

Eusdale Nature Reserve Fire Management Strategy 2014 Mapsheet 1 of 1



This strategy should be used in conjunction with aerial photography and field reconnaissance during incidents and the development of incident action plans. These data are not guaranteed to be free from error or omission. The NSW National Parks and Wildlife and its employees disclaim liability for any act done on the information in the data and any consequences of such acts or omissions. This document is copyright. Apart from any fair dealing for the purpose of study, research criticism or review, as permitted under the copyright Act, no part may be reproduced by any means without written permission. This strategy is a relevant Plan under Section 38 (4) and Section 44 (3) of Rural Fires Act 1997. The NSW National Parks and Wildlife Service is part of the Office of Environment and Heritage. Published by the Office of Environment and Heritage (NSW).

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Map Details	Related Documents
Datum: Geocentric Datum of Australia (GDA) 1994 Projection: Map Grid of Australia (MGA) Zone 55 Data: Spot Satellite Imagery: 2005.	1:25K Topographic Map: Meadow Flat 8831-2-S ; Tarana 8830-1-N Scale: Note scales are true when printed on A1 size paper OEH Fire Management Manual 2014 - 2015.

Fire Season Information

Wildfires	The critical wildfire season generally occurs between December and February. Dry lightning storms (characterised by numerous lightning strikes associated with little or no rainfall) frequently occur during this period. The potential for severe fire weather conditions occur when strong winds from the NW are aligned with high day time temperatures and low relative humidity. Particular care is required during periods of negative Southern Oscillation Indices when drier than normal conditions can be experienced as early as October/November and as late as March/April.
Prescribed Burning	Prescribed burning should generally be undertaken during Autumn. Prescribe burns may also take place during Winter and/or early Spring if suitable weather conditions prevail. A low to moderate intensity burn is generally prescribed over most of the reserve.

Operational Guidelines

Brief all personnel involved in suppression operations on the following issues using the SMEACCS format:

General	Guidelines
Aerial Water Bombing	<ul style="list-style-type: none"> The use of bombing aircraft is designed to support suppression and containment operations and where necessary slow the progress of an advancing fire until ground crews arrive. Aircraft assist in aggressively attacking hotspots and spot-overs and their use without the support of ground based suppression crews generally has limited effectiveness. Where practicable foam should be used to increase the effectiveness of the water. Ground crews must be alerted to water bombing operations.
Aerial Ignition	<ul style="list-style-type: none"> Aerial ignition may be used during back-burning or fuel reduction operations where practicable, but only with the prior consent of NPWS Senior Officer, Section 44 delegate or as prescribed in an operational burn plan. The use of aerial ignition as a fire suppression tool should be specified in the IAP or within the prescribed burn plan. Aerial ignition will only be undertaken by qualified and competent navigators and bombardiers. Utilise aerial ignition to rapidly burn out large areas and/or reduce spotting potential by preventing longer uphill fire runs. Aerial ignition can be utilised to rapidly progress back-burns down-slope where required. Temperature and humidity trends must be monitored carefully to determine the safest times to implement back-burns. Generally, when the FDI is Very High or greater, back-burning should only commence when the humidity begins to rise in the late afternoon or early evening. Back-burning may be safely undertaken during the day only when FDI is low. Where practicable, and prior to light up, clear (or wet down) around dead and hollow bearing trees adjacent to containment lines to reduce effort needed for mop up activities. Use parallel containment lines when applicable. All personnel must be fully briefed before back-burning operations begin. Approval of the IC is required prior to commencement of back-burning operations.
Back-burning	<ul style="list-style-type: none"> Standard Incident Management Systems are to be applied. The first combatant agency on site may assume control of the fire, but then must ensure the relevant land management agency is notified promptly. On the arrival of other combatant agencies, the Incident Controller will consult with regard to the ongoing command, control and incident management team requirements as per the relevant BFMC Plan of Operations, and be consistent with BFCC Policy 2-2006. Where possible, the construction of new containment lines should be avoided. For new containment lines the IMT should liaise with and receive consent from a senior NPWS officer prior to their construction. All containment lines constructed as part of the fire suppression effort must be constructed with minimal environmental impact as is possible and those containment lines not required for other purposes should be closed prior to the cessation of the incident.
Command & Control	<ul style="list-style-type: none"> All personnel involved in containment line construction should be briefed on the protection of the reserves natural and cultural assets. When constructing containment lines, steep and rocky areas and locations adjacent to riparian (creeks or streams) or significant drainage lines should be avoided. Containment line construction using earthmoving equipment must be conducted in accordance with this RFMS and the OEH FMM and sedimentation and erosion control measures must be implemented in accordance with both OEH and DLWC fire trail constructions guidelines and standards and the PWG Roads Policy (Manual).
Containment Lines	<ul style="list-style-type: none"> Earthmoving equipment may only be used with the prior consent of a senior NPWS officer. Earthmoving equipment must always be guided and supervised by an appropriately experienced person, who can assist with survey (route selection) and the identification and protection of threatened species and/or historic and Aboriginal sites (known or unknown) along the proposed containment line. To assist with the protection of natural and cultural assets and drainage features earth moving operators need to be briefed and observe the Threatened Species and Cultural Heritage Operational Guidelines contained in this RFMS Earth moving equipment must always be accompanied by a support vehicle and when engaged in direct or parallel attack this vehicle must be a fire fighting vehicle. (NB - The use of D4 sized dozers are preferred for containment line construction). Earthmoving equipment must be washed down (where practicable) prior to it entering NPWS estate and again on exiting NPWS estate. Where multiple items of earthmoving equipment are being used, the IMT should consider the appointment of a Plant Operations Manager.
Earthmoving Equipment	<ul style="list-style-type: none"> All fire advantages used during wildfire suppression operations must be mapped and where relevant added to the database. Use of wetting and foaming agents (surfactants) is permitted on the reserve. The use of fire retardants are only permitted with the prior consent of the senior NPWS officer and should be avoided where reasonable alternatives are available. Exclude the use of surfactants and retardants within 50m of watercourses, dams and swamps. Areas where fire suppression chemicals are used must be mapped and the used product's name recorded. The Threatened Species Operational Guidelines are to be observed.
Fire Advantage Recording	<ul style="list-style-type: none"> Where practicable, containment lines should be stabilised and rehabilitated as part of the wildfire suppression operation. The potential impacts of smoke must be considered when planning for wildfire suppression and prescribed burning operations. Where possible the use of prevailing weather conditions along with specific light up strategies and ignition patterns will be used to manage and disperse smoke. If smoke becomes a hazard on local roads or highways, the police and relevant media must be notified. Smoke management will be in accordance with relevant OEH guidelines.
Fire Suppression Chemicals	<ul style="list-style-type: none"> The reserve may be closed to the public during periods of extreme fire danger or during prescribed burning or wildfire suppression operations. Assume all trails are gated and locked. Communication "blackspots" occur throughout the reserve, and are often confined to the lower points in the landscape (ie gullies and creek lines). Firetrails can be steep, rocky and/or slippery in sections. For all fires, bulk water carriers should be deployed asap to the fireground Water may be sourced from dams located on farms surrounding the reserve. Eusdale Creek is a source of permanent water, all other creeks are ephemeral and generally do not contain water.
Rehabilitation	<ul style="list-style-type: none"> Assume all trails are gated and locked. Communication "blackspots" occur throughout the reserve, and are often confined to the lower points in the landscape (ie gullies and creek lines). Firetrails can be steep, rocky and/or slippery in sections. For all fires, bulk water carriers should be deployed asap to the fireground Water may be sourced from dams located on farms surrounding the reserve. Eusdale Creek is a source of permanent water, all other creeks are ephemeral and generally do not contain water.
Smoke Management	<ul style="list-style-type: none"> Assume all trails are gated and locked. Communication "blackspots" occur throughout the reserve, and are often confined to the lower points in the landscape (ie gullies and creek lines). Firetrails can be steep, rocky and/or slippery in sections. For all fires, bulk water carriers should be deployed asap to the fireground Water may be sourced from dams located on farms surrounding the reserve. Eusdale Creek is a source of permanent water, all other creeks are ephemeral and generally do not contain water.
Visitors	<ul style="list-style-type: none"> Assume all trails are gated and locked. Communication "blackspots" occur throughout the reserve, and are often confined to the lower points in the landscape (ie gullies and creek lines). Firetrails can be steep, rocky and/or slippery in sections. For all fires, bulk water carriers should be deployed asap to the fireground Water may be sourced from dams located on farms surrounding the reserve. Eusdale Creek is a source of permanent water, all other creeks are ephemeral and generally do not contain water.
WARNINGS	<ul style="list-style-type: none"> Assume all trails are gated and locked. Communication "blackspots" occur throughout the reserve, and are often confined to the lower points in the landscape (ie gullies and creek lines). Firetrails can be steep, rocky and/or slippery in sections. For all fires, bulk water carriers should be deployed asap to the fireground Water may be sourced from dams located on farms surrounding the reserve. Eusdale Creek is a source of permanent water, all other creeks are ephemeral and generally do not contain water.
Water Points	<ul style="list-style-type: none"> Assume all trails are gated and locked. Communication "blackspots" occur throughout the reserve, and are often confined to the lower points in the landscape (ie gullies and creek lines). Firetrails can be steep, rocky and/or slippery in sections. For all fires, bulk water carriers should be deployed asap to the fireground Water may be sourced from dams located on farms surrounding the reserve. Eusdale Creek is a source of permanent water, all other creeks are ephemeral and generally do not contain water.

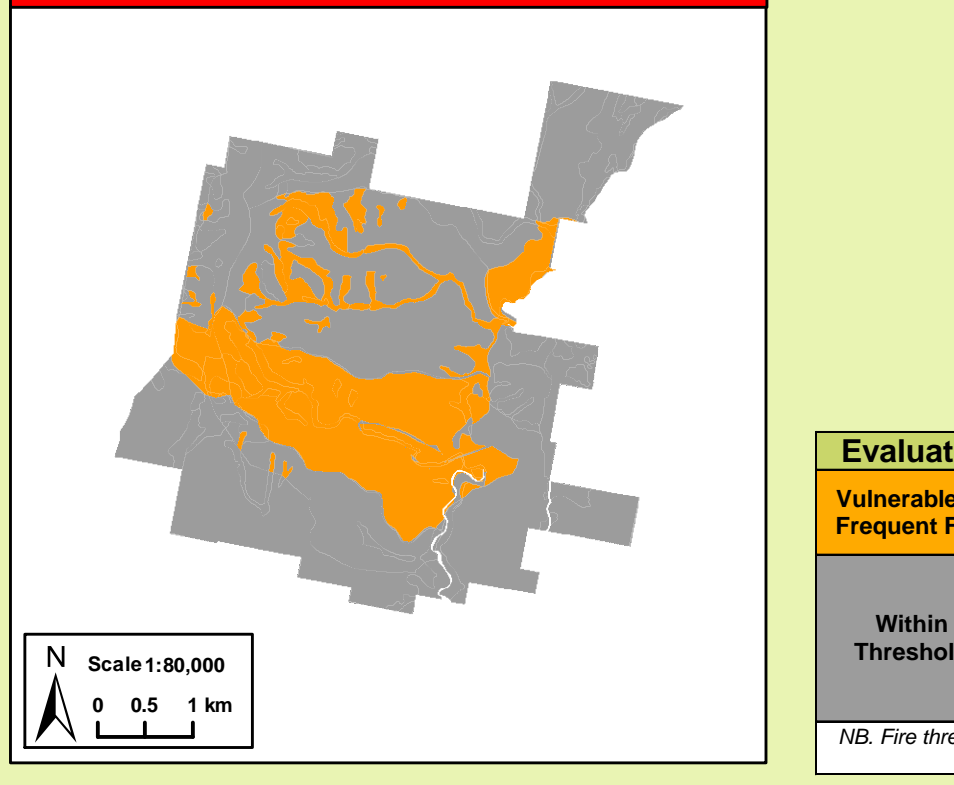
Threatened Species and Cultural Heritage Operational Guidelines

Site	Guidelines
Aboriginal Cultural Heritage Site Management	
An aboriginal sites survey is yet to be conducted for this reserve (as of November 2014). Therefore aboriginal sites may be present and consideration in engaging a Senior NPWS Officer or Aboriginal Sites Officer prior to hazard reduction and wildfire suppression activities is required.	
IS1	<ul style="list-style-type: none"> Do not cut down trees As far as possible protect the site from fire Use of foams, wetting agents & retardant is acceptable.
IS2	<ul style="list-style-type: none"> Avoid all ground disturbance including the use of earthmoving machinery, handline construction and driving over sites Sites may be burnt by bushfire, backburn or prescribed burn without damage.
Historic Heritage Site Management	
H1	<ul style="list-style-type: none"> As far as possible protect the site from fire Avoid all ground disturbance including the use of earthmoving machinery, handline construction and driving over sites Avoid water bombing which may cause ground disturbance Use of foams, wetting agents & retardant is acceptable.
Threatened Fauna Management	
FA1	Utilise mosaic burning and avoid disturbance at known sightings, roostings or refuges and avoid frequent fire (<6 years).
FA4	Utilise mosaic burning, protect hollow bearing trees and avoid frequent fire (< 6-10 years).
FA5	Utilise mosaic burning.

Communications Information

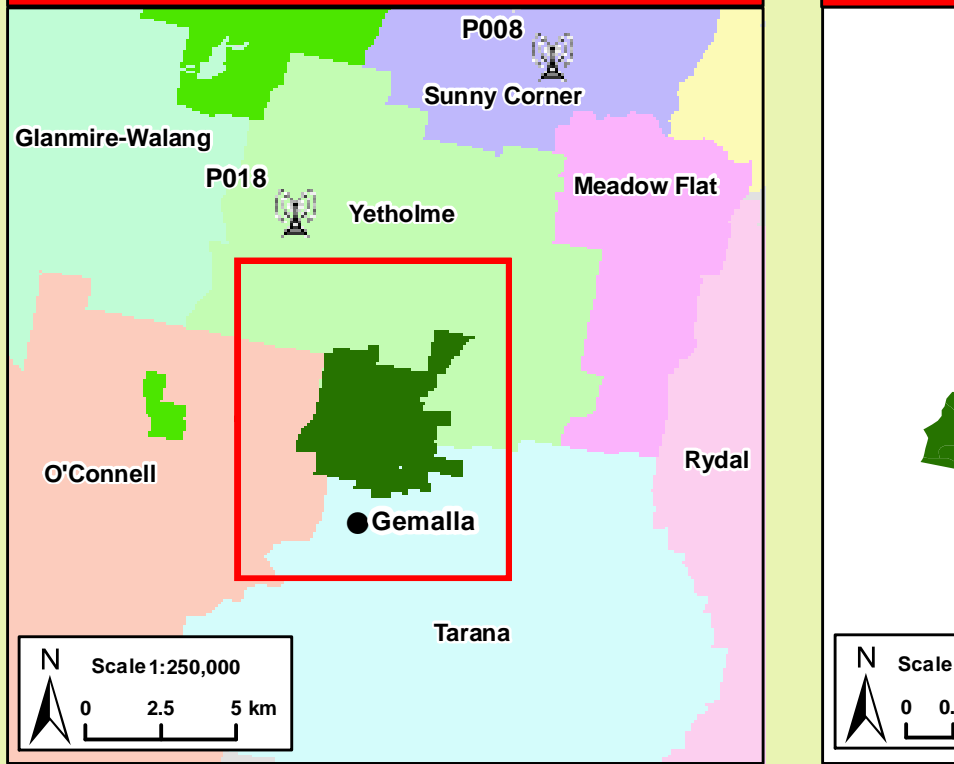
Service	Channel	Location and Comments
NPWS VHF Repeater (160MHz)	290	WRR Vote Group
	294	Sunny Corner (duplex)
	594	Sunny Corner (simplex)
	111	Mount Tomah
	112	Narrowneck
	113	Shooters Hill
	11 - 17	NPWS Fireground channels
NPWS VHF Portable Repeater	21 - 26	Fireground channels
RFS PMR - Chifley	P008 P018	Sunny Corner Mount Homer
Forestry Corporation - VHF	?	Local arrangements to be made
UHF - CB	10 or 16	Local brigade channel
Mobile Phone	Next G	Ridges - Good to Fair Gullies - Fair to Poor

Status of Biodiversity Thresholds

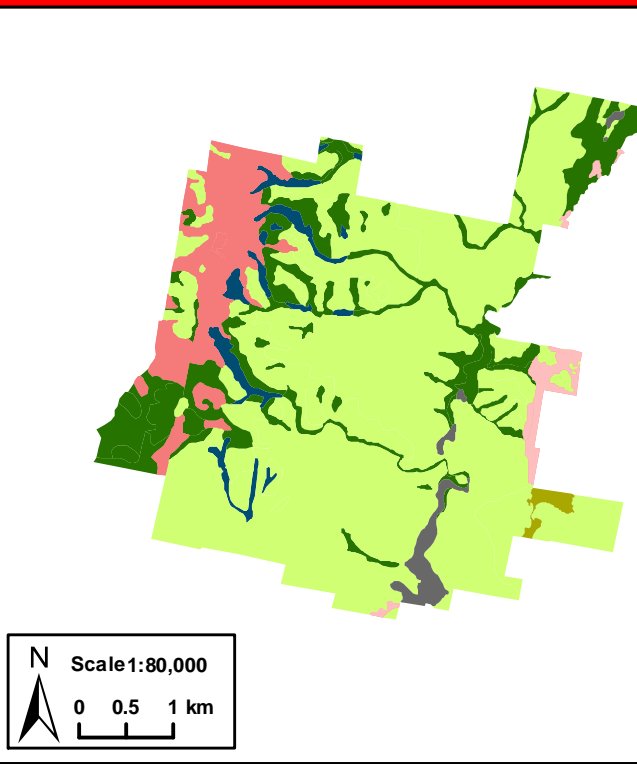


Evaluation of Biodiversity Thresholds
Vulnerable to Frequent Fire (This year)
 The area will be too frequently burnt if it burns this year.
 • Protect from fire as far as possible.
Within Threshold
 Within the threshold for vegetation in this area. Species have had sufficient time to mature and reproduce, and for habitats to develop.
 • A fire event is neither required nor should one necessarily be avoided.
 NB. Fire thresholds are defined for vegetation communities to conserve biodiversity.

RFS Fire Brigade Areas & Towers



Vegetation Map



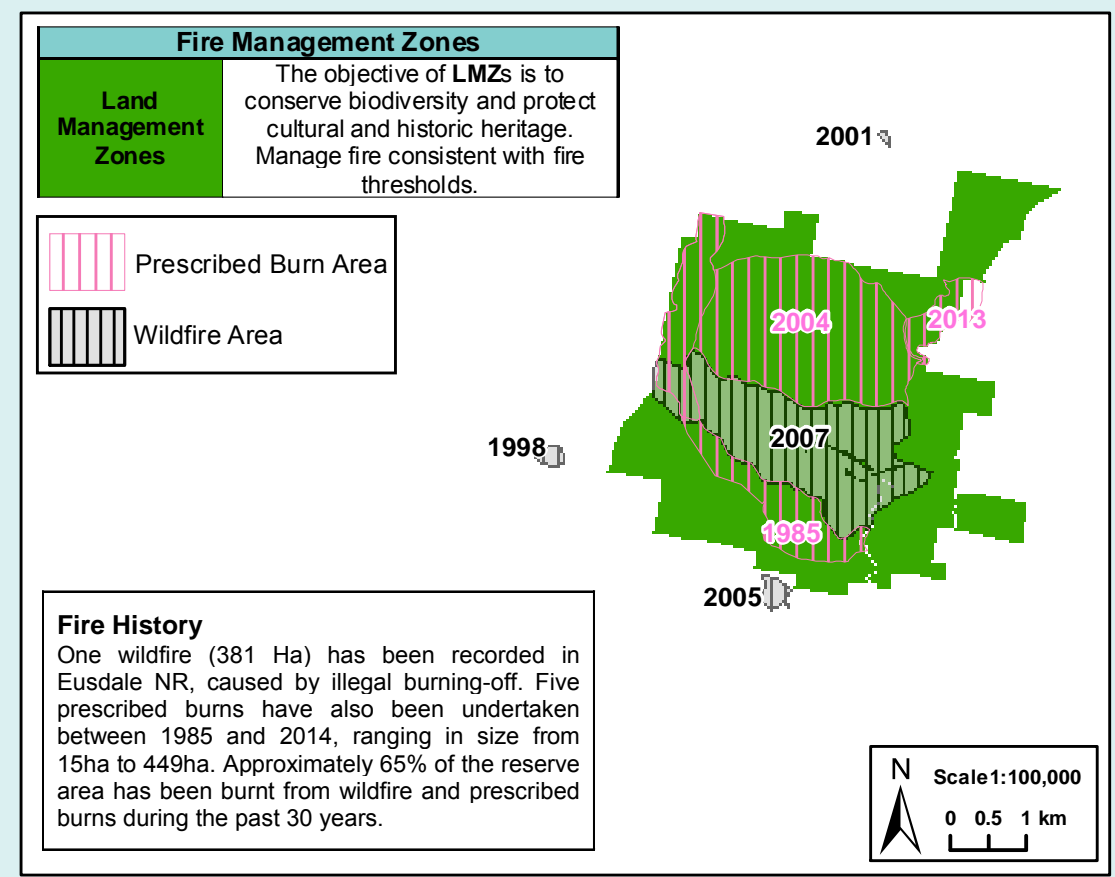
Vegetation Map Legend

Broad Vegetation Class	Vegetation Type	Vegetation Description and Fire Interval	Fire Behaviour
Dry Sclerophyll Forest (Shrub/Grass formation)	Southern Tablelands Dry Sclerophyll Forests	This vegetation type occupies a majority of the reserve and is generally characterised by the presence of Brittle and Inland Scribbly Gum. On the drier and more exposed (N & W) aspects of the reserve Long leaved (Bundy) Box is often found in association with the above species. While on the more protected and moist aspects and slopes Broad-leaf Peppermint Gum and Mountain Gum tend to integrate with the above species and may "locally" dominate the vegetation landscape in areas. An interval between fire events of less than 5 years and greater than 50 years should be avoided.	The presence of a high concentration of continuous ground cover species (ie native grasses) will often create erratic fire behaviour which can impact on the success of suppression activities and potentially lead to spotting and the rapid spread of fire under suitable weather conditions. On the more exposed ridges and aspects fuel loads are often lower and surface and ground fuels tend to be discontinuous.
Grassy Woodlands	Sub Alpine Woodlands	This vegetation type generally coincides with the higher elevation areas within the western half of the reserve and is characterised by the presence of Snow which is often in association with Mountain Gum. The understorey is often dominated by shrubs and a ground layer dominated by Bracken. An interval between fire events of less than 10 years and greater than 40 years should be avoided.	The presence of a high concentration of continuous ground cover species (ie native grasses) will often create erratic fire behaviour which can impact on the success of suppression activities and potentially lead to spotting and the rapid spread of fire under suitable weather conditions.
Grassy Woodlands	Southern Tableland Grassy Woodlands	This vegetation type is generally characterised by the presence of Apple Box and often occurs along low-lying drainage areas in association with Yellow Box along the southern and eastern halves of the reserve. In addition, Brittle Gum, Inland Scribbly Gum, Ribbon Gum and Broad leaved peppermint may occasional occur with various Acacia species. An interval between fire events of less than 10 years and greater than 40 years should be avoided.	The presence of a high concentration of continuous ground cover species (ie native grasses) will often create erratic fire behaviour which can impact on the success of suppression activities and potentially lead to spotting and the rapid spread of fire under suitable weather conditions.
Wet Sclerophyll Forests (Grassy sub-formation)	Southern Tablelands Wet Sclerophyll Forests	This vegetation type is characterised by the presence of Ribbon Gum, Mountain Gum, Broad-leaf Peppermint Gum and Blackwood. The understorey is often dominated by shrubs and the ground layer is dominated by Bracken with interspersed native grasses. An interval between fire events of less than 15 years and greater than 50 years should be avoided.	Under normal conditions these vegetation communities are generally moist and not subject to impact from fire and generally are expected to have a low fire intensity. However, during periods of drought these areas may be prone to fire and where fuel loads have built up over time (extreme bark loads) may lead to a dramatic increase in fire intensity and erratic fire behaviour.
Wet Sclerophyll Forests (Shrubby sub-formation)	Southern Escarpment Wet Sclerophyll Forests	This vegetation type generally is characterised by the presence of Brown Barrel and is often in association with Ribbon Gum and Mountain Gum. The vegetation community is generally confined to the upper headwaters of several drainage lines in the western half of the reserve. The understorey is often dominated by shrubs and the ground layer is dominated by Bracken with interspersed native grasses. An interval between fire events of less than 30 years and greater than 60 years should be avoided.	Under normal conditions these vegetation communities are generally moist and not subject to impact from fire and generally are expected to have a low fire intensity. However, during periods of drought these areas may be prone to fire and where fuel loads have built up over time (extreme bark loads) may lead to a dramatic increase in fire intensity and erratic fire behaviour.
Disturbed Areas	Disturbed (Cleared)	These areas are generally associated with the Eusdale Creek drainage line and as a result of past rural occupation practices, were often cleared and cultivated for pastoral/horticultural activities. Currently these areas are subject to extensive invasion by environmental, agricultural and noxious weed species. Over time, it is expected that these areas will be rehabilitated and where possible restored to their original (riparian) state through natural regeneration processes.	No fire regime These areas should be included into the adjoining LMZ during prescribed burning operations and managed accordingly.

Contact Information

Agency	Position / Location	Phone
National Parks & Wildlife Service	Duty Officer	02 6332 6350
	WRR Vote Group	02 6332 7640
	Central West Area Office - Bathurst	02 6332 7640
NSW Rural Fire Service - Chifley Zone	Duty Officer	0428 650 470
	Bathurst FCC - 7 Lee Street KELLO	02 6333 1333
Forestry Corporation	Duty Officer - Fire Reporting	02 6332 4812
	Northern Softwoods Region - Bathurst Management Area	02 6331 2044
Emergency Services	Police, Ambulance, Fire	000
	Statewide	13 2500
SES	Duty Officer - Central West - Bathurst	02 6334 8555
NSW Police Service	Bathurst	02 6332 8699
Hospital	Bathurst Base Lithgow	02 6330 5311 02 6350 2300
	Bathurst Regional Council	02 6333 6111
Local Aboriginal Land Council	Bathurst	02 6332 6835

Bushfire Risk Management Strategies & Fire History



Strategy	Guidelines
Direct Attack (This strategy should be the first consideration in order to minimise the area burnt)	For this strategy to be successful the following parameters need to be considered: FDI <100 and a FDR of High or below Flame Height <1.5m OFH - Low to Mod Sufficient resources need to be available The use of suitable heavy plant is permissible provided that close containment of the fire can be achieved. Fire behaviour can be erratic due to concentration and continuity of grass fuels. This option is generally implemented as part of a much broader containment strategy that utilises a combination of ground crews, water bombing aircraft, heavy plant, control lines (existing fire trails) and other fire control advantages such as low or discontinuous fuel areas.
Indirect Attack (If direct attack is not possible then this strategy is the preferred option).	This strategy is generally considered when the following parameters apply: FDI >100+ and FDR is Very High or above Flame Height > 1.5m OFH - High to Extreme

Incident Map

