



# Farming Guidelines for the Prevention of Bushfire



## CONTENTS

<b>1. Farming Guidelines for the Reduction of Bushfire Risk: Summary .....</b>	<b>2</b>
<b>2. Purpose.....</b>	<b>3</b>
<b>3. Background.....</b>	<b>3</b>
<b>4. Actions to Reduce Bushfire Impacts .....</b>	<b>3</b>
4.1 Farming Practices.....	3
4.2 Fire Access Tracks & Firebreaks .....	4
4.3 Cutting and Baling Hay/Straw .....	4
4.4 Harvest Management .....	5
4.5 Stubble Management.....	5
4.6 Haystack Management.....	5
4.7 Vehicles, Plant and Equipment Management .....	5
4.8 Fuel Hazard.....	6
4.9 Prescribed Burning .....	6
4.10 Burning for Fuel Reduction and Property Protection .....	6
4.11 Burning to Reduce the Impact of Large Bushfires.....	6
4.12 Conducting a Prescribed Burn.....	7
4.13 Approvals.....	7
<b>5. Fire Suppression .....</b>	<b>7</b>
<b>6. Principles of Bushfire Management Zones.....</b>	<b>7</b>
6.1 Asset Protection Zone (APZ).....	8
6.2 Bushfire Buffer Zone (BBZ) .....	8
6.3 Conservation-Land Management Zone (C-LMZ).....	8
<b>7. Native Vegetation .....</b>	<b>9</b>
<b>8. Definitions .....</b>	<b>9</b>
<b>9. Contacts.....</b>	<b>12</b>
<b>10. Document Location .....</b>	<b>13</b>
<b>11. Reference Documents .....</b>	<b>14</b>



## 1. Farming Guidelines for the Reduction of Bushfire Risk: Summary

The table below provides a brief summary of some of the actions farmers can undertake to manage the risk of bushfire. Use the page references to find out more detailed information that will need to be considered before undertaking any action.

Topic	Recommended actions	Is approval needed?	Reference page
Fire access tracks & firebreaks	Fire access tracks should be constructed according to guidelines and the level of bushfire risk Firebreaks should be constructed along fence lines, remnant vegetation or public roads and be 20 metres wide in a landscape approach	No, if part of a Bushfire Management Plan	Page 5 and reference 1 page 14
Cutting and bailing hay or straw	Strategic selection of paddocks to be cut as hay or bailed as straw in a landscape approach	No	Page 5
Grain harvesting	Use the Grain Harvesting Guidelines to guide harvest management during periods of high bushfire risk	No	Page 6
Stubble management	Reduce stubble height to about 10cm during harvesting. Further reduction should be considered after harvest eg grazing, rolling, chaining, harrowing or slashing	No	Page 6
Haystacks	Refer to the CFS information sheet for actions to reduce the risk of haystack fires	No	Page 6 and reference 3 page 14
Plant and equipment	Consider the risk of fire before grinding, welding, slashing, or mowing	Yes, in the open air, on days of Total Fire Ban	Page 6
Vehicles	Consider the risk of fire before driving vehicles through dry vegetation	No	Page 6
Fuel hazard	Undertake an assessment of the fuel hazard before deciding on actions to reduce fuel loads	No	Page 7 and reference 5 page 14
Prescribed burning	May be used to reduce fuel close to farm buildings, but fuel reduction by mechanical means is preferred	Yes, in some situations	Page 7 and reference 6 page 14
Fire suppression	Use farm fire units according to CFS and SAFF guidelines	No	Page 8 and reference 4 page 14
Bushfire management zones	Use a zoned approach to identify activities to be undertaken for bushfire safety preparedness	No, unless in a conservation land management zone	Page 8 and reference 7 page 14
Farm Forestry	Maintain firebreaks by reducing fuel loading	No	Reference 9 page 14
Native vegetation	Refer to the Native Vegetation Guidelines if fuel reduction activities include clearing native vegetation	Yes, in some situations	Page 10 and reference 8 page 14



## 2. Purpose

The South Australian Government is committed to reducing the risk of bushfires to primary producers, the community and the environment. The Farming Guidelines for the Reduction of Bushfire Risk, ('the Guidelines') has been developed to provide farmers with a clear and consistent approach to the management of farms to reduce the risk of bushfire.

The Guidelines promotes a planned landscape approach to bushfire protection and fuel reduction works, including stubble height reduction. The Guidelines should not be seen as removing the need for farmers to responsibly control fuel levels on their properties, or to be adequately prepared for, and know what to do in the event of a bushfire.

The Guidelines complements and maintains existing Bushfire Management Plans already developed by District Bushfire Management Committees.

The Guidelines will be a useful reference for anyone involved in planning for fire protection of farms in South Australia.

## 3. Background

The development of this Guidelines forms part of the South Australian Government's response to implement the recommendations from the Coronial Inquest into the 2005 Wangary bushfires.

The first three recommendations of the Deputy Coroner in effect were to:

- Develop a code of practice regarding the impact of existing farming practices on bushfire risk and prevention
- Undertake research into the effects of current farming practices on bushfire risk and prevention
- Undertake research into the ways to minimise the risk of bushfire created by current farming practices

A working party from the South Australian Bushfire Prevention Advisory Committee was responsible for developing a draft Guidelines with the aim of including the outcomes of the above research.

## 4. Actions to Reduce Bushfire Impacts

### 4.1 Farming Practices

The potentially practicable recommendations from the research regarding farming practices to reduce bushfire risk include:

- Strategically located firebreaks
- Cutting and baling paddocks for hay or straw
- Harvest management to reduce stubble height
- Post-harvest stubble management

## 4.2 Fire Access Tracks & Firebreaks

Fire access tracks and firebreaks should be established according to the level of bushfire risk, the need for property and natural asset protection and the management of primary production.

A zoned approach should be undertaken to prioritise bushfire management actions and should be undertaken within the scope of the Bushfire Management Committee plan.

Fire access tracks assist fire crews to get to bushfires and also act as fuel breaks. Standards for three types of fire access tracks have been adopted by the SA Government Agencies Fire Liaison Committee (see Reference 1 for further information).

Farmers should discuss the location and appropriate standard for any fire access tracks with the local CFS Brigade.

The results from the bushfire research recommend that firebreaks as cultivated, sprayed or mown areas should be strategically located only along fence lines adjoining areas of remnant vegetation or public roads and should be at least 20 metres in width.

Firebreaks required for farm forestry plantation areas vary from 7 metres for plantations less than 40 hectares in size to 20m for those covering 40 to 100ha.

To ensure that the use of firebreaks has a maximum mitigatory effect on the risk of bushfire, a strategic landscape approach should be adopted. The identification of strategically located firebreaks should form part of a local community based bushfire management plan. This plan should be developed in consultation with the local Bushfire Management Committee.

## 4.3 Cutting and Baling Hay/Straw

The results from the bushfire research also recommended that strategic harvesting of hay or straw (about 15% of total cereal crop area), used in conjunction with 20 metre roadside firebreaks, in “Good” seasons has a similar effect in reducing the extent of bushfires as having a “Poor” or “Median” growing season.

Strategically located cereal paddocks cut for hay or baled as straw can significantly reduce bushfire risk and improve effectiveness of fire suppression measures. The strategic selection of paddocks for cutting and baling could also be adopted in a landscape approach in combination with the selection of firebreaks, as described in part 4.2 above. It is acknowledged that commercial realities may influence the use of this option for fuel reduction.

In addition, consider the bushfire risk conditions when cutting hay. Consider a fire-resistant cover on the load or a spark shield behind the exhaust. Alternatively, have an exhaust system that is located under the body of the vehicle to ensure the exhaust emissions are away from the hay.





#### 4.4 Harvest Management

The reduction of stubble height to about 10cm to 15 cm during harvesting should be considered to reduce the risk of a spread of a bushfire. The use of straw choppers or spreaders on headers will also hasten decomposition of crop residues.

Farmers are also reminded of the existing Grain Harvesting Code of Practice that provides specific and practical guidelines for harvest management during periods of high bushfire risk. See Reference 2 for more information.

#### 4.5 Stubble Management

Post harvest stubble management, such as grazing, rolling, chaining, harrowing or slashing can significantly reduce the risk of a bushfire spreading. In addition it may help with snail management, avoids environmental issues associated with burning stubble and it may make seeding easier.

If stubble heaps are created for later burning, ensure that the size of the heap does not exceed the resources at hand to contain the fire. Farmers are encouraged to consider creating several smaller heaps rather than one large heap.

#### 4.6 Haystack Management

Haystack fires have a range of causes and they can spread quickly into the surrounding area and may initiate a bushfire if they are not managed appropriately.

Farmers are encouraged to store hay and silage:

- In several different dispersed locations on a property rather than in one location to reduce the risk of total loss from fire;
- Separate from other buildings, roadsides with public access and powerlines;
- So that it is protected from rain, leaking roofs and runoff;
- So that vegetation is cleared for 20 metres width around the store; and
- So that the moisture content of the hay is maintained between 12% and 18% (depending on crop type and baling method).

See Reference 3 for further information on practical measures that may be undertaken to minimise the risk of haystack fires.

#### 4.7 Vehicles, Plant and Equipment Management

Farmers need to consider the risk of fire before grinding, welding, slashing, mowing, or driving vehicles or plant through dry grass, pastures or crops. Driving vehicles with catalytic converters through dry vegetation is particularly hazardous.

Operators of vehicles, plant or equipment are encouraged to regularly check for straw or grass build up near hot bearings and look behind for fire. If vehicles, plant or equipment is to be left unattended, then the operator should check that they will not start a fire.

The use of cutting, welding, soldering, grinding or charring equipment is not permitted on days of Total Fire Ban in the open air without a special permit obtained from CFS regional offices.

## 4.8 Fuel Hazard

An assessment of fuel hazard is a useful tool for making decisions about fuel reduction works. See Reference 5 for more information.

## 4.9 Prescribed Burning

The use of prescribed burning is one of a range of practices available to farmers and other land managers for the management of fuel loads. However, for environmental concerns prescribed burning is not the preferred method of fuel management on farms.

Prescribed burning may be used for:

- reducing fuel loads and by doing so reducing the intensity and rates of spread of bushfires.
- reducing the impact of bushfire on properties.
- reducing the impact of large bushfires on biodiversity (landscape protection).
- enhancing biodiversity by modifying or maintaining vegetation communities for specific plant or animal species.

## 4.10 Burning for Fuel Reduction and Property Protection

Prescribed burning can be used to reduce fuel in areas close to farm buildings, and other infrastructure, which may be damaged by a bushfire.

Ground fuels consisting of bark, leaves, twigs and other plant material (often less than 6mm in diameter) contribute to the spread of fire. Reducing this fuel load, will assist in reducing the rate of spread and intensity of a bushfire and will assist in providing some protection for properties for a period of time post burning.

Prescribed burning can promote increased growth of weeds, exotic grasses and fast growing native plants that will re-establish fuel loads, so careful planning and continued monitoring is critical.

Mechanical reduction of fuel loads is a preferred option, especially where soil erosion may be an issue. The aim would be to leave a minimal cover required to stabilise the soil surface.

## 4.11 Burning to Reduce the Impact of Large Bushfires

Landscape protection burns or prescribed burns are primarily aimed to reduce fuel hazard across a landscape in order to reduce the likelihood of a large area burning in a single large bushfire event. The short term goal of this type of prescribed burning is for fuel reduction. In the long term landscape protection burning should be part of an integrated management plan to reduce the risk of the spread of bushfire across a landscape.



## 4.12 Conducting a Prescribed Burn

Prescribed burns should only be undertaken by competent and experienced personnel. The Government Agency Fire Liaison Committee's Prescribed Burning Code of Practice provides information on how to plan a prescribed burn (See Reference 6 for further information). Additional literature on this issue can be obtained from the following websites:  
[www.environment.sa.gov.au/parks/management/fire](http://www.environment.sa.gov.au/parks/management/fire)

Approval for bushfire management plans for burning native vegetation for fuel reduction within Asset Protection and Bushfire Buffer zones is obtained from the Native Vegetation Council (NVC).

## 4.13 Approvals

Some bushfire management works may need an approval. For further information on required approvals contact either:

- the SA CFS Regional Prevention Officer or the SA CFS Building Fire Safety Unit (see contact details in part 9 of the Guidelines)
- the Native Vegetation Group, Department of Environment and Natural Resources (DENR). The application process involves submitting a Bushfire Management Plan for approval (see contact details in part 9 of the Guidelines).

## 5. Fire Suppression

Farmers in South Australia have been accustomed to attending fires with their own equipment to protect their property and that of others. In recognition of this practice a Guideline for Operating Farm Fire Units was developed jointly between the SACFS and the South Australian Farmers Federation (See Reference 4 for further information).

## 6. Principles of Bushfire Management Zones

The bushfire management zones outlined in the Guidelines provides advice regarding the types of activities that should be undertaken for bushfire safety. The zoned approach aims to protect buildings (Asset Protection Zone, APZ) and properties (Bushfire Buffer Zone, BBZ). Outside of these zones the main purpose of bushfire safety is the management and conservation of biodiversity (Conservation and Land Management Zone, C-LMZ). See Reference 7 for more information.

The bushfire management zones outlined below have the following objectives:

- adopt a risk based approach to identify actions required to protect properties and natural assets.
- clarify for landholders the areas where different fuel management activities should be undertaken to ensure a standard approach is applied.
- assist in the development of bushfire management plans and programs.



## 6.1 Asset Protection Zone (APZ)

An Asset Protection Zone aims to provide the highest level of protection to human life and buildings. Controls in APZ's generally allow for vegetation to be cleared to reduce the radiant heat impact, flame contact and production of embers during a bushfire. APZ's also may provide a potentially defensible space to allow residents and fire fighters some degree of safety before, during and after the passage of the fire front, depending on the nature of the bushfire. Clearance of vegetation within an APZ will not, by itself, necessarily provide complete bushfire protection but is part of a mix of strategies to maximise bushfire safety.

Clearance should be accompanied by other measures such as:

- appropriate building construction and maintenance
- installation of fire suppression equipment
- in the case of new buildings, choice of appropriate location in relation to identified hazards as part of the planning process
- the adoption of appropriate building design and materials.

## 6.2 Bushfire Buffer Zone (BBZ)

The Bushfire Buffer Zone aims to provide an area adjacent to rural properties to assist in reducing the rate of spread, intensity and spotting potential of a bushfire. A BBZ may also be used in large areas of native vegetation to provide strategic fuel reduction in the landscape to protect community assets.

The BBZ will consist of strategic firebreaks of sufficient width and continuity to provide a substantial barrier to the spread of bushfire.

The BBZ aims to reduce damage to properties caused by bushfires, and provide areas which assist in making fire suppression activities safer and more effective. Within areas of native vegetation a Bushfire Buffer Zone will retain a modified native vegetation cover and have significant biodiversity value.

Under extreme fire weather conditions, it is acknowledged that areas within a BBZ may not prevent the impact of a high intensity bushfire.

## 6.3 Conservation-Land Management Zone (C-LMZ)

Areas of native vegetation not identified in a Bushfire Management Plan as either falling within an APZ or BBZ zone will be in the Conservation-Land Management Zone. This zone allows for fire management activities to meet ecological, conservation, and land management objectives. The use of prescribed burning, with the appropriate approval, is permitted in Conservation-Land Management Zones.

## 7. Native Vegetation

There are some situations where clearance of native vegetation for fuel reduction works is permitted. Clearance exceeding legislated standards needs an approval from the Native Vegetation Council (NVC) or delegate. Reference should also be made to A Guide to the Native Vegetation Regulations 2003 to Reduce the Impact of Bushfire (see reference 8).

The intention of the clearance legislation is not to prevent the necessary clearance of native vegetation for fuel reduction works, but to encourage the planned clearance for those fuel reduction works, and to ensure larger clearance actions are subject to environmental review. Detailed information is also available from the NVC website at [www.nvc.sa.gov.au](http://www.nvc.sa.gov.au) or through contacting the Native Vegetation Group of the Department of Environment and Natural Resources (DENR).

## 8. Definitions

### **Bushfire Management Plan**

Refers to a plan prepared by a Bushfire Management Committee, any fire management or fuel reduction plans etc prepared by the Department for Environment and Natural Resources (DENR), Forestry SA, SA Water, other government agencies, groups of land owners or individual farmers.

### **Fire danger season**

The period when the SA Country Fire Service declares fire restrictions are in force pursuant to the Fire and Emergency Services Act 2005.

### **Fire management**

All activities associated with the management of land that is at risk of sustaining a fire, including the use of fire to meet land management goals and objectives.

### **Fire prevention**

All activities associated with minimising the incidence of bushfire, particularly those of human origin.

### **Fire suppression**

All activities associated with extinguishing a fire, including activities associated with managing a fire and also using wet or dry firefighting methods.

### **Fuel**

Any material, such as grass, leaf litter, dead and live vegetation, which can be ignited and sustains a fire.

### **Fuel break (firebreak)**

Any natural or constructed discontinuity in a fuel bed used to segregate, stop or control the spread of fire, or to provide a control line from which to suppress a fire.

### **Fuel load (fuel quantity)**

The oven dry weight of fuel per unit area, may be expressed as tonnes per hectare.

### **Fuel reduction works**

All activities associated with minimising the quantity of fuel.

### **Total Fire Ban**

A Total Fire Ban may be declared for any time of the year and may fall outside of the declared Fire Danger Season. A Total Fire Ban may be declared for any one, or for all Fire Ban Districts and will be released to the

media on the evening prior to the Total Fire Ban day. With a few exceptions, no fires can be lit in the open on a Total Fire Ban day within the declared Fire Ban District(s).

## 9. Contacts

### **Biosecurity SA - Emergency Management , PIRSA**

Telephone: (08) 8207 7917

Web: [www.pir.sa.gov.au](http://www.pir.sa.gov.au)

### **South Australian Country Fire Service (CFS)**

In an emergency, please call 000.

Headquarters: (08) 8463 4200

Building Fire Safety Unit: 8391 6077

Region 1 - Mount Lofty Ranges: 8391 1866

Region 2 - Mount Lofty Ranges and Yorke Peninsula: 8522 6088

Region 3 - Murraylands and Riverland: 8532 6800

Region 4 - Flinders, Mid North and Pastoral Areas: 8642 2399

Region 5 - South East: 8762 2311

Region 6 - Eyre Peninsula and West Coast: 8682 4266

Web: [www.cfs.sa.gov.au](http://www.cfs.sa.gov.au)

### **Department for Environment and Natural Resources (DENR)**

Adelaide Region (Black Hill CP, Athelstone): 8336 0924

Kangaroo Island Region (Kingscote): 8553 2381

Murraylands Region (Berri): 8595 2111

Outback Region (Pt Augusta): 8648 5300

South East Region (Mt Gambier): 8735 1177

West Region (Port Lincoln): 8688 3111

Northern and Yorke Region (Clare): 8841 3400

Web: [www.environment.sa.gov.au](http://www.environment.sa.gov.au)

### **Native Vegetation Group,**

### **Department of Environment and Natural Resources, (DENR)**

Telephone: (08) 8303 9777

Email: [nvc@sa.gov.au](mailto:nvc@sa.gov.au)

Web: [www.nvc.sa.gov.au](http://www.nvc.sa.gov.au)

### **Forestry SA**

Telephone: (08) 8724 2888

Email: [forestrysa@forestrysa.sa.gov.au](mailto:forestrysa@forestrysa.sa.gov.au)

Web: [www.forestry.sa.gov.au](http://www.forestry.sa.gov.au)

## 10. Document Location:

File Name and Path of Master Document
Farming Guidelines for the Reduction of Bushfire Risk

### Author(s)

Name	Function
PIRSA	Biosecurity SA Emergency Management
SACFS	Prevention Services

### Revision History:

Version	Revision Description	Date
1.0	Effective from this date	2009
2.0	Post consultation	9/9/2010

### Confidentiality Classification:

Confidentiality	Description	Circulation Limit
<input checked="" type="checkbox"/> C1	LOW, no requirement for confidentiality	Public and unrestricted

### Disclaimer

The Department of Primary Industries and Resources SA and its employees do not warrant or make any representation regarding the use, or results of the use, of the information contained herein as regards to its correctness, accuracy, reliability, currency or otherwise. The Department of Primary Industries and Resources SA and its employees expressly disclaims all liability or responsibility to any person using the information or advice. Information contained in this document is correct at the time of writing.

© **Government of South Australia, through the Department of Primary Industries and Resources SA 2007**

This work is Copyright. Apart from any use permitted under the Copyright Act 1968 (Cwlth), no part may be reproduced by any process without prior written permission obtained from the Department of Primary Industries and Resources SA. Requests and enquiries concerning reproduction and rights should be directed to the Chief Executive, Department of Primary Industries and Resources SA, GPO Box 1671, Adelaide SA 5001.



## 11. Reference Documents

The following documents are referred to in the Guidelines and provide further guidelines on bushfire risk on farms.

1. South Australian Firebreaks, Fire Access Tracks and Sign Standards Guidelines for State Government Agencies (Government Agencies Fire Liaison Committee, 2008)
2. Grain Harvesting Code of Practice (SA Country Fire Service and SA Farmers Federation)
3. Haystack Fires (SA Country Fire Service Information sheet)
4. Joint Guidelines for Operating Farm Fire Units (SA Country Fire Service and SA Farmers Federation, June 2008)
5. Overall Fuel Hazard Guide for South Australia (Department for Environmental and Natural Resources, March 2008)
6. South Australia Prescribed Burning Code of Practice (Government Agencies Fire Liaison Committee, January 2004)
7. Fire Management Zones (Department for Environment and Natural Resources, [www.environment.sa.gov.au/parks/pdfs/PARKS\\_PDFS\\_ZONING-POL.PDF](http://www.environment.sa.gov.au/parks/pdfs/PARKS_PDFS_ZONING-POL.PDF) )
8. A Guide to the Native Vegetation Regulations 2003, (Department for Environmental and Natural Resources)
9. CFS Plantation Design Guidelines – Farm Forestry, [www.pir.sa.gov.au/\\_data/assets/pdf\\_file/0017/54413/CFS\\_Farm\\_Forestry\\_Guidelines\\_V3.pdf](http://www.pir.sa.gov.au/_data/assets/pdf_file/0017/54413/CFS_Farm_Forestry_Guidelines_V3.pdf)

