | 301–500 | Less than 5 km but more than 1 km |
| | Hazardous | Greater than 310 | Greater than 500 | Less than 1 km |



Self-assessment

Increased particle levels are also associated with reduced visibility. This can be used as a practical self-assessment indicator of air quality. Table 1 provides guidance on air quality categories, visibility and the groups within the population who might be affected by smoke. Table 1 can be used to make your own assessment of air quality to guide actions when smoke is present in your area, as follows:

1. Prior to fire being present identify landmarks that are visible from your home that fit within the categories in the table.
2. Use the landmarks as a guide to estimate air quality in your area during the time when smoke is present.
3. When you can no longer clearly see a landmark then air quality has deteriorated (visibility in Table 1 is the distance to the nearest landmark that is just obscured by the smoke).
4. Use the visibility determined in Step 3 to identify the applicable air quality category from Table 1.

Refer to Table 2 to identify what actions you might take to protect your health.

What can I do to protect myself and my family?

1. If there is an active fire in your area then fire safety is your first priority. Listen to advice from emergency services, the CFA or DSE about the fire activity in your area and what you need to do.
2. Listen to local news reports about any health warnings related to smoke from the fires.

3. If possible, check EPA Victoria's website for air quality bulletin providing information on particle levels in your area and recommendations on actions you can take to reduce the impact of smoke on your health.
4. Use the visibility guide (Table 1) when air monitoring data is not available in your area.
5. Use common sense – if it is smoky outside, it is probably not a good time to do vigorous work or exercise outdoors or for your children to play outside.
6. Where practical, stay indoors and keep windows and doors closed (if not too hot) to keep the indoor air as clean as possible.
7. Follow the cautionary advice set out in Table 2.
8. If you have heart or lung conditions, you are elderly or have children, talk to your doctor about steps you should take to protect yourself if smoke impacts your community. Talk to your doctor prior to the fire season, if possible, so you will know what to do in a smoky situation. Only your doctor can advise you about your specific health situation.
9. People with existing conditions should ensure they take their medication as prescribed. If you suffer from asthma, follow your asthma management plan.
10. If your symptoms worsen or you are concerned about symptoms you are experiencing, seek medical advice or contact the Nurse on Call service provided by the Department of Human Services (1300 60 60 24).

Table 2: Cautionary advice and actions

| Bushfire smoke alert level | Air quality categories | Cautionary advice |
|----------------------------|--------------------------------|---|
| None | Healthy | None. |
| Low | Unhealthy for sensitive groups | People with heart or lung conditions, children and older adults should reduce prolonged or heavy activity. |
| High | Unhealthy all | People with heart or lung conditions, children and older adults should avoid prolonged or heavy activity. Everyone else should reduce prolonged or heavy exertion. |
| | Very unhealthy | People with heart or lung conditions, children and older adults should avoid all physical activity outdoors. Everyone else should avoid prolonged or heavy activity. |
| | Hazardous | Everyone should avoid all physical activity outdoors; people with heart or lung conditions, children and older adults should remain indoors and keep activity levels low. |

This information has been jointly prepared by EPA Victoria and the Department of Human Services.

Further information about the potential health impacts of bushfire smoke is available on the DHS website. Further information about the potential health impacts of bushfire smoke is available on the DHS website, www.health.vic.gov.au/bushfire, and in the attached sheet.

For information about Nurse-on-Call visit www.health.vic.gov.au/nurseoncall.

For more information about asthma and bushfire smoke see the Asthma Victoria website at www.asthma.org.au.

For information on fires in Victoria and general fire safety advice, please contact the Victorian Bushfire Information Line (VBIL) on freecall 1800 240 667. Callers who are deaf, hard of hearing or have a speech or communication impairment may call textphone/telewriter (TTY) on 1800 122 969. Information is also available at www.dse.vic.gov.au/fires or www.cfa.vic.gov.au.

