

**Ingalba & Pucawan Nature Reserves**  
**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 process 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**  
 Datum: Geocentric Datum of Australia (GDA) 1994  
 Projection: Map Grid of Australia (MGA) Zone 55  
 Data: Spot Satellite Imagery: 2005.

**Related Documents**  
 OEH Fire Management Manual 2013 - 2014.

### Operational Guidelines

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

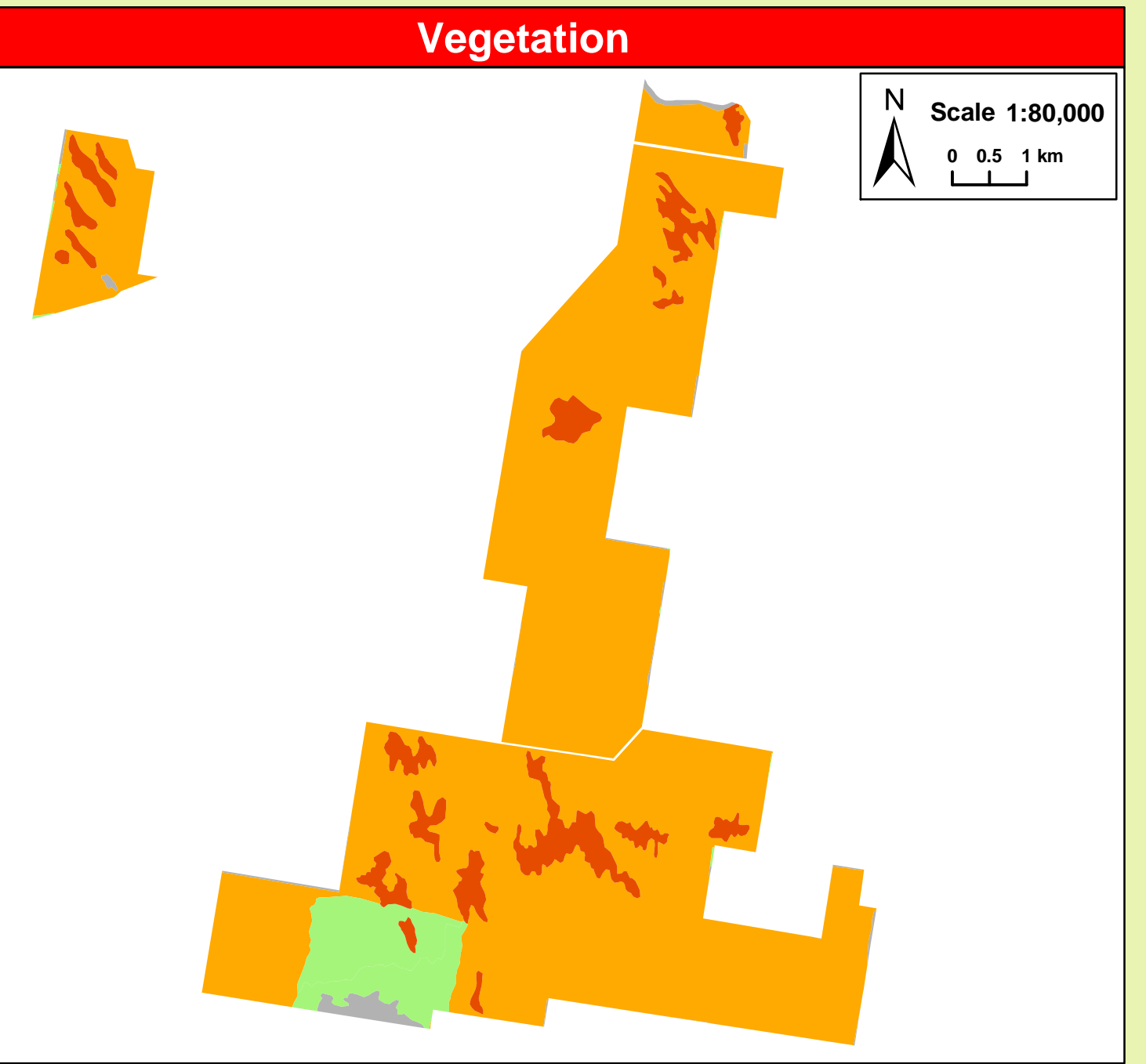
General	Guidelines
<b>Aerial Water Bombing</b>	<ul style="list-style-type: none"> <li>The use of bombing aircraft should support containment operations by aggressively attacking hotspots and spot-overs.</li> <li>The use of bombing aircraft without the support of ground based suppression crews should be limited to very specific circumstances.</li> <li>Where practicable foam should be used to increase the effectiveness of the water.</li> <li>Ground crews must be alerted to water bombing operations.</li> </ul>
<b>Aerial Ignition</b>	<ul style="list-style-type: none"> <li>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.</li> <li>The use of aerial ignition as a fire suppression tool should be specified in the IAP or within the prescribed burn plan.</li> <li>Aerial ignition will only be undertaken by qualified and competent navigators and bombardiers.</li> <li>Utilise aerial ignition to rapidly burn out large areas and or reduce spotting potential by preventing longer uphill fire runs.</li> <li>Aerial ignition can be utilised to rapidly progress back-burns down-slope where required.</li> </ul>
<b>Back-burning</b>	<ul style="list-style-type: none"> <li>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 commence when the humidity begins to rise in the late afternoon or early evening, with a lower FDI back-burning may be safely undertaken during the day.</li> <li>Where practicable, clear a 1m radius around dead and hollow bearing trees adjacent to containment lines prior to back-burning, or wet down these trees as part of the back-burn ignition.</li> <li>Use parallel containment lines when applicable.</li> <li>All personnel must be fully briefed before back-burning operations begin.</li> </ul>
<b>Command &amp; Control</b>	<ul style="list-style-type: none"> <li>Standard Incident Management Systems are to be applied.</li> <li>The first combatant agency on site may assume control of the fire, but then must ensure the relevant land management agency is notified promptly.</li> <li>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.</li> </ul>
<b>Containment Lines</b>	<ul style="list-style-type: none"> <li>Construction of new containment lines should be avoided, where practicable, except where they can be constructed with minimal environmental impact.</li> <li>For new containment lines IMT to liaise with and receive consent from a Senior NPWS officer prior to construction.</li> <li>Use parallel containment lines when applicable.</li> <li>All containment lines not required for other purposes should be closed at the cessation of the incident.</li> <li>All personnel involved in containment line construction should be briefed on both natural and cultural heritage sites in the location.</li> <li>Containment line construction using earthmoving equipment must be in accordance with the earthmoving guidelines contained within the RFMS.</li> </ul>
<b>Earthmoving Equipment</b>	<ul style="list-style-type: none"> <li>Earthmoving equipment may only be used with the prior consent of a senior NPWS officer, and then only if the probability of its success is high.</li> <li>Earthmoving equipment must always be guided and supervised by an appropriately experienced person, and accompanied by a support vehicle. When engaged in direct or parallel attack this vehicle must be a fire fighting vehicle.</li> <li>Containment lines constructed by earthmoving equipment should consider the protection of drainage features, observe the Threatened Species and Cultural Heritage Operational Guidelines, and be surveyed, where possible, to identify unknown cultural heritage sites.</li> <li>Earthmoving equipment must be washed down, where practicable, prior to it entering NPWS estate and again on exiting NPWS estate.</li> <li>Where multiple items of earthmoving equipment are being used, the IMT should consider the establishment of a Plant Operations Manager.</li> </ul>
<b>Fire Advantage Recording</b>	<ul style="list-style-type: none"> <li>All fire advantages used during wildfire suppression operations must be mapped and where relevant added to the database.</li> </ul>
<b>Fire Suppression Chemicals</b>	<ul style="list-style-type: none"> <li>Use of wetting and foaming agents (surfactants) is permitted on the reserve.</li> <li>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.</li> <li>Exclude the use of surfactants and retardants within 50m of watercourses, dams and swamps.</li> <li>Areas where fire suppression chemicals are used must be mapped and the used product's name recorded.</li> <li>The Threatened Species Operational Guidelines are to be observed.</li> </ul>
<b>Rehabilitation</b>	<ul style="list-style-type: none"> <li>Where practicable, containment lines should be stabilised and rehabilitated as part of the wildfire suppression operation.</li> </ul>
<b>Smoke Management</b>	<ul style="list-style-type: none"> <li>The potential impacts of smoke and possible mitigation tactics must be considered when planning for wildfire suppression and prescribed burning operations.</li> <li>If smoke becomes a hazard on local roads or highways, the police and relevant media must be notified.</li> <li>Smoke management must be in accordance with relevant RTA traffic management guidelines.</li> <li>OEH personnel are not trained in structural fire fighting and must not enter a structure in order to undertake structural fire fighting.</li> <li>Fire suppression activities may be undertaken from outside a structure in accordance with the policies in the NPWS FMM, in order to protect a built asset.</li> </ul>
<b>Water Points</b>	<ul style="list-style-type: none"> <li>Nearest reliable water is Temora township itself and it is recommended that a water cart be sourced.</li> </ul>
<b>WARNINGS</b>	<ul style="list-style-type: none"> <li>Beware of overhead powerlines.</li> </ul>

### Status of Biodiversity Thresholds

**Evaluation of Biodiversity Thresholds**

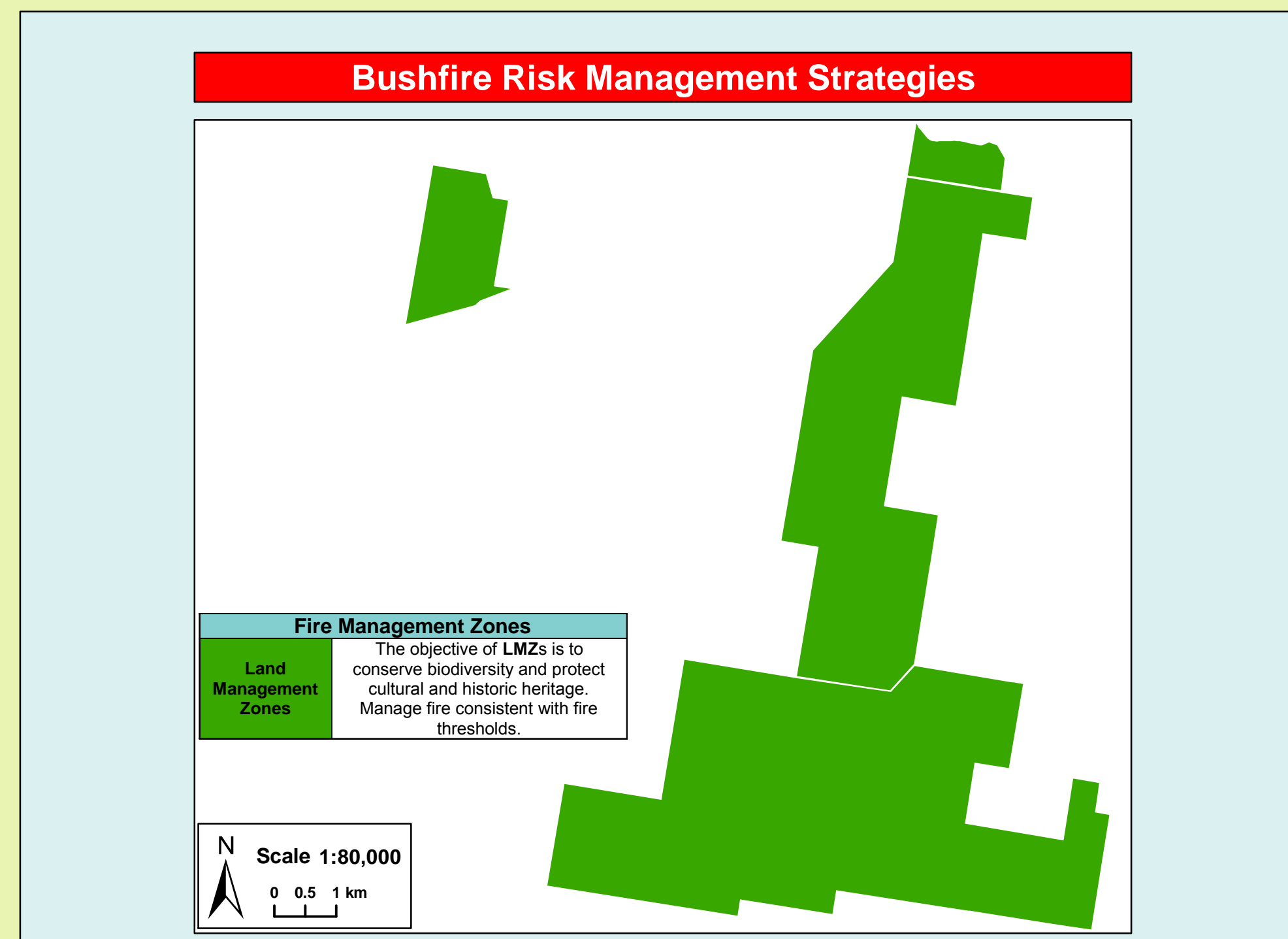
Within Threshold	Outside Threshold
<ul style="list-style-type: none"> <li>Within the threshold for vegetation in this area. Species have had sufficient time to mature and reproduce, and for habitats to develop.</li> <li>A fire event is neither required nor should one necessarily be avoided.</li> </ul>	<ul style="list-style-type: none"> <li>Outside the threshold for vegetation in this area. Species have not had sufficient time to mature and reproduce, and for habitats to develop.</li> <li>A fire event is required to restore the area to within the threshold.</li> </ul>

NB. Fire thresholds are defined for vegetation communities to conserve biodiversity.



### Contact Information

Agency	Position / Location	Phone
National Parks & Wildlife Service	Duty Officer	02 6332 6350
	Mid West Area & Regional Office – 200 Yambill St Griffith	02 6966 8100
NSW Rural Fire Service	Temora Fire Control Centre	02 6977 4737
Bland/Temora Zone	Bland Fire Control Centre	02 6970 1100
NSW Fire Brigades	Duty Officer	02 6972 0038
State Forests	Temora Fire Station	02 6978 0544
Emergency Services SES	Forbes – Duty Mobile	0428 696 678
Police Station (not open 24 hrs)	Temora	000
Police - Local Area Command	Wagga	13 2500
Hospital	Temora	02 6922 2599
Local Aboriginal Land Council (LALC)	Narrandera	02 6977 1066
Council	Temora	02 6959 1823
	Junee Shire Council	02 6382 5669
	Temora Shire Council	02 6980 1100
	Junee Shire Council	02 6924 8100



### Suppression Strategies

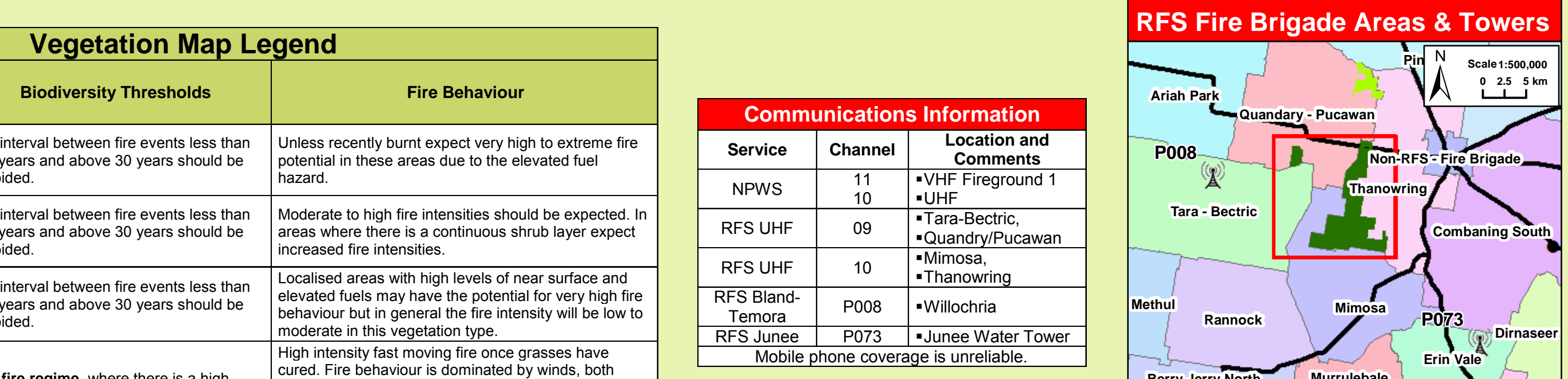
Typical Conditions	Indicative Suppression Strategies
<ul style="list-style-type: none"> <li>Current Fire Danger Rating (FDR) of Very High or Greater.</li> <li>Short and medium range forecasts suggest conditions typical to a FDR of Very High or Greater.</li> <li>A risk to life and/or property exists in the short – medium term.</li> <li>A broad area risk to biodiversity exists.</li> </ul>	<p><b>Direct</b> Initial attacks should be to try to extinguish or to contain to the smallest possible area.</p> <p><b>Indirect</b> Develop a suppression plan using existing and/or potential containment lines. If possible take into account biodiversity requirements but never to the detriment of life and property.</p>
<ul style="list-style-type: none"> <li>FDR of High or below.</li> <li>Short – medium term forecast indicate a continuing FDR of High or below.</li> <li>No risk to life or property exists in the short-medium term.</li> <li>Only small area risk to biodiversity exists.</li> </ul>	<p><b>Direct</b> Evaluate the biodiversity thresholds and use direct attack methods to extinguish if required.</p> <p><b>Indirect</b> Develop a fire suppression plan to the maximum allowable perimeter based on Biodiversity thresholds.</p>

### Vegetation Map Legend

Broad Vegetation Class	Vegetation Type	Biodiversity Thresholds	Fire Behaviour
Dry Sclerophyll Forest (Shrub/grass formation)	Dry Heathland/ Low Open Woodland	An interval between fire events less than 10 years and above 30 years should be avoided.	Unless recently burnt expect very high to extreme fire potential in these areas due to the elevated fuel hazard.
Dry Sclerophyll Forest (Shrub/grass formation)	Mugga Ironbark/ Western Grey Box Woodland	An interval between fire events less than 10 years and above 30 years should be avoided.	Moderate to high fire intensities should be expected. In areas where there is a continuous shrub layer expect increased fire intensities.
Dry Sclerophyll Forest (Shrub/grass formation)	Scattered Mugga Ironbark/Western Grey Box Woodland/	An interval between fire events less than 10 years and above 30 years should be avoided.	Localised areas with high levels of near surface and elevated fuels may have the potential for very high fire behaviour but in general the fire intensity will be low to moderate in this vegetation type.
Cleared/ Cropland	Cleared/ Cropland	No fire regime, where there is a high percentage of native grasses, the area should be managed for the previous formation, for example Grassy Woodlands (10 – 30 years).	High intensity fast moving fire once grasses have cured. Fire behaviour is dominated by winds, both speed and direction. Even in very low fuel, grass fires can be erratic and fast moving. In ephemeral years fire intensity will be higher and in drought years minimal growth will result in moderate fire behaviour but potentially still fast moving depending on weather conditions at the time.
Fire History	Fires in these reserves are rare; the fire history data shows only one wildfire in the last ninety years occurred in Ingalba in 1999 burning 35 hectares. Other ignitions of individual trees by lightning have occurred, but have been extinguished before developing into a fire.		
Ephemeral Conditions	Ephemeral fuel conditions occur after consecutive years of effective rainfall. This in turn leads to the growth and build up of fine surface fuels such as grasses and herbs, which can create a continuous fuel load across all of the above vegetation communities. As such expect a higher fire intensity.		
Drought Conditions	During drought conditions and when vegetation communities are visibly stressed it will be very difficult to undertake prescribed burning across many communities as the surface fuels will be very low. Wildfires are likely to be difficult to control due to extreme conditions during the day and areas of low fuel that are difficult to back-burn in under night-conditions.		
Mosaic Burning	A mosaic approach to fire management with post fire recovery and response assessments should be undertaken. Apply fire in a pattern across the reserve that allows gaps in both time and space, small verses large areas, scattered and variable times between fires in any location. If possible leave some areas of each vegetation community unburnt, as an end stage and reference site.		

### Threatened Sites Guidelines

Site	Guidelines
<b>Aboriginal Cultural Heritage Site Management</b>	
Note	An aboriginal sites survey is yet to be conducted for this reserve (as of Jan 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.
<b>Threatened Fauna Management</b>	
A large range of threatened species have been sighted across the reserve and consideration of these will need to be exercised during prescribed burn planning. Most notably are the endangered species Mallee Fowl, Bush Stone-curlew, Swift Parrot and the Regent Honeyeater. Contact NPWS for further information.	



### Communications Information

Service	Channel	Location and Comments
NPWS	11 10	•VHF Fireground 1 •UHF
RFS UHF	09	•Tara-Bectric, •Quandry/Pucawan
RFS UHF	10	•Mimososa, •Thanowring
RFS Bland-Temora	P008	•Willochria
RFS Junee	P073	•Junee Water Tower

Mobile phone coverage is unreliable.

### Fire Season Information

Wildfires	Prescribed Burning
<ul style="list-style-type: none"> <li>The critical wildfire season generally occurs from October/November to March/April.</li> <li>Dry lightning storms frequently occur and typical fire weather conditions are winds from the west to the north, high day time temperatures and low humidity</li> <li>Particular care is required following periods of Winter rain and after periods of negative Southern Oscillation Indices.</li> </ul>	<ul style="list-style-type: none"> <li>Prescribed burning should generally be undertaken during winter or early Spring</li> <li>Care should be taken to ensure sufficient fuel is available to allow a low to moderate burn over most of the area identified.</li> </ul>

