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# FIRE MANAGEMENT OF ROADSIDE VEGETATION



Produced by  
Roadside Conservation Committee  
1992



ROADSIDE CONSERVATION COMMITTEE



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## *CONTENTS*

1. Policy .....	4
2. Preamble .....	5
3. Guidelines for Fire Management on Roadsides .....	6
4. Fire and Plant Ecology .....	6
5. Weeds and Fire Hazard .....	11
6. Fire Breaks and Fuse Breaks .....	13
7. Fire Threat Assessment .....	15
8. Bush Fires Board of W.A. - Addresses .....	17
9. Members of the Roadside Conservation Committee .....	19

The Roadside Conservation Committee acknowledges the contribution made by officers of the Bush Fires Board to the production of these Guidelines

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## ***1. POLICY***

- 1 Roadside burning should not take place without the consent of the managing authority.
- 2 Local Government Authorities should adopt by-laws to control roadside burning.
- 3 Roadside burning should be planned as part of a total Shire/area Fire Management Plan.
- 4 Only one side of a road should be burnt in any one year.
- 5 When designing a Fire Management Plan, the two principles which must be kept in mind are the ecological management of vegetation and the abatement of fire hazard.
- 6 No firebreaks should be permitted unless the width of the roadside vegetation strip is greater than 20m.
- 7 A firebreak on any road reserve should be permitted only when, in the opinion of the road manager, one is necessary for the protection of roadside vegetation. The road manager shall specify the maximum width to which the break may be constructed.
- 8 In the case of any dispute concerning roadside fire management, the Bush Fires Board should be called in to arbitrate.

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## ***2. PREAMBLE***

Fires are a natural component of the Western Australian environment. Most plants have evolved strategies to cope with periodic fires.

Fire management for vegetation conservation involves ensuring that fires do not occur more frequently than the time needed for all plants to reach adequate reproductive capacity. The fire regime should be planned to be as varied as possible to encourage community diversity. It is assumed that, if vegetation health and diversity are maintained, so will animal use of the area.

Use of fire to abate fire hazards should be confined to those areas where distinct hazards, high ignition risks and high values can be identified. In general, these relate to roadsides where native plant species have been replaced by annual weeds and grasses.

### 3. GUIDELINES FOR FIRE MANAGEMENT ON ROADSIDES

#### REDUCE ROADSIDE FIRE HAZARD BY:

A. Minimising weed invasion.

B. Minimising spread of weeds.

Keep soil disturbance (especially by roadworks) to a minimum.

Use mowing or herbicide rather than burning to reduce weed-caused fire hazard.

Manipulate fire frequency and seasonality to encourage native plant growth rather than weeds.

After weed eradication, replant weedy areas with suitable local native plant species.

#### DRAW UP A FIRE MANAGEMENT PLAN

Plan activities so that they are carried through in the long term.  
In drawing up the plan, keep in mind:

- \* Reduction of fire hazard.
- \* Ecological management of vegetation.

### 4. FIRE AND PLANT ECOLOGY

#### NO TWO FIRES ARE ALIKE!

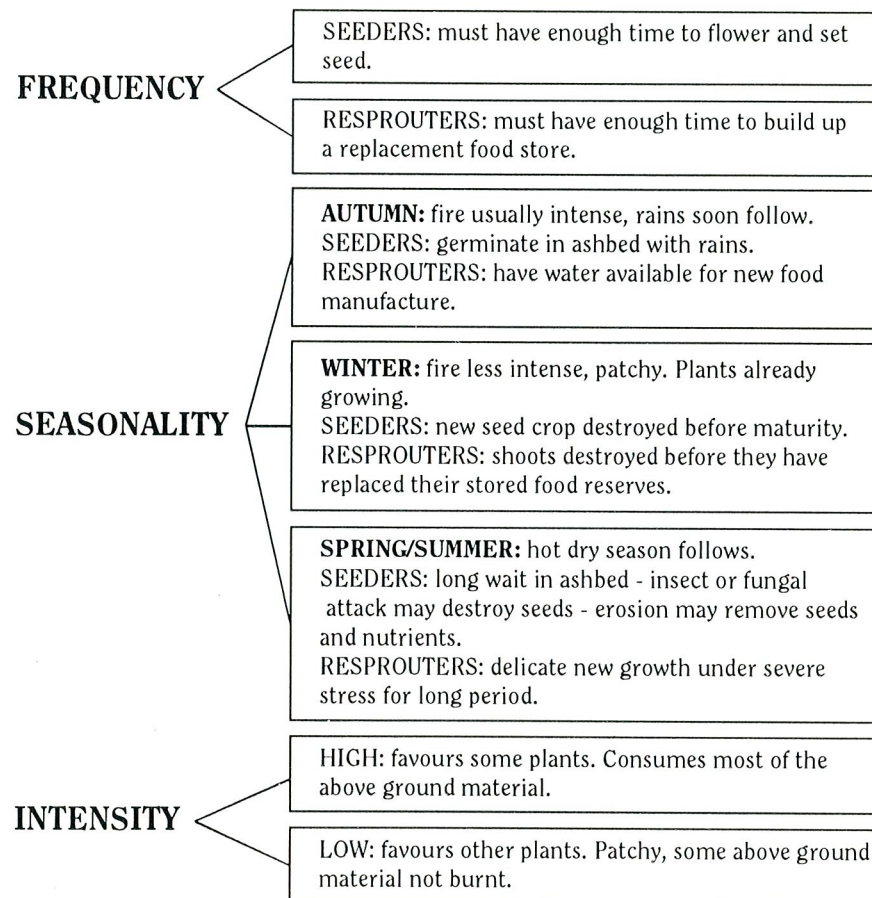
Their effect on plant communities depends on four major factors:-

- \* The frequency of fires.
- \* The seasonality (time of year) in which the fire occurs.
- \* The intensity of the fire.
- \* The distribution (patchiness) of the fire.

### FIRE FREQUENCY.

Plants regenerate after fire in three main ways:-

- A. by seeds ("seeders").
- B. by resprouting ("resprouters").
- C. by both seeds and resprouting.





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## FIRE SEASONALITY.

Long narrow strips of vegetation such as are found on roadsides in farming areas are particularly vulnerable to seasonal stress, and this increases in intensity in lower rainfall areas.

Spring burns subject regenerating vegetation to a long waiting period before the next effective rainfall. Seeds which may have fallen in the ashbed may be destroyed by pests before they can germinate. Wind may erode the bare soil and remove both seeds and ashbed nutrients.

Wind-blown seeds of weeds such as grasses blow onto the bare area from surrounding land.

Spring burning is potentially detrimental to native vegetation on narrow strips such as roadsides, especially in low rainfall areas.

## FIRE INTENSITY.

Fires of different intensity favour regeneration of different plants.

Some plants need an intense fire to open their fruits or crack their seed coats, others respond better to a cool burn. Intense fires may damage or kill mature trees.

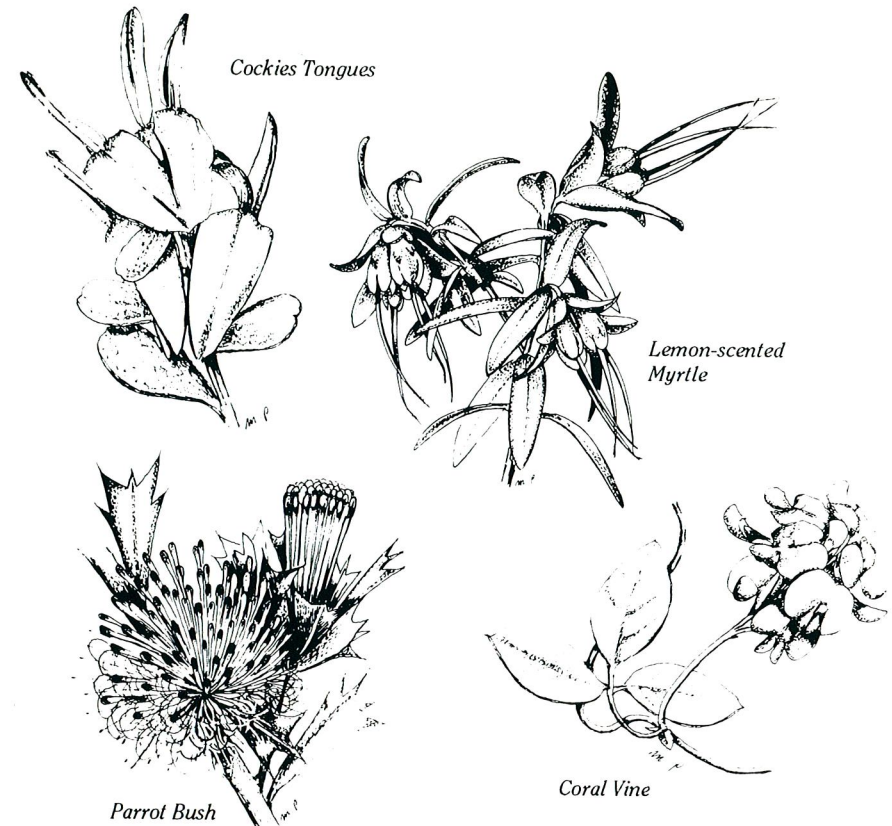
Low intensity fires may leave patches of unburnt material that can be a seed source or an animal refuge.

Conditions for burning must therefore be carefully selected to

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## A. Seeders

If a plant is killed by fire, it will regenerate from seeds stored on the plant or in the soil. To replenish this seed bank, the seedlings must be able to reach maturity, flower and set more seeds.

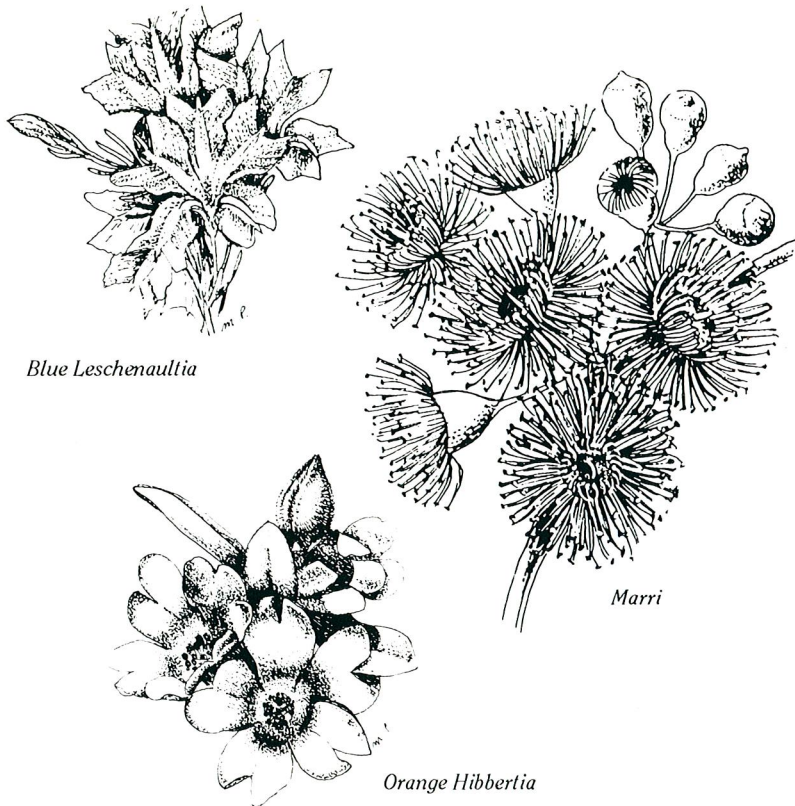


Kangaroo Paws for example, need at least 2 years to produce more seed. Too frequent burning will eliminate them from the site. Other plants need 4 years to begin to produce seed. Tree species such as wandoo may take up to 12 years from the seedling stage to produce enough seed to ensure survival of the population.

## B. Resprouters

After a fire, many native plants shoot again from buds protected beneath their bark or below ground on their rootstocks.

To do this, they use up food reserves stored in roots and stem.



If fires are too frequent, they do not get enough time to build up new food reserves, so each resprouting becomes weaker until eventually the plant dies.

## 5. WEEDS AND FIRE HAZARD

The presence of exotic weeds such as grasses, watsonia or wild turnip increases the roadside fire hazard.

### FLAMMABILITY

Most roadside weeds ignite more easily than do native plant fuels.

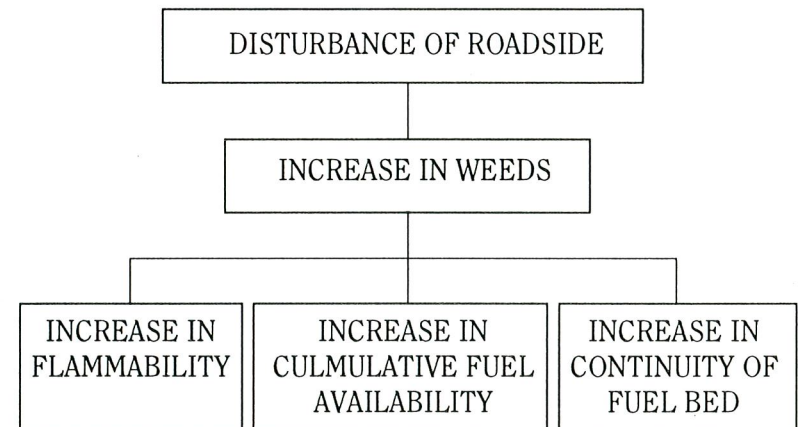
### FUEL AVAILABILITY

Weeds (e.g. wild oats) germinate, grow and die in one year, quickly becoming fuel for a bush fire. Depending on climate and growth rates, native plants take much longer to reach this state.

### CONTINUITY OF FUEL BED

Native plants usually have gaps between them. Weeds produce a continuous fuel bed, permitting a fire to spread quickly.

**Any disturbance of the soil or vegetation on the roadside increases the weed component and so increases the fire hazard of that roadside.**





Weeds such as wild oats, Veldt grass and wild turnip produce copious seed annually, and have the capacity to take over from native plants.

Burning too frequently, at the wrong time of year and at the wrong fire intensity encourages weeds and eventually eliminates native plants.

## 6. FIRE BREAKS

Firebreaks are a form of disturbance which provide excellent sites for weed growth.

Firebreaks should not be permitted on narrow (1 chain or 20m) road reserves.

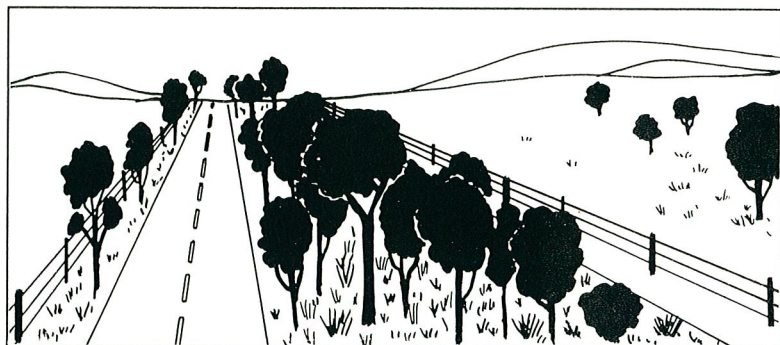


No firebreaks on narrow roadsides.

On wider road reserves when the width of the roadside vegetation strip is greater than 20m and, in the opinion of the road manager, a firebreak is **NECESSARY FOR THE PROTECTION OF THE ROADSIDE VEGETATION**, then one should be authorised.

The road manager may specify the width to which a break may be constructed (normally 3m).



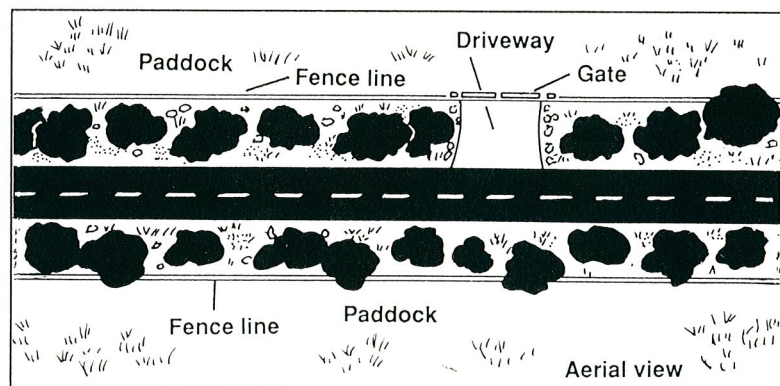


Wide roadsides may have firebreaks

If firebreaks have previously been constructed on narrow road reserves, or very wide breaks constructed elsewhere, the road manager should encourage the landowner to rehabilitate these with local native plant species.

## FUSE BREAKS

Where possible, landowners should be encouraged to maintain property access tracks and driveways free of weeds so that the fire fuse effect of vegetated roadsides is broken.



## 7. FIRE THREAT ASSESSMENT

The presence of flammable material does not constitute a fire threat of itself. A threat only exists when there is something of value nearby, such as a building or a fence, which could be burnt. There must also be a chance of ignition taking place.

Other fire behaviour factors such as rate of fire spread and flammability are important also, as they reflect the difficulty of fire suppression and therefore the potential to cause damage.

Flammability is the most critical factor for defining hazard on roadsides. It will be highest on roadsides covered in wild oats, other grasses and weeds.

Before burning a roadside, question whether it should be done at all. Apply the **"threat test"**.

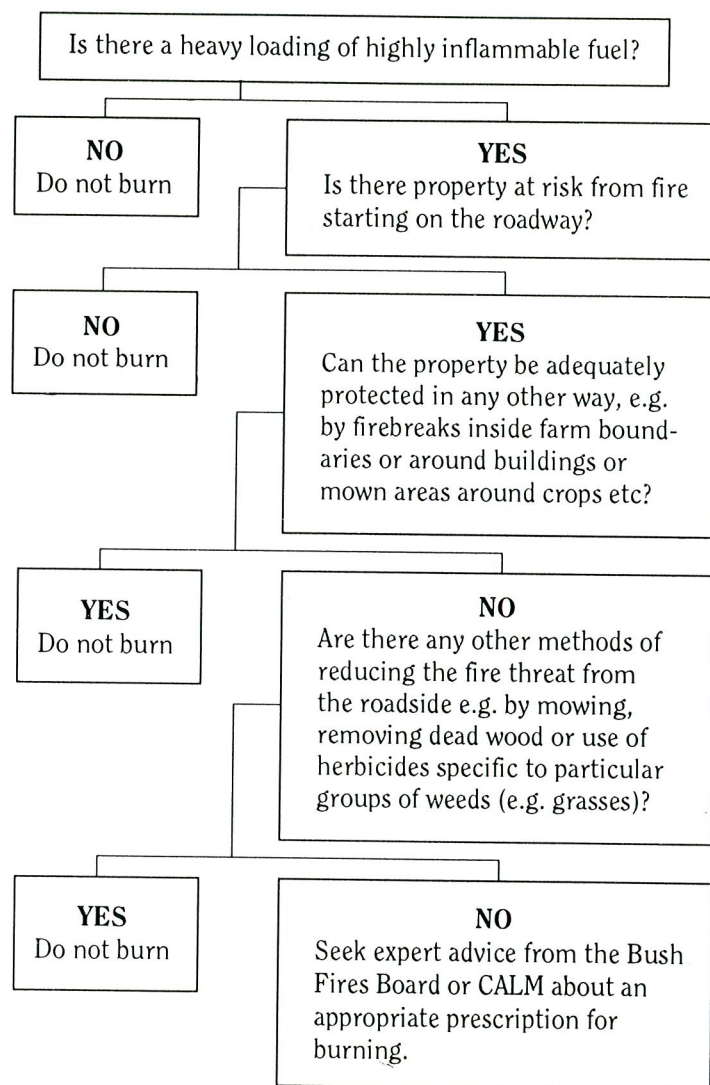
### If a well-vegetated roadside must be burnt:

- ✱ Burn only one side of the road at any one time.
- ✱ Do not burn the opposite side within five years.
- ✱ No single roadside hazard reduction burn should exceed 500m in length.
- ✱ Do not burn contiguous strips within three years.
- ✱ Avoid winter or spring fires on roadsides adjacent to agricultural land.

**IN CASE OF ANY DISPUTES, CALL IN THE BUSH FIRES BOARD DISTRICT LIAISON OFFICER TO ARBITRATE.**

## DOES THE ROADSIDE VEGETATION POSE A FIRE THREAT?

### "THE THREAT TEST"



## 8. BUSH FIRES BOARD OF WA

POSTAL AND PHYSICAL ADDRESS OF COUNTRY OFFICES AS AT 8/5/92.

DISTRICT OFFICE	ADDRESS AND PHONE NUMBER
BFB HEAD OFFICE PO BOX 500 SOUTH PERTH	201 KENT STREET KENSINGTON WA 6151 PHONE (09) 367 0777 FAX (09) 367 4840
ALBANY BFB OFFICE 184 ABERDEEN STREET ALBANY WA 6151	184 ABERDEEN STREET ALBANY WA 6330 PHONE (098) 421 475 FAX (098) 421 476
BUNBURY BFB OFFICE PO BOX 1288 BUNBURY WA 6230	NORTH BOYANUP ROAD PICTON WA 6229 PHONE (097) 254 355 FAX (097) 254 230
ESPERANCE BFB OFFICE PO BOX 40 ESPERANCE WA 6450	92 DEMPSTER STREET ESPERANCE WA 6450 PHONE (090) 714 096 FAX (090) 713 657
GERALDTON BFB OFFICE PO BOX 284 GERALDTON WA 6530	DPUD - GERALDTON PHONE (099) 210 760 FAX (099) 218 112
KUNUNURRA BFB OFFICE PO BOX 1048 KUNUNURRA WA 6743	CNR MESSMATE WAY & KONKERBERRY STREET KUNUNURRA WA 6743 PHONE (091) 680 258 FAX (091) 681 048

continued on page 18



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continued from page 17

DISTRICT OFFICE	ADDRESS AND PHONE NUMBER
MANJIMUP BFB OFFICE C/- PO BOX 93 MANJIMUP WA 6258	SHOP 2 KARRI ARCADE MANJIMUP WA 6258 PHONE (097) 711 877 FAX (097) 711 877
MOORA BFB OFFICE (NO PO BOX NO.)	68 PADBURY STREET MOORA WA 6510 PHONE (096) 511 055 FAX (096) 511 627
NARROGIN BFB OFFICE PO BOX 544 NARROGIN WA 6312	CENTRAL GOVERNMENT BUILDING PARK STREET NARROGIN WA 6312 PHONE (098) 810 107 (098) 810 108 FAX (098) 812 392
NORTHAM BFB OFFICE PO BOX 145 NORTHAM WA 6401	GOVERNMENT OFFICES McIVER HOUSE 297 FITZGERALD STREET NORTHAM WA 6401 PHONE (096) 224 222 (096) 224 223 FAX (096) 224 256

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## **9. MEMBERS OF THE ROADSIDE CONSERVATION COMMITTEE.**

- 1 Department of Conservation and Land Management.
- 2 Main Roads Department.
- 3 Westrail.
- 4 Country Shire Councils.
- 5 Bush Fires Board.
- 6 Conservation Interests.
- 7 Department of Agriculture.
- 8 Greening Australia (W.A.)
- 9 SECWA.

### **ROADSIDE CONSERVATION COMMITTEE.**

Department of Conservation and Land Management.  
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