



OPERATIONAL BRIEF

FORECAST HEATWAVE CONDITIONS ACROSS NSW

February 2017

The Bureau of Meteorology is forecasting a significant heatwave event across many parts of NSW in coming days. It is important for brigades and districts to consider the impact of these conditions.

Already this summer, NSW has experienced a number of heatwave events. Heatwave events are typically prolonged periods of increased temperatures, and where overnight temperatures remain considerably higher than normal.

Indeed, January was the hottest month on record for some areas, including Sydney. Across the state, January was the third warmest January on record, with maximum temperatures more than three degrees above average.

In coming days, these heatwave conditions are expected to continue due to a large mass of air over the centre of Australia, and extending into New South Wales. This is likely to result in temperatures exceeding 40 degrees in many locations, and for a period of several days.

The NSW RFS will be monitoring and assessing conditions, and declaring total fire bans as required.

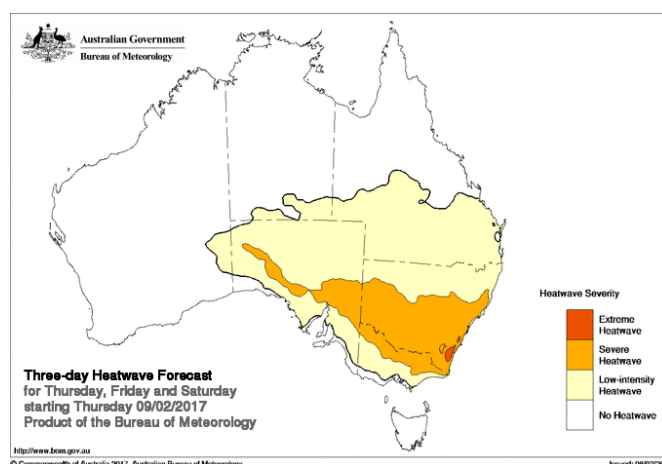
Brigades and districts should consider resourcing and availability during this period. Regions will continue to liaise with districts regarding preparedness arrangements.

In addition, all Service members are reminded of the health impacts heatwave conditions can have, whether you are operating in the field, or undertaking normal activities.

It is important that members remain well hydrated, including in the period leading up to periods of increased temperatures.

Members should refer to the attached Fact Sheet on the Effects of Heat.

Rob Rogers AFSM
Deputy Commissioner





EFFECTS OF HEAT

INFORMATION FOR YOUR HEALTH AND SAFETY

FACT SHEET

Hard work and heat

Firefighters regularly confront the problems of working in heat, the effects of which include:

- › Dehydration
- › Heat illnesses
- › Premature fatigue
- › Poor decision making which can lead to accidents and injuries.

Factors that contribute toward heat illnesses include:

- › Steady hard physical work
- › Temperature
- › Humidity
- › Air movement
- › Clothing
- › Radiant heat from the fire.

The body's temperature rises normally during hard physical work but is controlled mainly by cooling through the evaporation of sweat through the skin. The harder the work the higher the body temperature becomes which adds additional pressure on the body's blood circulation system. The increased sweat produced to try and cool the body will result in dehydration unless replaced by drinking water.

Minimising heat illnesses

In bush firefighting situations, it is essential to remain as effective as possible, often for many hours. A significant number of heat illness cases arise from the firefighter's own behaviour. Sensible behaviour is the first line of defence against premature fatigue and heat illness.

By far the greatest heat load arises from physical work.

Avoid overheating by:

- › Drinking water frequently
- › Regular meals and snacks to replace salt and electrolytes lost through sweating
- › Sensible work placing



- › Walking not running
- › Adopting a comfortable conservative pace on the fire line
- › Sharing heavy workloads, such as dragging hose line or crew rotation
- › Working at a comfortable distance from the fire (when possible)
- › Wearing appropriate clothing correctly
- › Reducing dehydration by regularly drinking water.

Drink plenty

Avoiding or minimising dehydration by frequent water intake is the single most important method of maintaining good function on the fireground.

Sweat losses on the fireground usually exceed one litre per hour and will rapidly lead to dehydration, resulting in premature fatigue and eventually heat exhaustion.

Sweat must be replaced by frequent water intake in small amounts. Avoid consuming large volumes of water at the one time.

Current research suggests that hydration status is optimised by drinking water to thirst.

Water is the best choice

- Increase your body fluid levels before work commences, particularly in hot conditions
- Drink water frequently (at least 150-200mL every 10 - 15 minutes) accompanied by regular meals and snacks to help replace minerals that have been lost through sweating
- Drink water to thirst
- Ensure clean supply of water is available
- Do not drink alcohol as it dehydrates the body
- Avoid excessive amounts of tea or coffee as both tend to increase dehydration.

Be prepared

Work on the fireground demands good health and fitness. If you are not suitable prepared for the job, you may not only jeopardise your own safety but that of fellow firefighters. The risk of heat illness is greatly increased in firefighters who:

- Are overweight and do not undertake regular exercise
- Suffer from heart, circulatory or kidney diseases, high blood pressure or diabetes
- Have skin disorders that impair sweating
- Are taking medications
- Are affected by injury or illness.

Looking after your Mate

All firefighters should assist and monitor the wellbeing of their fellow crew members by:

- Sharing workloads when appropriate
- Encouraging others to pace themselves
- Making sure others drink frequently
- Watching for signs of fatigue and heat illness in others
- Rotating crews regularly
- Dressing down by removing outer layers when having a break.

Protective clothing

Dress properly for bush fires

To reduce radiant heat load on the body, loose fitting NSW RFS bush fire jacket and pants should be worn with sleeves rolled down.

When not working close to the fire, open up your jacket to encourage cooling. Leaving the pants legs open at the bottom assists in the ventilation process between the material and the wearer as it reduces the metabolic heat build-up.

If you are affected by radiant heat, step back in to a cooler, more comfortable environment. For example retreat to the shade or an air conditioned vehicle.

The NSW RFS personal protective clothing supplied for bush firefighting has been selected to provide an appropriate level of protection in fire conditions where firefighters are working vigorously and generating a great deal of heat. The design of the NSW RFS bush fire jacket and pants incorporates side pleat vents which allow the heat to escape.

Heat illness

The heat illnesses most likely to affect firefighters are:

- Dehydration
- Heat cramps
- Heat exhaustion
- Heat stroke.

Symptoms

- Heat cramps are a result of losing too much water and salt through sweating which results in painful muscle cramps, usually in the legs and abdomen region.
- Heat exhaustion can be reasonably common the fire ground and if ignored may lead to heat stroke. Heat exhaustion results from being physically active in a hot environment and fluid loss has increased through sweating, reducing the amount of water in the body so that the blood volume falls. Symptoms include feeling hot, exhausted, weak, fatigued, thirsty, faintness, short breaths and cool, moist and pale skin with a rapid weak pulse.
- Heat stroke is an extremely dangerous condition and can be fatal. Water levels in the body become so low that sweating stops and the body temperature rises as it can no longer cool itself. Symptoms include high body temperature of 40 degrees or more, hot and dry skin, rapid pulse, shallow breathing, constant headache, nausea and/or vomiting, dizziness, irritability and mental confusion, and possibly unconsciousness.

Any of these may occur quite suddenly and must be treated seriously and immediately.

First Aid Treatment

Cool for recovery

Early recognition of the symptoms of heat illness and its treatment is vital, to reduce the potential for a more serious heat illness. The Officer in Charge should be alerted immediately.

Any firefighter who feels excessively fatigued or unwell or any firefighter who is noticed by others to be affected by heat illness should:

- Stop work and be removed from the fireground
- Move to a cooler place, in the shade with a breeze or an air conditioned vehicle
- Loosen and remove as much clothing as reasonable
- Sit or lie down, if feeling faint lie with legs elevated
- Drink plenty of fluids (preferably water) in small portions
- Sponge skin with water and fan to increase evaporative cooling
- Place ice packs on the armpits, groin and neck area to reduce body heat.

Affected individuals should be monitored regularly. If the individual is unconscious, they should be placed in the recovery position and constantly monitored until medical assistance arrives.

Should they not recover quickly, continue to deteriorate or are unconscious, they should be placed in the recovery position and constantly monitored until medical assistance arrives.

Should they not recover quickly, continue to deteriorate or are unconscious they should be regarded as heat stroke victims and DRSABCD should be implemented.

Emergency medical assistance should be sought immediately.

If a firefighter exhibits any heat illnesses, it is important to complete a NSW RFS Report of Workplace Injury or Illness form and return to their local Fire Control Centre as soon as possible and within 48 hours of the injury/illness occurring.



Get more health and safety information online at www.myrfs.nsw.gov.au or contact NSW RFS safety hotline on 02 8741 5221 or email safety@rfs.nsw.gov.au.