

RESOURCE INFORMATON

Burrinjuck Nature Reserve (3248 ha) was gazetted on 10th February 1984. Burrinjuck Nature Reserve is located 30 kms south-west of Yass, NSW. The gazetted reserve area is in two parts. The main part (3159 ha) is located on the northern side of Burrinjuck Dam, including part of the catchment for Barren Jack Creek and Carrolls Creek. On the other part (89 ha) is 800 m to the south, on the opposite side of Burrinjuck Dam, approximately 1.5kms west of Duttons Bluff. Recently purchased land (1911 ha) on the western side of Burrinjuck Nature Reserve, including Mount Europe and the Middle Earth (not yet gazetted), will be included in the Burrinjuck Nature Reserve Fire Management Strategy. For the purpose of this Fire Management Strategy, Burrinjuck Nature Reserve (now approximately 5159 ha) will be referred to as the "reserve", unless otherwise stated. The reserve is rugged, heavily timbered on steep falls into the Murrumbidgee River and Burrinjuck Dam. The reserves structure and diversity has the potential to protect vulnerable species listed under the Threatened Species Act 1995. The reserve was burnt during the 2003 fire season. Access to the northern part of the reserve is on Childowla Trail off Burrinjuck Road. The southern part can be

	rivate property, off Wee Jasper Road.
Department of Environment and Conservation	 Parks and Wildlife Division, National Parks and Wildlife Service. South West Slopes Region, Queanbeyan Area
Rural Fire	Southern Tablelands Zone (Bush Fire

- Hume Federal Electorate. - Burrinjuck State Electorate. Yass Valley Local Government Area - Brungle Tumut Aboriginal Land Council - Onewal Aboriginal Land Council Murrumbidgee Catchment Management IMPORTANT: The following planning information is based on the best possible data for each table category. When used in conjunction with other information in the plan, concessions may be needed where asset management and biodiversity requirement:

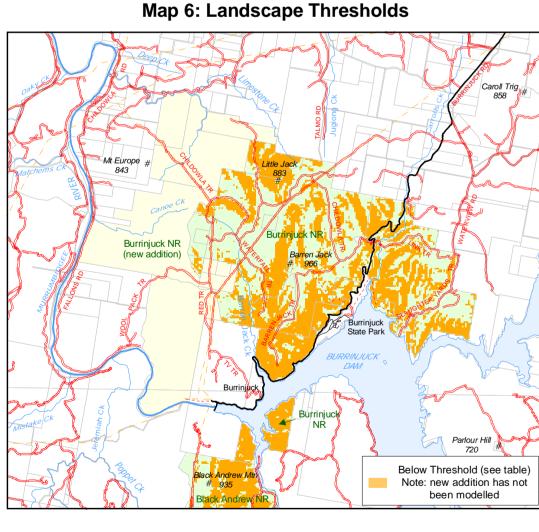
MAP 6: LANDSCAPE THRESHOLDS

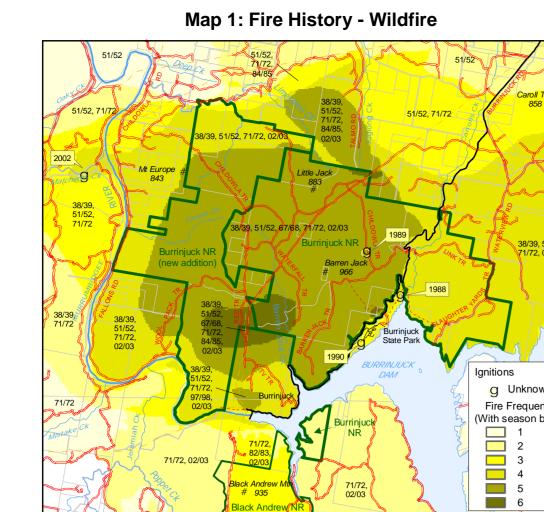
Slope Class Degrees	Fine Fuel Range in T/Ha	Threshold & Impacts
0-10	3-5	Less potential on lower slopes. Fine fuels averaging 4 t/ha are favourable.
10-15	4-7	Expected increase in gullies and wash-outs Fine fuels averaging 6 t/ha are favourable.
15-20	10-12	Increase expected through mid slopes and drainage lines. Fine fuels averaging 11 t/ha are favoura
20-25	12-14	Increase across disturbed slopes and trails Fine fuels averaging 13 t/ha are favourable.
25-30	16-18	Large scale soil loss expected in disturbed areas. Impacts may be severe in areas feeding in to watercourses. Fine fuels between 16-18 t/ha expected to prevent slope instability.
>30	>20	High fuels on slopes >30° are rare in this reserve. Erosion potential is extreme after high intensity fi as evident after the 2003 fires.
Throchold	2. Impacte	

• Currently, 30% of the park has potentially unstable soils/slopes (1536 ha). The new addition has not been modelled. Water quality may be compromised by soil disturbance and silt run off after fire. Organisms dependent on drainage lines and specific water quality are also at risk through soil disturbance. Maintaining the fine fuel minimum range may reduce potential moisture loss in soils during summer periods. · Fuel decomposition after fire may decrease (depending on fire intensity, fire interval, cover and patchiness of the fire) due to a reduction in soil micro-organism activity. The presence of foams and retardants within the soil may also effect soil and micro-· Areas with lower than average fine fuels for the corresponding slope class are expected to have increased slope instability and, poorer water quality.

- Minimise the potential for frequent and or high intensity fire in areas where fine fuel ranges do not meet the slope class thresholds. Avoid trail construction on slopes >15 degrees (conforming to Bush Fire Coordinating Committee Guidelines for the Classification of · If prescribed burning, ensure burn areas are strategically implemented across the landscape so that large areas and slopes are not left exposed. In addition, burning programs should be implemented during conditions where fuels can be reduced to the minimum t/ha of the fine fuel range for the corresponding slope classes. Avoid planned fire during years of extreme drought and the year proceeding a severe drought. Control lines or fuel breaks constructed during an incident should provide adequate drainage to prevent trail erosion.

Rehabilitation of control lines or fuel breaks constructed during fire events will be addressed during the incident in the Incident





	Black Andrew Mit 71/72, 02/03 6 6 8 6
	MAPS 1 & 2: FIRE HISTORY
Ignitions	Recorded ignitions and causes for fires within the Reserve and surrounding area are limited. However, trends in ignitions across the South West Slopes Region suggest fires are caused by lightning or human activities. Causes include lightning strikes associated with summer frontal systems from hot, dry, electrical storms, escaped campfires, farm equipment and escaped legal and illegal burns. Prior to reserve establishment, fires were potentially frequent, particularly where associated with dam construction and steam train access through the reserve.
Prescribed burns	Approximately 6 prescribed burns have been implemented within the reserve since 1982. Between 1982 and 1994, all prescribed burn programs were carried out along access trails west of Burrinjuck State Park and developed areas. The potential impact of burning along access trails, is the creation of an edge effect where species capable of establishing areas and increasing cover after successive fire may cause problems for future fire suppression by creating thicker, denser verges with lower fine fuels to carry backburns.
1	

Wildfires have occurred on average 16 years apart for the last 66 years. Large landscape fires burnt through the reserve and surrounding region in 1951 and 1972. These fires came from the west north-west, burnt the entire reserve and continued to the east through private and other lands. The most recent, landscape fire (2003-2003 fire season), burnt through Burrinjuck Nature Reserve and State Park. Wildfire The fire started around the 18th January 2003, approximately 5kms west of the existing reserve boundary. In extremely dry and windy conditions (and a period of prolonged drought), the fire spread rapidly, jumped the Murrumbidgee River and Burrinjuck Dam, and spotted to the east, south and south-west of the reserve. Close to 30,000 ha of agricultural land, plantation and National Park was affected. The fire was contained 11 kms southwest of Yass and south of Wee Jasper Road, along the timber line adjacent to agricultural land. The intensity of the 03 fires ranged from moderate to extreme, enhanced extreme fire weather conditions. The frequency and interval between fires (wildfires and prescribed burns) has implications for biodiversity and landscape management. There are areas within this reserve that have burnt 8 times in 66 years, where the shortest time between fires was 5 years and the longest period was 12 years. Local declines and extinctions are predicted for this reserve if regime trends continue.

In addition, the past regimes provide the opportunity for fire persistent species to increase in cover and abundance, where other species disappear. This may produce a more flammable vegetation community in future. Fire management practices (such as prescribed burning) may add to fire persistent species success, impact on community thresholds, soil and slope stability and potentially increase future fire behaviour. Research and monitoring should be initiated to ensure appropriate management practices are implemented.

		MAP /:	THREATENED FAUNA		
Fire Group	Common N	ame	Scientific Name	TSC Schedule	Vulnerable Period
۸	*Brown Tree	ecreeper	Climacteris picumnus	V	May-Dec
Α	*Diamond F	ire Tail	Stagonopleura guttalta	V	Jul-Feb
	Powerful Ov	vl	Ninox strenua	V	Apr-Dec
В	*Squirrel Gli	der	Petaurus norfolcensis	V	Jun-Dec
	Spotted tails	ed quoll	Dasyurus maculatus	V	Jun-Oct
С	Streams, sw	amps & Riparian Areas			
Fire Group	Veg Groups		Threatened Fauna Guidelines & Consider	rations	
Α	- 24 - 49 - 52	Felling hollow bearing availability for most sp changes in vegetation depend on. These spe simplification of forest Where possible; Exclude fires for at >15 years (2018) in Wildfires should be term mosaic pattern	ecline in insect abundance and diversity, which som trees (dead or alive) during 'mopping up' activities pecies in this group. Frequent burning potentially refloristic composition and structure or decreases the cies are likely to be disadvantaged by frequent fuel structure, especially areas effected by the 2003 fire least 30 years (2033) in vegetation group 52, >25 you vegetation group 24. kept to the smallest possible size, managed to reduce the second process. Ensure patches of grass, shrubs, standing and sing trees (dead or living), particularly during mop up	potentially decreduces available water quality reduction fire to s. ears in vegetatuce intensity ar fallen timbers a	eases nest hollow habitat through nany species because of the ion group 49 and did create long
В	All	availability for most sp changes in vegetation depend on. These spe simplification of forest December increases s Where possible; • Exclude fires for at >15 years (2018) in • Wildfires should be term mosaic pattern	trees (dead or alive) during 'mopping up' activities pecies in this group. Frequent burning potentially refloristic composition and structure or decreases the cies are likely to be disadvantaged by frequent fuel structure, especially areas effected by the 2003 fire pecies vulnerability. least 30 years (2033) in vegetation group 52, >25 you vegetation group 24. kept to the smallest possible size, managed to reduse. Ensure patches of grass, shrubs, standing and sing trees (dead or living), particularly during mop up	duces available water quality r reduction fire t s. Any fire betw ears in vegetat uce intensity ar fallen timbers a	e habitat through many species because of the veen June and ion group 49 and did create long
		All areas of vegetation	by swamps, streams and riparian areas. Species of	can often be fo	und under debris.

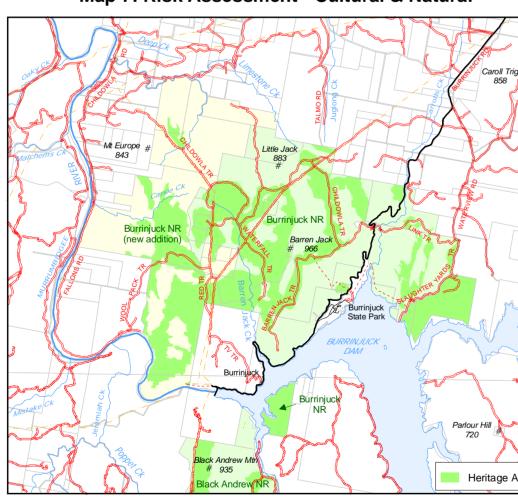
Map 7: Risk Assessment - Cultural & Natural

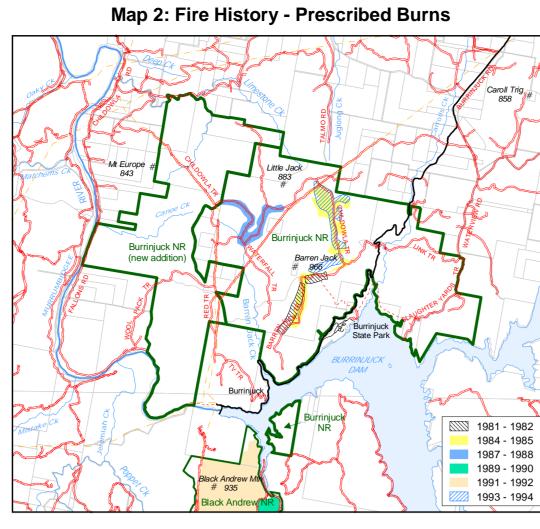
*Species recorded off the reserve, however the proximity of available habitat within the park is crucial for species survival.

Minimise frequent and potential for high intensity fires and keep fire at least 100 m from swamps,

Avoid the use of fire suppression chemicals and earthmoving within streams, swamps & riparian

Exclude all fires for at least 15 years (2018).





		Black Andrev	MR	1993 - 1994
		MAP 7: THE	REATENED FLORA	
Group	Common Nar	ne	Scientific Name	Schedule
Α	Wee Jasper G	revillea	Grevillea iaspicula	V
В	Yass daisy		Ammobium craspedioides	V
Group	Vegetation Group	Threaten	ed Flora Management Guidelines & Considerations	
Α	• 49 • 52	drought). The potential loss of locations where there is a Lim susceptible to weed competiti Where possible; Avoid ground disturbance within the vegetation group. Slashing may be used with recommended during spring. The species should be moundertake weed control in weeds. Impact from retardants and	range and population size it is vulnerable to disturbance of a few plants could be of major significance. This specie testone substrate, rocky outcrops, cave entrances or cliff on and predation by grazing animals (eg goats) in close proximity to populations of this species and minimal where potential populations may exist. In this community as an alternative to prescribed burning. In this community as an alternative to prescribe distribution of the ensure weed species do not interfere with plant and adjacent to populations, taking care to spray or dig of the forms is unknown. Avoid application where species are the vegetation group management guidelines.	es prefers is. It is mise disturbance g, but not nt recovery. out only target
В	- 24 - 51 - 52	species. There is little to no in resprout after fire, however in Where possible; Avoid ground disturbance within the vegetation group. Slashing may be used with recommended during sprir	ing, ploughing & slashing) are considered responsible for neact expected from planned or unplanned fire. This spectervals between fires should consider affects on species in close proximity to populations of this species and minion where potential populations may exist. in this community as an alternative to prescribed burning ig. nitored to ensure weed species do not interfere with plan	ecies may persistance. mise disturbance g, but not

		Manage this species within the vegetation group management guidelines.
		is based on data researched in September 2005, collated from CSIRO and NPWS floristic fire response
		group numbers should be referenced against the vegetation management guidelines in the Vegetation
Communit	ties and Thresho	ds section of this plan, as some community regimes may be in conflict with threatened flora managemen
auidalinas		

· Impact from retardants and foams is unknown. Avoid application where species are recorded.

		MAP 7:	THREATENED FAUNA			guidelines.		
)	Common N	ame	Scientific Name	TSC Schedule	Vulnerable Period			
	*Brown Tree	ecreeper	Climacteris picumnus	V	May-Dec		MAP 7: CULTUR	RAL HERITAGE
	*Diamond F	ire Tail	Stagonopleura guttalta	V	Jul-Feb	Key Guidelines		
	Powerful Ov	/I	Ninox strenua	V	Apr-Dec	Identified sites must	t he protected	
	*Squirrel Gli	der	Petaurus norfolcensis	V	Jun-Dec			incidents and or for preparation of Review of Environmental
	Spotted taile	ed quoll	Dasyurus maculatus	V	Jun-Oct			nsure new records are included. Aboriginal site information from adding. Site data must respect this agreement and must be used
	Streams, swamps & Riparian Areas					appropriately.	•	
)	Veg Groups		Threatened Fauna Guidelines & Consider	rations		program outlines.		e outlined in the Review of Environmental Factors and burning
		Fire often leads to a de	ecline in insect abundance and diversity, which som trees (dead or alive) during 'mopping up' activities p	ne species are o	dependent on.		ined officers will provide advice on site prote servation management plans (where they ex	
	· 24 · 49	availability for most sp changes in vegetation depend on. These spe simplification of forest	ecies in this group. Frequent burning potentially recordinate composition and structure or decreases the cies are likely to be disadvantaged by frequent fuel structure, especially areas effected by the 2003 fire	duces available water quality r reduction fire b	habitat through many species	Aboriginal Heritage	Potential sites may include burials, ceremor	Recorded sites include modified trees and scattered artefacts. iial sites, over hangs and rock arrangements. ected during fire suppression and prescribed burning programs. heritage.
	• 52	>15 years (2018) inWildfires should be term mosaic pattern	least 30 years (2033) in vegetation group 52, >25 y vegetation group 24. kept to the smallest possible size, managed to reduse. Ensure patches of grass, shrubs, standing and ting trees (dead or living), particularly during mop up	uce intensity ar fallen timbers a	nd create long	Historic Heritage	sites has not been determined. Sites includ 'Grownow' Sheds, in the new addition to the sites may exist, however not recorded. The be hazardous to crews and machinery durin	toric sites within the reserve. However, the significance of these de weirs and associated features of dam construction and the reserve, which represent past land use and practices. Other se may include, mining relics, ruins, fence lines etc, which may g suppression and prescribed activities.
	All	availability for most sp changes in vegetation depend on. These spe simplification of forest December increases s Where possible; Exclude fires for at >15 years (2018) in Wildfires should be term mosaic pattern	trees (dead or alive) during 'mopping up' activities pecies in this group. Frequent burning potentially reciforistic composition and structure or decreases the cies are likely to be disadvantaged by frequent fuel structure, especially areas effected by the 2003 fire species vulnerability. Least 30 years (2033) in vegetation group 52, >25 you vegetation group 24. kept to the smallest possible size, managed to reduct. Ensure patches of grass, shrubs, standing and sing trees (dead or living), particularly during mop up	duces available water quality r reduction fire t s. Any fire betw ears in vegetat uce intensity ar fallen timbers a	e habitat through many species pecause of the peen June and ion group 49 and and create long	2005.	e sites are based on data recorded on AHIN	perational guidelines during any fire events. IS and HHIMS databases and field data recorded as at September ENT - LIFE & PROPERTY Fire Management Guidelines & Considerations
	Streams, swamps & Riparian	Fire and destabilisation waterways, sedimenta remove riparian vegeta effect water quality and severe impacts on the Where possible;	by swamps, streams and riparian areas. Species of n of soil resulting from frequent fire can lead to incredition and eutrophication, potentially impacting on speation, reducing the filtering benefits of vegetation. Let may lead to algal blooms. Frequent prescribed by se habitats.	eased run-off in ecies. High into oss of nutrient	to streams and ensity fire can from the site can	On park Assets (Transgrid Powerlines)	Powerlines may cause danger to ground personnel through smoke conduction of electricity through the air. There is a low risk of fire damage due to clearing under the lines.	Provide guidelines for new assets constructed within the reserve. Contact the relevant authority to turn the power off prior to back burning or prescribed burn operations under lines. Maintain access trails and firebreaks within the park that will assist in fire fighting efforts. Participate in fire management proposals through RFS Zone

Map 8: Risk Assessment - Property

Other assets

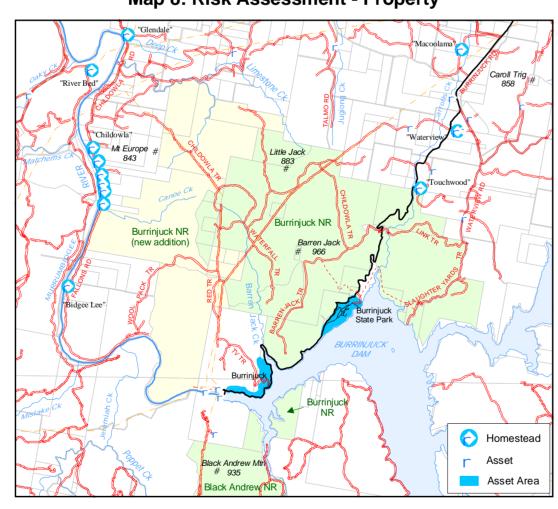
(including private

property or other

lands adjacent to the

Property assets may be damage

by fire escaping the park.

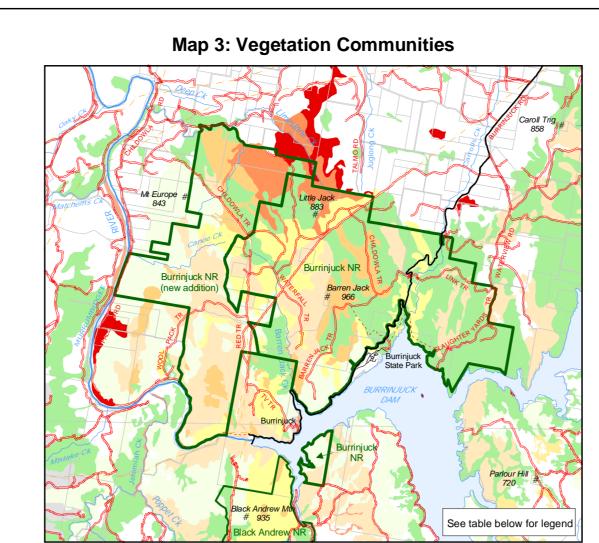


Bush Fire Management Committee meetings.

o minimise potential spread to private lands.

During the fire season rapidly respond to all unplanned fires

Co-operative fuel managemeth operations to be undertaken in conjunction with Burrinjuck State Park and local RFS.



MA	.P 3: VEGETATION COMMUNITIES & 1	THRESHO	DLDS
Veg Group	Vegetation Description	Reserve Ha's	% of Reserve
16	Blue Gum & Broad Leaved Peppermint - Dry Grass/Shrub Forest	720.0	14
21	Riparian Forest	0	0
24	Apple Box & Nortons Box - Moist Grass Forest	1565.8	30
31	White Box - Grassy Woodland	0	0
38	Dwyers Gum - Heath Open Woodland	294.3	6
49	Brittle Gum & Broad Leaved Peppermint - Poa Grass Forest	842.8	16
51	Long Leaved Box & Black Cypress Pine - Heath/Shrub Forest	560.0	11
52	Nortons Box - Poa Grass forest	1082.0	21
189	Degraded Forest	16.7	<1
191	River Oak Forest	3.2	<1
198	Pine (Pine Plantation)	2.5	<1
199	Cleared with patches of Natural Vegetation	65.4	1
N/A	No Data	6.4	<1

Vegetation Group

Vegetation Management Guidelines & Considerations

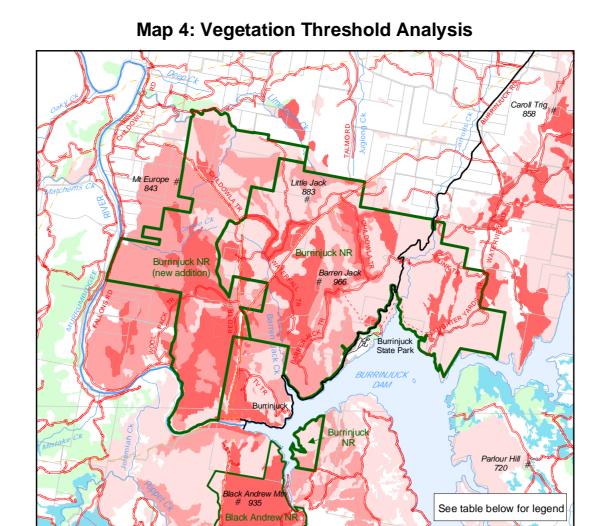
Frequent fires predicted to cause extinctions in this community over-storey if successive

15 - 35	Blue Gum & Broad Leaved Peppermint - Dry Grass/Shrub Forest & White Box - Grassy Woodland 16 & 31	fires occur <15 years apart. Some species within the community understorey sampled predicted to decline if infrequent fire occurs >35 years apart although others in the community may be locally extinct if consecutive fires occur <50 years apart. Most tall storey species may decline if consecutive fires occur <10-15 years apart and may become locally extinct if fires occur >100 years apart. Where possible; Minimise the potential for frequent fire, where successive fires occur <15 years apart. Prescribed fires should only be initiated where successive occur >35 years apart and where no more than 10% of the vegetation group is targeted for burning. Other methods of fuel manipulation should be considered. Monitor after fire for invasive weed species that may compete during fire recovery.
15 - 60	Apple Box & Nortons Box - Moist Grass Forest 24	Frequent fires predicted to cause extinctions in this community over-storey if successive fires occur <15 years. The majority of species within the community understorey sampled predicted to decline if fire is infrequent (ie. Fire occur >60 years apart. This community covers a small percentage of the reserve and is a key community supporting the survival of threatened fauna. Where possible; Minimise the potential for frequent fire, where successive fires occur <15 years apart. Prescribed fires should only be initiated where successive occur >20 years apart and where no more than 10% of the vegetation group is targeted for burning. Other methods of fuel manipulation should be considered. Minimise the use of earth moving equipment within the vegetation community to prevent fragmentation Avoid felling mature, hollow bearing trees.
15 - 120	Riparian Forest 21	Frequent fires predicted to cause extinctions if successive fires occur <15 years apart. Local extinctions predicted within the community if fire occurs >120 years apart. Top soils prone to erosion with frequent and high intensity fire. This community covers a small percentage of the reserve and is a key community supporting the survival of threatened fauna. Where possible; Minimise the potential for frequent fire, where successive fires occur <15 years apart. Prescribed fires should only be initiated where successive occur >15 years apart and where <5% of the vegetation group is targeted for burning. Other methods of fuel manipulation should be considered. Minimise the use of earth moving equipment within the vegetation community to prevent fragmentation Avoid felling mature, hollow bearing trees (dead or living).
25 - 110	Dwyers Gum - Heath Open Woodland & Brittle Gum & Broad Leaved Peppermint - Poa Grass Forest & Long Leaved Box & Black Cypress Pine - Heath/Shrub Forest	Declines predicted if successive fires occur <25 years apart. Vegetation Group 38 has the most sensitive species to frequent fire, where consecutive fires <25 apart may cause local extinctions. Local extinctions may also occur if fire is infrequent. That is, where fire is excluded for long periods (>110 years). Most overstorey species will persist where consecutive fires occur >100 years apart, but <400 years apart. Daviesia, Cassinia and Platylobium species, which persistent after fire, are predicted to increase in cover, abundance and density. This has the potential to increase the bushfire behaviour within the community 5-8 years after disturbance. Veg Group 51 provides threatened species habitat. Where possible; Minimise size and potential spread of fire where successive fires occur <25 years apart. Prescribed fire may be implemented in areas where APZ's and SFMZ's have been identified. Prescribed fires should not be implemented where successive occur <25 years apart and where <10% of the vegetation group is targeted for burning. Other methods of fuel manipulation should be considered to reduce the potential increase of fire persistent species. Monitor after fire for invasive weed species that may compete during fire recovery
30 - 70	Nortons Box - Poa Grass forest 52	Some species within this community may be affected by frequent and infrequent fire events. Some ground cover species are predicted to decline where successive fires occur <30 years apart and may become locally extinct, where fire is excluded for >70 years. Most species sampled within the group are capable of persisting >100 years without fire. This community covers a small percentage of the reserve and should be protected from further disturbance. Where possible; Minimise the size and intensity of any fire, especially where successive fires occur >30 years apart. Minimise the use of earth moving equipment within the vegetation community. Prescribed fires should only be initiated where successive occur >30 years apart and where <5% of the vegetation group is targeted for burning. Other methods of fuel manipulation should be considered.

manipulation should be considered. of the season and impact

wood" a	Note on the fire.
	The v - Fir - car - Fir - SF - Pro - fre - thr - Wi - Re - In add
	. Fir

	on this reserve and others within the Burrinjuck Dam area. Top soils are prone to severe erosion with frequent and or high int ire.
	BIODIVERSITY SUMMARY
	The various responses of reserve fauna to fire suggest that, for biodiversity management;
·	Fire should not be introduced to areas affected by the 2003 wildfires until the communities recover to their full carrying capacity for threatened species (HMZ 1 & HMZ 2).
١.	Fire should be excluded from the reserve in core threatened species habitat (HMZ 1) for at least 15-30 years.
.	SFMZ prescribed burns should be restricted to <10% of any vegetation community, in isolation within the reserve
	Prescribed burns should be of low intensity (to reduce impacts on threatened species) and at a low enough
	frequency (>15-30 years, dependent on the vegetation group) to maintain a range of habitat components for threatened fauna. Fuels within 8-15t/ha for 60-80% of FMA are considered appropriate.
١.	Wildfires should be kept as small as possible to reduce impacts on threatened species habitat.
١.	Research plots should be initiated in areas identified as FMA and HMZ1 to monitor changes in biodiversity value
In	n addition, for management of vegetation;
١.	Fire should be excluded from the areas burnt repeatedly (Overburnt threshold) or recently (HMZ 1).
	Floristic and structural diversity monitoring should be conducted in the 2003, 1984 & 1972 age classes to monit any changes in floristic diversity and habitat quality occurring with time since fire.
ı	Fire should only be applied in response to a demonstrated loss of biodiversity.



Threshold	Vegetation Group	% of Reserve	Interpretation & Management Guidelines
Overburnt	16, 24, 38, 49, 51, 52	25	According to the vegetation regime thresholds, two consecutive fires have been recorded too close together and the area is overburnt. Additional fire in this area will lead to adverse fire regimes and may threaten community biodiversity. Fire should be excluded until, at least, 2018 to 2033 (dependent on the vegetation group threshold).
Vulnerable	16, 24, 38, 49, 51, 52	31	 Will be overburnt if the area burns before the end of 2015 to 2033. Fire should be avoided until 2018 to 2033 (dependent on the vegetation group threshold).
ecently burnt	16, 24, 38, 49, 51, 52	42	Time since fire is less than the threshold intervals, but will be considered OK after the year 2015 to 2033. Fire before such time will push this vegetation into the vulnerable class. • Fire should be avoided until 2018 to 2033 (dependent on the vegetation group threshold).
Underburnt	N/A	0	Where identified, the area may require fire for Asset protection, strategic or ecological reasons. Planned fire may be introduced for fuel reduction burning for asset and strategic protection programs, ecological purposes and unplanned fire events may be allowed to burn if The vegetation community demonstrates a loss of biodiversity conditions are suitable the intensity meets vegetation, flora and fauna community requirements >50% of any vegetation community group in any threshold across the reserve is classed as Ok, Almost Underburnt and Underburnt.
Almost Underburnt	N/A	0	Where identified, the area may require fire for Asset protection, strategic or ecological reasons. Planned fire may be introduced for fuel reduction burning for asset or strategic protection programs and unplanned fire events may be allowed to burn if The vegetation community demonstrates a loss of biodiversity conditions are suitable the intensity meets vegetation, flora and fauna community requirements >50% of any vegetation community group in any threshold across the reserve is classed as Ok, almost underburnt and underburnt.
ОК	24	<1	Areas which thresholds have been assigned to, which don't fall into one of the above categories. Fire is neither required or to be avoided. Fire should only be applied in areas for ecological purposes or for SFMZ reasons. Where possible, maintain >50% of any vegetation community group across the reserve as Ok, Almost Underburnt and Underburnt.
nknown/ No Regime Assigned	189, 191, 198, 199	2	The fire history is too short to determine whether it is underburnt or over burnt. Areas that do not have a threshold assigned to them or there is missing data, limiting the modelling capabilities in DEC GIS.
Note: The thre	eshold analysis	is derived from	m vegetation community thresholds and recorded fire history (including fire frequency and

MAP 4: VEGETATION THRESHOLD ANALYSIS

	MAP 10:	FUEL LANDSCAPE
Site Sampling (Surface Fuels - April 2004)	Fine Fuels T/ha (Visual)	Notes
Minimum Fuels	0.6 (1.0)	*Veg Group 24 & 38 - in modelled low fuels (<5 t/ha) & moderate Bushfire Behaviour potential.
Highest Fuels	6.8 (7.0)	*Veg Group 16 & 24- in moderate modelled fuels (between 5-9 t/ha) & moderate Bushfire Behaviour potential. Grass cover was approximately 29% and aerial fuels with coverage around 35%. This may increase rapidly in the next 3-5 years during regeneration and recovery from 2003 fires.
Average Fuels	4.0 (4.2)	* Fine fuel loads are expected to increase rapidly over the next 5-10 years as the landscape recovers from the 2003 fires. Depending on climatic conditions and fire regimes, fine fuels should peak within 10-15 years (2015-2020), where the average fine fuels should range between 14-17 t/ha in vegetation groups 16,24, 49 & 51 and between 8-12 t/ha in vegetation groups 21, 31, 38 & 52.
Modelled Fuels (Surface & Aerial Fuels - April 2004)	Fuels in t/ha	Notes
Minimum Fuels	1.5	Minimal fuels were modelled across the landscape, where 80% of the reserve fuels modelled under 10 t/ha and approximately 19% modelled
Maximum Total Fuels	19.4	between 10 and 15 t/ha. Higher modelled fuels occurred in vegetation group 51, accounting for only 1% of reserve fuels. The data indicates, across the
Mean Fuels	7.7	landscape, fuel loads generally conform with levels prescribed for strategic fuel management zones (8-15t/ha for 60-80% of zone).
during 2004, which included visual	assessments. This	Data is based on 10 fuel sites and sampling (\(\sigma 50 \) taken within the reserve s data is used to determine the relationship of fuels at sites with NDVI te vegetation density across the reserve. Visual assessments include bark in

intervals). All vegetation communities should be monitored and planned fire should only be applied if a loss of biodiversity is demonstrated. In the event of fire in this reserve, this analysis would have to be performed again to establish new threshold values.



SFMZ

HMZ1

	Map 5: Bu	shfire Beha	viour Potent	tial
				Caroll Trig 858
John S. C.	Mt Europe #	Little Jack 883 #	Jugiong	
	Burrinjuck NR (new addition)	Burrinjuck Barre # 9	NR In Jack	The same of the sa
	REDIR	Barren Jack C	Burrinjuck State Park	orthe residence of the second
S S S S S S S S S S S S S S S S S S S		Burrinuck	BURRINJUCK DAM Irrinjuck NR	Very High
		ck Andrew Mil # 935 ack Andrew NR	3	Low

The ratings an information wit	d modelling for thin the map vie	ng (under moderate conditions in this fire management strategy are sp w area can not be used to compare of e NPWS South West Slopes Region.	ecific to Burrinjuck Nature Repther landscapes represented	eserve map		
Rating	Vegetation I	Description			Reserve Hectares	% of Reserve
Low	No Data Cleared with	patches of Natural Vegetation			71.8	1
Medium	Riparian Forest White Box - Grassy Woodland Brittle Gum & Broad Leaved Peppermint - Poa Grass Forest Nortons Box - Poa Grass forest Dwyers Gum - Heath Open Woodland River Oak Forest Degraded Forest Pine Plantation (Under 5 years of age)				2241.4	42
High	Blue Gum & Broad Leaved Peppermint - Dry Grass/Shrub Forest Apple Box & Nortons Box - Moist Grass Forest Long Leaved Box & Black Cypress Pine - Heath/Shrub Forest Pine Plantation (5-10 years of age)			2845.8	55	
Very High	Pine Plantati	ine Plantation (>10 years of age)			0	0
Aspect Beha Reflects like	aviour Rating <i>ly aspect dryn</i>	l less and fire wind direction	Slope Behaviour Ra	ting		
Rating Aspect in degrees		Aspect in degrees	Rating	Slop	Slope in degrees	
Low		40 - 190	Low	0 - 10	0 - 10 degrees	
Medium		10 - 40 & 190 - 220	Medium	10 - 2	10 - 20 degrees	
High		220 - 260 & 335 - 10	High	20 -3	20 -30 degrees	
Very High 260 - 33		2/0 225	Very High	. 20	degrees	

MAP 9: BUSHFIRE MANAGEMENT ZONES

Bushfire Behaviour Potential risk areas on DEC hazards and or increased threats.

Fuel Monitoring Areas are localities for

monitoring fine surface fuel, grasses, shrubs,

dead and down material and ecological health.

Strategic Fuel Management Zones are areas

spotting or to consolidate reserve APZ's. The

prescribed burns in the target area, within the

used to target 'potential' risks of high fuels,

high fire intensity, increased rate of spread,

zone is not a commitment to execute

Areas of high priority natural and cultural

conservation value. It identifies areas of

'recorded' cultural and natural assets. This

habitat to prevent declining numbers or

zone is important for the protection of cultural

heritage and the conservation of some species

reserve that have not been surveyed and or

have no records of significant features or

Life, property and commercial assets in high

Assets should be evaluated annually to measure potential

This zone identifies areas of significance for

• These heritage zones should be monitored to determine natural and cultural features across the broader threats to biodiversity and managed in accordance with

landscape. This generally means 'parts of the conservation policy and principles.

Property) Guidelines.

which may indicate an increase in risk.

Works program to follow Risk Assessment (Life and

· Monitor regularly to quantify changes in the fuel landscape,

 Monitor to improve knowledge ecological responses and health and identify undesirable changes in vegetation Use areas to establish SFMZ's where appropriate.

The implementation of fuel management programs should

comply with BFCC guidelines and should be conducted in

manipulation program should only occur where more than

Any program must include monitoring before and after

prescribed burns to determine effectiveness of the program

Heritage areas should be assessed annually to determine

Prescribed fire may be applied in these areas if appropriate

for ecological purposes or protection of cultural heritage. Implement recovery plan guidelines (where they exist).

Manage during incidents according to HMZ1 guidelines.

Prescribed fire may be applied in these areas if appropriate

for ecological purposes or protection of cultural heritage. Manage during incidents according to HMZ2 guidelines.

potential hazard, threats to cultural heritage, and

thresholds for TSC and vegetation communities.

areas identified in this strategy as a SFMZ.

80% of the zone exceeds 15 t/ha (BFCC).

on fuels and the ecological impacts.

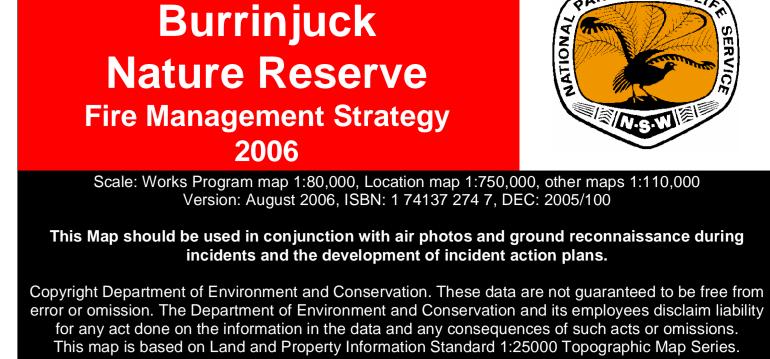
Implementing prescribed burns or other vegetation

Map 10: Fuel Landscape

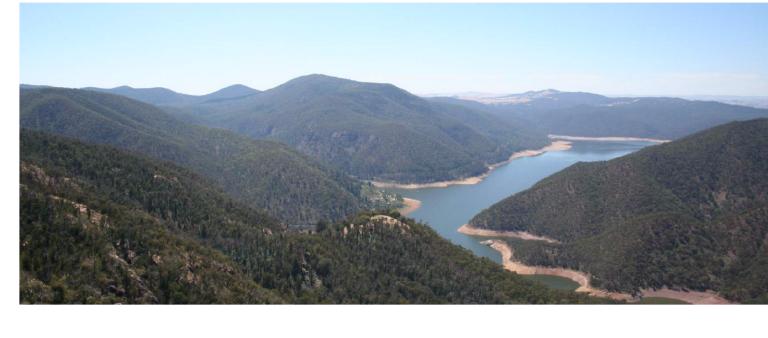
	Second Control of the	TALMORD Jugiong Ck	Caroll Trig #858	
on so a sum of the second of t	Burrinjuck NR (new addition)	Little Jack 883 5 3.2 4.5 5.9 Burrinjuck NR Barren Jack # 966 5.5	urrinjuck ate Park 2.7	Mistak
		Burrinjuck Burrinjuck NR Andrew Mn 935 k Andrew NR	Measured Fuel Load Average Surface Fuels (t/ha) Vegetation Density High Low	

		WORK	KS PROGRAM				
Asset	Priority	Name, Area or Detail	Management Strategy	Proposed Works			
	High	Childowla Trail, Red Trail, Slaughteryards Trail (Cat 1)	Maintain access for safe 4WD access for Category 1 Fire vehicles. All trails clearly signposted strategically at intersections and trailheads.	Assess annually. Initiate maintenance programs and works as required, or as specified in Regional Operations Program. Formalise existing turning areas (Carrolls Creek). Identify and develop other and include in the Region Operations Plan.			
Trails	Medium	Other Management Trails (Cat 7 - 9)	Maintain access for safe 4WD access for fire vehicles Categories 7 - 9. All trails clearly signposted strategically at intersections and trailheads.				
	Medium	Turning Bays (Carrolls Creek)	To provide adequate turning and passing bays along trails within the reserve.				
	These tra	These trails do not comply with the Bush Fire Coordinating Committee Guidelines for the Classification of Fire Trails - Policy No. 1/03.					
Asset PZ	Medium	Powerlines etc	Easement to be maintained in accordance with Powerline MOU (Transgrid and Great Southern Energy).	Any works carried out in conjunction with the owne and Yass Valley BFMC.			
Heritage MZ1	High	Specific landscape, cultural, natural (threatened species and their habitats and vegetation communities) conservation values and recreational values.	Manage and protect natural & cultural values with appropriate fire management regimes. Develop cultural protection program	Monitor thresholds every years, and after fire events Implement programs when necessary or provided for recovery or conservation management plans.			
Heritage MZ2	Medium	General landscape, natural and cultural conservation values.	Manage and protect natural & cultural values with appropriate fire management regimes.	Monitor thresholds every years, and after fire events			
Strategic FMZ	Low	Strategic Fuel Management Zones, where they have been identified.	Monitor vegetation adjacent to assets on and off park (assets within 200 m of park boundary). Monitor established fuel sites, follow information and research programs on park, especially in newly acquired land.	Review FMZS's every 5 years and in a coordinated management approach wineighbours. Programs should only occ where measured hazards exceed BFCC guidelines. Implement through the Bu Fire Management Commit			
Information & Research	Low	Fuel and vegetation monitoring.	Continue measuring/monitoring fuels at all established sites, including photographic records. Establish new sites to encompass new lands and areas adjacent to assets on and off park (assets within 200 m of park boundary). Research fire history and intensity	Establish new sites within life of this FMS. Monitor every 5 years, an after fire events. Map fire intensity and hist within the life of this FMS.			

	<u>l</u> n	Black Ar	ndrew/NR	New		
		WORK	KS PROGRAM			
Asset	Priority	Name, Area or Detail	Management Strategy	Proposed Works		
	High	Childowla Trail, Red Trail, Slaughteryards Trail (Cat 1)	Maintain access for safe 4WD access for Category 1 Fire vehicles. All trails clearly signposted strategically at intersections and trailheads.	Assess annually. Initiate maintenance programs and works a required, or as specification.		
Trails	Medium	Other Management Trails (Cat 7 - 9)	Maintain access for safe 4WD access for fire vehicles Categories 7 - 9. All trails clearly signposted strategically at intersections and trailheads.	Regional Operations Program. Formalise existing turn areas (Carrolls Creek) Identify and develop o		
	Medium	Turning Bays (Carrolls Creek)	To provide adequate turning and passing bays along trails within the reserve.	and include in the Reg Operations Plan.		
	These trails do not comply with the Bush Fire Coordinating Committee Guidelines for the Classification of Fire Trails - Policy No. 1/03.					
Asset PZ	Medium	Powerlines etc	Easement to be maintained in accordance with Powerline MOU (Transgrid and Great Southern Energy).	Any works carried out conjunction with the o and Yass Valley BFM		
Heritage MZ1	High	Specific landscape, cultural, natural (threatened species and their habitats and vegetation communities) conservation values and recreational values.	Manage and protect natural & cultural values with appropriate fire management regimes. Develop cultural protection program	Monitor thresholds evyears, and after fire evelonement programs necessary or provided recovery or conservat management plans.		
Heritage MZ2	Medium	General landscape, natural and cultural conservation values.	Manage and protect natural & cultural values with appropriate fire management regimes.	Monitor thresholds ev years, and after fire ev		
Strategic FMZ	Low	Strategic Fuel Management Zones, where they have been identified.	Monitor vegetation adjacent to assets on and off park (assets within 200 m of park boundary). Monitor established fuel sites, follow information and research programs on park, especially in newly acquired land.	Review FMZS's every years and in a coordir management approach neighbours. Programs should only where measured haze exceed BFCC guidelite. Implement through the Fire Management Coordinate of the service		
Information &			Continue measuring/monitoring fuels at all established sites, including photographic records. Establish new sites to encompass new lands and	Establish new sites w life of this FMS. Monitor every 5 years		



South West Slopes Region



Works Program 2006 - 2011

Reproduced with permission of Land and Property Information.

