



‘Bushfire Prevention and Preparedness’



(A guide for residents and landholders)



Disclaimer:

You must read the following important information before you proceed.

Bushfire prevention and preparedness is **your responsibility** as the landowner, and as such, these materials have been provided to assist you in making wise choices. They do not contain all of the information available, but should provide a good starting point for you to start thinking and preparing yourselves, your home and your property for bushfires.

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*This information has been developed as a component of the
Lower Eyre Peninsula Bushfire Re-establishment Program
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INTRODUCTION

This package has been prepared to provide you with information about how to prepare your home, property and yourself for a bushfire. While it does not contain all information available on the topic, it will be an excellent starting point for thinking about preparing yourself and your property for bushfires.

This package is divided into three sections:

- What you need to know
- What you need to do
- Other useful information.

If you require any further information or assistance please refer to the 'Contact Details' provided.

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Community Fire Safe Fact Sheets, courtesy of the SA C.F.S.

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Community Fire Safe

BURNING OFF

Burning-off is still the farming practice that produces the greatest risk every summer. Unless the procedure is planned carefully and carried out with extreme caution, at the right and under the right conditions there is a real danger that the burn-off will get out of control.



time

Burning off.

During the Fire Danger Season:

- Under no circumstances can burning-off be done during the fire danger season without a permit obtained from the local council authorised officer.
- At all times stick strictly to the conditions set out in your permit.
- When carrying out this operation do not try to burn more than can be controlled at any time with the personnel and equipment available.
- You can not burn-off on a Total Fire Ban day

Outside the Fire Danger Season:

- Be aware of the local Council's code of practice for burning-off outside of the fire danger season and follow these guidelines.
- Some Council's have environmental restrictions for burning off. Before commencing a burn-off find out if any restrictions apply in your local area.

Safe Practices:

When planning a burn-off adopt the following safety procedures:

1. Obtain a permit from the local council permit officer if you are planning to burn during the fire danger season.
2. Prepare clean fuel break at least 4 metres wide around the area to be burnt.
3. Obtain a weather forecast before a burn-off, especially for local winds. Do not start too early in the day before weather conditions are settled.
4. Give at least 24 hours notice to neighbours of your intention to burn.
5. Ensure a sufficient water supply for firefighting is available at all times during and after the off. Provide ample water through tanks and portable pumps set up on trucks or utes for farm firefighting and also for refilling of knapsacks.
6. Ensure a sufficient number of people are present at the site from the time the fire is lit to the time it is completely extinguished.
7. Do not attempt to burn any more area than can be controlled with the people and equipment available.

8. Use a strip burning method to control the direction and rate of burning to match the wind strength.
9. Where possible burn down hill. Burning up a steep incline even against the wind is always dangerous. Light the fire first on the leeward side of the land to establish a protective break. Burning into the wind will give a slower, safer and cleaner burn. Then light from the windward side of the land.
10. Beware of sudden changes in wind direction and speed. If it changes considerably cease lighting and make every effort to make the perimeter safe. Always make sure the fire edge is blacked out progressively for at least 20 metres into the burnt area.
11. Have immediate access to a UHF CB or mobile phone through out the fire operation to call for assistance if needed.
12. Have a well-maintained firefighting unit at all times in the area where the burning-off is taking place.
13. Constantly patrol the burn-off area for a number of days after, to prevent rekindling as stumps and tree roots can continue to burn underground for many days.



Have a well-maintained firefighting unit at all times in the area where the burn-off is taking place.

Burning Rubbish/Use of Incinerators:

- Check local council fire regulations and burning on domestic premises policy regarding the burning of rubbish and the use of incinerators. Restrictions apply.
- Some councils have totally prohibited the use of open fires and incinerators for waste disposal on domestic premises.
- A permit is required to burn rubbish or garden refuse on the ground during the fire danger season. The area must be cleared for 4 metres and a person in attendance at all times with enough water available to readily extinguish the fire.

Further Information:

Country Fire Service Level 7,
60 Waymouth Street,
Adelaide, SA 5000
8463 4200
www.cfs.org.au



Community Fire Safe

WILDFIRE BEHAVIOUR

Some basic facts about wildfire behaviour may help you understand how fire can damage property and how to protect against it.

Fire Intensity

The intensity of a fire refers to the amount of heat being generated. The higher the intensity the harder the fire is to control and the more damage it is likely to cause. Fire intensity depends on three major factors: **vegetation**, **weather** and **topography**.



Vegetation

The type and amount of vegetation determines fuel load, which in turn determines fire intensity. The intensity of a fire increases in proportion to the amount of available fuel (flammable material less than 6mm in diameter). The more available fuel, the greater the fire intensity. Forest and scrub fires are more intense and generate significantly more heat than grass fires. As a result the impact and potential damage of a forest or scrub fire on a home will be much greater. Reduction of fuels by clearing undergrowth provides the best method of reducing fire intensity and thus is an essential part of any fire protection strategy.

Weather

Increasing temperature and wind velocity and decreasing relative humidity directly contribute to an increase in the rate of spread of fire and the resultant fire intensity. As fuels dry out ignition is easier and the rate of spread increases. In South Australia the prevailing fire winds are from the North. However, history has shown that a South Westerly wind change, although cooler, can increase the danger by swinging the fire in a different direction catching people unaware. It is therefore important, when developing a fire protection strategy for your home to take into consideration that the majority of fires are most likely to come from the Northern and Western sides.

Topography

Fires burn more quickly and with greater intensity up slopes than on flat around or downhill. Ridgetops and steep slopes therefore are the most dangerous to build on. North facing slopes are also dangerous as they receive more direct sunlight than South facing slopes, which dries out vegetation causing more intense fires.



Further Information:

Country Fire Service
Level 7, 60 Waymouth Street, Adelaide, SA 5000
8463 4200
www.cfs.org.au



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CARE OF PETS AND LIVESTOCK

The care and transport of pets and livestock prior to, during and after the passage of fire is rarely mentioned in any advice or information regarding wildfire prevention and safety. But the loss of a loved pet is usually, especially for children, just as upsetting as the loss of a home and personal possessions. The heartache can be avoided if, when developing a wildfire family action plan, pets and other livestock are included.

Small Animals - *dogs, cats, birds, rabbits etc*

Forward planning

- Ensure your dogs and cats are identified and registered with the local council to increase the chance of being reunited if you become separated.
 - Get your animals used to travel when young. Take them on regular car journeys so they are comfortable traveling and don't get carsick.
 - Be sure that you can adequately restrain or confine your pet, as it may become frightened and panic in a fire.
- Dogs: check you have collars, leads or a harness and a muzzle if dog is aggressive.
 - Cats, rabbits, guinea pigs: use a secure cage or firmly tied pillow case or carry bag.
 - Birds, ferrets, mice: also use a secure cage or box with air holes.
 - Fish: transport in a wide necked jar with a secure lid and fill with 2/3 water (include a plastic straw to blow air into water now and again).
 - Snakes and lizards: use a secure box with small air holes or a firmly tied pillow case or carry bag.
 - Frogs: transport in a small tub with 2cm of water in bottom and air holes in lid.
- Ensure your pets' vaccinations are up to date in case they need to be placed in a pet boarding facility.
 - If your family has decided to evacuate early in the event of a wildfire then be sure to remember your pets when preparing your 'evacuation box' (refer to CFS Wildfire Fact Sheet No.7 - "Planning to Go"). Consider including:
 - plastic containers for water,
 - small amount of food (dry food is best for dogs and cats),
 - medication (such as daily heartworm tablet),
 - litter or newspaper, and
 - an information list containing your name, address, phone number, pets name, medical \ history, food requirements and vets phone number.



On days of high fire danger

- If you have to go to work decide whether to take your animals to a safer place before leaving home. Keep in mind that if there is a fire you may not be allowed home for some time.
- If you are home shut your pets inside the house so they are close by. Check your 'evacuation box' to ensure you have leads and containers of water ready if you plan to leave in the event of a fire.

- If you do plan to evacuate, leave early while it is still safe to do so. Handle your pets firmly but reassuringly. Restrain dogs and confine other animals in cages or suitable containers. Cover cages with a woolen blanket or wet towel and secure all pets in the car.
- If you are caught in fire while driving stay in the car with doors and windows closed. Cover yourself and your pets with woolen blankets and keep down below the level of the windows.

Larger Animals - horses, cattle, sheep and goats etc

Forward planning

Your options will obviously depend on the size of your property, the number of stock and where your animals are kept. However, the following suggestions may be of some help:

- Identify the 'safest' paddock on your property or neighbouring property. For example, one which:
 - contains a water supply,
 - has clear access,
 - is well grazed with minimum fuel to carry fire, and
 - is well fenced.
- Consider fencing the 'safe' paddock with steel or concrete posts so it is fireproof.
- If your fencing is electric consider what may happen if the power supply is cut off during a fire.
- Consider having gates in internal property boundaries so stock can be easily moved to other areas without being taken down a road.
- If you are at work during the day, consider moving stock into the 'safe' paddock the night before a Total Fire Ban Day.
- If possible thoroughly water the 'safe' paddock the night before a Total Fire Ban Day.



Animals needing protection from fire can be kept in shaded, bare earth paddocks on days of extreme fire danger.

If fire threatens

The following suggestions are most applicable to horses but may help other types of livestock:

- Hose your animals all over and do not scrape off
- Remove all equipment from your animal – rugs burn, plastic headstalls melt and metal buckles may get hot.
- Move the animals into an open space with the least vegetation.
- DO NOT shut animals into a stable or small yard. Animals will suffer minimal burns if given the maximum space and can cope well on their own if they can move into the open.

If animals do sustain burns the best form of immediate first aid is sponging with cold water until proper veterinary care is available.

Further Information:

Country Fire Service

Level 7, 60 Waymouth Street, Adelaide, SA 5000

8463 4200 www.cfs.org.au



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FUEL BREAKS

Carry out seasonal fuel reduction programs to maintain a 'zone of protection' between your home and property and the surrounding bushland and grassland.

One simple rule guides all fire prevention planning on farms, rural properties, hobby farms and hills properties: 'reduce the fuel and the threat is reduced'.

All assets; buildings, stock, fences and fodder resources need wide areas around them where ground fuels of dry grass, undergrowth and dead branches and leaves are reduced or cleared.

Types:

- Grazing of selected areas is very effective in reducing ground fuel vegetation around buildings and fodder reserves. Maintain 70% ground cover if possible and aim to have 3cm height of dry pasture by the end of March.
- Ploughing and harrowing can produce excellent fuel breaks if established early. Late workings can kill all ground vegetation. Constant maintenance may be needed in steep or windy areas to prevent soil erosion.
- Slashing or mowing is an economical method, provided the cut material is removed or allowed to rot down well before Summer. These breaks will need maintaining by grazing or mowing.
- Herbicides can be sprayed onto areas where other methods of fuel reduction may be difficult, such as around buildings, sheds, alongside fence lines and around fuel supplies. Spraying needs to be done after the Autumn break or at the end of Winter to be effective on actively growing plants. Check regrowth of sprayed fuel breaks and re-do if necessary with a plough, slasher or boom spray.



Grazing in selected areas is very effective in reducing ground fuels

Property Protection:

Home

- Prepare a 20 metre fuel reduced zone around the homestead by cutting long grass, removing dead vegetation and pruning lower limbs of established trees to provide a vertical fuel break, to reduce the danger from radiant heat and sparks.
- Fodder crops such as lucerne, the household vegetable garden, mown lawns or wide paths can provide an excellent fuel break around the home area.

Buildings/Sheds

- Protect all outbuildings/sheds with a 4 metre cleared fuel break prepared by grazing, slashing, mowing, ploughing or spraying herbicide.

Livestock

- Prepare and maintain fuel reduced areas onto which stock can be moved and held during a wildfire.
- Plan to use a safe area if threatened by fire, eg: green feed, fallow paddocks, well grazed holding paddocks, raceways, stockyards, irrigated pasture or Summer crops.

Fences

- Prepare a 4 metre fuel break along all fence lines with bare gaps at intervals under the fence line by spraying, slashing, mowing or ploughing.



Prepare a 4 metre fuel break along fence lines.

Fodder Reserves

- Clear or spray, graze, slash, mow or plough fuel breaks around all haystacks and haysheds.
- Surround all fodder reserves with a further 20 metre fuel reduced strip either irrigated, mown, bared (through grazing or spraying) or ploughed. Do not attempt to burn-off.

Fuel Chemical Supplies

- Prepare a 4 metre fuel break around all fully enclosed clearly labelled sheds.

Crops

- Prepare a 4 metre mechanical fuel break around all crops and a mechanical fuel break behind the first lap of the header.
- Locate farm machinery on a cleared/ploughed area away from adjacent crops when not being used during harvesting operations.

Further Information:

Country Fire Service
Level 7, 60 Waymouth Street, Adelaide, SA 5000
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www.cfs.org.au



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HOW HOUSES BURN

Initiation of Building Fires

Building fires start in the same way as wildfires - with small ignitions. These ignitions progress slowly at first, accelerate and progressively involve the whole building. During a wildfire buildings can ignite in three ways; through **ember attack**, **direct flame contact** and **radiant heat**.

Ember Attack

The entry of windblown sparks (burning embers) through unprotected openings is the principal cause of building damage during wildfires. These sparks start small fires, often well before the main fire front or many hours after, which develop rapidly and may eventually involve the whole building if left unattended.

Direct Flame Contact

Direct flame contact occurs when hazardous vegetation or other flammable material in close proximity to the home ignites causing flames to impinge directly on the exterior of the building.

Radiant Heat

While exposure to radiant heat is the principle cause of loss of life in wildfires, it rarely causes buildings to catch fire. In extreme cases it may ignite timber directly but this only happens when a large quantity of fuel burns close to the building. More importantly, radiant heat can break glass (due to different rates of expansion between the glass and window frame) allowing the entry of sparks and flames into the building. It may also heat up a building making ignition by embers easier.

Research has shown that ember attack is the main cause of homes catching alight during wildfires.



Hazardous vegetation in close proximity to a building may increase the possibility of ignition through direct flame contact or radiant heat

The Bushfire Attack

The attack of a wildfire on a building goes through three stages:

Stage 1: As fire front approaches

The attack begins when embers, blown ahead of the fire front, reach the building and its surroundings. This ember attack can begin up to an hour or more before the fire front itself arrives.

Stage 2: When fire front arrives

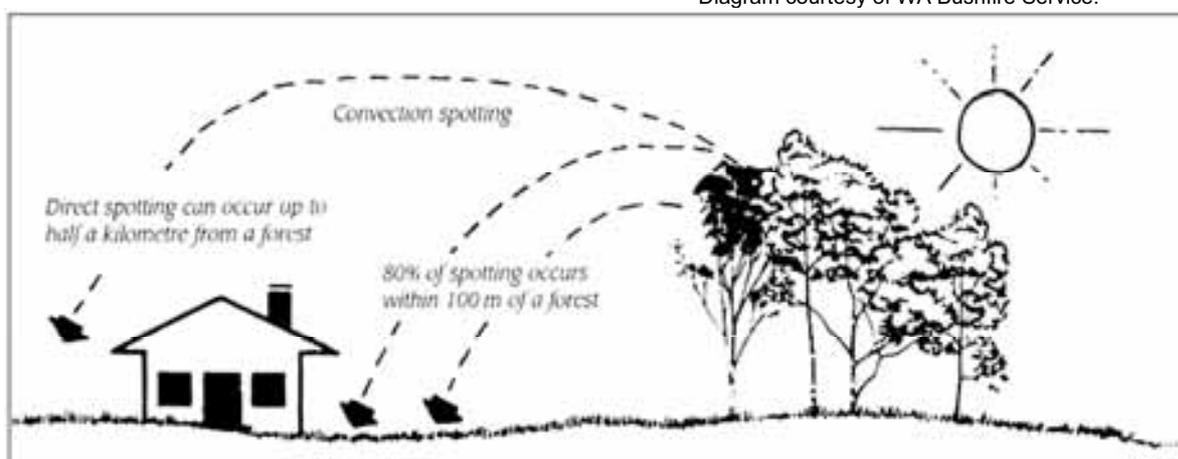
The second stage occurs when the fire front arrives. Ember attack, radiant heat, flames and smoke are at their maximum. But this only lasts for a few minutes while the fire front passes.

Stage 3: After fire front has passed

After the fire front has passed, embers continue to be blown from burning tree trunks, outbuilding, fence posts, woodheaps and the like. This final stage may last several hours.

| Stage 1 | -----> | Stage 2 | -----> | Stage 3 |
|--------------------------|--------|--|--------|-----------------------------|
| As fire front approaches | | When fire front arrives | | After fire front has passed |
| 1 hour | | 5 - 15 mins | | 3 - 8 hours |
| Ember attack | | Ember attack Direct flame contact Radiant heat | | Ember attack |

Diagram courtesy of WA Bushfire Service.



Forest fires can cause 'spotting' (small ignitions caused by burning bark and twigs blown ahead of the main fire front which evolve into large fires). Spotting can occur hundreds of meters ahead of the fire and has been recorded as far as 30km in extreme conditions. However, the greatest chance of spotting is immediately adjacent to the going fire front.

Further Information:

Country Fire Service
Level 7, 60 Waymouth Street, Adelaide, SA 5000
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Country Fire Service

Community Fire Safe

IDENTIFYING HAZARDS AROUND YOUR HOME

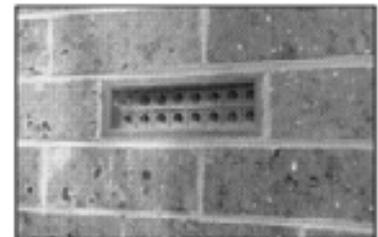
Burning debris is carried by strong winds that accompany wildfires. These sparks and embers may enter your home through small openings such as vents or may be large enough to break windows and ignite curtains and furniture etc. They may also settle on flammable material outside your home causing a small fire ('spot fire') to start. If this fire happens to be on your wooden deck, doormat or woodpile, it may eventually grow large enough to destroy your home. Walk around your home and identify the potential problem areas:



Hazardous vegetation will increase fire intensity close to your house.



Burning embers may ignite leaves in your gutters.



Exposed vents may allow entry of sparks and embers.



Woodpiles located close to your house may ignite and burn fiercely.



Dry woodchip mulch and old railway sleepers may ignite.



Dry, untreated timber decking will ignite easily.



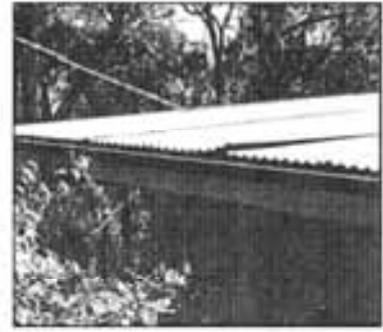
Rough sawn wooden pergola may ignite and spread fire to your house.



Gaps in eaves may allow entry of sparks and embers.



Radiant heat and airborne objects may break large unprotected windows.



Poorly fitted metal sheeting or tiles may allow entry of sparks and embers into the roof cavity.



Flammable material stored under decking or floors may ignite and spread fire to your house.



Combustible door mats and wooden furniture may ignite.



Overgrown creepers may accumulate dead material making them easier to ignite.



Complicated roofline may trap leaf litter and other flammable debris.



An unpainted wooden lattice may ignite more easily than a treated one.



Thick understorey will increase fire intensity, which may lead to a crown fire in nearby trees.



Trees overhanging your house will drop dead leaves and twigs into your gutters.



Hanging baskets may ignite or be blown onto unprotected windows.



Burning debris carried by strong winds may break unprotected attic windows.

Further Information:

Country Fire Service
Level 7, 60 Waymouth Street,
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Community Fire Safe

PERSONAL SURVIVAL

Radiant Heat

Radiant heat is the major cause of death during wildfires. If you put your hand near an open flame, an electric heater or light bulb you can feel the radiant heat it generates. Draw your hand away and the amount of heat you feel on your skin decreases. Put something between your skin and the heat source and again your skin feels immediately cooler. That's all you need to remember about radiant heat from wildfires - **distance** and **shielding** protect you from dangerous exposure.

The danger is real. Radiant heat from the flame front of a wildfire scorches vegetation well in front of its path and kills animals caught in the open. People also die if they do not seek protection. Death is caused by heat stroke, when the bodies cooling system fails, leading to heat exhaustion and death.

To Manage Radiant Heat:

- decrease fire intensity by reducing fine fuels around your home prior to the fire danger season,
- move away from the heat source, and establish a barrier between the heat source and
- yourself, for example:
 - a solid wall
 - another building
 - protective clothing
 - blankets
 - landscaping features such as embankments and terracing etc.



Decrease fire intensity by reducing fine fuels prior to the fire danger season

How People Die in Wildfires

Heat Stress:

The human body operates most efficiently between a narrow range of temperatures. Once it exceeds the uppermost limits, physiological failure begins and this can lead to collapse and death.

Heat stress can be managed by:

- Wearing sensible clothing: clothes of natural fibre that allow air flow and are not too hot. Refer to CFS Wildfire Fact Sheet No.6 - "Planning to Stay" for more information on protective clothing.
- Drinking lots of water
- Sheltering as much as possible, especially when the fire front arrives.
- Avoiding unnecessary exertion.
- Avoiding elevated water tanks. Once immersed in water, the body will quickly absorb heat from the water. If the ambient air temperature is in the high thirties and a wildfire raises the temperature of the water a further ten degrees, the water/body temperature will be unsurvivable.

Dehydration

Very hot conditions plus excessive stress and exertion during bushfires will rapidly lead to loss of fluids and subsequent dehydration. In a wildfire situation a person could lose up to 2 litres/hour. Symptoms of dehydration, such as tiredness, irritability, irrational behaviour, loss of coordination, may lead to collapse and in extreme cases death.

Dehydration can be managed by regularly drinking water, about 1 cup every 5 to 10 minutes. It is easier to manage where there is more than one person present that one can look after the other.



SO

Burn Injuries

Burn injuries occur when a body is exposed to intense heat and can be managed by avoiding being in the wrong place at the wrong time. This requires understanding and planning (refer to CFS Wildfire Fact Sheet No.5 - "Plan Now to Stay or Go").

Physical Injuries

Wildfire events are conducive to accidents because of factors such as poor visibility, high stress and adrenalin levels. This leads to confusion, poor decision making, loss of concentration and tunnel vision.

The risk of physical injuries can be managed by being extra careful. People should be aware of the likelihood of injury whilst carrying out fire protection/suppression activities. Good planning is also important in preventing physical injuries. Good planning leads to confidence, which reduces stress levels. Good planning also means less stressful decisions need to be made on the spot and is conducive to more controlled behaviour (refer to CFS Wildfire Fact Sheet No.8 - "What to do in the Event of a Wildfire").

Lung Injuries

In a building fire the most common hazard to humans is from smoke and toxic gases. Death often results from oxygen deprivation in the bloodstream, caused by the replacement of oxygen in the hemoglobin by carbon monoxide. While this is a major cause of death in house fires it is uncommon in wildfires. In wildfires smoke contributes indirectly to death by obscuring visibility, irritating the eyes and lungs and causing stress.

Lung injuries can be managed by protecting the lungs from smoke and super heated air. It is important to seek shelter when heat and smoke are most intense. Nose and mouth should be covered with a dust mask, wet towel or scarf etc. A special filter mask for people suffering with respiratory conditions such as asthma should be included in your survival kit.

Further Information:

Country Fire Service
Level 7, 60 Waymouth Street, Adelaide, SA 5000
8463 4200
www.cfs.org.au



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PROTECTION OF FODDER RESERVES

Haystacks, haysheds and silos must be well sited and well protected from wildfire, with properly prepared and maintained fuel breaks. The reserves they contain may be the only stock feed available after a large fire. Silage however is non-flammable and needs no special precautions.

Choose a Safe Site:

- Wherever possible fodder reserves should be located away from sides of buildings facing the most likely direction of fire.
- Store the hay away from roads, boundary fences and trees, for the best protection from wildfire.

Take all Precautions:

- Where possible dry the hay before it is baled or stored to guard against spontaneous combustion.
- Surround fodder reserves with a 20 metre fuel reduced strip either irrigated, mown, grazed, sprayed or ploughed.
- Erect a temporary fence to enable stock to graze right up to the stack to reduce the fire risk. Where three sides of a stack are walled, wire mesh gates, hinged or temporary can be put across the open side.
- Failing this, use herbicides to reduce the grass fire danger.
- Do not burn-off around haystacks.
- Insure all flammable reserves.
- Install a sprinkler system around the stacks for the best protection.



Poorly maintained open fodder reserve surrounded by tall, dry grass.



Well maintained enclosed fodder reserve surrounded by a 20m fuel reduced strip.

Further Information:

Country Fire Service

Level 7, 60 Waymouth Street, Adelaide, SA 5000

8463 4200

www.cfs.org.au

SPRINKLER SYSTEMS

Fire protection of a property cannot rely on one factor; there will always be a number of measures which, when combined, will provide the best fire protection. However, when homes are located in areas of extreme fire danger, an external sprinkler system should be considered as an important part of the total fire protection plan. Before installing a system the following three points **must** be considered:

1. Are you sure that someone will be home to turn the sprinklers on in the event of a wildfire? If this condition cannot always be met it may be wiser and cheaper to consider placing more emphasis on passive forms of fire protection like vegetation management and spark and ember proofing (refer to CFS Wildfire Fact Sheet No.15 - "Landscaping for Fire Protection").
2. Do you have sufficient water to enable a sprinkler system to operate for two to three hours? Reticulated mains water is not always available nor can it be relied upon. During a major fire the increased demand may reduce volume and pressure to many houses. Therefore, it is strongly recommended that an independent water supply of at least 22,000 L, be established.
3. Do you have a means of providing adequate water pressure to operate the system? Like mains water a major fire may also cause the electricity supply to fail and on a day of extreme fire danger ETSA will turn the power supply off. Therefore, it is important not to rely on an electric pump to supply pressure - a back up pump driven by a small petrol or diesel motor is essential.

How houses Burn

During a wildfire houses are subjected to radiant heat, direct flame contact and ember attack. Radiant heat and direct flame contact occur as the fire front passes the home which only lasts for 5 - 15 minutes. Ember attack, however, can last for up to one hour before the fire front arrives and many hours after it has passed. Research has shown that ember attack is the major cause of houses burning during wildfires.

Purpose of Sprinkler Systems

Based on the above understanding, sprinkler systems may be designed for two purposes:

1. To reduce the impact of radiant heat, direct flame contact and ember attack on the home by supplying a curtain of water that wets down the roof and walls.
2. To reduce fire intensity by wetting down vegetation



Roof mounted system designed to reduce the impact of radiant heat, direct flame contact and ember attack on the home.

What Sort of Sprinkler System Do You Need?

Roof mounted system designed to reduce the impact of radiant heat, direct flame contact and ember attack on the home. Before designing a sprinkler system for your home it is important to establish what sort of system you require. The following checklist asks some simple questions about the design, construction and condition of your home. If you answer **yes** to any of the questions your house may benefit from a sprinkler system which reduces the impact of radiant heat, direct flame contact and ember attack by wetting down the roof and walls. If you answered **no** to most of the questions then a system designed to reduce fire intensity by wetting down vegetation may suffice.

Checklist:

| | Yes | No |
|--|--------------------------|--------------------------|
| Is your home constructed from flammable material such as vinyl weatherboards or timber? | <input type="checkbox"/> | <input type="checkbox"/> |
| Does your home have multiple or split-levels and a high pitched or complicated roofline? | <input type="checkbox"/> | <input type="checkbox"/> |
| Does your home have a poorly fitting tiles or metal sheets on the roof? | <input type="checkbox"/> | <input type="checkbox"/> |
| Does your home have gaps in the eaves and exposed vents etc? | <input type="checkbox"/> | <input type="checkbox"/> |
| Does your home have an open underfloor space, exposed timber decking or pergola? | <input type="checkbox"/> | <input type="checkbox"/> |
| Does your home have large exposed windows that face the most likely direction of fire? | <input type="checkbox"/> | <input type="checkbox"/> |
| Was your home built prior to changes in the Building Code of Australia in 1985? | <input type="checkbox"/> | <input type="checkbox"/> |
| Is there an abundance of unmanaged vegetation close to your home? | <input type="checkbox"/> | <input type="checkbox"/> |

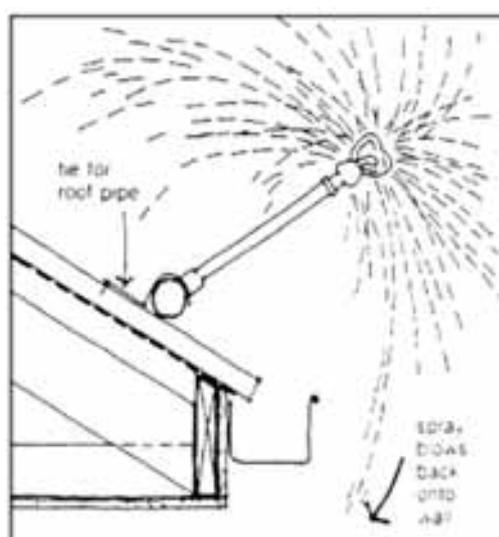
1. Reduce Impact of Radiant Heat, Direct Flame Contact and Ember Attack

Roof mounted sprinkler systems can be designed to reduce the impact from radiant heat, direct flame contact and ember attack. They are best designed mounted at the gutter line and angled out to provide a mist of water droplets onto the roof and direct an even curtain of water downward over the walls.

Butterfly sprinkler heads or deluge spray systems provide the optimum water coverage. Be aware some sprinkler heads produce water droplets that too fine, blowing away or evaporating in strong winds. Other sprinkler heads produce water droplets that are too large or infrequent, providing inadequate protection from radiant heat.

Where possible locate sprinklers over doors and windows as these are the weak points in the wall and mount sprinklers close enough together to provide an overlap of spray.

For specifications regarding the spacing of sprinklers and their performance consult your distributor.



that are

area

One method of mounting roof sprinklers showing water spraying over roof and walls

2. Reduce Fire Intensity

Ground based sprinkler systems can be designed for reducing fire intensity by wetting down vegetation around the home and may even be an extension of your garden watering system.



Butterfly sprinkler head



Twin jet impact drive sprinkler

Butterfly sprinkler heads, deluge spray systems or impact drive sprinklers may all be used for this purpose. Be aware, however, that impact drive sprinklers take a long time to wet down an area. It is recommended, therefore, that impact sprinklers are turned on the night before a bad fire danger day (or very early in the morning) and run for as long as it takes to sufficiently wet down the vegetation surrounding your home. Always keep enough water in reserve in case a fire does eventuate.

Sprinklers can be mounted on metal risers spaced around the building and fed from an underground pipeline, forming a main ring around the home. This system can be mounted at a distance of 10 metres from the house and sprinkler heads can be set 10 metres apart so that 100% overlap of the spray is achieved. If using impact drive sprinklers they should be adjusted to complete a full rotation every 10 to 15 seconds.

Installing Sprinklers

When installing roof mounted sprinklers the supply pipes to the sprinklers should be metal and can be set on the roof above the gutters under the eaves or on the fascia under the gutter. The sprinkler heads can then be set on metal risers to get the desired water coverage.

When installing ground based sprinklers all above ground piping including risers to taps and sprinklers should be metal. The ring around the house, however, can be plastic provided it is buried at least 300mm underground.

A hose that can reach right round the house needs be connected to the system. The hose should be a minimum of 19mm in diameter and fitted with an adjustable firefighting nozzle that is capable of withstanding the pump pressure. It should also be independent of the sprinkler system so that water can be conserved and in high-risk areas it should be made of rubber as plastic hose can melt when subjected to extreme heat.

Pumps

You will need an appropriate portable pump to provide sufficient water pressure to operate your sprinkler system effectively. For roof mounted systems a 38mm centrifugal pump close coupled to a 5hp (3.7kW) petrol engine should provide sufficient water for up to 10 butterfly sprinklers. For more sprinkler heads or when using deluge spray systems or impact drive sprinklers consult with the manufacturer or distributor to establish what size engine and pump is adequate to pressurise the system.

The pump should be housed in well ventilated shed or small insulated shelter in an easily accessible area on the protected side of the house (ie: on the side least likely to be threatened by fire). Make sure the pump can be operated by all members of the family (a key start ignition system is ideal) and that it is checked weekly during the fire danger season.

When deciding to turn on your sprinkler system allow enough time to wet down the area before the fire reaches your property and keep enough water available to continue operating the systems until well after the fire has passed. If you intend to install the sprinkler system yourself it is recommended that you seek advice from a plumber to ensure optimum performance from your system.

Further Information:

Country Fire Service

Level 7, 60 Waymouth Street, Adelaide, SA 5000

8463 4200

www.cfs.org.au

APPENDIX 2

Fact sheets related to Home Design and Building:

- CFS fact sheet – House Siting and Design..... 86
- Planning SA – Building a home in a Bushfire Prone Area..... 89
- Planning SA – Ways to make your home more resistant to bushfires...93



Community Fire Safe

HOUSE SITING AND DESIGN

House Siting

When buying land or property in rural or urban fringe areas it is important to consider the level of fire hazard in the district. When deciding on a site on which to build in such areas, take care to choose a position that is relatively safe. The important points to consider when selecting a house site are:

Aspect

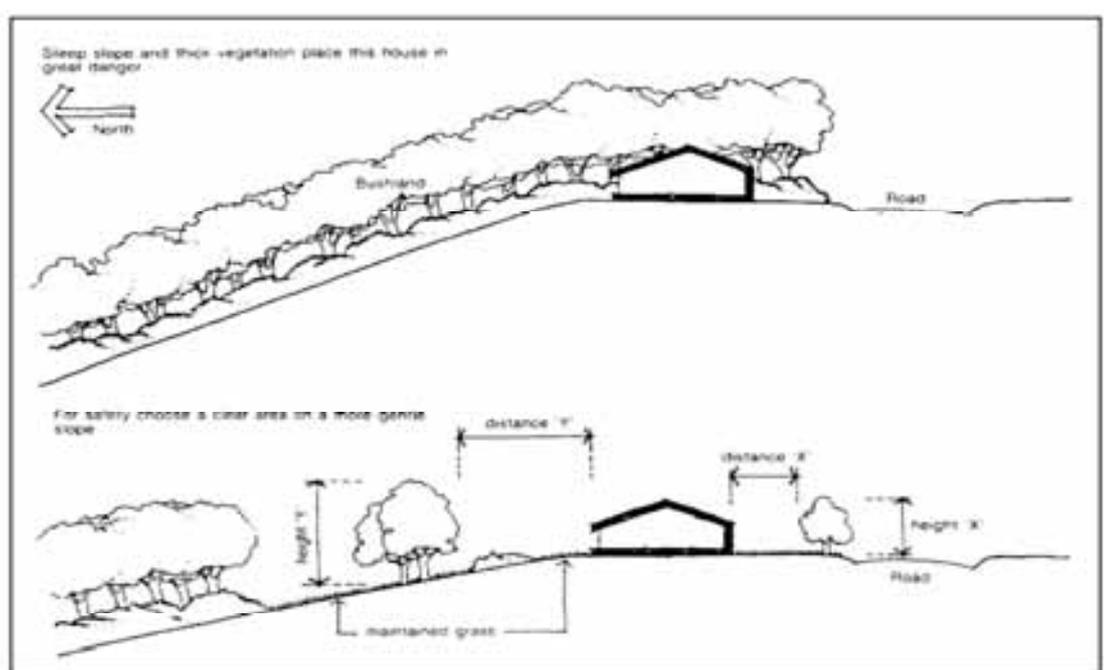
Northerly to Westerly facing slopes are more frequently subject to wildfire than Easterly or Southerly slopes. The greatest danger occurs when a wildfire is driven by hot dry winds from the North or North West just before a South Westerly change.

Slope

Ridgetops are more dangerous than gullies and steep slopes are more dangerous than gentle slopes. Why? A fire must preheat fuel before it will burn and heat transferred by radiation and convection is accelerated when fires are burning uphill and retarded when fires are burning downhill. The steeper the slope, the more this characteristic of fire is accentuated.

Vegetation

Building in a district with large areas of native vegetation, particularly thick scrub is more dangerous than areas where undergrowth has been cleared. Land to the South and East of large parks or forests may be especially hazardous. In these areas a 20m fuel reduced zone around dwellings is recommended which may be increased to 30 - 40m on steep slopes (provided native vegetation clearance approval has been granted). For more information about selecting, locating and managing vegetation for fire protection refer to CFS Wildfire Fact Sheets No.15 – "Landscaping for Fire Protection" and No.16 - "Fire Retardant Plants".



Access

Clear access and egress should allow for the safe movement of firefighting vehicles. Gateways should be at least 4m wide and roadways should have a well-compacted surface with slopes no greater than 1 in 3 and solid crossings over permanent waterways. Turn around areas should be wide enough for large vehicles to easily manoeuvre. Allow for a minimum turning circle of 25m in diameter.

Water Supply

Make sure there is sufficient water available for firefighting. At least 5000 L should be connected to a 5hp pump with hoses to reach right round the house. Where a sprinkler system is used the reserve will need to be 22 000 L.

House Design

Most houses burn down in wildfires because flying embers have caught in nooks and crannies - under loose roofing perhaps; or under verandahs, on windowsills, in sheltered recesses and doorways. A spark starts a little fire, which if left unnoticed may spread - and your home burns down from the inside out. Therefore, when planning your new house, consider the following basic safety features:



The safest homes have a smooth outside shape and low-pitched roof.

House Shape

The safest homes have a smooth outside shape with no nooks or crannies and a low-pitched roof with no level changes. Single storey houses are generally safer than split storey.

Building Materials

Non flammable wall materials, such as brick, mud brick, fibre cement sheeting and weatherboards are all acceptable. Be aware that rough timber and some other claddings could warp or catch fire.

Roofing Materials

There is no concrete research to fully substantiate the argument that tiled roofs are less safe than metal roofs, however timber shakes and timber shingles, and plywood/bituminous felt or thermoplastic are precluded in fire-prone areas. If you use tiles, they need to be well fitted with fire retardant sarking beneath them. A low-profile roof reduces wind turbulence and minimises level changes and valleys where leaves and debris can gather. High winds occur in fires so make sure your roof can withstand them.

Under Floor Spaces

Houses on poles or stumps or with exposed decking or stairs can be firetraps. Air turbulence and any flammable material under the house make it easier for fire to become established in the flooring. The safest option is to construct the house on a concrete slab. If poles or stumps are a necessary part of your house design, keep the floor as close to the ground as possible. Enclose the under floor space and ensure no flammable materials build up.

Skylights & Air Conditioners

Plastic skylights may melt and glass skylights may break, letting in the fire. If you must have a skylight install wire meshed glass or a thermoplastic cover. Turn off evaporative air conditioners when a wildfire approaches and cover to prevent entry of sparks.

Timber

If possible, steer clear of elevated timber decking, stairs or raised timber verandahs. If you do use them, avoid rough sawn timber, which is more easily ignited. Timber can be safe if you use dense hardwood timber like jarrah. For exposed rafters and external timber work, give it a smooth or painted finish and don't use flammable coatings like tar or resinous compounds, which may catch fire easily.

Building Code of Australia

Be aware that house construction is controlled under the Building Code of Australia and is monitored by your local council.

Further Information:

Country Fire Service
Level 7, 60 Waymouth Street, Adelaide, SA 5000
8463 4200
www.cfs.org.au



Building a home in a Bushfire Prone Area

After the 1983 Ash Wednesday bushfires, the State Government consulted with a number of local councils and declared a large part of the Mt Lofty Ranges—from the Fleurieu Peninsula to the Barossa Valley—as a 'Bushfire Prone Area'.

The risk of bushfires is high in South Australia's hot and dry climate—particularly in the areas declared as Bushfire Prone. That's why all homes built in South Australia's Bushfire Prone Areas must be designed and built using planning and construction principles that help protect them from bushfires.

When properly implemented, these design principles will not only help to protect the home from fire damage, but will also provide the occupant and members of the Country Fire Service (CFS) with the means to fight bushfires if they threaten the home.

The requirements for new homes in Bushfire Prone Areas are included in council Development Plans, the Building Code of Australia (BCA) and the South Australian Housing Code (SAHC).

Why a Fact Sheet?

This fact sheet provides an overview of the requirements that apply to all new homes and accommodation facilities built in South Australia's designated Bushfire Prone Areas.

How do I get approval to build in a Bushfire Prone Area?

Under the *Development Act 1993*, development approval is required from the relevant council for all building work. To secure this approval in a Bushfire Prone Area, new homes must comply with the bushfire requirements in the appropriate Development Plan as well as those in the BCA or SAHC.

Which councils have designated Bushfire Prone Areas?

While a number of South Australian councils have bushfire protection planning principles contained in their Development Plans, only the councils below have designated Bushfire Prone Areas:

- | | | |
|--------------------------|---------------------------------|-----------------------|
| - Adelaide Hills Council | - Alexandrina Council | - The Barossa Council |
| - City of Burnside | - City of Campbelltown | - Mid Murray Council |
| - City of Playford | - City of Tea Tree Gully | - City of Onkaparinga |
| - City of Mitcham | - Mount Barker District Council | |
| - City of Victor Harbor | - Yankalilla District Council | |

Maps of these areas can be found in the relevant council planning guideline documents (known as Development Plans). Anyone that suspects their property may be located in a Bushfire Prone Area can contact their local council for confirmation, or they can visit the Planning SA website at www.planning.sa.gov.au and access the bushfire maps in the relevant Development Plan.

Other Areas - Bushfire Management PAR – Part 1

On 2 November 2006, amendments to Regulation 78 and Schedule 18 of the Development Regulations 1993 were gazetted. **On 9 November 2006 the adoption of the Bushfire Management PAR – Part 1 was also gazetted** by the State Government. Both the regulation amendments and the PAR came into adoption on the day of gazettal. To view the changes to regulation 78 and schedule 18 and the gazette notice please refer to **Notices 64/06 and 66/06**

which can be downloaded at <http://www.governmentgazette.sa.gov.au/>⁵

The changes achieve the following:

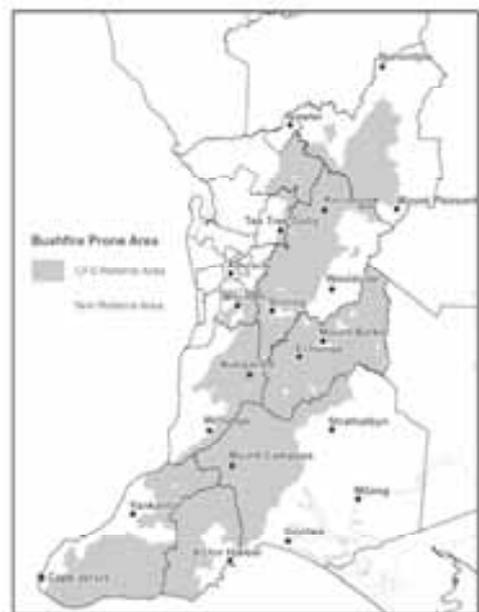
1. They require additional areas of the State (Part 1 of the PAR covers):

- Eyre Peninsula
- South East
- Yorke Peninsula
- Kangaroo Island

These areas are defined as designated bushfire prone areas and therefore subject to the risk of bushfire; and

2. They clearly delineate the level of bushfire risk (general, medium or high) to which an individual site is considered to be exposed.

Planning SA 136 North Terrace Adelaide South



What is a 'CFS Referral Area'?

Since the initial declaration of Bushfire Prone Areas, each affected local council and the CFS have assessed the land within these areas and have declared them as either 'CFS Referral Areas', 'Non-Referral Areas' or 'Areas Excluded from Bushfire Planning Provisions'. These classifications have been incorporated into the Bushfire Prone Area maps in Development Plans.

In a 'CFS Referral Area', the council will refer any development applications for this land to the CFS for comment on those matters within the council's Development Plan relating to bushfire protection.

Where a new home is in a 'Non-Referral Area', councils can make the necessary planning decision without referral to the CFS. Areas declared as 'Excluded from Bushfire Planning Provisions' have generally been excluded because of the existence of adequate infrastructure (such as water supply and access roads) as well as limited natural vegetation. Homes built in a 'CFS Referral Area', 'Non-Referral Area' or area designated as 'Excluded from Bushfire Planning Provisions' must still comply with the construction requirements for buildings in Bushfire Prone Areas.

What are the bushfire requirements in a Development Plan?

Planning policies in Development Plans are known as 'objectives and principles'. Those relating to bushfires include:

- siting of the home so that it minimises the risk from bushfires
- ensuring the CFS has adequate and proper access to the home for the purpose of fire fighting
- requiring a home to have an adequate supply of water dedicated to fire fighting purposes
- landscaping that addresses both natural vegetation issues and the reduction of fire risk.

What is a 'risk classification', and how does it affect the level of bushfire protection I will need?

To determine a site's risk of bushfire, the applicant must undertake a site hazard assessment prior to or early in the design stage. Australian Standard AS 3959 – 1999 Construction of buildings in bushfire prone areas provides an acceptable method for determining a site hazard assessment and the proximity of the building to neighbouring vegetation, the type of vegetation and the slope of the land are considered when the hazard assessment is undertaken. The level of bushfire risk is then classified as 'low', 'medium', 'high' or 'extreme'. This classification determines the level of construction needed to provide the necessary bushfire protection. The identification of the site hazard assessment should be considered prior to the purchase of land as the cost of the home will increase as the site hazard becomes greater.

What is the difference between low, medium, high or extreme risk classifications?

If a site is classified as 'low' risk, the risk from a bushfire is considered minimal and not great enough to warrant any additional requirements over and above standard construction methods. 'Medium' risk sites must be fitted with additional spark and ember proofing, while 'high' risk sites must have spark and ember proofing as well as extra protection against radiant heat. 'Extreme' risk sites require the same requirements as 'high' risk sites, but with additional protection against some

The construction classification are Code of Australia, AS Australian Housing



methods for each site contained in the Building 3959 -1999 and the South Code.

If a fire fighting water supply is required by council, are there any construction requirements for that water supply?

Council Development Plans require homes in Bushfire Prone Areas to have dedicated fire fighting water supplies (normally a minimum of 5 000 litres in a Non-Referral Area and 22 000 litres in a CFS Referral Area). The council may vary these requirements depending on the availability of other fire fighting water supplies such as dams, swimming pools or an adjacent fire main with a guaranteed water supply (normally only accessible in townships).

The provision of a fire fighting water supply must be in conjunction with ready access to that water by the occupant or the CFS and the water supply and fire fighting equipment must comply with *Minister's Specification SA 78—Bushfire fighting equipment and water supply requirements in designated bushfire prone areas*. This Specification requires that:

- the dedicated water supply must be independent of the reticulated mains water that feeds the building
- the dedicated water supply must be able to supply the installed bushfire protection system
- fire fighting hoses must be connected and charged with water from the identified water supply
- water supply tanks must be non-combustible
- appropriate fire service adaptors must be provided
- the water supply shall be pressurised by a pump that is powered by a petrol or diesel engine of at least 3.7 kW
- if a pump is not used the water supply system must operate independently of mains electricity and be capable of pressurising the water for bushfire fighting purposes
- the pump must be protected by a non-combustible cover
- there must be adequate water piping between the tank and the pump
- non-metal water piping must be protected
- fire fighting hoses must be in an appropriate location
- fire fighting hoses must be adequate (in terms of length, diameter, applied pressures, nozzles and general construction of the hoses)
- fire fighting hoses must be readily available.

What if I want to extend my existing home?

Any extensions to existing homes require development approval, including the associated provisional development plan consent and provisional building rules consent. For development plan consent, the site location will determine whether the site is in a CFS Referral Area and the council will assess the new work and decide if a bushfire protection upgrade is necessary.

For building rules consent, extensions must be protected against bushfire in accordance with the BCA, however there is no requirement to upgrade the existing dwelling. An exception to this rule occurs when an extension or addition increases the floor area of the house by more than 50 percent, in which case the authority responsible for issuing building rules consent may request that the existing house is upgraded to the current requirements.

Who will ensure that a new home complies with bushfire safety requirements?

Under the *Development Act*, development approval is required from the council for all building work to ensure it complies with the requirements in the Development Plan and the BCA. Before this approval is issued, the council will assess the application against the Development Plan and the council or a private certifier will assess the design against the requirements of the BCA or SAHC. This assessment includes checking the site hazard classification and compliance with the bushfire safety requirements.

After development approval has been granted, the council may also inspect the building work to ensure compliance with the approved documents.



Once my home is built, how can I minimise the risk to the property in the event of a bushfire?

The CFS has produced a publication entitled *Your Survival Guide to Wildfire—Plan NOW to Stay or Go*. This document sets out the information needed to help minimize the risk and to survive a bushfire and is available from CFS regional offices or online at www.cfs.org.au.

If you have constructed or are about to construct a home in a Bushfire Prone Area, you are encouraged to make yourself familiar with the available CFS bushfire prevention information and to actively prepare both yourself and your property for bushfire.



Further information

For more information about building a home in a Bushfire Prone Area, contact your local council. Information is also available from:

Planning SA

Level 3, 136 North Terrace
Adelaide SA 5000
Phone: 8303 0602

www.planning.sa.gov.au/building_policy

SA Country Fire Service

Development Assessment Unit
(Bushfire Protection)
6 Druids Avenue
Stirling SA 5152
Phone: 8339 6900
cfsdau@cfs.org.au

www.cfs.org.au

Ways to make your home more resistant to bushfires

April 2005



Why you should make your home more resistant to bushfires

By following the ideas suggested in this Fact Sheet you will help to protect not only your family and yourself, your home and possessions, but also the lives of firefighters. In addition you will reduce the costs the community has to bear after bushfires such as clean up work, insurance claims and government support. Finally you will also be helping the environment. If your home is more fire resistant, you will not have to clear as much vegetation from around your home and so a lot of trees and scrub, and their resident wildlife, can remain.

There are four ways to make your home more resistant to bushfires:

1. Carefully choose where you build
2. Provide an easy-to-use track to your home
3. Provide a water supply that is just for bushfire use
4. Build your home using techniques and materials that make it more resistant to bushfires

1. Carefully choose where you build

It is recommended that you build:

- (a) where the site is flattest. This means avoiding steep slopes (especially upper slopes), narrow ridge crests, the tops of narrow gullies, and slopes facing north or west
- (b) where hazardous vegetation (such as overhanging branches and thick bushes) is at least 20 metres away.

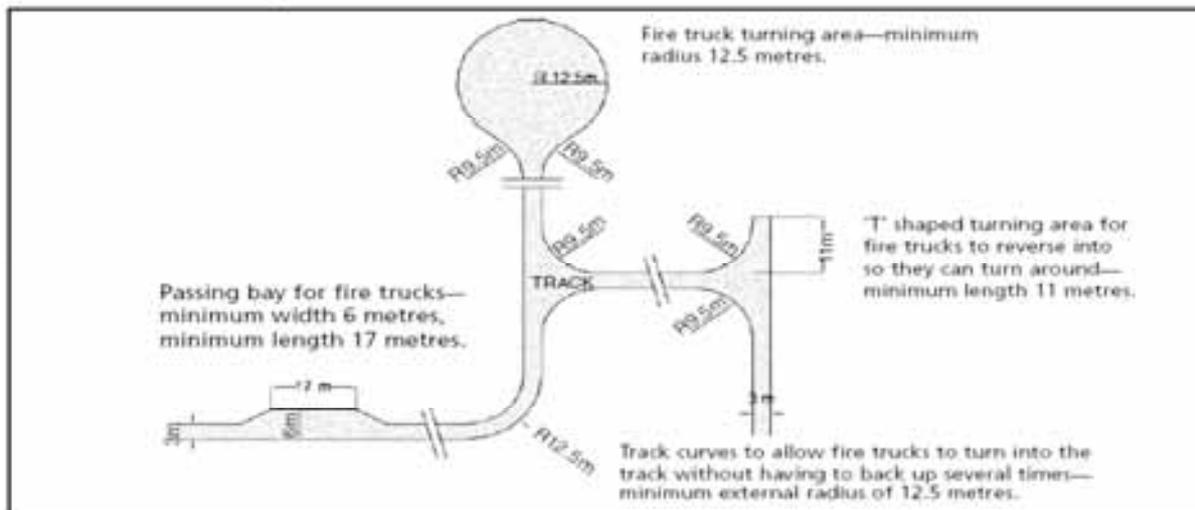
2. Provide an easy-to-use track to your home

Fire fighters should be able to safely enter, leave, and move around your home. So if the track to your home is more than 30 metres from the nearest public road, it should:

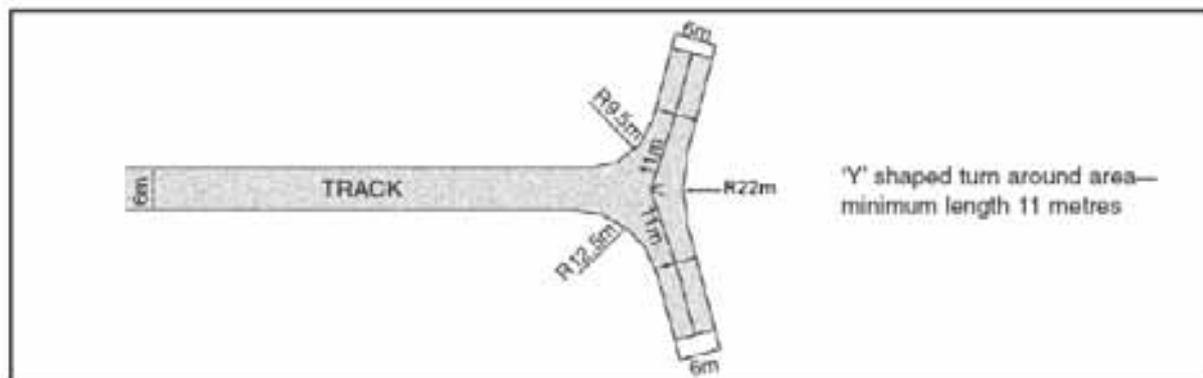
- (a) be made of all-weather materials
- (b) be at least 3 metres wide, have a steepness of not more than 16 degrees at any point, and be located away from hazardous vegetation
- (c) be built so that fire trucks don't have to back up. This could mean that it needs to have curves and turning areas, loops around buildings, bridges and/or passing bays.

Diagrams 1 and 2 show the recommended distances required when constructing your track so that fire trucks can move easily around your block.

Bushfire Protection Diagram 1



Bushfire Protection Diagram 2 – layout at the end of a track that is wide enough to allow vehicles to turn into and reverse direction.



3. Provide a water supply that is just for bushfire use

It is recommended that you provide a 5000 litre water supply just to be used for fire fighting, in a convenient location. This may be a tank or dam.

4. Build your home using techniques and materials that make it more resistant to bushfires

There are a few simple construction techniques and materials that can be used to increase your home's resistance to bushfires¹.

¹Techniques listed here are based on Australian Standard AS 3959 Construction of buildings in bushfire prone areas for a building located in a medium hazard attack category. Buildings may also be constructed to a higher hazard attack category.

Flooring

Flooring should be one of the following:

- a concrete slab on the ground
- a suspended concrete floor
- a timber or steel framed floor where the underneath of the bearer is more than 600mm above ground level. In this case the space under the floor should be protected by a non-combustible sheet material such as fibre cement, which is placed on the underside of the floor joists. Or you could put a vertical non-combustible lining around the perimeter of the floor to protect the framing under the floor
- a timber or steel framed floor where the underneath of the bearer is less than 600mm above ground level. In this case the space under the floor should be protected by being fully enclosed with a vertical non-combustible lining that is at least 400mm above ground level and meets the bottom of the wall cladding material.

External walls

External walls should be made in one of the following ways:

- using an external leaf of masonry, concrete or earthwall
- building a timber or steel framed wall that has sarking installed (material aimed at reflecting and deterring heat transfer) with a flammability index of no more than 5, and is clad with a noncombustible material for the first 400mm above the finished ground level, paving level or any balcony or deck with solid flooring
- using timber logs with all joints between the logs gauge-planed and sealed.

Supporting posts, columns, stumps, piers and poles

Posts, columns, stumps, piers and poles should be made of a non-combustible material, however timber posts may be used if they are mounted on metal stirrups with a clearance of 75mm or more above the finished ground or paving level.

Windows

Windows should be screened with corrosion-resistant steel, bronze or aluminium mesh with a maximum aperture size of 1.8mm.

External doors

External doors should be fitted with weather strips. Screen doors should be tightly fitting and use corrosion-resistant steel, bronze or aluminium mesh with a maximum aperture size of 1.8mm.

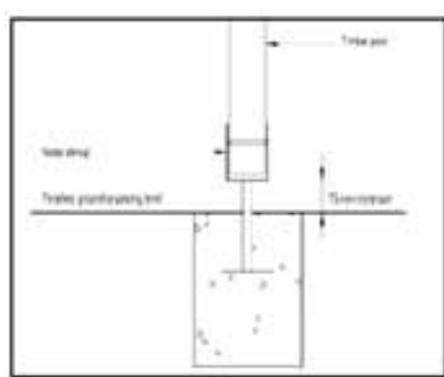
Vents and weepholes

Vents and weepholes should be protected with corrosion resistant steel, bronze or aluminium mesh with a maximum aperture size of 1.8mm.

Roof coverings

- Roof coverings should be made of metal sheets or fibre-reinforced cement. Do not use timber shakes or shingles.
- All gaps under corrugations in the sheet roofing should be sealed or protected in one of the following ways:
 - (a) fully sarking* the roof
 - (b) covering gaps with a corrosion-resistant steel or bronze mesh with a max aperture size of 1.8mm
 - (c) using a profiled metal sheet
 - (d) using a neoprene seal or compressed mineral wool.
- Cappings on sheet roofing should be pre-formed or the gaps between the capping and the sheeting should be sealed or protected.
- Tiled roofs should be fully sarked* with a flammability index of no more than 5, including the ridge, and the sarking should be located directly beneath the tiling battens.

*see definition of sarking under heading 'External walls'.



Eaves and fascias

- The roof/wall junction should be sealed with a fascia and eaves lining or the gaps between the rafters at the line of the wall should be sealed with a non-combustible material.
- Penetrations through the roof cladding for vent pipes and the like should be sealed with a non-combustible collar or fire-retardant sealant.

Skylights

Skylights and other shafts through the roof space should be sealed with a non-combustible sleeve or lining. Thermoplastic sheet in a metal frame may be used, provided that the diffuser at ceiling level is made of wired or toughened glass in a metal frame. Openings in ventilated skylights should be covered with corrosion resistant steel or bronze mesh with a maximum aperture size of 1.8mm.

Roof ventilators

All components of roof ventilators, including rotary ventilators, should be made of non-combustible material and have their openings protected by corrosion resistant steel or bronze mesh with a maximum aperture size of 1.8mm.

Roof mounted evaporated air cooling units

All openings into cooling units should be protected by corrosion-resistant steel or bronze mesh with a maximum aperture size of 1.8mm.

Gutters and downpipes

Materials or devices used to stop leaves collecting in gutters should have a flammability index of no more than 5.

Service pipes (water and gas)

Piping for water and gas supplies should be buried at least 300mm below the finished ground level, or be made of metal.

Verandahs and decks

Verandahs and decks should be made of concrete and the posts, columns or supporting walls must be adequately protected. If you want a timber deck, the gaps between the boards should be no smaller than 5mm. So that a fire under the deck can be put out the perimeter of the deck should not be enclosed.

For further information contact:

Department for Transport and Urban Planning Planning SA

Building Policy Branch

Level 3, 136 North Terrace, Adelaide SA 5000

ph: 8303 0602

www.planning.sa.gov.au/building_policy

APPENDIX 3

On the Land

| | |
|--|-----|
| • Livestock safety during bushfires..... | 98 |
| • SACFS Recommended Codes of Practice..... | 99 |
| • Property Fire Planning Process (flow chart)..... | 103 |

LIVESTOCK SAFETY DURING BUSHFIRES

- Livestock owners are reminded of measures to take in case of the threat of fire on their property. Planning should start well before the bushfire season and be part of on-going property management.
- While caring for livestock and other animals before and after a bushfire is essential, personal safety should be considered as a first priority on all occasions.

COMMENCEMENT OF THE BUSHFIRE SEASON:

- A plan should be prepared detailing where to put stock in the event of a fire.
- A 'safe paddock' close to the homestead or yards, should be hard-grazed or slashed (size and secure fencing of the paddock are important to consider). This paddock should be reserved for use in the event of a bushfire.

BEFORE A BUSHFIRE COMES THROUGH:

- All livestock owners in the vicinity of a fire should assess the safety conditions that prevail for their livestock.
- Livestock should be moved to the 'safe paddock', or an area of the property where dry grass, timber or anything that might fuel a fire is at a minimum.
- Assessment and movement of livestock should be implemented well in advance of a fire front passing through the property.

AFTER A BUSHFIRE PASSES:

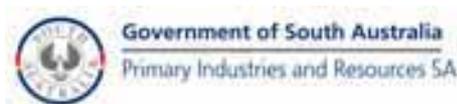
- Livestock should be carefully assessed for burns or injury after the fire front has passed, and it is safe to do so.
- Veterinary advice should be sought for any livestock that may be suffering from burns or other injuries after fire.
- Ensure dead stock are appropriately disposed of to minimise disease risks and impacts on the environment, water courses, etc.
- Ensure permanent or temporary fencing is adequate.
- Provide surviving livestock with access to good quality clean water, suitable fodder, and shade if possible.
- Animals recovering from burns should be placed in a separate paddock or yard where they can be inspected regularly and nursed well.

COMPANION ANIMALS

Companion animals should be kept indoors during a fire, and veterinary advice sought for injured animals.

FOR FURTHER INFORMATION:

Contact your local PIRSA Animal Health officer
Or contact PIRSA Animal Health at Glenside on 8207 7900



Recommended Codes of Practice

The following information serves as a guide to the SA farming community to assist in the practice of safe farming operations.

Each local council has adopted industry codes of practice for grain harvesting operations and stubble slashing during the Fire Danger Season and for burning-off operations outside of the Fire Danger Season. These codes have been developed in conjunction with local district bushfire prevention committees to reduce both the risk of bushfire and the likelihood of fires escaping.

You will need to contact your local council to find out what specific codes of practice apply to your area.

Further Information

Local Council Fire Prevention Officer

South Australian Farmers Federation:

Tel: (08) 8232 5555

Fax: (08) 8232 1311

SA Country Fire Service:

Tel: (08) 8463 4200

Fax: (08) 8463 4234

www.cfs.org.au

Weather Information Service

Bureau of Meteorology

Recorded Forecasts and Warnings, Telephone: (08) 8366 2700

Weather by Fax: 1800 061 435

Weather Call, Telephone: 1900 155 375 or 1196

www.bom.gov.au - Met Fax: (08) 8362 0340.

The following information serves as a guide to the SA farming community to assist in the practice of safe farming operations.

Each local council has adopted an industry code of practice for grain harvesting operations, where appropriate, during the Fire Danger Season. This code has been developed in conjunction with local district bushfire prevention committees to reduce both the risk of bushfire and the likelihood of fires escaping.

You will need to contact your local council to find out the specifics of the code of practice applied in your area.

Generic Code of Practice Guidelines for Grain Harvesting Operations.

1. Be aware of criteria and conditions in place for the suspension of local grain harvesting operations on extreme weather days, as established by district bushfire prevention committees in consultation with local farmers. Criteria may be dependent on local weather conditions, harvesting requirements and period of time specified for suspension of operations.
2. Ensure crop residues on machines are kept to an absolute minimum, especially around engines and brakes (high fire risk areas).
3. Adopt a regular maintenance program, both before and during grain harvest operations. Pay attention to moving parts, bearings and spark arrester.
4. As weather conditions deteriorate, increase maintenance and practice enhanced vigilance around potential fire risks.
5. Establish a minimum four (4) metre fuel break around perimeters of crops or paddocks to be harvested. This may consist of a 4 metre mown or chemical break with a 2 metre ploughed strip within it.
6. Have farm firefighting unit in the same paddock.
7. Have immediate access to a UHF CB radio or a mobile phone.

Stubble Slashing Operations

The following information serves as a guide to the SA farming community to assist in the practice of safe farming operations.

Each local council has adopted an industry code of practice for stubble slashing operations, where appropriate, during the Fire Danger Season. This code has been developed in conjunction with local district bushfire prevention committees to reduce both the risk of bushfire and the likelihood of fires escaping.

You will need to contact your local council to find out the specifics of the code of practice applied in your area.

Generic Code of Practice Guidelines for Stubble Slashing operations.

1. An operator must not operate an internal combustion engine in connection with cutting flammable bush or grass unless
 - the area immediately around the land where bush or grass is to be cut is cleared of all flammable material for a distance of at least 4 metres, or a portable water spray in good working order and
 - a shovel or rake is at hand.
 - any exhaust pipe is fitted with a spark arrester in good working order.
2. Comply with set criteria and conditions for the suspension of slashing operations, as established by district bushfire prevention committees in consultation with local community (ie: Total Fire Ban Days).
3. Maintain machinery in good working order and keep residue build up to a minimum.
4. Keep the slasher height up, to avoid contact with stones and other obstacles.
5. Inform neighbours, especially those downwind, of your intention to slash.
6. Maintain a watch on local conditions as they may become severe enough to warrant ceasing operations.
7. Have a well maintained and fully operational farm firefighting unit in the paddock area where slashing is to occur.
8. Have immediate access to a UHF CB radio or mobile phone.

Burning-Off

The following information serves as a guide to the SA farming community to assist in the practice of safe farming operations.

Each local council has adopted an industry code of practice for burning-off operations outside of the Fire Danger Season, where appropriate. This code has been developed in conjunction with local district bushfire prevention committees to reduce both the risk of bushfire and the likelihood of fires escaping.

You will need to contact your local council to find out the specifics of the code of practice applied in your area.

Generic Code of Practice Guidelines for Burning – off outside of the Fire Danger Season.

1. Prepare clean fuel breaks at least four (4) metres wide around the area to be burnt.
2. Obtain a weather forecast especially for local winds before a burn-off.
3. Give at least 24 hours notice to neighbours of your intention to burn.
4. Ensure a sufficient water supply for firefighting is available at all times during the burn-off.
5. Do not attempt to burn any more area than can be controlled with the people and equipment available.
6. Ensure a sufficient number of people are present at the site from the time the fire is lit to the time it is completely extinguished.
7. Be methodical. Plan the burn-off operation. Where appropriate burn down hill and adopt a strip burning method.
8. Always light the fire on the leeward side of the land to establish a protective break and then light from the windward side of the land.
9. Be aware of sudden changes in weather conditions especially wind speed and direction.
10. Always be sure the fire edge is blackened out progressively to a distance of 20 metres into the burnt area.
11. Have immediate access to UHF CB radio or mobile phone throughout the fire operation.
12. Have a well maintained fully operational farm firefighting unit in the paddock area where burning-off is to occur.
13. Constantly patrol the burn-off area for a number of days to guard against rekindling after the operation is completed.

Property Fire Planning Process

To assist with planning, and prioritising works required on your property, you may like to use the process outlined below.



This process can be used as an ongoing cycle to ensure new risks are identified, and old plans are still relevant.