Mann River Nature Reserve

Fire Management Strategy (Type 2)

2021 - 2026

This strategy should be used in conjunction with aerial photography and field reconnaissance.

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Contact: NSW National Parks and Wildlife Service, Northern Inland Branch

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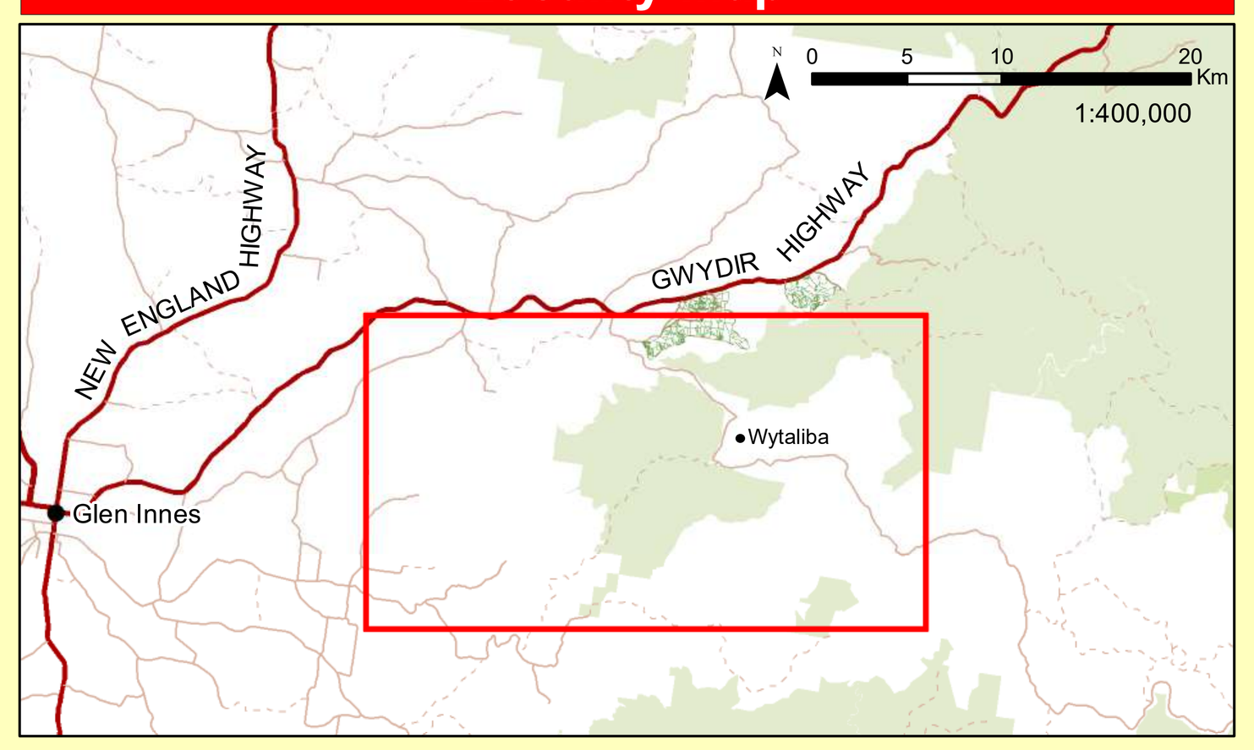
This strategy is a relevant Plan under Section 38 (4) and Section 44 (3) of the Rural Fires Act 1997.

Locality Map



Map details		
Datum: GDA_1994_MGA_Zone_56	Geographic Coordinate System: GCS_GDA_1994	Noted scales: True when printed on A0 size paper
Local Government Area: Glen Innes Severn	**Topographic Map** 1:25000 - Yellow Jacket 9338 4S, Henry River 9338 3N	

Contact Information

Agency	Position / Location	Phone
National Parks & Wildlife Service	Area Manager - Darren Pitt	0427 212 255
	Duty Officer (24 hour)	8275 1742
	Northern Tablelands Area Office (bus. hours)	6739 0700
NSW Rural Fire Service Northern Tablelands	NT Zone Manager - Chris Walbridge	0428 657 647
	NT Duty Officer	6739 6911
	NT Zone Office	6739 6900
Forest Corporation of NSW	Coffs Harbour Grafton State Duty Officer	6652 0111 6640 2222 9965 4375
Fire & Rescue NSW	Newcastle Comms. Centre	4929 7177
Emergency Services	Police, Fire, Ambulance	000
SES		132 500
Police	Glen Innes	6732 9799
Council	Glen Innes Severn	6730 2300
Local Aboriginal Land Council	Glen Innes LALC	6732 1150

Communications

Service	Channel	Location and Comments
NPWS Repeaters	334 330 634	• Summit Mountain • North Vote Group • Fire ground
FC NSW	194 (NP77) 80mhz radios)	• Frog Hollow • NPWS holds 80MHz hand helds at Tenterfield and vehicle mounted at Armidale
RFS	N011	• Northern Tablelands Digital Voting
UHF - CB		• Small fires channel 10, large fires determined by IMT
Aviation - CTAF	134.70	NIB frequency unless another frequency is allocated on an incident
Mobile		• The trig at Tommy's Rock lookout is the only possibility for mobile reception.
Satellite Phone	0147 165 975 0147 154 198	• Stored at Glen Innes

Fire Season Information

Wildfires	The critical wildfire season occurs during September to November. This period may extend into January if the normally reliable summer rainfall does not eventuate. Particular care is required during periods of negative Southern Oscillation Indices. The end of the critical fire season is often marked by wet storm activity.
Prescribed Burning	Fuel accumulation rates are generally high, and fire can carry through forest burn only several years previously. Prescribed burning is most effective in late winter and early spring where the combination of low rainfall and cured fuels from frosts maximise available fuel loads. Autumn burns are possible, but rainfall events in this period can mean fuel moisture contents remain too high for effective hazard reduction burning.

Operational Guidelines

Aerial Operations	• Aerial operations will be managed by trained and competent personnel. This includes directing aerial bombing and aerial ignition operations • The use of bombing aircraft without the support of ground-based suppression crews should be limited to very specific circumstances. • All aerial ignition operations require the consent of a senior NPWS officer or the Section 44 Appointee.
Backburning	• All personnel must be fully briefed before back burning operations begin. • Backburning in areas of Low – Moderate OFH will require the use of wind, or low humidity to maximise effectiveness. • Where possible clear around dead and fibrous barked trees adjacent to control lines prior to backburning.
Command & Control	• The first combatant agency on site may assume control of the fire, but then must ensure the relevant land management agency is notified promptly. • The initial Incident Controller will liaise with the RFS to ensure that the agency in command is determined and an Incident Controller is appointed.
Containment Lines	• New containment lines require the prior consent of a senior NPWS officer. • Construction of new containment lines should be avoided, where practicable, except where they can be constructed with minimal environmental impact. • All personal involved in containment line construction should be briefed on, and must consider both natural and cultural heritage sites in the location. • All containment lines not required for other purposes should be closed immediately at the cessation of the incident.
Earthmoving Equipment	• Plant may only be used with the prior consent of a senior NPWS Officer. • Plant must always be guided and supervised by an experienced officer and accompanied by a support vehicle (NPWS). When engaged in direct or parallel attack, this vehicle must be a fire fighting vehicle. • Plant must be washed down, where practicable, prior to it entering NPWS estate and again on exiting NPWS estate.
Fire Suppression Chemicals	• The use of foam, wetting agents and retardants will NOT be permitted within 50 metres of dams and watercourses holding water. • The aerial use of gels and retardants should be approved by a senior NPWS officer. • The use of retardants requires the approval of a senior NPWS officer.
Rehabilitation	• Where practicable, containment lines should be stabilised and rehabilitated as part of the wildfire suppression operation.
Water Points	• Water points are limited and not always reliable. Consider deployment of a bulk water carrier to support fire operations.
Smoke Management	• Potential smoke impacts and mitigation tactics will be assessed during the planning of fire operations.
Visitor Management	• Visitors numbers in the reserve can be high with day use and overnight facilities available • In Extreme + Fire Danger at the Branch Directors discretion, reserves or sections of the reserve may be closed or evacuated. • Ensure the closure is advertised on the NPWS visitor website
WARNINGS	• The forests within Mann River Nature Reserve are capable of sustaining rapidly moving high intensity fires in rugged terrain with few access opportunities. There is a high risk of entrapment in these areas under severe or above fire danger ratings. • Narrow Pass Trail has a gate that is sometimes locked and is very slow to traverse. Check the gate status with NPWS Glen Innes. • The multiple occupancy "Wytaliba" adjoins Mann River NR to the East. • Gibraltar Range National Park, Nymboida NP & SCA, Barool NP, and Washpool NP & SCA are geographically intertwined if landscape scale fires eventuate. In this circumstance fire planning needs to carefully consider adjacent threats and fire advantages in these reserves. • Fire runs should be anticipated with winds from any direction.

Heritage Guidelines

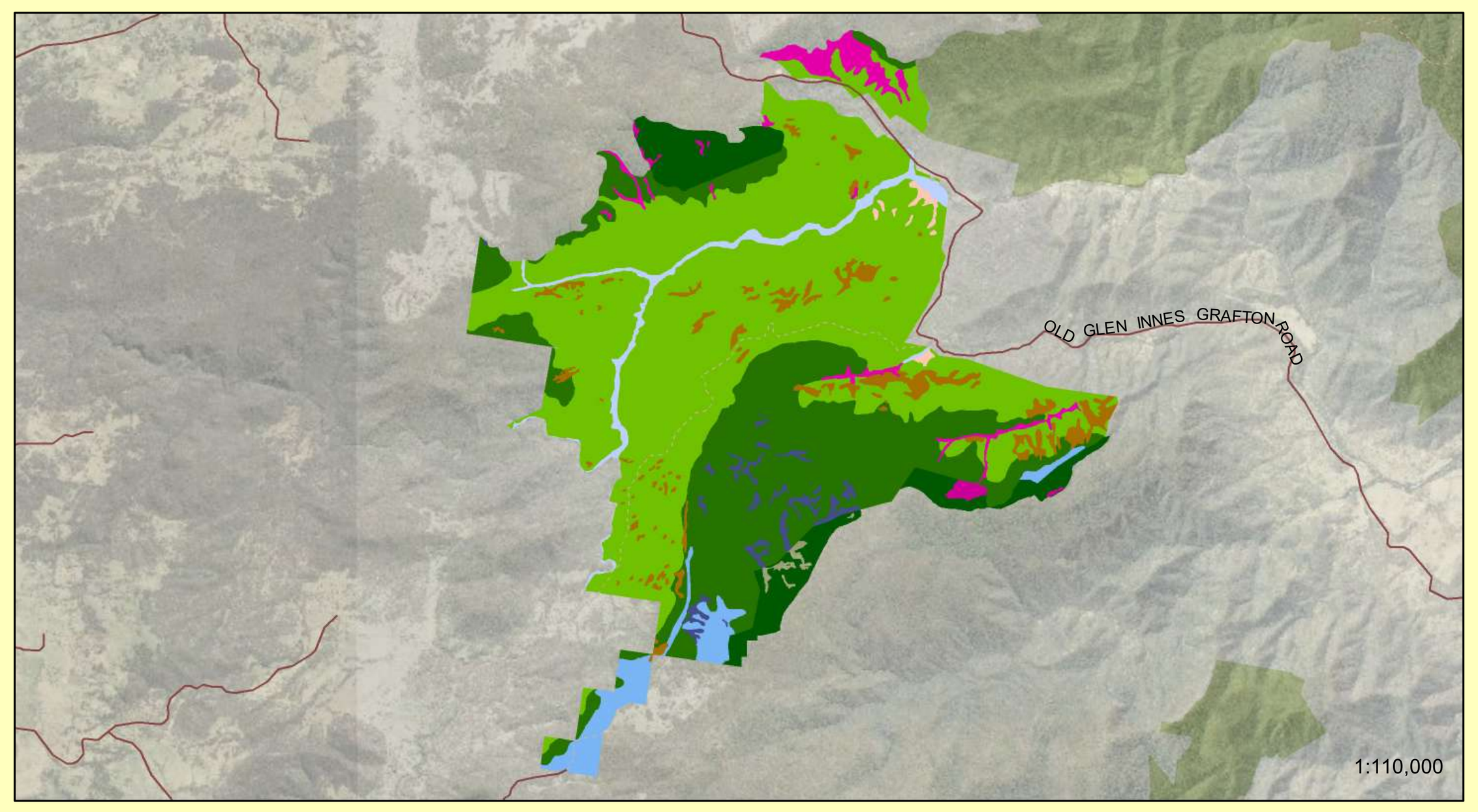
Aboriginal Cultural Heritage	**IS 1 –** As far as possible protect site from fire. Do not cut down trees. **IS 2 –** As far as practicable protect the site from fire. Avoid all ground disturbance and driving over sites. Avoid water bombing which may cause ground disturbance. **IS 3 –** Avoid all ground disturbance. Avoid water bombing. Site may be burnt by fire without damage. **Modified trees** • As far as possible, protect the site from fire, and do not cut trees • Use of foams & retardant is acceptable. **Habitation sites** • Exclude control line construction from sites. Consider a buffer zone of about 50 metres from the sites. • AIIMS databases must be checked as part of planning for fire operations. **Mann River significant Aboriginal sites include:** • There is a section of Narrow Pass Fire Trail with an open site. It is marked with green posts to indicate where to lift the blade on heavy plant.
Historic Sites	**Mann River NR has no significant historic sites requiring special protection from fire.**
Threatened Fauna & Flora	• The protective actions for threatened flora and fauna have been incorporated into the Operational Guidelines
Soil Erosion Management	The soils within the reserve are generally stable. Steep terrain is susceptible to erosion after disturbance. Fire trails used in fire operations should be drained as soon as possible after use.

Suppression Strategies

Conditions	Guidelines
Intent: All of Mann River Nature Reserve and surrounding country was burnt by intense wildfires in 2019 in the Kingsgate and Kangawalla Fires. The aim of suppression should be to minimise the extent and intensity of fires in Land Management Zones, until large areas of the reserve return to acceptable biodiversity thresholds. Suppression activities should aim to minimise fire size and intensity where possible.	
All vegetation types	
Fire danger rating LOW - HIGH	• Consider a broad containment strategy using existing roads, allowing long-term management requirements for biodiversity • Direct and parallel attack may be applied with earthmoving machinery and fire units.
Fire danger rating VERY HIGH	• Close parallel or direct attack may be an option at night depending on weather conditions. • Distance between the flank and machinery and fire units should be kept to a minimum • Secure and deepen containment lines on the next predicted downwind side of the fire. • May require aerial support to manage spot overs and monitor fire spread.
Fire danger rating SEVERE - EXTREME +	• Firefighter safety is the paramount consideration in deployment. • Undertake broad containment strategies using main fire trails and cleared country. • Tactics will include property protection where safe and necessary. • Close parallel or direct attack and / or mop up of fire edge may be an option at night depending on weather conditions. Warning: Fire runs should be anticipated with winds from any direction. Entrapment risk is very high.

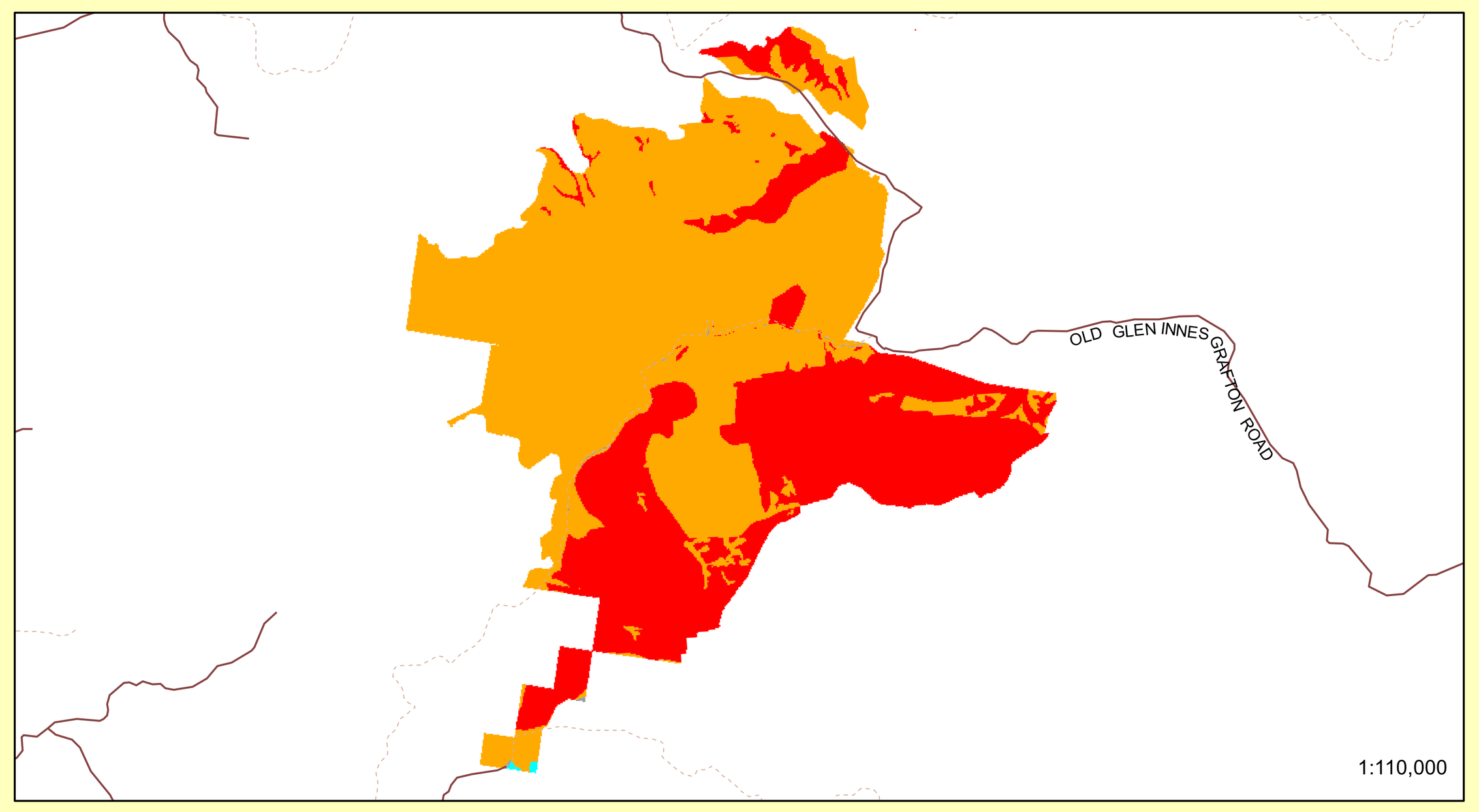
Operations Map

Vegetation



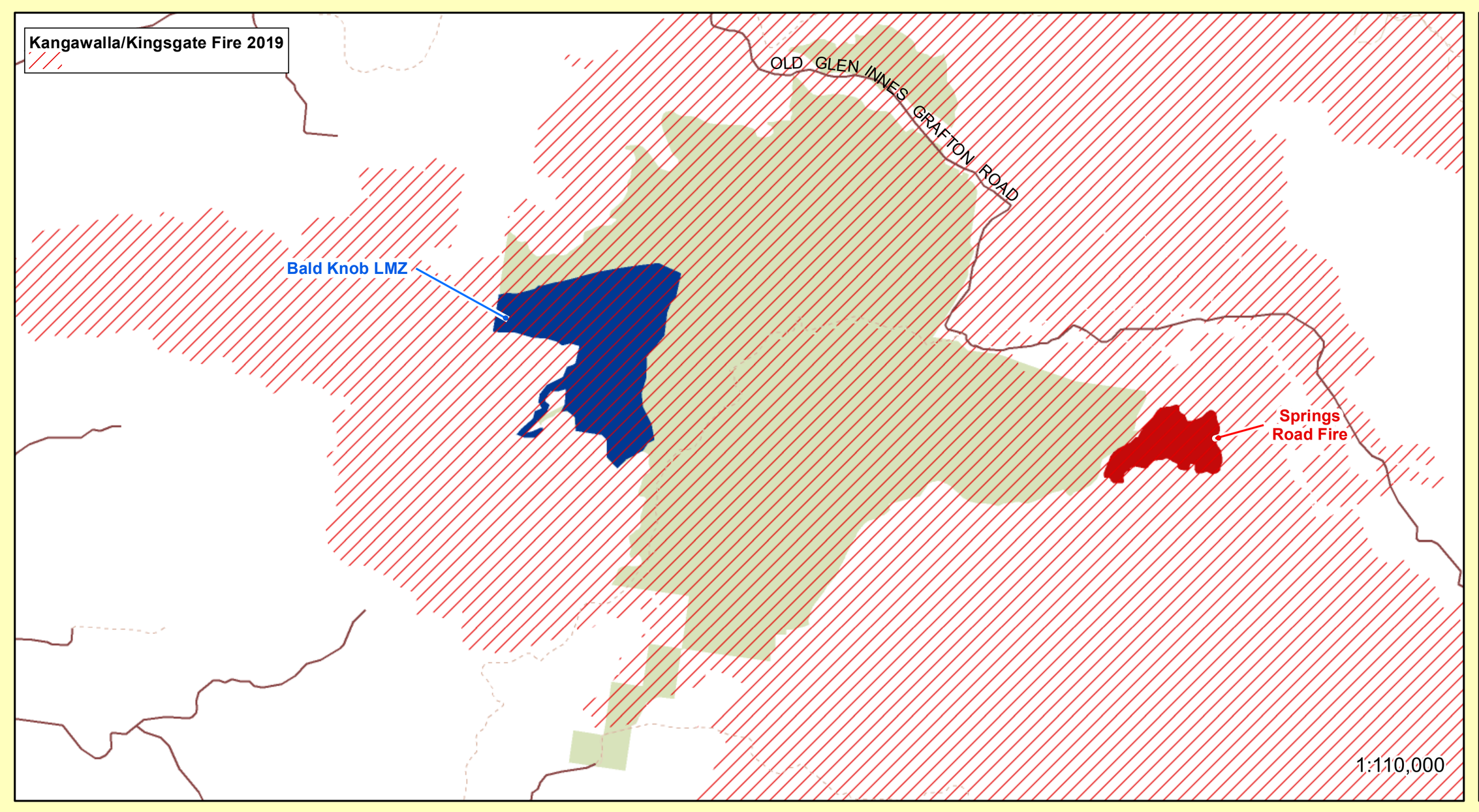
Vegetation Formation (Keith)	Vegetation Management Guidelines	Fire Behaviour
Dry sclerophyll forests (shrub/grass sub-formation)	• The minimum interval between low intensity fires is more than 5 years. • The maximum interval between fire should be less than 50 years. • The minimum interval between high intensity fires should be evaluated on forest condition. • Many sites with this vegetation class have been exposed to frequent fires for extended periods. • This is the dominant vegetation type in Mann River NR, comprising well over 50% of the Nature Reserve. Fire management in this vegetation type will be one of the main determinants of the overall fire management regime.	• This class of vegetation is often associated with hilly and steep terrain which cause variable fire behaviour with due to terrain driven factors. • The potential rates of spread during extended dry season can be very high due to terrain factors. The very steep terrain, skeletal soils and droughty nature of these escarpment sites mean **OFH is normally in the range of Moderate to Very High.** • Spotting associated with uphill fire runs can be severe.
Dry Sclerophyll Forests (Shrubby sub-formation)	• Avoid Fire intervals of less than 7 years and greater than 30 years. • The minimum interval between high intensity fires should be evaluated on forest condition. • A diversity of fire intervals across the local landscape should be maximised. • This formation is the second most dominant in the reserve. It is in a relatively consolidated are in the south east, and in several smaller pockets in the north west.	• OFH is highly dependent on time since fire. The potential rates of spread van vary from Moderate to Very High due depending on **OFH**.
Heathlands	• Avoid Fire intervals of less than 7 years and greater than 30 years. • A diversity of fire intervals across the local landscape should be maximised. • These heathlands can be associated with other threatened species. Avoid aerial incendiary on rocky outcrops associated with these heaths. • These northern montane heaths are small and fragmented and generally surrounded by dry sclerophyll forest. Fire in these dry sclerophyll forests will impact on the heathlands.	• OFH is highly dependent on time since fire. Wind and terrain effects are magnified in running heath fires. The potential rates of spread can vary from Moderate to Very High.
Freshwater wetlands	• Fires should be avoided unless required for strategic protection of the reserve. • Strategic burning should avoid fire intervals of less than 6 years and greater than 35 years. • These montane bogs and fens with impeded drainage are about 10 small fragmented entities in the south east surrounded by dry sclerophyll forests. Fire regimes in the dry sclerophyll forests will impact these freshwater wetlands.	• Potential rate of spread is low due to **Low-Mod** OFH in most years. • Localised areas of High OFH may produce areas of higher fire intensity.
Rainforest	• No prescribed burning should be conducted. • Avoid high intensity fires close to rainforest boundaries. • Very small thin isolated pockets of rainforest exist associated drainage features and sheltered slopes.	• Potential rates of spread are usually very low to zero rate of spread.
Wet sclerophyll forests (shrubby sub-formation)	• The minimum interval between moderate intensity fires is 25 years. • The minimum fire interval between high intensity fires should be more than 25 years. • A diversity of fire intervals across the local landscape should be maximised. • These Wet Sclerophyll Forests are in relatively consolidated areas in the south of Mann River NR.	• The potential rates of spread during extended dry season can be High due to **High to Extreme OFH**. • There is a high potential for spotting in this vegetation type. • Fires are often of high intensity.
Forested wetlands	• Avoid fire intervals of less than 7 years and more than 35 years. • Avoid high intensity fires • This vegetation type is in a narrow band adjacent to and either side of the Mann River.	• Potential rates of spread are dependent on seasonal conditions. • Low OFH and hence low rates of spread occur in dry years. • A Low - Moderate OFH may develop after successive wet seasons producing continuous ground cover. • The narrow strip of vegetation adjacent to a river means this vegetation type will have little impact on fire behaviour.
Grasslands	• The minimum interval between fire events should be 2 years. • The maximum interval between fire events should be 10 years. • The grasslands are in small isolated pockets on north facing slopes near the Old Grafton Road.	• Potential rates of spread are dependent on seasonal conditions. • **Low OFH and hence low rates of spread** occur in dry years. • **A Moderate to High OFH** may develop after successive wet seasons producing continuous ground cover. In these conditions potential rate of spread may be **Moderate to Very High.** • The small size of the grasslands means they will have little impact on fire behaviour

Vegetation Fire Thresholds



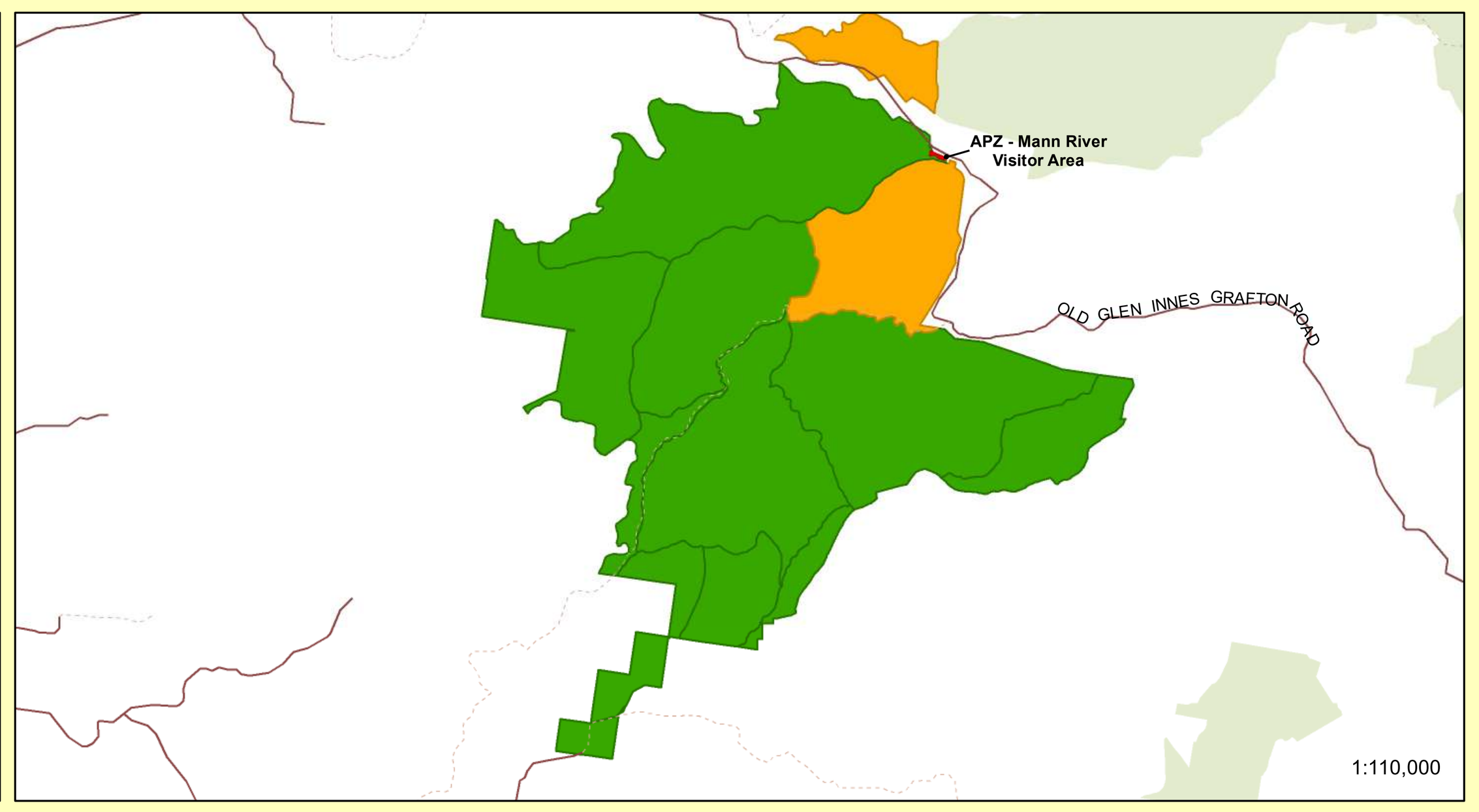
Vegetation Threshold	Treatment
Too Frequently Burnt	Fire thresholds have been exceeded. Protect from fire as far as possible.
Vulnerable to Frequent Fire	The area will be Too Frequently Burnt if it burns this year. Protect from fire as far as possible.
Within Threshold	Fire history is within the threshold for vegetation in this area. A burn is neither required nor should one necessarily be avoided.
Long Unburnt	Fire frequency is below fire thresholds in the area. A prescribed burn may be advantageous. Consider allowing unplanned fires to burn.
Unknown	Insufficient data to determine fire threshold.
No Regime Assigned	Areas which do not have recommended fire intervals assigned to them eg. cleared land, rock.
NB. Fire thresholds are defined for vegetation communities to conserve biodiversity	

Fire History



Fire Type	Fire Details
Prescribed Burn	2017-18: Bald Nob
Wildfire	2019-20: The Glen Innes S44 complex of fires burnt the entire reserve with generally intense crown fire. West of Narrow Pass Fire Trail was was subject extreme intensity from the Kangawalla Fire. East of Narrow Pass Fire Trail was high intensity from the Kingsgate Fire. 2014-15: Springs Road South. A very hot and high intensity fire.

Risk Management Information



Fire Management Zone	Treatment
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 in locations to assist containment of wildfires, by maintaining the Overall Fuel Hazard at HIGH or below.
Land Management Zones	The objective of **LMZ**s is to conserve biodiversity and protect cultural heritage. Manage fire consistent with fire thresholds.