



Air Quality Monitoring in Busselton

Purpose

The purpose of this Fact Sheet is to provide information on air quality monitoring that is undertaken by the Department of Environment Regulation (DER) in Busselton.

Introduction

Air quality monitoring is undertaken by DER at a number of regional and metropolitan locations within Western Australia in accordance with the National Environment Protection (Ambient Air Quality) Measure (NEPM).

DER is responsible for the operation and maintenance of 13 air quality monitoring sites in Western Australia, including Busselton.

Busselton's air quality monitoring site was founded in 2007, primarily to monitor smoke from bushfires, prescribed fire hazard reduction burns and wood-fired home heaters.

Key Points - Air Quality in Busselton

- Air quality in Busselton is considered good on most days, although some poor air quality events occur in any given year.
- Poor air quality events have been primarily attributed to prescribed fire hazard reduction burns or bushfires.
- Monitoring will continue in accordance with NEPM as the national standard.
- Expansion to the monitoring site to measure PM₁₀ is scheduled for 2019/20.

Our Monitoring

One air quality pollutant, particle matter less than 2.5 microns in diameter (PM_{2.5}) is monitored in Busselton.

Particle matter can be harmful to humans and can be attributed to industrial activities and natural sources such as bushfires, prescribed fire hazard reduction burns, dust storms and pollen.

Air Quality Particle Criteria

The NEPM provides a number of criteria for particle matter as shown through Table 1.

Table 1. Air Quality Particle Criteria

Pollutant	Averaging Period	Maximum concentration (micrograms per cubic metre)
Particle Matter as PM ₁₀	1 day	50 µg/m ³
	1 year	25 µg/m ³
Particle Matter as PM _{2.5}	1 day	25 µg/m ³
	1 year	8 µg/m ³

All exceedences and events are reported and identified. If the exceedence is caused by a fire or dust event, and causes the one day average particle standards to exceed normal historical fluctuations and background levels, it is referred to as an exceptional event.

Particle Levels in Busselton

Busselton has occasionally exceeded the daily (24 hour) standard of 25 µg/m³ for PM_{2.5} as shown through Figure 1.

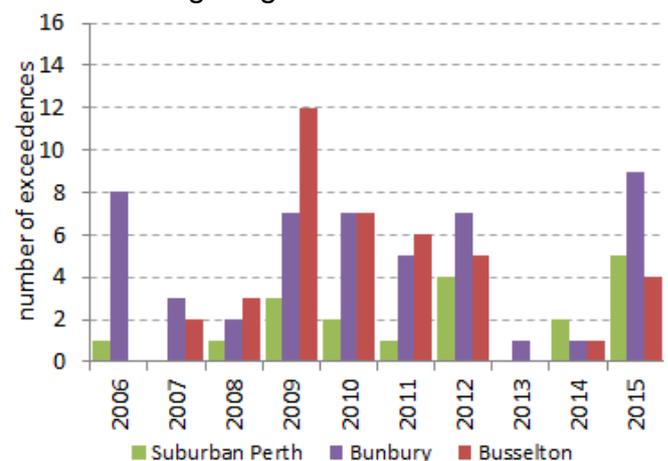


Figure 1. Number of times the NEPM 24 hour PM_{2.5} standard was exceeded at a range of sites

Busselton experienced four exceedences of the daily NEPM PM_{2.5} standard in 2015. All were caused by either bushfires in February or

prescribed fire hazard reduction burns in Spring.

In 2015, the annual average PM_{2.5} concentration in Busselton was 8.6 µg/m³ (Figure 2).

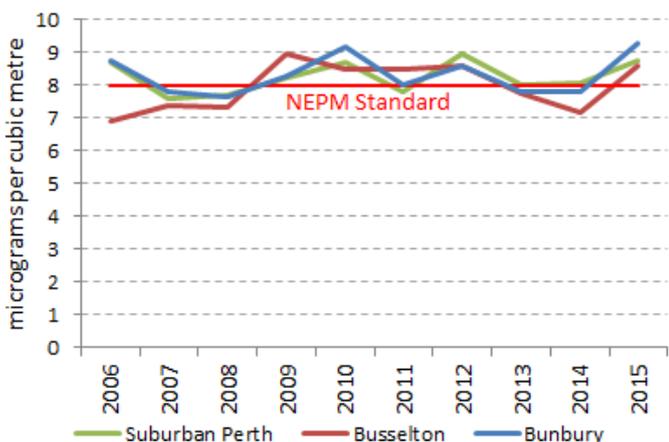


Figure 2. Annual average PM_{2.5} concentrations at a range of sites

The main sources of particle matter in Busselton are wood heaters, bushfires, prescribed hazard reduction burning and various natural events.

As Figure 3 shows, over the past three years, elevated averaged particle levels at Busselton have occurred predominantly in the evenings and morning and during the drier Summer months. Additionally, the figure also shows there are some elevated periods overnight during the Winter months.

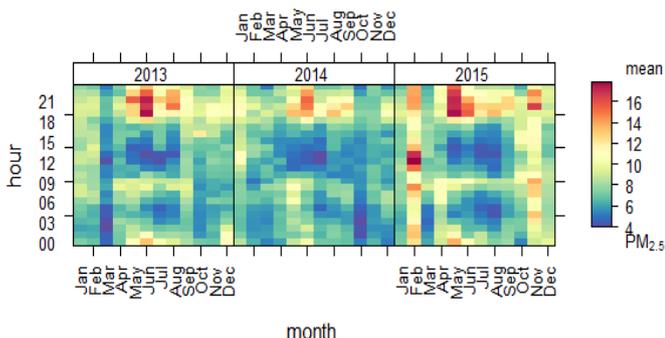


Figure 3. Average PM₁₀ concentrations at Busselton for each hour over the last three years

Future Monitoring in Busselton

While there has been no PM₁₀ particle monitoring by DER in Busselton, installation of a PM₁₀ particle monitor is scheduled for 2019/20.

Particles Explained

Airborne particles are commonly classified by size in terms of their equivalent aerodynamic diameter (EAD). An EAD is the diameter of a spherical particle of density 1 gram per cubic centimeter (the same density as water) which exhibits the same aerodynamic behavior as the particle in question. Particles are sampled and described on the basis of their EAD but usually simply called the particle size.

PM₁₀ particles are any substances that have an EAD less than or equal to 10 micrometres in diameter. PM_{2.5} are any substances that have an EAD less than or equal to 2.5 micrometres in diameter. Particles in this size range make up a large portion of dust that can be drawn into the lungs. Larger particles tend to be trapped in the nose, mouth or throat¹.

The important thing to note is that PM₁₀ and PM_{2.5} is not one particular substance, but simply a classification of particle or dust size.

¹ [National Pollutant Inventory, Particulate matter \(PM₁₀ and PM_{2.5}\)](#)

More Information

For advice on the Regulations, or related matters, please contact Licensing and Approvals on 6467 5000.

This document is available in alternative formats and other languages on request.

Related Documents

Additional publications about Air Quality are available online from www.der.wa.gov.au/airquality, or can be requested by phoning 6467 5000.

Legislation

This document is provided for guidance only. It should not be relied upon to address every aspect of the relevant legislation. Please refer to the State Law Publisher (SLP) for copies of the relevant legislation, available electronically from the SLP website at www.slp.wa.gov.au.

Document Versions

- July 2016

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