*Heatwave Transcript*

I will outline some information about heatwaves, the broad definition of heatwave in Australia, and the effects of heatwaves.

I will outline the process for heatwave monitoring and warning.

I will provide an indication of the history of heatwaves in Australia and consider some basic actions that community members

can take to prepare for heatwaves. I will provide some useful sources of information people interested in heatwaves can use.

There is no fixed and agreed definition of what a heatwave in Australia is.

The Bureau of Meteorology defines a heatwave as "three or more days of high maximum and minimum temperatures that are unusual for that location".

Authorities agree a heatwave is “a prolonged period of excess heat”.

Heatwaves have taken more lives in the last 200 years than any other natural hazard event.

The people who die from heatwaves are usually people with pre-existing medical conditions making the direct attribution of their death to the heatwave tricky.

Heatwaves are slow events (not sudden onset like earthquakes), they do not generate the same media coverage as more high profile events.

Excess heat in the far tropical north of Australia is different to what is considered excess heat in the cooler, more temperate south of the continent. Thus, a heatwave is defined ***relative*** to local conditions in an area.

Heatwaves are extreme events so they are rare. However, they can be expected to occur somewhere in Australia every year – if not multiple times in a year and even in one location.

**What can cause a heatwave, and what issues can arise from heatwaves?**

Certain environmental conditions combine to allow heatwaves to develop. These include: dry soils meaning little moisture rises in to the atmosphere to cool the air; persistent high pressure atmospheric systems; warmer than average conditions due to natural variability (e.g., El Nino) and warmer than average conditions due to longer term warming of the Earth’s climate system.

Heatwaves impact humans and animals and plants (including wildlife, farm animals and companion animals) increasing body stress.

They also can impact infrastructure (e.g., rail lines) and systems –

e.g., power generation when peak demand increases to power air cooling systems, resulting in power blackouts.

**Who has responsibility for heatwave monitoring and early warning?**

The Bureau of Meteorology (BoM) and its regional offices monitor climate and weather conditions.

The Heatwave Service generates and displays maps showing colour-coded heatwave severity for the previous few days or the coming few days as a form of assessment.

A Heatwave Forecast consists of a series of maps for the coming days that show areas where heatwave conditions are expected to occur and indicates whether the intensity is expected to reach severe or extreme in status.

Information about developing heatwave events is passed from the BoM to relevant State and Territory government departments that are mandated to prepare for and respond when heatwave events occur. In some jurisdictions, this is the State Emergency Service (SES). In others it is the State Health Department and in others it is a combination of agencies.

***History of heatwaves affecting Australia***

Since 1950, Australia has experienced more heatwave days than before 1950, heatwaves now last longer and the hottest days within individual heatwave events are now hotter than they were before the 1950s.

The BoM and its regional office have in recent years kept detailed records of individual heatwave events.

It is not possible here to provide a comprehensive account or list of past heatwave events affecting Australia.

I’ll give a brief description of the January 2009 southeast Australian heatwave as an example.

Southeastern Australia (Figure 3) was affected by an extreme heatwave event (which also provided the context for the catastrophic Black Saturday Bushfire disaster in Victoria).

Across South Australia, Victoria and Tasmania – the States most affected - temperature records were broken day after day and night after night. Melbourne reached its highest ever-recorded temperature of 46.4oC.

The heatwave was caused by a very slow moving high pressure system located in the Tasman Sea and a tropical low pressure system located off the

northwest Australian coast and a monsoon trough over Northern Australia –

providing perfect conditions for funneling hot dry winds from the central interior to the southeast of the country. Significant areas were affected by energy blackouts as power demand for air conditioning increased massively and transmission systems were unable to cope and failed.

Rail and tram-lines buckled across Adelaide and Melbourne causing major disruption to transportation services – compounded by power failures.

The confirmed statistics are patchy but health services reported several thousand people in South Australia and Victoria were treated for heat related stress. Some people died, although direct causation is not easy to establish.

**Where do heatwaves occur in Australia?**

The simple answer to this question is every State and Territory is at risk from heatwaves. This means that no matter where you live, eventually you may be affected by a heatwave event.

Furthermore, given long enough, you may also be affected by an ‘extreme’ event.

**How do I prepare for a heatwave?**

The BoM uses a basic intensity scale. The majority of heatwaves are of low intensity and in these cases the majority of people are expected to be able to tolerate the event. Less common and more intense heatwaves can be more

problematic for vulnerable people in the community including the young, the elderly, people with pre-existing medical conditions etc.

Extreme heatwaves however, are a risk to everybody – especially where people do not take precautions to stay cool.

Critically, each State and Territory has its own set of guidelines and advisories on preparing a heatwave plan.

You should access information on heatwaves online relating to your state.

There are many similarities with all state guidelines. Despite the variations,

the following basic steps are common to all locations:

1. Keep informed by watching the news and know when a heatwave is coming;
2. Stock pile foods, medicines and other essentials so you can limit the number of times you have to go out in to the heat;
3. Drink plenty of water and try to stay cool;
4. Close all windows, outside doors to the house and close curtains and blinds – this helps to keep the interior of a building cooler than it would otherwise be;
5. If you have to go outside, try to avoid the hottest parts of the day, wear sunscreen, a hat, glasses, cool, loose fitting cotton clothes;
6. Avoid heavy strenuous activity;
7. Eat small meals often and try cold plates such as salads;
8. Check out of family and friends who might be more vulnerable

(the young, the elderly, any one that is sick etc.) and make sure they are ok.

**Summary**

Heatwaves are a normal part of Australian weather and climate. That said, climate change will increase the frequency and intensity of future heatwave events.

The Bureau of Meteorology defines a heatwave as "three or more days of high maximum and minimum temperatures that are unusual for that location".

The Bureau of Meteorology operates a heatwave service during the summer months and when an event is forecast, information is passed to the media for public broadcast.

State and Territory Health Departments and emergency service organisations have lots of great and freely available information to enable individuals, families and communities prepare for heatwave events.

Common sense is the best protection for heatwaves

* stay cool and try to stay out of the sun.

Heatwaves can have significant effects on power supply networks and transport systems with ripple effects for the wider economy.