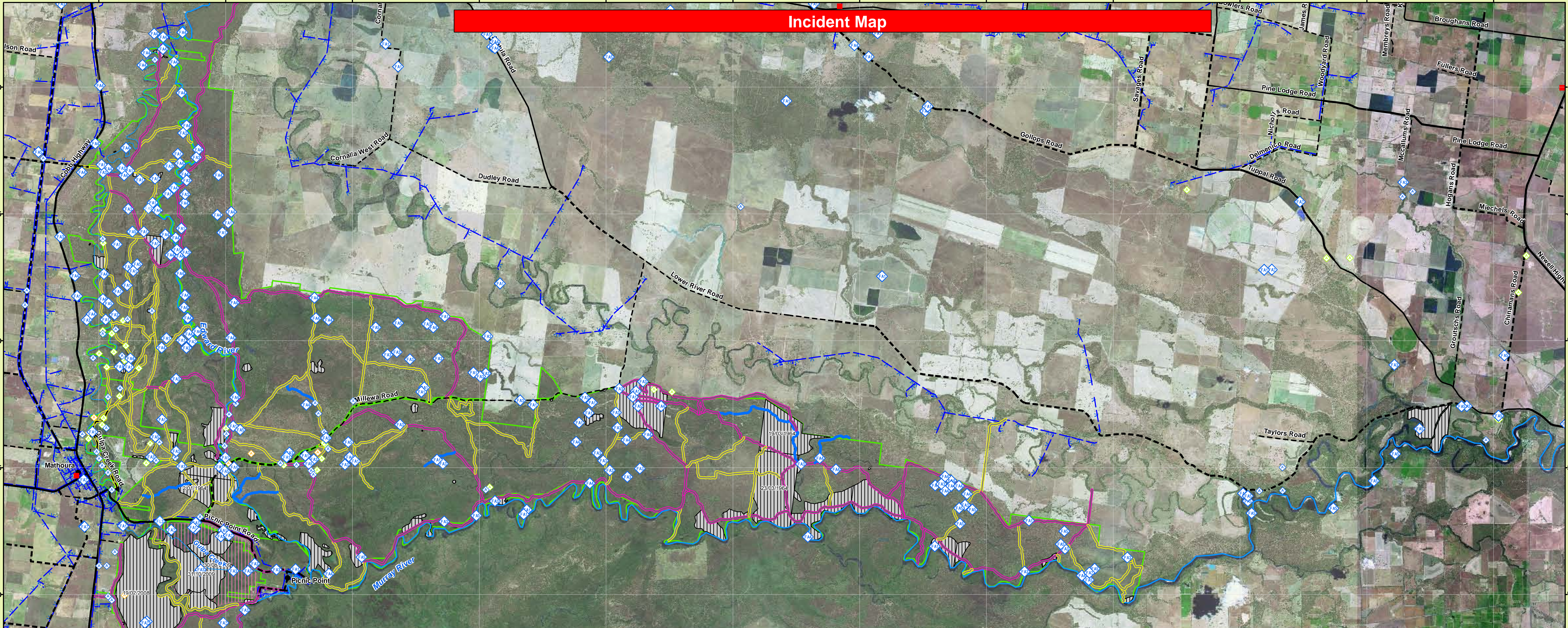


Incident Map



Communications Information		
Service	Channel	Location and Comments
NPWS Repeater	29	•Mathoura
RFS UHF	10	•All Brigades
RFS Murray	P019	•Mathoura
	P039	•Finley
	P011	•Bunnaloo
	P028	•Moama
RFS Deniliquin	P053	•Deniliquin
State Forests UHF - CB	19	•Deniliquin/Mathoura
	30	•Barooga
State Forests VHF	223	•Mathoura

- NPWS Estate
- Rivers
- Powerlines
- Gate
- Fire Trails
- Cat 1 - Essential
- Cat 1 - Important
- Dormant
- Wildfire
- Prescribed Burn
- Roads**
- Sealed Road - Two Lanes
- Unsealed Road - Two Lanes
- Sealed Road - One Lane
- Unsealed Road - One Lane
- Site Management (see guidelines)**
- Aboriginal Site - AH1
- Aboriginal Site - AH2
- Aboriginal Site - AH3
- ◆ Threatened Fauna
- ◆ Threatened Flora

Murray Valley National & Regional Parks Millewa, Moira and Gulpa Island Precincts Fire Management Strategy 2012 Mapsheet 1 of 2

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.

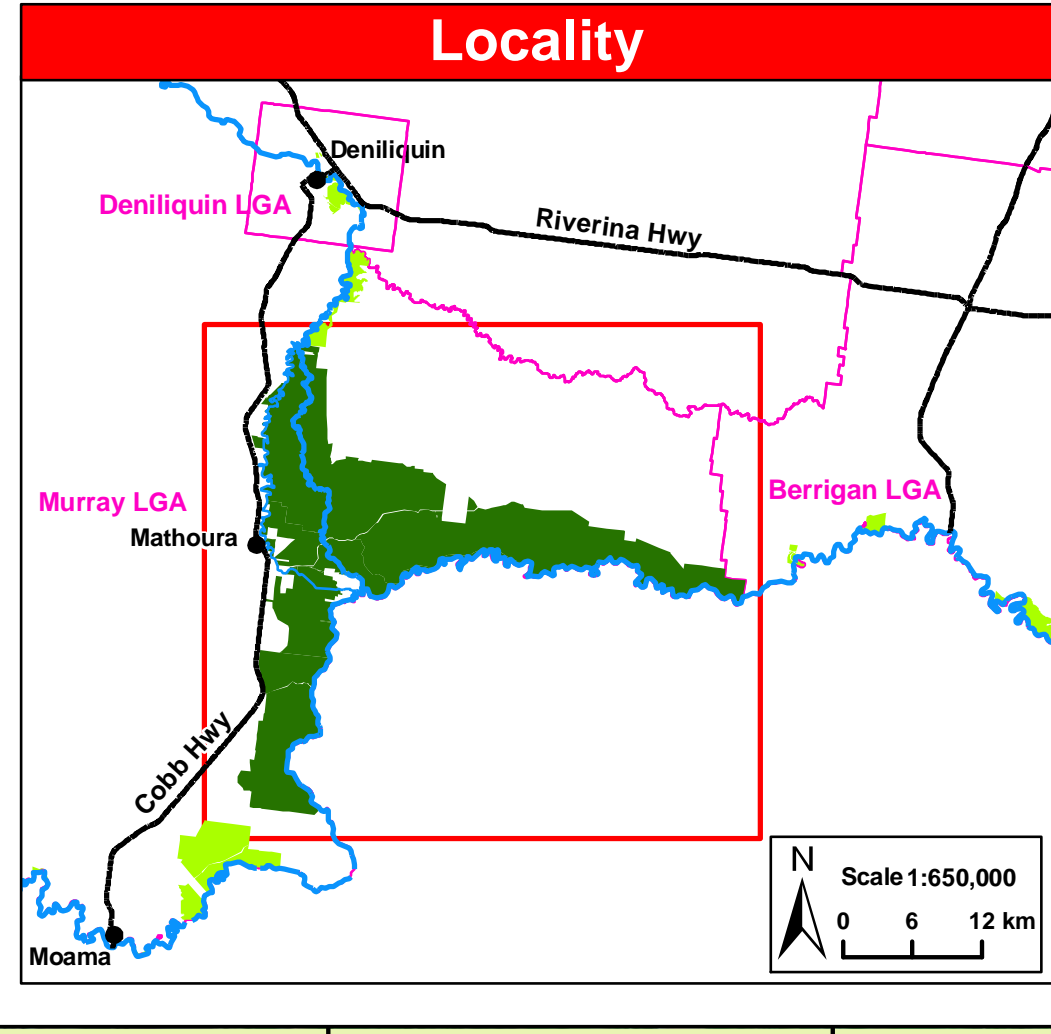
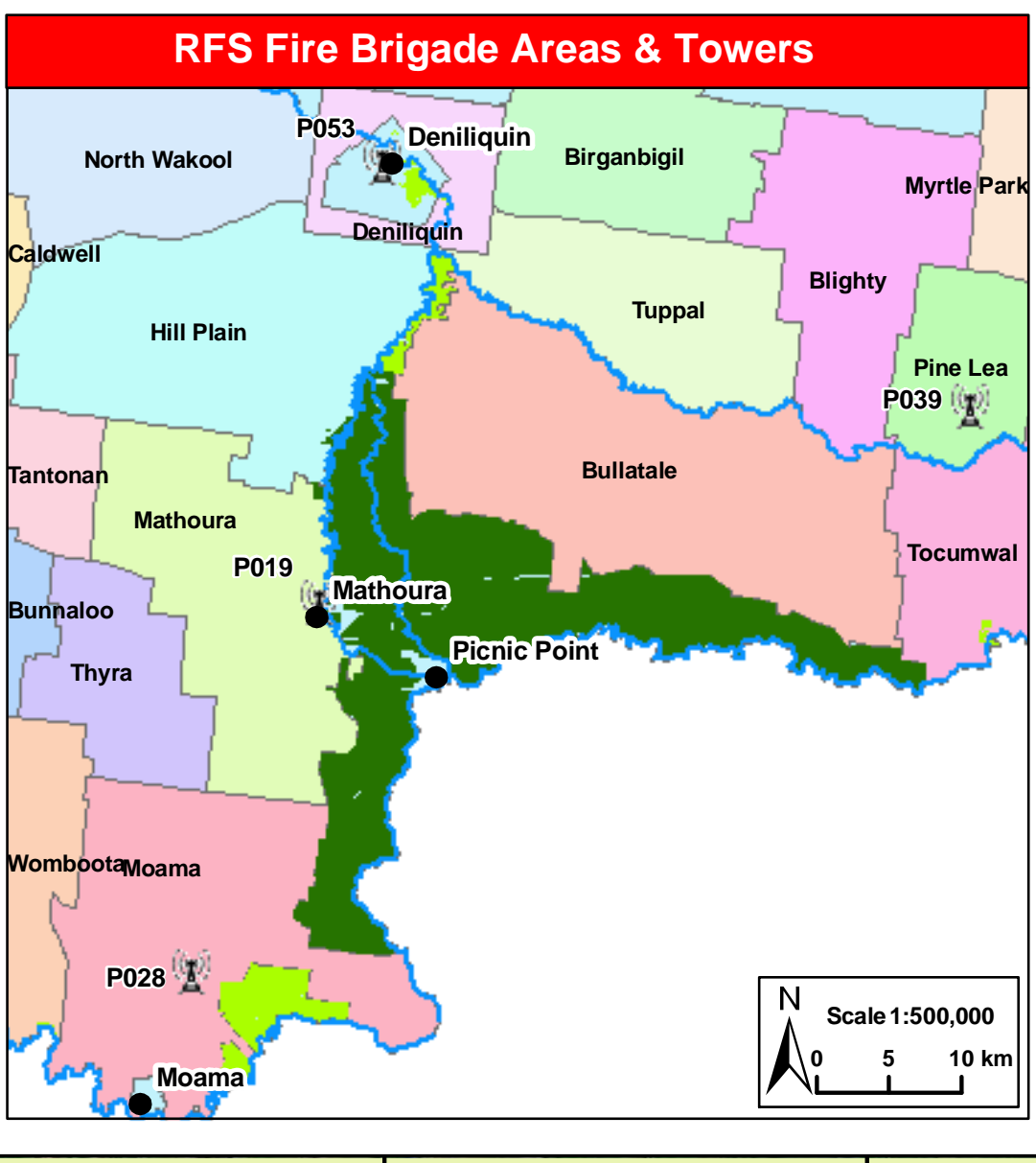
This strategy is a relevant Plan under Section 38 (4) and Section 44 (3) of Rural Fires Act 1997.

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), March 2012.
Contact: OEH PWG Regional Office, 200 Yambill St, Griffith NSW 2680 P.O. Box 1049 Griffith NSW 2680 ph. 02 6966 8100

ISBN 978 1 74293 656 7	OEH 2012/0422	Date: August 2012	Version No: 1
------------------------	---------------	-------------------	---------------

Map Details		Related Documents
Datum: Geocentric Datum of Australia (GDA) 1994 Projection: Map Grid of Australia (MGA) Zone 55 Data: Spot Satellite Imagery: 2005.		OEH Fire Management Manual 2011 - 2012.

Threatened Sites Guidelines	
Site	Guidelines
Aboriginal Cultural Heritage Site Management	
AH1	<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.
AH2	<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.
AH3	<ul style="list-style-type: none"> • Avoid all ground disturbance including the use of earthmoving machinery, handline construction and driving over sites. • Avoid water bombing which may cause ground disturbance. • Permission required from Aboriginal Heritage Environment Officer and Aboriginal community.
Threatened Fauna Management	
FA1	<ul style="list-style-type: none"> • Utilise mosaic burning and avoid disturbance at known sightings, roostings or refuges and avoid frequent fire (<6 years).
FA2	<ul style="list-style-type: none"> • Utilise mosaic burning, avoid disturbance at known sightings, roostings or refuges, avoid frequent fire (<6 years) and exclude chemical use.
FA3	<ul style="list-style-type: none"> • Utilise mosaic burning and protect hollow bearing trees.
FA4	<ul style="list-style-type: none"> • Utilise mosaic burning, protect hollow bearing trees and avoid frequent fire (<6—10 years).
FA5	<ul style="list-style-type: none"> • Utilise mosaic burning.
Threatened Flora Management	
FL1	<ul style="list-style-type: none"> • Avoid fire in known locations.
FL2	<ul style="list-style-type: none"> • Utilise mosaic burning
FL3	<ul style="list-style-type: none"> • Exclude fire from habitat and avoid the use of machinery and chemicals.



Fire Season Information

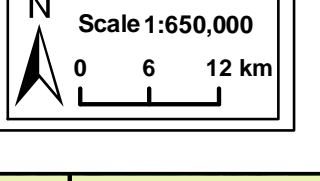
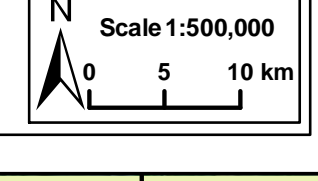
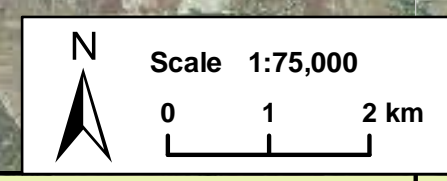
Wildfires

- The critical wildfire season generally occurs from October/November to March/April
- 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
- Particular care is required following periods of Winter rain and after periods of negative Southern Oscillation Indices.

Prescribed Burning

- Prescribed burning should generally be undertaken during winter or early Spring
- Care should be taken to ensure a low intensity burn over most of the area treated.
- An exception to these guidelines is burns targeting the thinning of artificially created dense stands of trees, which may require a higher intensity fire. Also the timing may occur in either Autumn or late Spring to achieve a higher intensity result.

Contact Information		
Agency	Position / Location	Phone
National Parks & Wildlife Service	Duty Officer (8am-10pm)	02 6332 6350
	Regional Office - 200 Yambill St, Griffith	02 6966 8100
	Murray Area Office	03 5483 9100
Mid Murray Zone NSW Rural Fire Service	Duty Officer	03 5881 6297 (AH)
NSW Fire Brigades	Deniliquin FCC 305 Duncan St, Deniliquin	03 5881 5351
	Moama Fire Station Moama Fire Station	03 5881 7401 03 5482 1653
State Forests	Deniliquin - Duty Mobile	0408 675 211
Emergency Services SES		000 13 2500
Police Station (not open 24 hrs)	Deniliquin	03 5881 9499
	Moama	03 5482 0099
Police - Local Area Command	Deniliquin	03 5881 9437
	Deniliquin	03 5882 2800
Hospital	Echuca	03 5485 5000
	Duty Officer Murray	0417 351 668
Parks Victoria	Deniliquin Shire Council	03 5898 3000
	Conargo Shire Council	03 5880 1200
	Murray Shire Council	03 5884 3302
Council	Berrigan Shire Council	03 5888 5100



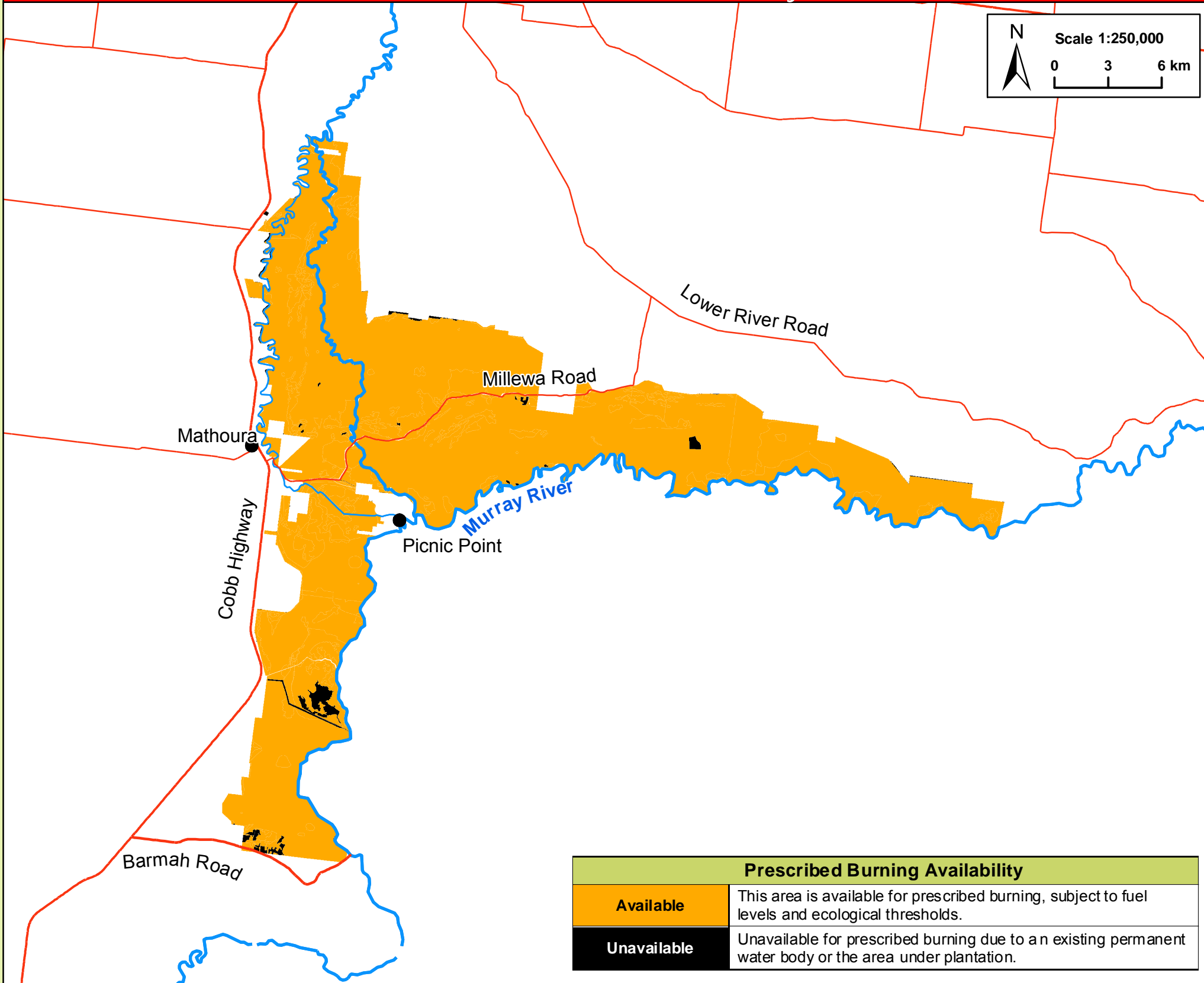
Murray Valley National & Regional Parks Millewa, Moira & Gulpa Island Precincts Fire Management Strategy 2012

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.

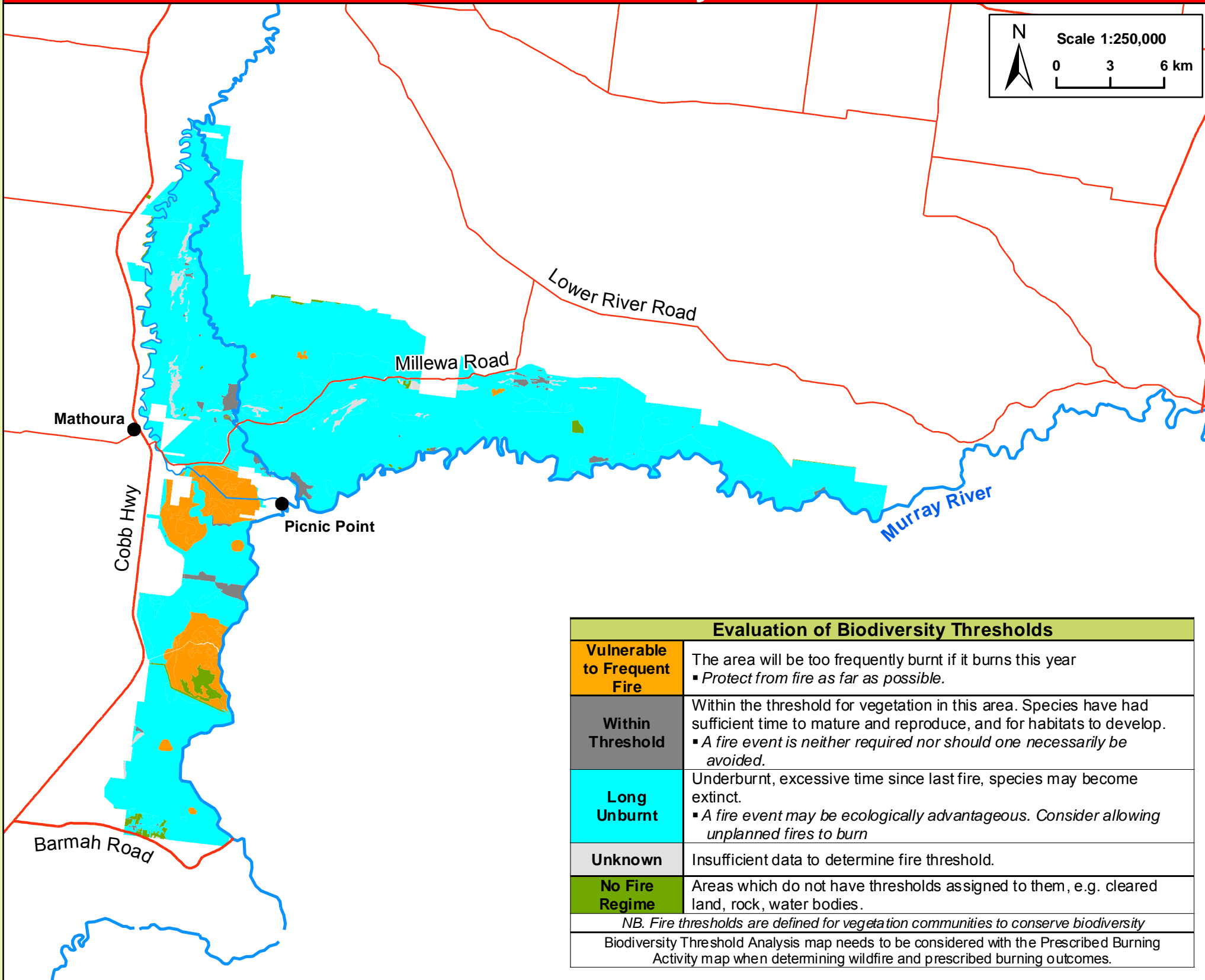
This strategy is a relevant Plan under Section 38 (4) and Section 44 (3) of Rural Fires Act 1997.

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), March 2012. Contact: OEH PWG Regional Office: 200 Yambill St, Griffith NSW 2680 P.O. Box 1049 Griffith NSW 2680 ph. 02 6966 8100

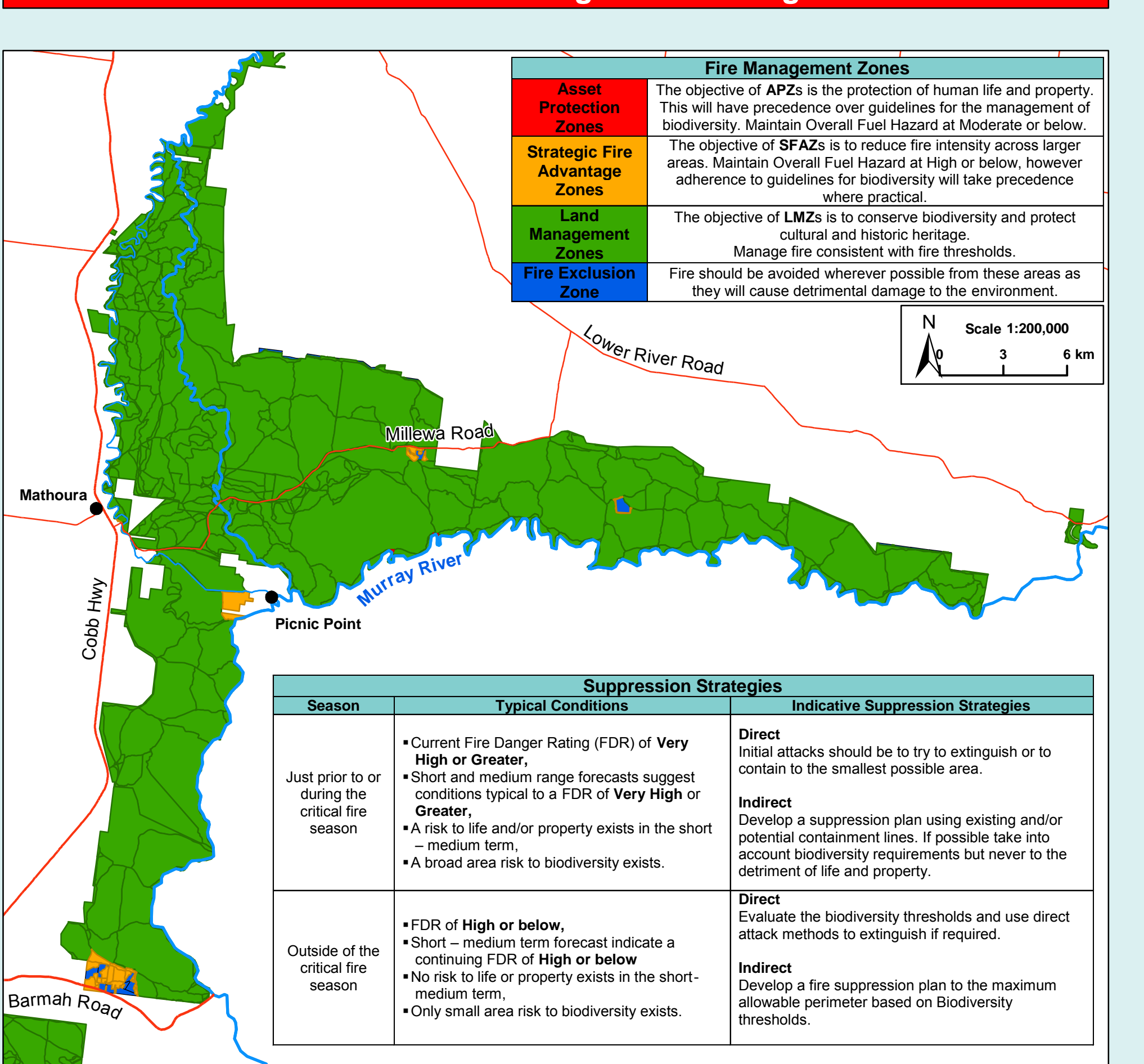
Prescribed Burn Availability



Status of Biodiversity Thresholds



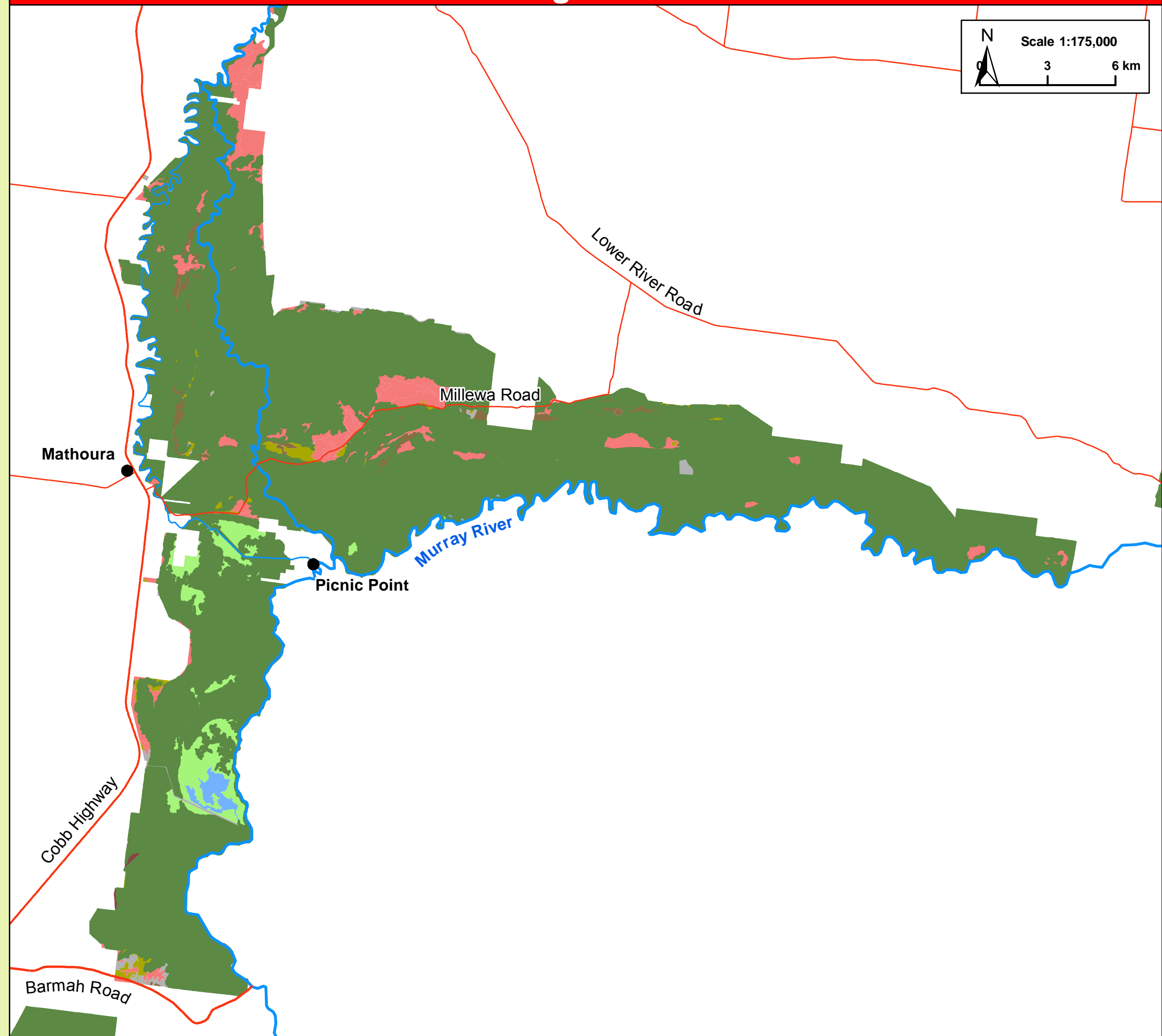
Bush Fire Risk Management Strategies



Operational Guidelines

Brief all personnel involved in suppression operations on the following issues using the SMEACS format:	
General	Guidelines
Aerial Water Bombing	<ul style="list-style-type: none"> The use of bombing aircraft should support containment operations by aggressively attacking hotspots and spot-overs. The use of bombing aircraft without the support of ground based suppression crews should be limited to very specific circumstances. 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 Regional Manager. OEH Section 44 delegate or as prescribed in an operational burn plan. Aerial ignition will only be undertaken by accredited navigators & bombardiers. The pattern for aerial ignition will be specified in the IAP during fire suppression. Utilise incendiaries to rapidly burn out large areas where required.
Back-burning	<ul style="list-style-type: none"> 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. 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. Use parallel containment lines when applicable. All personnel must be fully briefed before back-burning operations begin.
Command & Control	<ul style="list-style-type: none"> Standard Incident Management Systems are to be applied. On the arrival of other combatant agencies, the initial incident controller will consult with regard to the ongoing command, control and incident management team requirements as per the relevant BFMC Plan of Operations. Where OEH is not the first responding fire authority to arrive at a fire on OEH-managed lands, a competent officer of the first arriving fire authority will direct fire management activities until a competent OEH officer assumes control (unless prior agreements have been made).
Containment Lines	<ul style="list-style-type: none"> Construction of new containment lines should be avoided, where practicable, except where they can be constructed with minimal environmental impact. For new containment lines IMT to liaise with and receive consent from a Senior NPWS officer prior to construction. Use parallel containment lines when applicable. All containment lines not required for other purposes should be closed at the cessation of the incident. All personnel involved in containment line construction should be briefed on both natural and cultural heritage sites in the location. Containment line construction using earthmoving equipment must be in accordance with the earthmoving guidelines contained within the RFMS.
Earthmoving Equipment	<ul style="list-style-type: none"> 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. 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. 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. Earthmoving equipment must not leave tracks or create new tracks in Machinery Exclusion areas as marked on the Incident Map of a RFMS. Earthmoving equipment must be washed down, where practicable, prior to entering NPWS estate and again on exiting NPWS estate. Where multiple items of earthmoving equipment are being used, the IMT should consider the establishment of a Plant Operations Manager.
Fire Advantage Recording	<ul style="list-style-type: none"> All fire advantages used during wildfire suppression operations must be mapped and where relevant added to the database.
Fire Suppression Chemicals	<ul style="list-style-type: none"> 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.
Rehabilitation	<ul style="list-style-type: none"> Where practicable, containment lines should be stabilised and rehabilitated as part of the wildfire suppression operation.
Smoke Management	<ul style="list-style-type: none"> The potential impacts of smoke and possible mitigation tactics must be considered when planning for wildfire suppression and prescribed burning operations. If smoke becomes a hazard on local roads or highways, the police and relevant media must be notified. Smoke management must be in accordance with relevant RTA traffic management guidelines.
Structural Fire Fighting	<ul style="list-style-type: none"> OEH personnel are not trained in structural fire fighting and must not enter a structure in order to undertake structural fire fighting. 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.
Visitor Management	<ul style="list-style-type: none"> The reserve may be closed to the public during periods of extreme fire danger or during wildfire suppression operations. Areas of the reserve may be closed for prescribed burning operations.
WARNINGS	<ul style="list-style-type: none"> Beware of overhead powerlines. Beware of any gas bottles on the reserve and any dangerous goods storage areas. Reserve prone to flooding and only some trails will be trafficable after flood events or rainfall.

Vegetation



Vegetation Map Legend

Broad Vegetation Class	Vegetation Type	Biodiversity Thresholds	Fire Behaviour
Forested Wetlands	River Red Gum Forests	An interval between fire events less than 10 years and greater than 35 years should be avoided. River Red Gums will only tolerate low intensity fires. Individual trees may survive canopy scorch if they are not under stress and are in older age classes. Younger trees will not survive moderate to high intensity fires. Two fires occurring in the same area in a period of less than 20 years apart may reduce the extent of River Red Gum Forests.	These vegetation communities will generally not carry fire unless there are high ephemeral fuel loads, which generally occur after flooding events. In favourable years the River Red Gum forests can be scattered with 2m high reed beds, which can result in isolated areas of very high to extreme fire behaviour.
Freshwater Wetlands	Rush - Sedge - Common Reed Wetlands	An interval between fire events less than 10 years and greater than 35 years should be avoided.	In periods of high ephemeral fuel loads the wetlands pose a risk of extreme fire intensities, hot - fast moving fires and rapid change in direction associated with wind.
Semi-arid Woodlands (Grassy sub-formation)	Black Box - Lignum Woodlands or Black Box Chenopod Open Woodland	An interval between fire events less than 9 years should be avoided. There is no maximum interval between fire events specified for this vegetation type as there was insufficient data to give definite intervals. Fire should be avoided where Chenopod species occur. Two fires in the same area in a period of less than 10 years apart may remove younger Black Box trees. Fire should be avoided where Chenopod species occur.	In years of high ephemeral fuels, landscape fires are possible as fire potential will be very high to extreme, characterised by spotting from Black Box and River Red Gum communities and fast moving fires in other communities. Red Gum trees commonly form candles.
Semi-arid Woodlands (Shrubby sub-formation)	Cypress Pine Woodland of source-bordering dunes	An interval between fire events less than 15 years should be avoided. There is no maximum interval between fire events specified for this vegetation type as there was insufficient data to give definite intervals.	The Cypress Pine Woodlands generally occur on source-bordering dunes and the potential rate of spread would be low due to low overall fuel hazard. Fire runs are likely to slow down when entering this vegetation.
Grassy Woodlands	Riverine Inland Grey Box & Yellow Box - River Red Gum Tall Grassy Woodlands	An interval between fire events less than 8 years and greater than 40 years should be avoided.	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 erratic and fast moving. In ephemeral years 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. Potential spotting from trees.
Grassland	Grasslands (various communities)	An interval between fire events less than 3 years and greater than 10 years should be avoided.	
Other	Non-native plantation	No fire regime.	
Water	Permanent Water Body	N/A	
Fire History		Wildfires are generally attributed to humans, either from escaped campfires, discarded cigarettes or matches or deliberate ignitions. A lower number of fires can be attributed to lightning strikes. Most wildfires (of those that have been documented - approximately 90) in the last 60 years were less than 10 Ha with approximately 10% of fires being greater than 100 Ha in extent.	
Ephemeral Conditions		Ephemeral fuel conditions occur after consecutive years of effective rainfall and significant flooding events. 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 a result expect higher fire intensity.	
Drought Conditions		During drought conditions and when vegetation communities are visibly stressed or experiencing dieback no prescribed burning will be permitted and wildfire areas will be minimised.	
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 versus 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.	