

DEFENDING YOUR PROPERTY

Prepare and actively defend



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Defending your property

Victorian legislation gives residents the right to stay to defend their properties from bushfire if they choose, but it is a decision that requires careful thought and considerable preparation.

Bushfires kill and even well-prepared homes can be destroyed by bushfire. Survival must be your main priority, and the only sure way to survive a bushfire is to be well away from the threat.

If you live near bush, grassland or coastal areas you must have a Bushfire Survival Plan that details whether you are going to stay to defend your home or will leave before a bushfire threatens.

If you choose to stay to defend, you must have adequate defensible space, be well prepared and understand the complexities and the risks of your decision, including the very real chance you may be injured or killed.

Not all bushfires are the same and not all homes can be defended from bushfire. You should use the Household Bushfire Self-Assessment tool at www.cfa.vic.gov.au or in this Kit to establish whether active defence is an option for you.

You need to use skill and care when using this information. If you have any uncertainty about the application of this information to your own circumstances you should obtain professional advice.

The safest option is to leave before bushfire threatens. Refer to the Leave Early booklet in this Kit for more information.



Not all houses are defensible

Planning to defend

If you have completed the Household Bushfire Site Assessment Workbook, or the online version, and your plan is to actively defend your property, there are some decisions you need to make before the start of the fire season. Staying to defend requires careful planning and preparation.

You must have a written Bushfire Survival Plan that every member of your family knows and understands. This includes understanding how to prepare for bushfire, how equipment will be used, how you will protect yourself, and how and when you will shelter from the fire front.

Make sure the plan is flexible to account for different situations such as weekends and school holidays. You need to revise your plan whenever your circumstances change. Remember to update everyone about any changes to your agreed plan of action.

A pull-out planning template is in the centre of this booklet. This will help guide you in writing your Bushfire Survival Plan.

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On days of Code Red (catastrophic) fire danger the safest option is to leave the night before, or early in the morning.

There are four important factors to consider when choosing to defend your property:

- 1. Your personal capacity**
- 2. Property preparation before the fire season**
- 3. Recommended equipment and resources**
- 4. Your home's structure and building design.**

If you choose to stay, you must consider the following:

1) Personal capacity

If you plan to stay and actively defend you should be physically fit and able, and mentally prepared. You need to understand the physical and psychological risks of staying and defending your home.

Reconsider staying to actively defend if there are:

- One or more people with physical or intellectual disabilities residing in the home
- Any household members with emotional or mental health conditions
- One or more infirm, frail or vulnerable people residing in the home
- One or more elderly people residing in the home
- One or more children under the age of 16 living in the home.

Your Bushfire Survival Plan should have practical steps to protect the vulnerable members of your family. It is advisable that children are not present during active defence. Children, the infirm, frail, elderly and people with vulnerabilities are advised to leave early.

Defending your home will require enormous reserves of physical and mental stamina. It may require many hours and sometimes days of active patrolling and defense of your property. This will be exhausting. It can only be done with two or more fit and able adults.

Actively defending your home will be a frightening and stressful experience. It may be hard to breathe, difficult to see, disorientating, very noisy and very hot. Be aware that bushfire smoke can aggravate respiratory conditions such as asthma as well as heart conditions.



Bushfires are frightening

2) Property preparation

The *Preparing your Property* brochure outlines what is required to prepare your property before the fire season.

These preparations must begin before the bushfire season. Property preparation is complex and takes considerable time, effort and expense.

Staying on your property is not an option if you cannot create and maintain the required defensible space around your home.

Defendable space is an area surrounding a building that has little or no combustible vegetation or other fuels. The Household Bushfire Site Assessment Workbook or online version will help you work out how much defendable space is appropriate for your home. You need to decide whether you can achieve and maintain the required space.

If you cannot or choose not to meet these minimum defendable space requirements you should not stay on your property and you must leave early to protect against loss of life.

Not all houses are defendable in all conditions, no matter how well you prepare. The more extreme the weather, the less likely even the best prepared households will be able to withstand an intense bushfire. The location of your home in relation to vegetation and terrain are factors that contribute to the risk of bushfire. Houses in some high-risk locations may not be possible to defend at all. These include:

- **Houses situated on more than a 20 degree slope in a forested area**
- **A house on a heavily forested block with dense undergrowth around the house.**

Defendable space limits the exposure of your house to flames and radiant heat, but it does not protect it from ember attack. Ember attack is one of the main causes of property loss and damage.

You must prepare your property including both vegetation management and building improvements to reduce the impact of ember attack.

More details of how to improve the chance of your home surviving ember attack is found in this booklet in the *Building Design and Construction* section.

Staying with an unprepared property is very dangerous and could cost you your life.

Do not expect a firetruck.

If you are unprepared, your chances of successfully defending your home are very limited. The task will be much more demanding both physically and emotionally than it would be if you had made your home and property bushfire ready. Your house may catch fire leaving you with little or no protection. If you have not prepared your property before the fire season you must consider leaving before bushfire threatens.



Prepare your house

3) Recommended equipment and resources

If you are confident you are capable and prepared to actively defend your property CFA recommends you have these resources and equipment as a minimum:

- Minimum 10,000 litres of water for firefighting purposes
- A firefighting pump that is protected from radiant heat and not reliant on mains power supply
- Firefighting hoses that reach around your home
- Protective clothing.

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Minimum 10,000 litres of water



10,000 litres of water

You should have access to a dedicated, independent water supply of at least 10,000 litres to stay to actively defend. You cannot rely on mains water during a bushfire.

If you can, install a 10,000 litre tank specifically for firefighting purposes. Alternatively, the 10,000 litres could be made up from a variety of sources such as several tanks or a dam and a tank or a swimming pool. Dams are not considered by CFA to be a reliable water source as they can dry up over summer.



Dams are not always reliable

Tanks should be made from galvanised iron or concrete. Plastic tanks can melt in extreme bushfires. If you have a tank it is extremely important that you protect it from the effects of

fire by reducing vegetation around the tank. Make sure you can access this water easily and it is located close to the buildings you need to protect.

You can also store smaller amounts of water using:

- 44 gallon drums placed strategically around the home
- Rubbish bins (wheelie bins work well but could melt in intense heat)
- Wheelbarrows
- Troughs or garden ponds

The more water storage you have the better.



44 gallon drums for water storage

Piping to deliver water

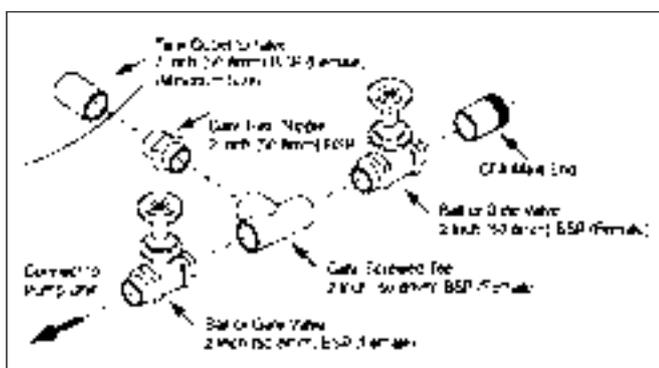
You must also consider the type of piping used if you have a tank. It is recommended that all below-ground water pipelines must be installed to the following depths:

- Subject to vehicle traffic: 300 mm
- Under houses or concrete slabs: 75 mm
- All other locations: 225 mm.

All fixed above-ground water pipelines and fittings, including water supply, must be constructed of non-corrosive and non-combustible materials.

Above ground water supplies should be provided with a CFA fitting. To make this a useful system it is best to have a “T” fitting that allows one side for CFA and the other side for you. CFA’s specifications for this type of fitting would be:

- One 64 mm, 3 thread/25 mm x 50 mm nominal bore British Standard Pipe (BSP), round male coupling (see below):



Gate or Bell Valve to suit your own pump and male end to suit CFA Fire Tankers

- All pipe work and valving between the water supply and the outlet must be no less than 50 mm nominal bore
- If less than 20 metres from the building, each outlet must face away from the building to allow access during emergencies.

Firefighting pump

Have a petrol, diesel or electric pump if you need to draw water from an independent water supply such as a tank or swimming pool.

If you have an electric water pump, you will need to have a generator as back-up, as it is likely that mains power will fail during a bushfire. The size of the pump you will need depends on:

- The source of water and how far away it is
- Piping size, length and configuration
- The number of outlets you will be using at the same time
- The size and length of the hoses you are using with your pump.

Pump suppliers should be able to advise you of the size of pump you require.

When a pump overheats or melts it stops working. If the fuel in the pump vaporises from the heat it will become inoperable. It is extremely important that your pump is protected from fire and radiant heat.

You can protect your pump by reducing the vegetation around it, housing it in a shed or another building that will resist radiant heat, direct flame contact and embers and has adequate ventilation. The more protection you can give your pump the more likely it will continue to operate during a bushfire.



Firefighting pump

It is important that every adult in the household knows how to start and operate the pump.

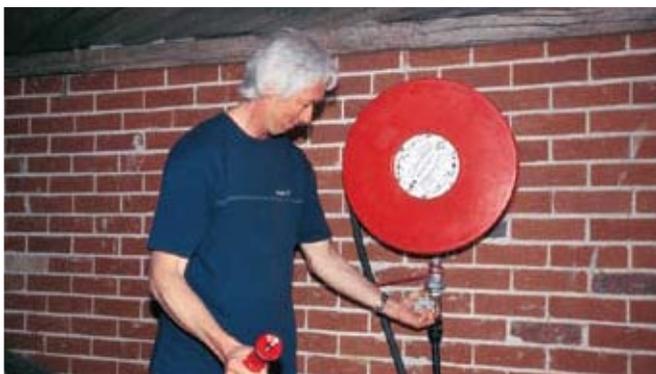
The fuel in the pump must be changed annually as stale fuel may prevent your pump from working properly.

You must plan what you will do if your pump fails during a bushfire. You may consider having a second pump as a back-up.

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Firefighting hoses

The standard garden hose is made from plastic and may melt in a bushfire. CFA suggests using fire resistant hoses in place of garden hoses. Keep in mind that the bigger the hose the heavier it will become when full of water and the greater the volume of water used.



Firefighting hose

Consider:

- That hoses will need to reach to all areas of your home. You can use a string line to work out the required hose lengths
- Metal hose fittings for taps are less likely to melt when temperatures rise
- Putting a hose fitting connection on to your washing machine tap so that you can use your hose inside if needed.

Personal protective clothing

Put together a kit of clothing for each household member. You must cover all exposed skin to protect yourself from radiant heat. Change into these clothes as soon as you are aware of fire in your area.

- Long-sleeved overalls or long-sleeved shirt and pants in natural fibres (cotton or wool)
- Wide-brimmed cotton hat
- Solid leather footwear such as boots and woollen socks

- Leather gloves
- A 'P2' type mask or cotton scarf / handkerchief for face protection and to filter smoke
- Goggles or glasses to protect eyes from smoke and flying embers.



Protective clothing

Other firefighting equipment

The equipment recommended above is extremely important but there is a range of other equipment that will assist you in defending your property. Many of these items are commonly found around the home.

Consider the following:

- **Buckets** – Galvanized buckets are best as plastic buckets can melt
- **Mops** – Old-fashioned cotton-headed mops soaked with water can be used to put out embers
- **Ladders** – Sturdy ladders will be required to check the ceiling space and roof for embers



Ladder

- **Blankets and towels (made from wool or cotton only)** – When wet they can be used to seal any gaps under doors to help prevent embers and smoke from entering the house
- **Torches (battery powered)** – Leave a torch in the roof space to check for embers. Have another in the house in case the power goes off during the bushfire. Make sure you have plenty of batteries for the torches or consider purchasing a wind-up torch
- **Radio (battery powered)** – You will need to have a radio tuned into ABC or your local radio station to receive updated fire information. Power will most likely go out, so you must have a battery powered or wind-up radio



Shovels and rakes

- **Shovels and rakes** – These can be very useful for shovelling dirt onto embers or small fires and to break up piles of burning material
- **Knapsacks** – Firefighting backpacks can be purchased, but many of the weed sprayers sold in hardware stores are also suitable (make sure they are cleaned out first). Consider how heavy a knapsack will be when it is full of water; a 20 litre knapsack will weigh 20 kilograms
- **Downpipe or gutter plugs** – To fill your gutters with water you will need a way to block the downpipes. Depending on the shape of your downpipes you may be able to purchase specially made gutter plugs. Other materials can also be used to block down pipes such as small sand bags, wet towels and tennis balls. Alternatively a plumber can install a shut off valve on all your downpipes.



Wet towels can be used to block downpipes

Sprinkler systems can help fight embers

The objective of a bushfire sprinkler system is to help extinguish embers that land on the roof or other parts of the building. To operate effectively, a sprinkler system needs to have an appropriate, adequate water supply, an activation mechanism and a delivery system including pipes and heads that will discharge water at appropriate densities.

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Sprinkler system

The delivery system includes the pump, pipework and spray heads. You must ensure that the pump is the correct size and duty to deliver water to the spray heads at a suitable pressure. The pump must be protected from radiant heat. The correct size pipework can only be determined after the completion of a full hydraulic design. Pipes must be made of non-combustible materials such as copper. The spray heads need to be carefully chosen so that they provide an appropriate spray pattern and discharge density that can operate effectively during a bushfire.

Other considerations:

- Will your sprinkler system be able to run even if mains power fails?
- Do you have an adequate water supply?
A sprinkler system should be able to run for several hours
- What effect will wind have on the delivery of water to critical areas of your home?

Bushfire sprinkler systems are only one treatment to improve the protection of your house from embers. On their own, they are not a reliable solution to treat bushfire risk. There is currently no Australian Standard for the design and installation of bushfire sprinkler systems.

For more information about designing an appropriate bushfire sprinkler system, consult professionals who specialise in them.

Firetruck access

Although your plan should not rely upon CFA to assist you during a major fire, in some circumstances they may be available to provide some support.

It is in your interests to ensure that CFA firefighters have room to bring their trucks into your property safely and have easy access to a water supply.



Consider access for tankers

Consider:

- A CFA tanker is 3 metres wide, 3.2 metres high and 7.5 metres long – can it get along your driveway? You need to allow 4 metres x 4 metres for adequate clearance.
- Is there room for a tanker to turn around?
- Can a tanker easily get through the gates?
- Can the bridges and culverts on your land carry a 15-tonne firetruck?
- Can firetrucks get within six metres of a dam, tank or pool to pick up water?
- Are gates and water supplies clearly marked?
- Does your below ground water tank have a roof hatch so the firetruck can draw water?

- Can your tank be connected? For direct connection with the CFA tanker, the outlets on your above-ground water tanks need to be 64mm diameter and three-threads per 25mm.
- Is your street too steep to allow tankers to drive down?

4) Your home's structure and building design

To reduce the impact of embers on your home there are some important building improvements that are recommended. These measures will assist in ember proofing your house, making it more difficult for embers to enter the house or burn against the house.

The number of improvements will depend on the type of house you have. Research shows there are areas around your home that can contribute more to the overall bushfire risk than others. These include decks, windows, doors and roof areas.

Anywhere embers can lodge or enter your house can start a fire.

- **Is your house above-ground on stumps or on a concrete slab? Do you have a timber deck or verandah?** Protect underfloor spaces with non-combustible sheeting or metal mesh. This will prevent embers from landing under the house and starting small spot fires. Remove any combustible materials stored beneath the floor.
- **Is your house constructed from bricks, timber, cladding or a mixture?** Roughly sawn timber or badly maintained brick work can catch embers. Ensure any external timber cladding is regularly maintained and all gaps are sealed. Seal or repair any holes, cracks or damage to flooring and walls. Cover all external vents with metal mesh (not aluminium) and keep clear of debris to prevent embers from entering your home.

- **Are your window and door frames well sealed?** Place weather stripping around the inside of doors and windows to eliminate any gaps.
- **Do you have any skylights or evaporative coolers?** Make non-combustible fire screens to cover external skylights. Protect evaporative coolers with metal mesh screens. You will need to check with your evaporative cooler supplier to ensure the performance of the system is not compromised by installing the mesh.

By sealing all gaps around your house and roof, or installing wire mesh around larger areas that cannot be sealed, you will greatly reduce the risk of embers entering your house.



Consider the design of your house

Protection for windows – window shutters

Windows are a weak point in houses as they allow radiant heat to enter and can allow embers in if they break. Once embers enter your house they will be very difficult to extinguish: your house is full of combustible materials such as furniture, curtains and carpet. Protecting your windows will reduce the impact of radiant heat and the potential for embers to get inside.

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Window shutters

The best protection for windows is properly installed and fitted window shutters. Shutters installed to provide bushfire protection should meet relevant requirements of AS3959 – 2009 or at least be non-combustible. For safety reasons it is recommended that the shutters be controllable from inside of the house. If these are electronic, remember you may lose power. It is important that you are able to remain aware of what is happening outside.

The other protection for windows that can be considered is toughened glass. This will help the windows to withstand higher amounts of radiant heat.

Another mechanism to protect windows is to install wire mesh screen (not aluminum) on all windows. The wire mesh holes should be no larger than 1.5mm. These screens may help shield windows from flying debris and reduce the chance of them cracking and allowing embers to enter.



Wire mesh screens



Protect gaps with metal mesh



House on stumps

The following table identifies some of the key risk areas – roofs, windows, doors and decks and provides some possible solutions to protect your home and surrounding buildings from ember attack.

Roofs, windows, doors and decks

Target Area	Treatment Options	Comment
Roof: Gaps in the roof pose a high risk to ember penetration	Sarking (reflective non-combustible sheeting)	Sarking is an effective treatment to prevent embers from entering through your roof. Unless installed at construction stage this can become very expensive.
	Gap sealing by using compressed mineral wool insulation	This can be a cheap and effective solution for existing homes. Careful installation is required to ensure all gaps are sealed. Sealing gaps is an effective defence against burning embers.
	Bushfire sprinklers	Sprinklers may help protect your house but have limitations. All openings on the roof must be protected for the duration of the ember attack. Sarking or gap sealing can be more effective.
Windows: Open and unscreened windows pose an extreme risk	Maintenance of window sills	Embers lodging on combustible window sills pose a high risk. Maintain paint on window sills so there is no flaking paint.
	Screened windows and sills	Installing wire mesh screens (not aluminum) with 1.5mm holes over both the window and frame can prevent embers touching the glass or timber. This can also be an effective method for reflecting radiant heat.
	Seal gaps around window frames	This is an effective treatment for existing metal window frames. The sealant should be a fire retardant product.
	Sprinklers	Sprinklers may help protect your house but have limitations. You also need to ensure that full coverage of the window and frame is achieved.
	Shutters	Installing shutters over both the window and frame will protect windows from cracking from flying embers.

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Target Area	Treatment Options	Comment
Doors: Open and unscreened doors pose an extreme risk. Embers lodging on combustible door sills and gaps around door frames pose a high risk.	Non-combustible door sill	By replacing combustible door sills with a non-combustible product will reduce the chance of an ember igniting.
	Screened doors	Installing metal screen doors over timber doors will reduce the chance of an ember igniting the door.
	Seal gaps around door frames	If the door is non-combustible then sealing the gaps around the door will prevent embers from penetrating into your home.
	Sprinklers	Sprinklers may help protect your house but have limitations. You also need to ensure full coverage of the door and frame.
Decks: Embers lodging on decks pose a very high risk of ignition	Non-combustible decking materials	Non-combustible decking material won't burn. Use concrete stumps, metal framing and fire retardant treated timber.
	Separation from the dwelling to prevent fire spread	If the deck is built with combustible material, non-combustible material should be placed between the deck and the house. This will reduce the possibility of the fire spread occurring between the deck and the house.
	Construct with gaps between decking materials	Leaving gaps between the decking timbers will allow most embers to fall through. However, there is still a possibility of embers igniting at timber junction points. Ensure there is no fuel under the decking and that you have access to put out any spot fires underneath.
	Sprinklers	Sprinklers may help protect your house but have limitations. You also need to ensure that full coverage of the decking achieved.

New standard for the construction of houses in response to bushfire risk

Following the 2009 bushfires the Victorian Government brought forward the introduction of the new Australian Standard AS3959-2009 – Design and construction of buildings in bushfire prone areas. This new standard will improve the defendability and resilience of homes at risk of bushfire.

The new building standard currently applies to all new homes to be built in Victoria.

New buildings across Victoria must now be assessed for bushfire attack level (BAL) rating. The BAL is determined by a number of factors including aspect, slope and the proximity and type of vegetation at the site.

Information about the Australian Standard is available from the Building Commission website www.buildingcommission.com.au

For more information about the construction of new homes or the modification of existing homes please:

- Contact your local council planning or building department for further information.
- See the CFA publication, Building In Wildfire Management Overlay Applicant's Kit (2007). It is a guide to obtaining the necessary approvals. The Applicant's Kit is available on the CFA website www.cfa.vic.gov.au

Personal safety

Choosing to actively defend your property involves the risk of physical injury and death. On days of Severe or Extreme fire danger, if your plan is to stay to actively defend then you must be ready to act and respond to bushfire.

The safest option is to leave the night before predicted days of Code Red (catastrophic) fire danger and not remain at your property.

If you choose to stay with your property during a fire and actively defend you must plan for your survival.

Radiant heat – a major killer in a bushfire

- Bushfires produce enormous amounts of radiant heat
- This heat travels in straight lines, radiating outward from a bushfire well ahead of flames
- Radiant heat is the same warmth you feel from a campfire, a radiator, heater or the flame from a stovetop gas cooker but could be up to 50,000 times more intense in a major bushfire
- Without protection, exposure to radiant heat can lead to heat stress, heat exhaustion, heat stroke and death.

Protection from radiant heat

- The best protection from radiant heat is distance – double the distance between you and the fire and the radiant heat will be reduced by four times
- Radiant heat can be blocked by a solid object such as a concrete wall or a building that creates a barrier between you and the bushfire
- In the past, people have died without flames reaching them as they were not wearing appropriate protective clothing. You need to cover all exposed skin. Protective clothing will provide a type of barrier between your skin and the heat.

Staying to defend your property during a bushfire means you will be exposed to radiant heat. As the fire front moves closer to your house radiant heat levels will become extreme. It will become too hot to remain outside and you will need go

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inside your house. Your house may provide a barrier to the radiant heat as the bushfire passes if appropriately built and prepared. You must remain on alert and continue to look out for any burning embers landing inside your house.

Preventing heat stress and dehydration

Heat stress occurs when the body is exposed to too much heat. During a bushfire you must protect yourself from radiant heat and keep hydrated to avoid heat stress.

Dehydration can lead to mental confusion and you will be unable to think clearly. You must have drinking water set aside and you must drink regularly.



Drink water regularly

Consider the following to prevent heat stress on days of high bushfire risk:

- Drink plenty of water
- Avoid alcohol and fizzy drinks as they increase dehydration
- Keep cool by splashing your face with cool water
- Move in and out of the shade and the house where possible

- Wear light weight, loose-fitting clothing made of natural fibres.

The Department of Human Services has a range of fact sheet information on their website at www.dhs.vic.gov.au/emergency

Safety in the car

Cars are a very dangerous place to be during a bushfire as they offer very little protection from radiant heat.

Even with the best preparations and plans it is possible you may get caught on the road or you may get caught while travelling to work or on holidays. This is a very dangerous situation. To increase your protection from radiant heat if caught in your car:

- Park behind a solid structure to block as much radiant heat as possible. If this is not possible, then pull over to the side of the road into a clear area, well away from vegetation that may ignite
- Wind up your car windows, close the vents, put on your hazard lights and headlights, leave the engine running and air conditioning on recirculate
- Get down as low as possible below window level
- Cover up with a woollen blanket until the fire front passes. If you have water, drink it
- Get out of the car once the fire has gone.

Do not return to your home during a bushfire

Some people attempt to return to their homes during a bushfire to rescue family members, to gather pets or other valuables, or to defend their property. This is extremely unsafe and could prove fatal.

Experiencing a bushfire

Experiencing a bushfire can be frightening and stressful. Understanding what to expect and planning for what you will do will help you to cope during a bushfire. But remember: the safest way to survive bushfire is to be well away from the threat.

How bushfires spread

A bushfire spreads in three ways:

- Burning embers – when embers land on leaves, twigs or grass, they can start small fires called spot fires. If left unchecked, these fires smoulder, grow and spread
- Radiant heat – sufficient radiant heat can heat fuels in front of the fire until they ignite and burn
- Direct flame contact – flames move forward and continue to ignite dry materials ahead of the fire.

How houses are set alight

Houses and buildings can be set alight by:

- Embers carried by the wind
- Radiant heat from the fire
- Flames directly touching the house.

How embers can ignite houses

Research consistently shows that ember attack is the main way houses are set alight during bushfires. Ember attack occurs when small burning twigs and leaves carried by the wind land on a house. It can happen during all stages of a bushfire: before, during and after the fire front passes. Places where debris accumulates are a good indicator of where embers may land and start small fires. If left unchecked, these fires can destroy homes.

Staying to defend your property will involve constant patrolling and extinguishing of embers, sometimes for many days.



Embers can ignite houses

How radiant heat and direct flame contact can ignite a house

Research has shown that radiant heat has an increased chance of igniting combustible timber on a building when a lot of fuel such as forest, overgrown garden or other structures burn quite close to it. Creating and maintaining a defensible space will reduce the likelihood of this occurring.

Radiant heat can ignite exposed surfaces without direct flame or ember contact and can crack or break windows, allowing embers to enter a building. Plastics such as wall cladding can distort or melt, exposing timber framing.

Radiant heat can pass through glass so it is important to protect all windows and ensure that you stay away from windows as the fire front passes.

Radiant heat is extremely dangerous to people if they are not protected by a solid object.

The distance between the fire and the house will determine how much direct flame contact and/or radiant heat the house is subjected to. If the distance from the fire is doubled, the radiant heat load on the building can be reduced up to four times.

Prepare and actively defend

The chance of direct flame contacting a house is increased by the presence of fuel up to the house. It is also increased when winds bend the flames closer toward the ground. The length of time that direct flame contact and/or radiant heat lasts, depends on how much fuel there is to burn and how quickly this burns.

What you can expect to happen during a bushfire

- Spot fires moving ahead of the main fire
- Lots of smoke and burning embers landing ahead of the fire and for many hours afterwards, making it hard to know where the fire front is
- Smoke, heat, noise and possibly darkness – bushfires are very loud, threatening and scary
- Power could be cut off or will be disrupted by the fire
- Mains water pressure could fail as other residents and firetrucks access water
- Telephone lines could be cut by falling trees and mobile coverage can quickly become congested. Loss of power will prevent cordless phones from working
- Road travel will be extremely dangerous as visibility will be low, fallen branches and power lines may block roads and there will be many emergency vehicles on the road.

Possible emotional and physical effects from bushfire

- Disorientation and confusion from the wind, smoke and heat
- Difficulty breathing, particularly for people with respiratory conditions
- Fear about what might happen – remember how you planned to prevent it and concentrate on what needs to be done
- Thirst and hunger – look after yourself – drink before you are thirsty and eat before you are hungry

- Fatigue – don't work till you drop, take regular breaks
- Panic – remember your plan and don't take risks.

What fire warnings can I expect?

Fires start without warning and can threaten lives and properties within minutes so you may not always receive an official warning.

While CFA will do its best to provide residents with warnings, not all townships or suburbs may be mentioned in a warning. It may instead cover a broader area.

You need to remain alert, monitor the outside environment for signs of fire and actively seek information by listening to ABC and local radio. You can also check CFA's website www.cfa.vic.gov.au or call the Victorian Bushfire Information Line (VBIL) on 1800 240 667.



Monitor the outside environment

Have a local map book handy to identify where fires may be burning in relation to you.

- Have a battery-powered radio, in case power goes out
- Have extra batteries for the radio
- Have the VBIL phone number stored in your phone.

There are three types of alert messages:

- **Emergency Warning** – you are in danger and need to take action immediately. You will be impacted by fire. This message will usually be preceded by an emergency warning signal broadcast over the radio.
- **Watch and Act** – a fire is approaching you, conditions are changing; you need to start taking action now to protect you life and your family.
- **Advice** – a fire has started – there is no immediate danger; general information to keep you up-to-date with developments.

It is always safer to leave before bushfire threatens than to wait for a warning. Not receiving a warning does not necessarily mean there isn't a threat.



Warnings will be broadcast on radio

Your Bushfire Survival Plan

Not everyone thinks clearly in an emergency. A written and well-practised plan will help you remember what needs to be done during a crisis. Your plan needs to outline what to do:

- Before the bushfire season – property preparation
- During the bushfire season – property maintenance
- On days of Severe, Extreme and Code Red (catastrophic) fire danger – final preparations

- When fire is in your area – your plan of action or response
- As fire approaches and impacts your property – how to protect yourself
- After the fire-recovery for you and your household.

Your plan needs to be flexible and work for you in varying circumstances. Make sure everyone in the household knows the plan and what their roles are. You will also need to consider a range of alternative plans.

Back-up your plans – your plan B

Having alternative plans detailing what you will do if parts of your Bushfire Survival Plan fail is very important. This will need to include a plan of what to do if:

- Your pump or other equipment fails
- Your house catches fire and you need somewhere else to shelter
- You injure yourself and need somewhere to shelter safely.

Leaving when the bushfire has arrived is extremely dangerous and can be deadly. Therefore you must consider what your safest options are should you be unable to stay in your house.

Consider:

- Are there any other structures on your property that could provide shelter if needed
- Do any of your neighbours have a well-prepared house you can use if you need to? Identify the safer houses in your street / area now so that you know where to go to if you find yourself caught out by a bushfire
- As a last resort, there may be a Neighbourhood Safer Place designated in your area. Check with your local council if there is one designated in your area.

Prepare and actively defend

You need to reassess your decision to defend your property the morning of Severe and Extreme fire danger days. Always consider if your circumstances have changed. On days of Code Red (catastrophic) fire danger the safest option is to leave the night before, or early in the morning. Do not wait until there is fire in the area to make the decision. Leaving late when fire is close to your house is extremely dangerous. Do not expect a firetruck.

You need to have a plan to leave early that includes:

- Where you will go
- How you will get there
- What you will take
- What you will do with your pets.

See *Leaving Early* in this Kit for more information.



Have a leave early plan

How will your Bushfire Survival Plan change if it's a weekday, a weekend or a public holiday?

Think about who will be at home if a bushfire threat occurs on a weekday, a weekend or a public holiday. How will this impact on your ability to put your Bushfire Survival Plan into action? What if your children are at school? Many bushfires start late in the afternoon. What will you do if you have visitors staying with you? Will any family members be away on business or holiday?

If they are away, someone else will need to take up their Bushfire Survival Plan responsibilities.

Who will you tell about your Bushfire Survival Plan?

It is a good idea to share the details of your Bushfire Survival Plan with family, friends and neighbours at the earliest opportunity. Doing so will save everyone a lot of distress when there is a bushfire as they will know that you are prepared for it, and know where to find you.



Share your plan with neighbours

Activating your plan of action

Bushfires can travel extremely fast and impact without warning. It is vital that you are ready to act as soon as you learn of fire in your area. Many people have been caught out thinking they had more time to act before the bushfire impacted. Filling tanks and filling gutters with water takes time. Plan for the fact they you may have 30 minutes or less before fire impacts. What can you do in 30 minutes or less?

On days of Severe or Extreme fire danger

CFA advises residents staying to defend to carry out a range of important preparations the morning of or night before days of Severe or Extreme fire danger. This will help you put your plan into action when the bushfire approaches.

Waiting until you are alerted to fire in the area to put these things in place is extremely risky:

- Fill tanks or portable tanks, knapsacks and other water points
- Fill water points inside such as the bath tub and laundry trough
- Connect and roll out fire hoses
- Organise enough drinking water for all household members
- Remove all flammable items from around the house including door mats, outdoor furniture and pot plants
- Remove all dead leaves and other fine fuels from around the house
- Ensure gutters are clean and are ready to be filled with water. Put gutter plugs in place. You can even fill your gutters with water
- Check your protective clothing kits and place in an easily accessible location
- Bring small pets inside
- Move larger animals and stock to safer paddocks or yards
- Check the pump/s are working and that you have adequate fuel supplies
- Set up woollen blankets and wet towels in an easily accessible location
- Move portable gas cylinders away from the house
- Move indoor furniture away from the windows
- Set up ladders in place outside and inside
- Set up torches and batteries in an easily accessible location
- Move cars, tractors, caravans and trailers away from the house.



Fill tanks or portable tanks



Move door mats



Put gutter plugs in place

When fire is in your area – your trigger

On Severe or Extreme fire weather days, if you see smoke you should consider it a risk to your life and use it as a trigger to activate your plan of action. Never presume that a fire will be put out before it reaches your property. If you see smoke always assume there is a fire that can threaten you and your home. It is safer to be cautious than to be slow to react.

Prepare and actively defend



Consider smoke a threat

You may receive a warning of a fire in your surrounding area but you cannot rely on a warning as your only trigger to activate your plan of action. You need to be aware that a warning might not provide you with sufficient time to act effectively.

Knowing when fire is in your area requires you to be vigilant in monitoring your environment for signs of fire and seeking information from official sources.

Information and warnings about fires will be broadcast on ABC radio and displayed on the CFA website. It is your responsibility to pay attention to what is happening around you.

Fire agencies will do their best to provide information about fires, but you cannot rely on information about specific threats.

When fire services broadcast information about fires they may not mention your particular township or suburb. Know your general area so you can recognise when fires may be close to you. Have a local map book handy to identify where bushfires may be burning in relation to you.

What will you do once alerted to a bushfire in your area?

As soon as you are alerted to a fire in your area you must put on your protective clothing and ensure everyone in the household has the correct clothing on.

It is recommended that you:

- Switch off mains gas supply
- Double-check all gas cylinders are securely stored in an upright position with relief valves pointing away from the house
- Fill gutters if not already done
- Wet down around the house
- Close all windows and doors and use wet towels and blankets to fill gaps under doors
- Turn off the air conditioner
- Close window shutters
- Continue to listen for updates on ABC or local radio
- Patrol for embers and extinguish them on landing
- Shelter inside as the fire front passes.



Check gas cylinders



Wet down the house

As fire approaches and impacts

As the bushfire approaches there may be many embers falling and you will need to extinguish them as best you can. If you have a sprinkler system - turn it on. Bring inside any equipment that may melt if left outside.

You will need to go inside to protect yourself from radiant heat when it gets too hot. Your own body will tell you when it is too hot to remain outside. The skin on your ears and hands are the best indicators as they are highly sensitive areas, if they start to feel extremely hot – get inside.

Once inside you need to actively patrol inside the house for embers that may have entered. Check in the roof space and in every room.

You may need to remain inside for 20-30 minutes as the fire front passes, in some circumstances it may be even longer. As the fire front passes it may be very noisy – some people describe a fire front passing as a freight train going past. The sky will turn black and it will be like night time.

If your house catches fire

If your house catches fire from the outside monitor from the inside as you may be able to extinguish it when you move back outside. However, if the fire moves inside you will be in a very dangerous

situation. If this happens you must:

- Close the door to the room that is on fire
- Move to the other end of the house closing all the doors behind you
- Make sure that you have a point of exit in every room you move to
- Do not get trapped in a room without a way out
- Move outside onto burnt ground as soon as you can
- If it is still too hot outside you will need to seek shelter in another building or structure.

After the fire

Even though the fire front has passed the danger is not over yet. You need to continue to wear your protective clothing and stay hydrated. Embers will continue to fall on and around your house for many hours. It is advised that you check for burning embers:

- Inside the roof
- Under the floor boards
- Under the house
- On verandas and decking
- Around window sills and doors
- In garden beds and mulch
- In wood heaps
- In sheds.



Extinguish all spot fires

Large trees may continue to burn for many hours and will be very difficult to extinguish. Focus on extinguishing embers that may impact on your house.

Prepare and actively defend

Call friends and family to let them know you are safe.

The Department of Primary Industries (DPI) will assist with assessing injured stock and losses to farm assets. Call DPI on 136 186 or visit the website www.dpi.vic.gov.au for more information.

Emotional wellbeing

In emergencies, people can use up more emotional energy than they realise. They put themselves in a survival state to deal with the problems they face. This state is called a state of stress.

The longer the emergency, the stronger the symptoms of stress are likely to be. It is also important to understand stress is normal and natural, but needs to be recognised so it does not cause further problems.

After the crisis has passed a few guiding principles will set up a good recovery.

- Concentrate on restoring safety, routine and familiarity as soon as possible
- Try to relax, calm down and come out of adrenalin mode – only when we are out of the arousal state can we get in touch with what we need
- Get together with loved ones, friends or those who you trust, restore the connections to other people and community
- Talk about what you have been through. People in the same place at the same time don't have the same experience – everyone sees it in their own way; we can't understand other's reactions unless we know what they went through
- Talk to children and explain what people feel, be prepared for them to go back to earlier patterns of behaviour during this recovery period

- Find out about reactions people experience and the period of time people take to recover
- Plan for quality time, rest, recreation and doing enjoyable things. This is how we restore the lost energy
- Keep an eye on each other – we are all different and we can help people who feel overwhelmed or confused
- If you or others continue to feel bad, can't move on, feel numb or detached, continue to be anxious, lack motivation, then get more information or talk to recovery workers who can help you understand where the recovery process is stuck and suggest strategies for moving on.

Animals and bushfire

What will you do with your pets?

The safest place for your pets is to relocate them to somewhere with little or no bushfire risk, well away from a potential bushfire area. Arrange to agist, kennel or board pets with family, friends or a commercial facility.

If you are unable to or choose not to relocate your pets you need to move them inside the house well before fire impacts. Your pets should shelter from radiant heat with you as the fire front passes.

Animals suffer from heat stress the same as humans do so ensure your pets have access to plenty of water.

Horses cope better than most other animals

Larger animals such as goats and horses are best placed in a paddock that has been well grazed. Horses should not be locked up in small areas or stables. Never turn them out on the road – they will be in danger from traffic and the fire.

- On high fire risk days move horses to an open paddock with little vegetation so they can move freely. Horses are good at moving themselves to safe open areas and suffer minimal burns if left to do so
- The 'safe' area should be as large as possible and may be a closely grazed paddock or be created from several paddocks by opening gates. Ideally it should have a dam with clear access
- An alternative 'safe' area might be a large well-fenced ménage, provided there are no trees or buildings nearby that will burn readily. Consider slashing a paddock to create a 'safe' area
- All equipment including rugs, halters and fly veils should be removed from horses, as the plastic may melt and buckles may burn the animal
- If you are unable to identify a 'safe' paddock for your horse, agist it out of the area, or make arrangements to temporarily relocate your horse on high fire risk days. Options may include local showgrounds, sale yards, parks, racetracks or pony club grounds.

Managing livestock during a fire

Sheep and cattle should also be placed in paddocks with low fuel loads. Identify the safest areas on your property and use these paddocks when the weather is likely to be hot, dry and windy.

- On days of extreme fire risk stock should be left in the lower risk areas
- Listen to weather forecasts and observe your own environment to help you decide when to put your plan into action
- Safe areas include paddocks with green summer crops, bare paddocks with no dry feed, or a ploughed paddock. Firebreaks are an imperative. They may be a bare laneway or a ploughed break

- Stock can be held in yards with bare or ploughed surrounds. The surrounds can be wetted in advance, however the yards must be well defended after the fire front passes (if safe to do so)
- For more information, refer to 'On the land' at www.cfa.vic.gov.au



Put stock in well-grazed paddocks

CFA Bushfire Education Programs

Each summer CFA runs education programs to inform residents of their need to be prepared and plan for their safety. These are delivered, free of charge, in high bushfire risk areas. The two programs are Fire Ready Victoria and Community Fireguard.

Fire Ready Victoria

Fire Ready Victoria meetings are held in local halls or on street corners in bushfire-prone areas from October until the end of the fire season. Meetings take around 1.5 hours and provide information on local risk, fire behaviour, personal survival, house survival and what actions you can undertake to prepare yourself and your property.

A calendar of activities showing meeting locations is advertised to residents through flyers, local newspapers, sign boards and on CFA's website.

Prepare and actively defend

Community Fireguard

Community Fireguard encourages residents to work together to improve bushfire safety. Community Fireguard groups are formed when residents of a local area choose to participate in the program. Groups are made up of

neighbours or residents living in a shared bushfire risk environment.

For more information about CFA's community education programs, contact your nearest CFA Area office or visit www.cfa.vic.gov.au

Summary

- Victorian legislation allows residents to stay with their home during a bushfire, however, it involves risk, including the risk of death
- On Code Red (catastrophic) fire danger rated days the safest option is to leave your property the night before or early in the morning
- Defending is not an option for children, the elderly or those with vulnerabilities
- There are four important factors to consider when choosing to stay and actively defend; Personal capacity; Property Preparation; Recommended equipment and resources; and Your homes structure and building design. Do not expect a firetruck.
- You must be physically and mentally fit to actively defend and it is best done with two or more capable adults
- You must only consider active defence if you can create and maintain the recommended minimum defensible space requirements
- By managing your vegetation to the required distance and creating defensible space you can significantly reduce the radiant heat and direct flame contact to your house
- CFA recommends that residents planning on staying to actively defend have the following resources and equipment: minimum 10,000 litres of water; firefighting pump protected from radiant heat; firefighting hoses; protective clothing and adequate window protection, preferable window shutters
- A range of other equipment such as buckets, mops, torch, battery powered radio, gutter plugs and ladders are also needed to help defend your property from bushfire
- To reduce the impact of embers on your house there are a number of maintenance activities and improvements to the home that can be made
- Sealing gaps around the house where embers can enter and removing anything flammable from around the house will reduce the impact of embers on your house
- Radiant heat is a major killer in a bushfire and you must protect yourself from radiant heat
- Experiencing a bushfire can be frightening and stressful
- Your Bushfire Survival Plan must contain your preparations pre-season and on a day you may expect a bushfire plus your plan of action once fire approaches
- Bushfires can travel very fast. You will need to make a range of preparations on the morning or night before a predicted Severe or Extreme fire danger day
- You will need to know your trigger to activate your plan of action when you know fire is in the area
- As soon as you know fire is in the area put on your protective clothing
- Remember to shelter inside from radiant heat as the fire front passes
- You need to have a plan for your animals during a bushfire.

PREPARE. ACT. SURVIVE.

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