Winter Burning Guide

Controlled burns in winter may help protect your home this summer

To help protect your home from summer bushfires, DFES recommends you manage the vegetation on your bush block

Government of **Western Australia**
Department of **Fire & Emergency Services**

DFES
Department of Fire & Emergency Services

Winter Burning Guide

Environmental Protection Branch, 2015
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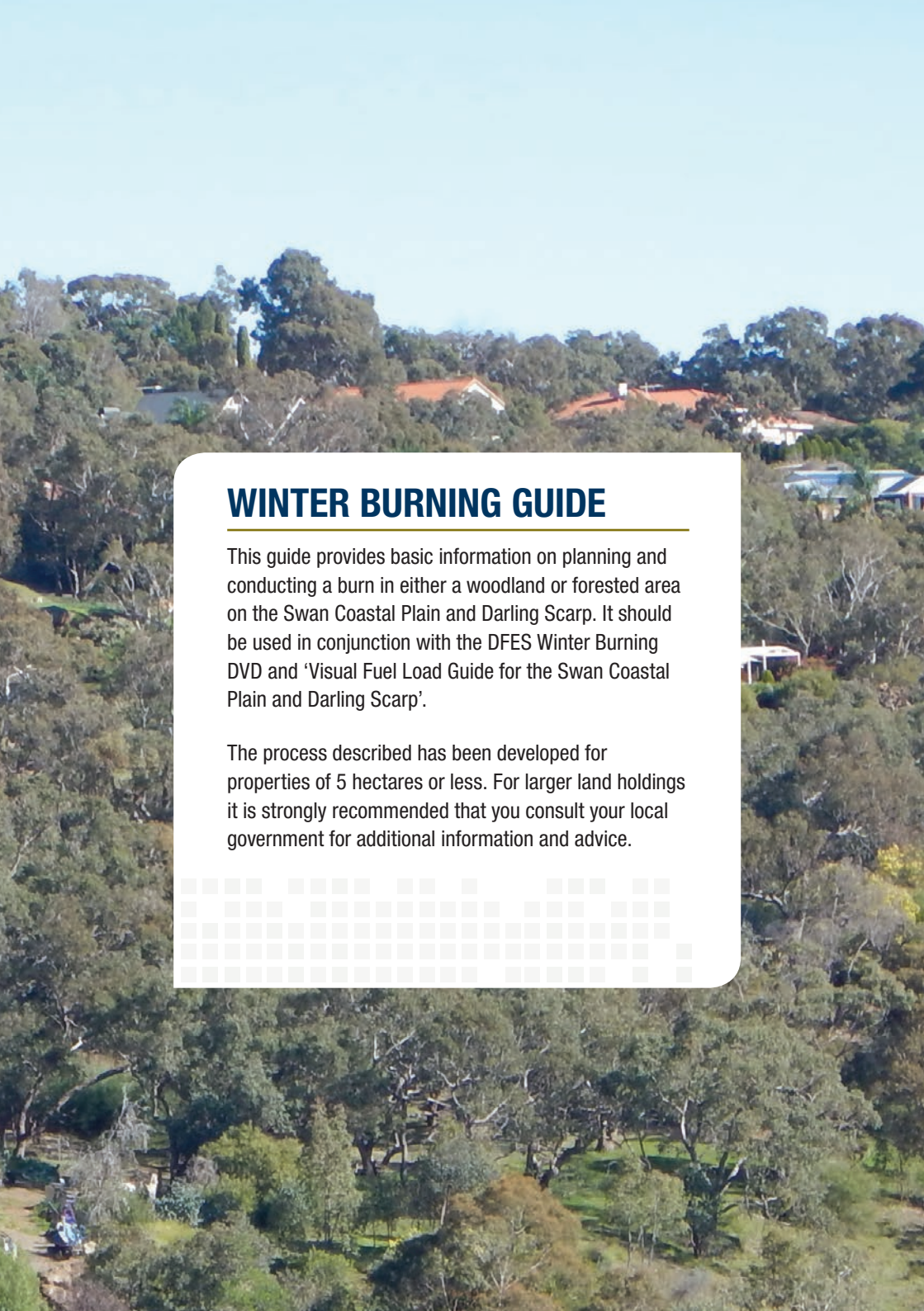


WINTER BURNING GUIDE

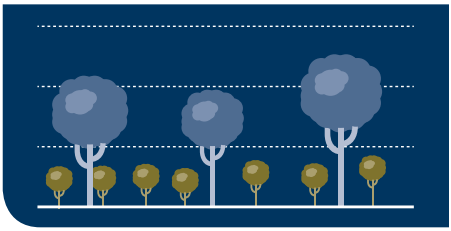
This guide provides basic information on planning and conducting a burn in either a woodland or forested area on the Swan Coastal Plain and Darling Scarp. It should be used in conjunction with the DFES Winter Burning DVD and 'Visual Fuel Load Guide for the Swan Coastal Plain and Darling Scarp'.

The process described has been developed for properties of 5 hectares or less. For larger land holdings it is strongly recommended that you consult your local government for additional information and advice.

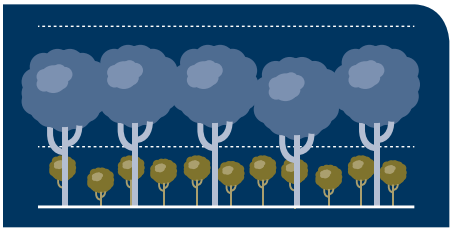
FORESTS AND WOODLANDS OF THE SWAN COASTAL PLAIN AND DARLING SCARP

It is important to note that the primary difference between forests and woodland is the percentage of tree crown cover. Where tree crown cover exceeds 30% the area is a forest and where tree crown cover is present but less than 30% cover an area is a woodland[1].

The difference in tree crown cover is significant, as it will influence the quantity and distribution of leaf litter accumulation. Generally, at less than 30% tree crown cover there will not be sufficient leaf fall to produce a consistent coverage of leaf litter on the ground, and there is likely to be a greater proportion of scrub vegetation compared to forests. Woodlands are more likely to have discontinuous fuels and may require more ignition points than forests.



WOODLAND



FOREST

IBRA regions represent a landscape based approach to classifying the land surface, including attributes of climate, geomorphology, landform, lithology, and characteristic flora and fauna[2]. This guide is applicable to the Swan Coastal Plain IBRA region and the Darling Range within the Northern Jarrah Forest IBRA sub-region.

1 Australian Surveying and Land Information Group. 1990. *Atlas of Australian Resources* (Vol. 6, Vegetation); Australian Surveying and Land Information Group: Canberra, Australia.

2 Department of the Environment. 2012. *Interim Biogeographic Regionalisation for Australia* (Regions and Subregions) v. 7 (IBRA).

REDUCING FUEL

Reducing vegetation (fuel) around your property may help protect your home from bushfire this summer.

The intensity (heat) and spread of a bushfire is determined by the amount of fuel available to burn. If you reduce the amount of fuel around your property, a bushfire will burn more slowly and will generate less heat. This will reduce the risk to your home and assist firefighters in extinguishing a fire.

There are a number of ways you can reduce fuel levels. These include:

- Hand clearing (raking and removing leaf litter).
- Slashing (using machinery to remove vegetation).
- Chemicals (using herbicides to remove vegetation).
- Burning.

Fire is a natural part of the Australian environment and therefore burning is a popular and efficient method of reducing fuel.

The winter months are the perfect time for you to use fire to reduce fuel on your property. The weather conditions in winter will assist you in safely and effectively conducting your burn.

PLANNING TO BURN? WHAT NOW?

If you are planning to burn, the following five steps will assist you in preparing and conducting your burn.

1. PLAN A FIVE TO TEN YEAR ROTATION FOR YOUR WINTER BURNING

Each year burn up to 1/5 of the available area by dividing the bushland on your property into at least 5 areas. Use existing breaks such as paths, driveway, cleared areas, creeks, or rock outcrops to assist you in dividing your property.

Each area should be between 50m^2 (10m x 5m) and 200m^2 (20m x 10m).

When using fire on your property, it is important to establish and maintain a combination of burnt and unburnt areas.

Burning one small area at a time will ensure that the burns are of a manageable size and intensity, and will reduce the impact on the environment.

2. ASSESS THE FUEL LOAD AND DETERMINE WHICH AREA TO BURN

Use the DFES 'Visual Fuel Load Guide for the Swan Coastal Plain and Darling Scarp' to assess the fuel levels within each area. There are 3 simple steps to measuring the amount of fuel:

a. Find a photograph in the 'Visual Fuel Load Guide…' that best reflects the amount of scrub vegetation in each area.

b. If there is leaf litter on the ground (leaves, twigs, bark etc.), measure the depth of the litter with a ruler (in millimeters). Convert the leaf litter depth to tonnes per hectare using the following table:

Litter Depth (mm)	5	10	15	20	25	30	35	40	45	50	55
Jarrah t/ha[3]	2.7	5.3	8	11	13	16	19	21	24	27	29
Banksia t/ha[4]	3.2	5.8	8.4	11	14	16	19	21	24	27	29

c. Add the scrub fuel (from the photograph) and the litter fuel (t/ha) to get an overall fuel measurement.

The area with the highest amount of fuel should be burnt in the first year. Generally, you should aim to reduce the fuel around your property to less than 8 t/ha.

3 Sneeuwjagt R. J. and G. B. Peet, 1985. *Forest Fire Behaviour Tables for Western Australia*. third ed. Department of Conservation and Land Management, Perth, WA.

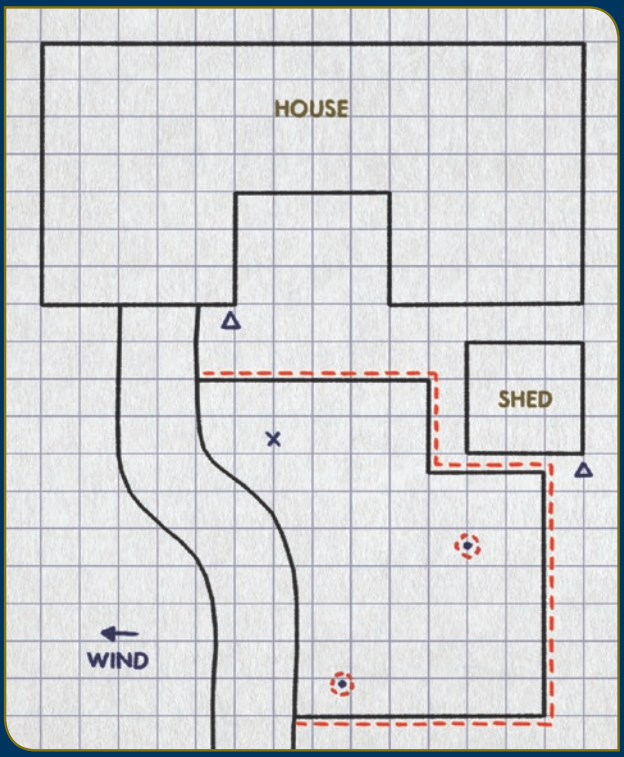
4 Environmental Protection Branch. 2015. *Fuel Loads in Banksia Woodlands*. Department of Fire and Emergency Services, Perth, WA.

3. SKETCH THE BURN SITE

Neatly sketch the area you have decided to burn. Include buildings, driveways, fences, large trees and water sources.

Include firebreaks that need to be constructed. Firebreaks are areas of bare earth or non combustible material (e.g. a raked path, a road or driveway) that separate the burn area from buildings, sheds, fences, and unburnt areas. You will need a firebreak of at least one metre in width around the perimeter of your burn area. You may also decide to construct firebreaks within the burn area around specific plants or assets that you wish to protect from fire (e.g. a rare orchid, fibrous barked trees, a shed or a fence).

The sketch will assist you in preparing the area for burning. An example sketch is provided below.



4. PREPARE THE AREA

Using your sketch as a guide, construct the firebreaks using a rake, these should be at least one metre in width.

Locate and test water sources to ensure they are adequate. Hoses should be long enough to reach around the perimeter of the burn area. If your hose is not long enough, ensure you have a number of buckets available.

5. DETERMINE WHEN TO BURN

Check with your Local Government for information on when you can burn in your area. The best time to burn in the South West is generally between late June and early September as the weather conditions and the moisture in the vegetation will cause the fire to burn cooler and for a shorter period of time. Large tree limbs, stumps and logs are unlikely to catch fire during this time.

Based on advice from your Local Government and weather information from the Bureau of Meteorology website (www.bom.gov.au), determine a possible date for your burn.

BEFORE YOU BURN

Contact your neighbours at least four days prior to burning to let them know your plan. You may be able to help each other by burning together.

ON THE DAY OF THE BURN

- Check the wind forecast on the Bureau of Meteorology website (www.bom.gov.au). The wind needs to be between 12 and 19 kilometers per hour. At this speed leaves and twigs will be in constant motion. If there is too little wind, the fire may not burn or smoke may linger. If there is too much wind it may be difficult to control the fire.
- Check the wind direction. This will assist you to predict which direction the fire will burn, and where the smoke will blow.
- Look at the sky and make sure it is clear and not hazy. This is to make sure smoke does not become a problem. Do not burn if the Bureau of Meteorology has issued a haze alert for the day of the burn or the next day.
- Check that it has been between 5 and 10 days since the last time it rained.

Beaufort Scale[5] Description	Average wind speed (km/h)	Estimating speed over land
Calm	less than 1	Calm, smoke rises vertically.
Light Air	1 – 5	Direction of wind shown by smoke drift, but not by wind vanes.
Light breeze	6 – 11	Wind felt on face; leaves rustle; ordinary wind vane moved by wind.
Gentle breeze	12 – 19	Leaves and small twigs in constant motion; wind extends light flag.
Moderate breeze	20 – 28	Raises dust and loose paper; small branches moved.

5 Adapted from: Simpson, G. C., 1926. *The velocity equivalents of the Beaufort Scale. Air Ministry Professional Notes*, No. 44. London: Meteorological Office.

UNDERTAKING THE BURN

- Wear appropriate protective clothing. This includes cotton or wool long sleeve shirt, trousers and socks, leather or cotton gloves and wide brimmed hat, eye protection and leather boots.
- Light the fire with a single ignition point after 3:00pm.
- The ignition point should be within 5 metres from a firebreak with the wind blowing towards the firebreak.
- If the fire does not look like it will burn the entire area, you may wish to ignite another point 15–20 metres away from the first one (within 5 metres downwind of a firebreak).
- Have a hose or another source of water on standby in case you need to put the fire out.
- The fire should burn slowly and self extinguish by 6:00– 6:30pm.
- When the flames have gone out, use a metal rake to turn over the smouldering vegetation. This will help to fully extinguish the fire. Water can also be used to put out any smouldering areas.
- Monitor the fire until it is extinguished.
- At the end of the burn there may be some patches of unburnt vegetation and leaf litter on the ground.

THE DAY AFTER THE BURN

- Check the burn area to make sure the fire has not reignited. There should be no smoke, smoldering vegetation or glowing embers.

DAY OF THE BURN CHECKLIST

Have you checked that…..	Yes / No
You have received permission from your Local Government.	
Neighbours have been notified.	
The sky is clear.	
A haze alert has not been issued for today or tomorrow.	
It is between five and ten days since it last rained.	
Winds are between 12 and 19 kilometres per hour.	
It is later than 3:00pm.	

If you have answered yes to all of the above questions, the conditions are suitable for you to burn.

For more advice, consult your Local Government, local Bush Fire Brigades or DFES.

POINTS TO REMEMBER WHEN BURNING

- Light the fire with a single ignition point (monitor the progression of the fire and add a second ignition point if necessary).
- The ignition point must not be more than five metres downwind from a firebreak.
- Have water ready to put the fire out.
- **Do not leave the fire until it has gone out or you have put it out.**