



Bushfire Safety



Background Information For Teachers

The following information is designed to provide teachers with a summary of the key issues relating to bushfires, bushfire preparation and safety and the knowledge to teach these concepts. Much of the information relates to preparing homes and keeping families safe, but as a teacher, you are also responsible for the safety of the children in your care if a fire occurs, or is likely, in the area around your school. Many of the preparation tips can be applied to school buildings and grounds as well as residential properties. For details specific to your area contact your state or territory fire agency. You will find a list of websites at the end of this information.

Understanding Bushfires

A bushfire is a fire that burns in grass, bush, scrub or woodland. They can threaten property, people, animals and the environment. It is important to understand how they can start, what factors make them more dangerous, and how to be prepared in the event of a bushfire.

A bushfire, like any fire, is a chemical reaction that needs three things to burn: oxygen, fuel and heat.

1. We all need *oxygen* to survive, and so do fires.
2. Anything that will burn provides *fuel*, which feeds fire. Keeping fuel away from your home (e.g. keeping your gutters free of leaves, trimming grass and storing piles of wood and gas bottles away from the home), is helpful in keeping your home safe from bushfires.
3. The final element, *heat*, is required to ignite (set fire to) the fuel. Most bushfires get heat from things such as lightning, matches, or electricity.

Bushfires can start at any time, but are more dangerous and harder to control in particular areas and at certain times of the year. During 'Fire Danger Season' (can also be known as 'Bushfire Season' or 'Bushfire Danger Season'), restrictions are placed on certain activities to help reduce the risk of bushfires. Rural areas are divided into 'fire ban districts'. These districts are areas where fire dangers are similar enough so that one set of fire ban rules apply to a large area. Some days are declared 'total fire ban' days due to a combination of factors that increase bushfire risks. On these days, camp fires must not be lit, some types of BBQ's must not be used, and welding equipment or anything that could create a spark is also prohibited from being used.

For information about whether today is a 'Total Fire Ban' day or for other fire restrictions visit the website of your state or territory fire agency.



You could also watch the video ‘Total Fire Ban’ <http://vimeo.com/31055533> which has more information about ‘Total Fire Bans’.

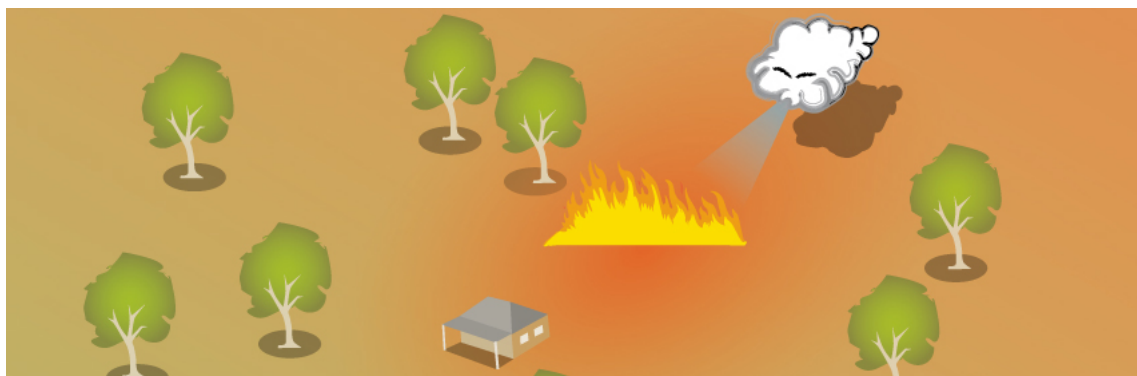
Bushfires vary in intensity. A more intense bushfire will generate more heat, may be harder to control and cause more damage than a smaller or less intense fire. Fire intensity depends on three main factors: vegetation, weather and topography.

1. *Vegetation* can affect the heat and speed of a bushfire. A bushfire in a forest filled with heavy undergrowth will be very hot, yet may not move quickly, whereas a fire in grassland may be less intense but will burn very quickly. Bushfires in coastal scrub burn very hot, yet do not move as fast as a grass fire.
2. *Weather* conditions such as extreme heat, low humidity, gusting winds and low rainfall dramatically increase a bushfire’s intensity and the rate at which it spreads.
3. *Topography* can affect the speed and intensity of a bushfire. Fires burn more quickly and with greater intensity up slopes than they do on flat ground or downhill.

How a bushfire spreads

Bushfires spread in three ways: direct flame contact, radiant heat and burning embers.

1. **Direct flame contact** – flames touch unburnt fuels and raise their temperature to ignition. This process is hastened by wind blowing the flames deeper into the fuel ahead or an upward slope presenting fuel to the flames sooner.
2. **Radiant heat** – radiant heat from the fire raises adjacent fuel to ignition temperature, often before the flames reach it.
3. **Burning embers** – embers are burning leaves and twigs which are carried by the wind. When embers land on fine fuels they can start small fires. If left unchecked, these fires smoulder, grow and spread. Embers are carried ahead of the actual fire (can be up to 30km ahead) by wind and can land on flammable material, causing small fires to start. An ‘ember attack’ is the main cause of house loss in bushfires as they can occur before, during and after the fire front passes.





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Fires also spread vertically from the surface through the middle and upper-level fuels such as shrubs, bushes and trees. Fires only reach the canopy of tall trees ('crown') if there is a continuum of fuel from the surface up to the tree tops.

As a general rule, flame height is between three and five times the height of the fuel, making the cutting or grazing of grass very important in preparation for the bushfire season.

Fire Warnings

A national 'Fire Danger Rating' system is in place across Australia. Fire Danger Ratings are calculated using a combination of data about the weather and the environment. It tells us how bad a bushfire could be, based on current conditions, if it started on that day. It can be useful in determining your plan of action with regard to your bushfire survival plan.

Fire Danger Rating	What should I do?
Catastrophic (Code Red)	When a day has a 'catastrophic' fire danger rating, you need to ACT NOW.
Extreme	When a day has an 'extreme' fire danger rating, you need to GET READY TO ACT.
Severe	When a day has a 'severe' fire danger rating you need to GET READY TO ACT.
Very High	When a day has a 'low-moderate, high or very high' fire danger rating you need to BE AWARE of what is happening around you.
High	When a day has a 'low-moderate, high or very high' fire danger rating you need to BE PREPARED.
Low-moderate	

Once a bushfire has started there are three types of warning message that you should be aware of and often these are heard on the radio. However, there may not be a warning so do not wait for one before you act.

- Advice message**
 A fire has started. There is no immediate danger, or the danger has eased. This is general information to keep you up to date with developments.
- Watch and Act message**
 A fire is approaching you, conditions are changing. You need to start taking action to protect you and your family: you should leave now or get ready to defend.



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■ Emergency Warning message

You are in danger and need to take action immediately to survive. You will be impacted by fire. This message will be preceded by an emergency warning signal (a siren sound).

For more information about Fire Danger Ratings and what to do in the event of a bushfire visit the website of your state or territory fire agency.

Emergency Alert telephone warning system

Emergency Alert is the national telephone warning system used by emergency services. The system sends voice messages to landline telephones and text messages to mobile telephones within a defined area, about actual or likely emergencies such as fire, flood or extreme weather events. The message will provide information on the current emergency, what action to take and where to find further information.

Emergency Alert is not used in all circumstances. In an emergency situation a range of information sources should be checked continuously to stay aware of local conditions.

Remember that power failures will prevent cordless phones from working and bushfires may damage telephone infrastructure in your area or prevent mobile reception. The bushfire may be travelling too fast to get a warning out.

For more information on Emergency Alert please visit www.emergencyalert.gov.au

Remember, do not wait for a warning message before you act!

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Knowing what you need to do to prepare your home and property for a bushfire is essential for the safety of you and your family. You can never fully predict what may happen when a bushfire occurs, so even if the plan is to leave well before a bushfire threatens, you still need to have a backup plan in case a situation prevents you from leaving.

Before summer starts you need to discuss with your family what to do if a bushfire threatens, using the 'Prepare, Act, Survive' principle.

- **Prepare** – know your bushfire risk, have a bushfire survival plan and prepare your property and family.
- **Act** – on the 'Fire Danger Ratings' and other alerts in your area. Stay informed and put your preparations and plans into action - do not wait and see.
- **Survive** – monitor conditions if a fire starts. Know the bushfire warning alert levels and what you will do if there is a fire in the area. Remember, the most important thing is the safety of you and your family.



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Bushfires can threaten suddenly and without warning. It is important to know the 'Fire Danger Rating' in your area and be aware of local conditions. You should watch for signs of fire (especially smoke and flames), have your bushfire survival plan and emergency kit ready, and call Triple Zero '000' to report a fire.

Radiant heat

Radiant heat is the heat you feel from a fire and is the biggest killer in bushfire events. Here are some suggestions for protection from radiant heat:

- Distance is the best protection from radiant heat. Make sure you get as far away from the fire as possible.
- Make sure all of your skin is covered.
 - Do not wear thongs, t-shirts or shorts. Instead wear a long-sleeved, collared shirt, pants made from cotton or another natural fibre, sturdy boots with woollen socks, tough leather garden gloves, a wide-brimmed hat, a face mask or towel to cover your mouth and nose (to protect you from smoke) and goggles or other eye protection.
 - Cover up as soon as you are alerted to a fire in your area.
- Move inside a solid structure or position yourself behind a solid object, such as a brick wall.



Preparing for the Bushfire Season

Whether you choose to leave early to go to a safer place, or you stay to defend your home, planning and preparation are the keys to keeping you and your family safe.

A well prepared home can be easier for you or firefighters to defend, is less likely to be destroyed (even if you're not there) and helps reduce the risk to your neighbours' homes. Preparation will also give you more protection if a fire threat suddenly arises and you cannot leave and must take shelter.

Research has shown that the biggest cause of house damage during a bushfire is sparks and embers landing on or near your home. This can trigger a fire before, or hours after a bushfire has passed. Sparks and embers enter a home wherever there is a gap: under roof tiles, under the floor, in crevices, window sills and vents, and under verandahs.

Contact your state or territory fire agency for more information on home protection, but here are some basic tips:

- Clear vegetation and rubbish away from your home. Reduce, remove and manage vegetation, such as long grass, within a 20 metre radius of your home and five metres of any sheds or garages.





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- Mow any lawn.
- Manage trees close to your home and prune limbs that are lower than two metres above the ground or that overhang your home.
- Remove dead branches, leaves and undergrowth. Refer to the video 'Raking up Twigs and Leaves' <http://vimeo.com/31059638>
- Plant less flammable vegetation, including plants and trees with low oil and high water and salt content.
- Remove bark, heavy mulch, wood piles and any other flammable materials close to your home and sheds. Refer to the video 'Off to the Tip' <http://vimeo.com/31114269>
- Cover any gaps and drainpipes where embers might enter or catch with a non-flammable mesh. Refer to the video 'What's a Spot Fire?' <http://vimeo.com/31114061>
- Always clear the area around a fire pit or BBQ before lighting a fire. Accidents happen and a bushfire can start from the simplest accident. Refer to the video 'Accidents Happen' <http://vimeo.com/31061958>
- Regularly clear gutters of leaves and debris.
- Ensure there is clear access to your property and home that is at least 3 metres wide, and that there is a turnaround point for firefighting vehicles.
- Know which direction a bushfire in your area would most likely come from.



Other measures you can take to protect your home include:

- installing a sprinkler system (with metal fittings that won't melt) to wet down your home and garden, and reduce the risk of radiant heat, sparks and embers
- installing wire-reinforced glass or thermo plastic covers on skylights
- using non-flammable building materials (where possible) such as brick, mud brick and fibre cement on walls, and a well-secured metal roof
- spark-proofing your home with metal flywire screens on windows and doors, or installing fire resistant metal shutters
- ensuring access to an independent water supply such as a tank, dam or swimming pool of at least 5000 litres
- installing a petrol/diesel driven water pump
- making sure hoses are long enough to reach around the home

- checking and servicing all mechanical equipment, including grass cutters, water pumps, sprinkler systems and fire extinguishers
- protecting your property with adequate home and contents insurance.

Emergency Kit

An emergency kit should be prepared before the bushfire season with all the essentials needed to keep you safe should a bushfire occur. The kit should include things you:

- need to help keep everyone safe on the day of a bushfire
- want to take with you to safety
- will need for up to four days following a fire.



It is important to plan for no electricity, no water and limited food when preparing your emergency kit. For a list of items that you should include visit the website of your state or territory fire agency.

Bushfire Survival Plan

Preparing a 'bushfire survival plan' is essential to help protect you and your family from the threat of a bushfire.

The decision about whether you choose to leave early or stay and defend your property needs to be made well before a bushfire threatens your home, and before the fire danger season arrives.

Involving all family members (including children) in preparing a bushfire survival plan is important as it can help to reduce fears and concerns, and can help ensure everyone is familiar with the plan and able to implement it, should the need arise. It also teaches everyone an essential life skill, useful for anyone who lives or works in bushfire prone areas.

Items that should be discussed:

- A risk assessment of your home.
- A list of things that need to be done in preparation for a bushfire (such as keeping vegetation clear around the home, securing pets, closing windows and doors, etc.) and how they can help.
- What special belongings everyone would like to pack so that they won't be left behind if a bushfire threat forces you to leave early. Refer to the video '*Preparing for an Emergency*' <http://vimeo.com/31114183>



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- Children's ability to recite their full name, address and emergency contact numbers (especially Triple Zero '000'), names and addresses of relatives or friends, and any allergies or medical conditions they have.
- Child-friendly places they can go e.g. a friend or relative's home.
- Children's understanding of the bushfire plan.
- Scenarios which help practise the important components of your bushfire plan, including the situation where you may not be able to leave.

When preparing a bushfire survival plan, consider:

- Is the plan to leave early?
- What are our triggers to leave?
- What if you can't leave?
- Is the plan to stay and defend?
- What if a bushfire happens on a school day or the school is closed?

For more information about what to consider when preparing a bushfire survival plan, contact your state or territory fire agency.

What if it is a school day, or the school is closed?

Make sure that all family members are familiar with the bushfire emergency plan at the school. It should be decided who will pick up the children if the parents are unable to do so. If the school is closed and the parents cannot take time off work, they should organise for the children to stay with an adult in a low-risk area. Refer to the video 'Know the School Plan' <http://vimeo.com/31114485>





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For More Information

For more information about bushfire preparation and safety, contact your state or territory fire agency.

- ACT Rural Fire Service
<https://esa.act.gov.au/actrfs/>
- Northern Territory Fire and Rescue Service
www.pfes.nt.gov.au/Fire-and-Rescue.aspx
- NSW Rural Fire Service
www.rfs.nsw.gov.au/
- Queensland Fire and Emergency Services (QFES)
www.qfes.qld.gov.au/
- South Australian Country Fire Service
www.cfs.sa.gov.au/
- Tasmania Fire Service
www.fire.tas.gov.au/
- Victorian Country Fire Authority
www.cfa.vic.gov.au/
- WA Department of Fire and Emergency Services (DFES)
www.dfes.wa.gov.au/