Kalyarr National Park and State Conservation Area

Fire Management Strategy 2012

Mapsheet 1 of 2

Office of Environment & Heritage
NSW National Parks & Wildlife Service

This strategy should be used in conjunction with aerial photography and field reconnaissance during incidents and the development of incident action plans.

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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.

1:50k Topographic Map: Oxley 7729-N, Maude 7729-S, One Tree 7829-N, Illilliwa 7829-S
Scale: Noted scales are true when printed on A1 size paper

Related Documents

OEH Fire Management Manual 2011 - 2012.

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 be undertaken before decreases in Autumn temperatures occur. Burning may also be undertaken during late Winter and early Spring and when ephemeral fuels pose a potential high fire threat.

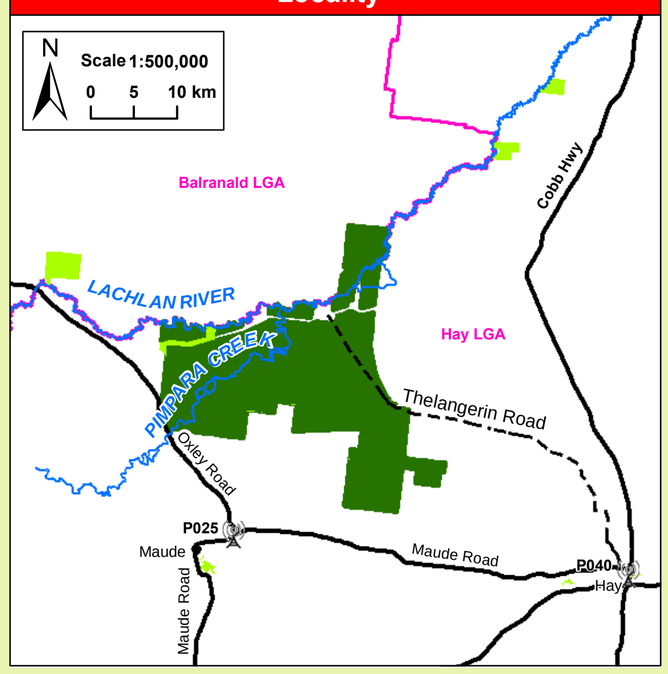
Contact Information

Agency	Position / Location	Phone
National Parks & Wildlife Service	Duty Officer (24 hour)	02 6332 6350
	Regional Office - Griffith	02 6966 8100
	Hay Area Office (bus. hrs)	02 6990 8200
	Kalyarr National Park (Darcoola)	02 6993 6257
Mid West Team NSW Rural Fire Service	Hay Fire Control Centre	02 6993 4213
	Jason Wall (Team Manager)	0429 934 214
NSW Fire Brigades	Hay Fire Station	02 6993 1101
Emergency Services	Hay District Hospital	000 02 6990 8700
SES	Hay Shire Volunteer Unit	13 2500 02 6993 1161
Police Station (not open 24 hrs)	Hay	02 6993 1100
Police – Local Area Command	Deniliquin	**03** 5881 9437
Council	Hay Shire Council	02 6993 1003

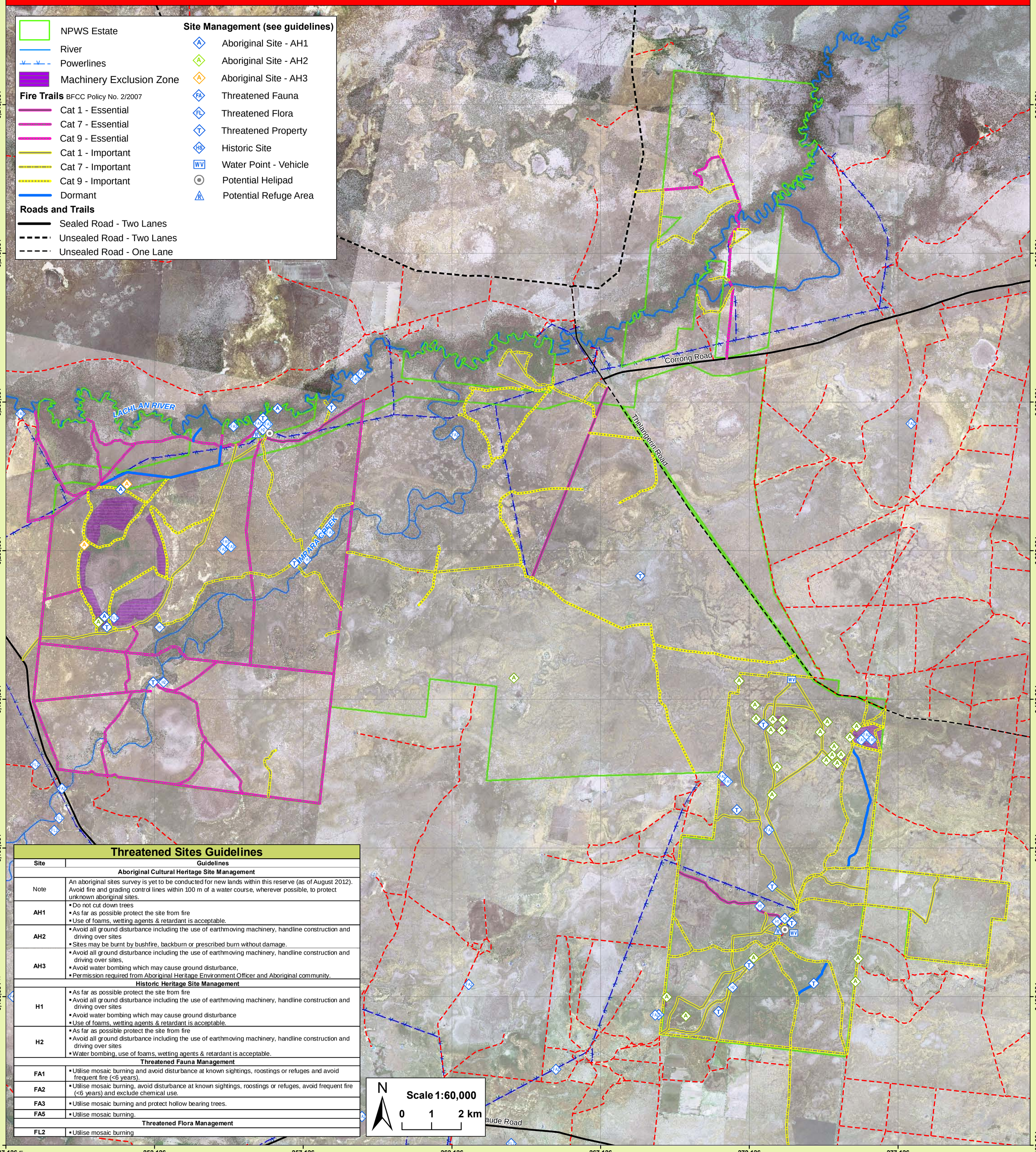
Communications Information

Service	Channel	Location and Comments
RFS PMR	42	Maude
	53	Toms Lake, via Booligal
	57	Hay
	73	Walgrove, 20 km SE of Hay
	82	Galah, 45 NE of Hay
UHF - CB	13	Car and hand held radios
Mobile		Do not rely on mobile phones, scattered coverage over reserve areas.

Locality



Incident Map



Threatened Sites Guidelines

Site	Guidelines
	Aboriginal Cultural Heritage Site Management
Note	An aboriginal sites survey is yet to be conducted for new lands within this reserve (as of August 2012). Avoid fire and grading control lines within 100 m of a water course, wherever possible, to protect unknown aboriginal sites.
AH1	▪Do not cut down trees ▪As far as possible protect the site from fire ▪Use of foams, wetting agents & retardant is acceptable.
AH2	▪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	▪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.
	Historic Heritage Site Management
H1	▪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.
H2	▪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 ▪Water bombing, 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).
FA2	▪Utilise mosaic burning, avoid disturbance at known sightings, roostings or refuges, avoid frequent fire (<6 years) and exclude chemical use.
FA3	▪Utilise mosaic burning and protect hollow bearing trees.
FA5	▪Utilise mosaic burning.
	Threatened Flora Management
FL2	▪Utilise mosaic burning

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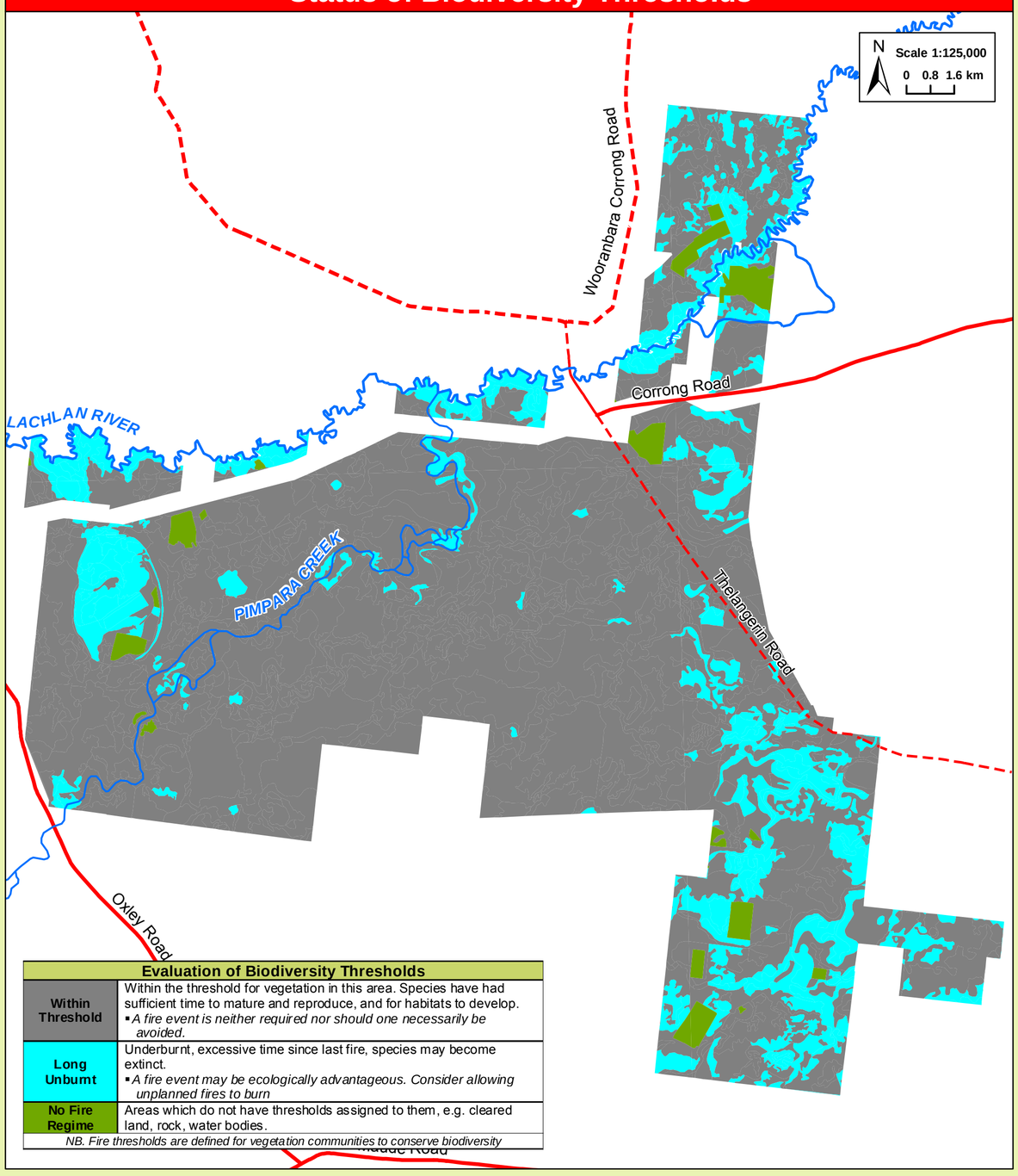
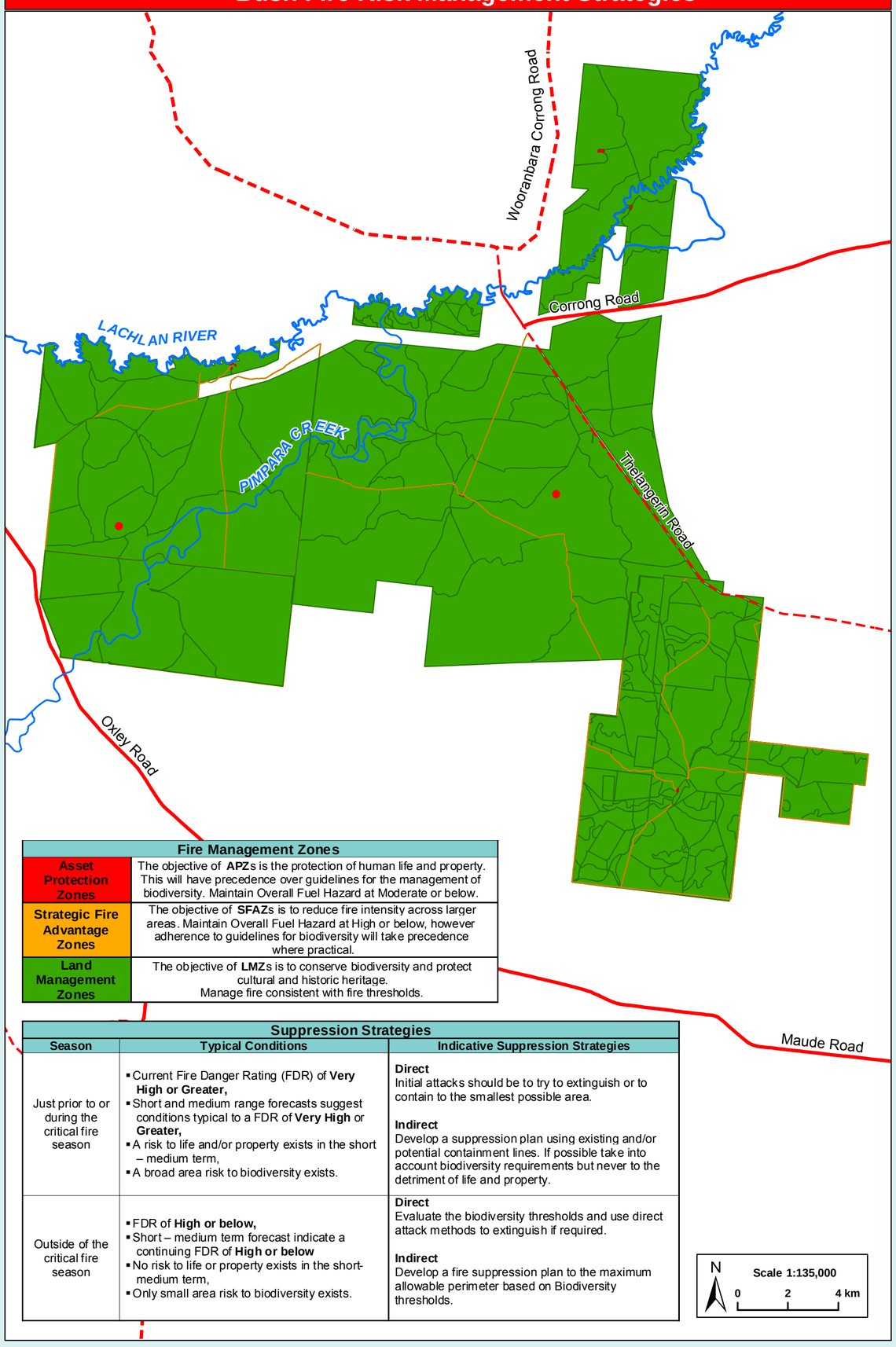
Status of Biodiversity Thresholds



Evaluation of Biodiversity Thresholds	
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.*
Long Unburnt	Underburnt, excessive time since last fire, species may become extinct. ▪ *A fire event may be ecologically advantageous. Consider allowing unplanned fires to burn*
No Fire Regime	Areas which do not have thresholds assigned to them, e.g. cleared land, rock, water bodies.
NB. Fire thresholds are defined for vegetation communities to conserve biodiversity	

Bush Fire Risk Management Strategies



Fire Management Zones	
Asset Protection Zones	The objective of **APZ**s is the protection of human life and property. This will have precedence over guidelines for the management of biodiversity. Maintain Overall Fuel Hazard at Moderate or below.
Strategic Fire Advantage Zones	The objective of **SFAZ**s is to reduce fire intensity across larger areas. Maintain Overall Fuel Hazard at High or below, however adherence to guidelines for biodiversity will take precedence where practical.
Land Management Zones	The objective of **LMZ**s is to conserve biodiversity and protect cultural and historic heritage. Manage fire consistent with fire thresholds.

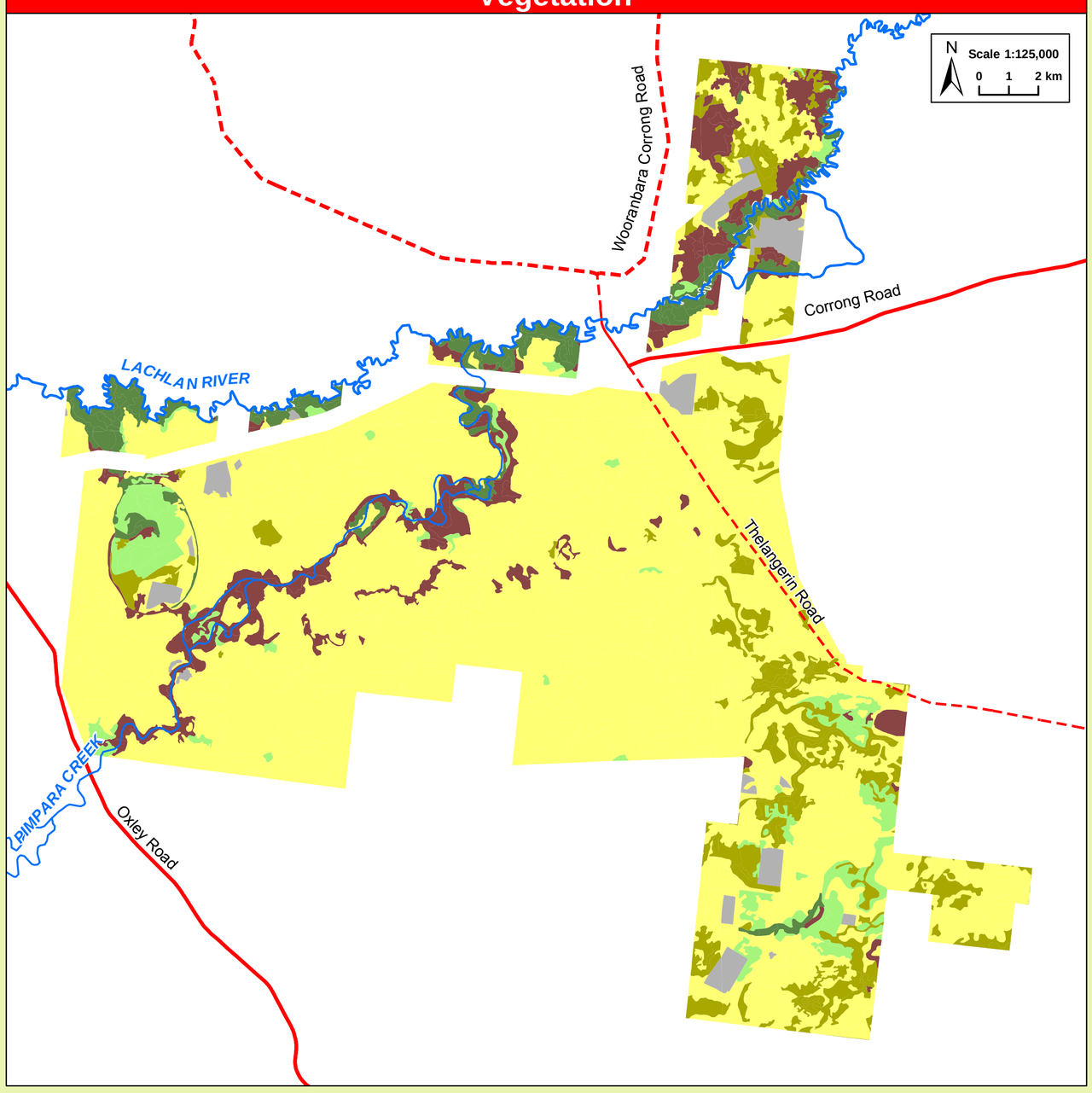
Suppression Strategies		
Season	**Typical Conditions**	**Indicative Suppression Strategies**
Just prior to or during the critical fire season	▪ Current Fire Danger Rating (FDR) of **Very High or Greater,** ▪ Short and medium range forecasts suggest conditions typical to a FDR of **Very High** or **Greater,** ▪ A risk to life and/or property exists in the short – medium term, ▪ A broad area risk to biodiversity exists.	**Direct** Initial attacks should be to try to extinguish or to contain to the smallest possible area. **Indirect** 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.
Outside of the critical fire season	▪ FDR of **High or below,** ▪ Short – medium term forecast indicate a continuing FDR of **High or below** ▪ No risk to life or property exists in the short-medium term, ▪ Only small area risk to biodiversity exists.	**Direct** Evaluate the biodiversity thresholds and use direct attack methods to extinguish if required. **Indirect** Develop a fire suppression plan to the maximum allowable perimeter based on Biodiversity thresholds.

Operational Guidelines

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

General	Guidelines
Aerial Water Bombing	▪ 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	▪ 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 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	▪ 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	▪ 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	▪ 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 personal 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	▪ 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 it 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	▪ All fire advantages used during wildfire suppression operations must be mapped and where relevant added to the database.
Fire Suppression Chemicals	▪ 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	▪ Where practicable, containment lines should be stabilised and rehabilitated as part of the wildfire suppression operation.
Smoke Management	▪ 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	▪ 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	▪ 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	▪ 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 high reed beds, which can result in isolated areas of very high to extreme fire behaviour. 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. 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. The Cypress Pine and Buloke Woodlands generally occur on Sandhill rises 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.
Freshwater Wetlands	Lignum wetland Swamp Cane Grass tall Open tussock grassland	An interval between fire events **less than 10 years and greater than 35 years** should be avoided.	
Semi-arid Woodlands (Grassy sub-formation)	Black Box Woodland with Chenopod understory Cypress Pine and Buloke Woodland on Sandhill rises	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.	
Arid shrublands (Chenopod subformation)	Bladder Saltbush Shrublands Black Blue Shrublands Copperburr Shrubland	**Fire should be avoided where Chenopod species occur.**	
Grassland	Grasslands (*Austrodanthonia* & *Austrostipa* spp.)	An interval between fire events **less than 3 years and greater than 10 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 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.
Other	Non-native plantation	**No fire regime**. where there is a high percentage of native grasses, the area should be managed for the likely previous formation, for example Forested wetlands (10 – 35 years).	
Fire History	The fire history for this reserve is incomplete. There is no verbal or recorded documentation of large scale fires occurring across the reserve area.		
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 it will be very difficult to undertake prescribed burning across many communities as the surface fuels will be very low. Wildfire areas will be minimised. Wildfires could be 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.		