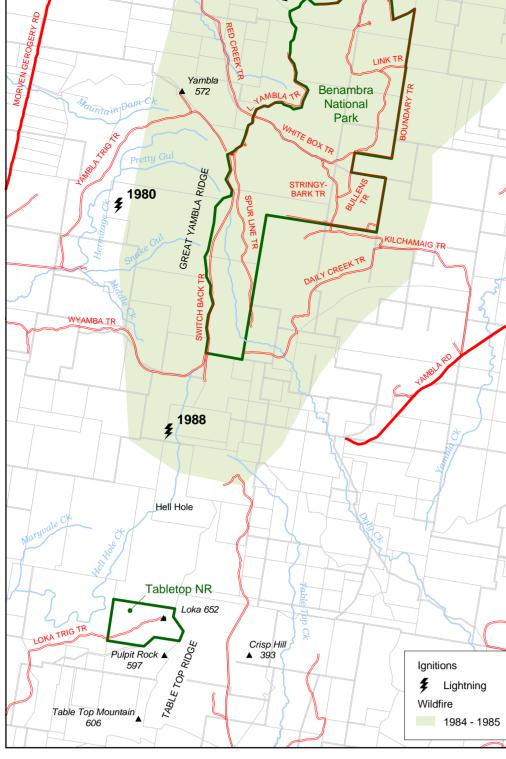


J F M A M J J A S O N D

	RESOURCE	INFORMA	TON
	nbra National Park was gazetted in 2001 Nature Reserve was gazetted in 1965 and		
Department of Environment and Conservation	Parks and Wildlife Division, National Parks and Wildlife Service, South West Slopes Region, Riverina Highlands Area.	Government Areas	Farrer Federal Electorate. Albury and Wagga Wagga State Electorate Greater Hume Government Area.
Rural Fire Service	Albury Hume Bushfire Management Committee.	Other Agencies	Albury and District Aboriginal Land Counci Murray Water Catchment Board.

J F M A M J J A S O N D

Slope Class Degrees	Fine Fuel Range in T/Ha	Threshold & Impacts
0-10	3-5	 Any disturbance to soil and slope stability will affect catchment and water quality values.
10-15	4-7	• Soil disturbance and exposure by fire may cause erosion.
15-20	10-12	 Water quality may be compromised by soil disturbance and silt run off after by fire. Fuel decomposition after disturbance may decrease after fire (depending on slope, fire intensity,
20-25	12-14	cover and patchiness of the fire) due to a reduction in soil and micro-organism activity. The
25-30	16-18	 Presence of foams and retardants within the soil may also effect soil and micro-organism activity. Fine fuel ranges below the recommended tonnes per hectare for the corresponding slope class are
>30	>20	expected to increase slope instability and effect water quality.
 Where poss thresholds. Where poss If hazard red large areas New trails, co New trail, co 	ible, avoid trail co duction burning, e and slopes are no control lines or fue	nt and or high intensity fire in areas where the fine fuel range does not meet the slope class instruction on slopes >25 degrees. Insure burn areas are strategically implemented across the landscape for potential wildfire control and ot left exposed. Il breaks constructed during an incident should provide appropriate drainage to prevent wash outs. breaks will be assessed, closed and or rehabilitated within 6 months of construction or, where

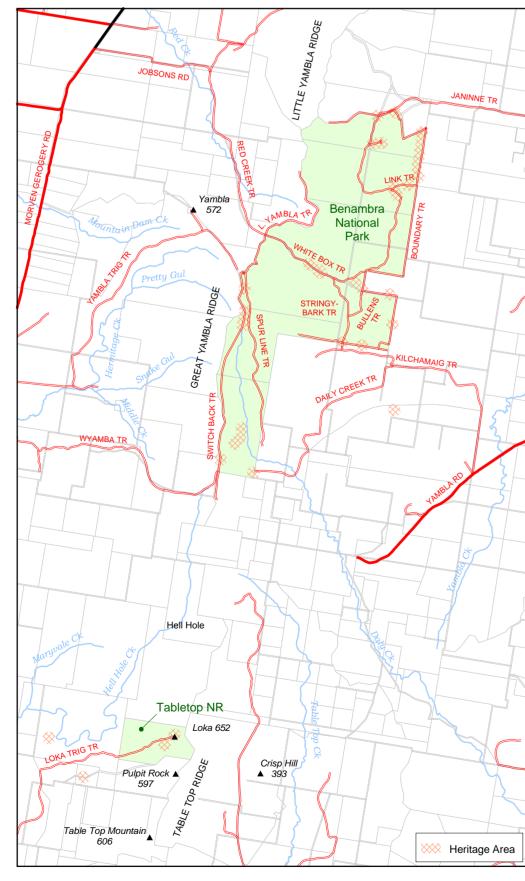


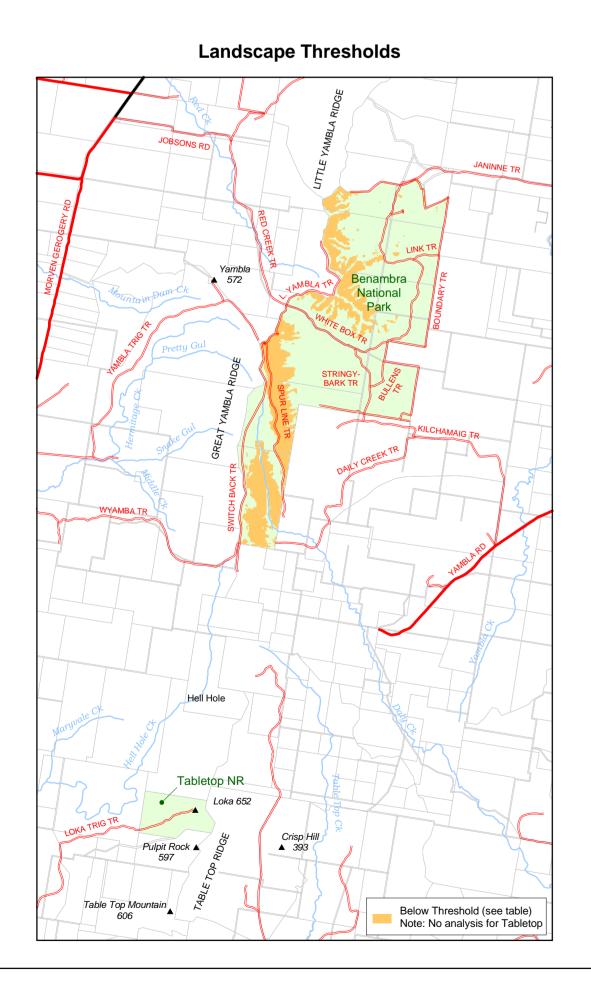
	FIRE HISTORY
Ignitions	2 confirmed lightning strikes (1980 & 1988), both ignitions occurred outside the reserves
Hazard Reduction	1 Hazard reduction burn has been recorded in this reserve. Windrows in the NE corner of Benambra NP were burnt in 1981. Trail maintenance, slashing and spraying trail verges have also been applied.
Wildfire	1 recorded wildfire has burnt the entire area of Benambra NP and surrounding area, however the ignition (unknown cause) occurred NW of the reserve.
Fire Frequency	Benambra has had 1 area (<10 ha) affected by 2 fires in the last 25 years. It is possible more events may have occurred during this period and previously, however there is limited recorded and mapped information available.

Fire Group	Veg Group	Common Name	Scientific Name	TSC Schedule
Α	27	Yass Daisy	Ammobium craspedioides	V
в	27	Square Raspwort	Haloragis exalata	E
D	27 & 28	Woolly ragwort	Senecio garlandii	V
Fire Group	Vegetation Group		Threatened Flora Management Guidelir	es
A	27	 this species. Avoid ground disturbani within the vegetation gri Slashing may be used v The is little to no impact This species may resprint interfere with plant reco Impact from retardants 	es (tilling, ploughing & slashing) are considered ce in close proximity to populations of this specie oup where potential populations may exist. within this community, but not recommended dur t expected from planned or unplanned fire. out after fire and should be monitored to ensure very. and foams is unknown. Avoid application where thin the vegetation group management guideling	es and, where possible, ing spring. weed species do not species occur.
В	27, 28 & 42	 Primary juvenile period seed soil stores may no Frequent fires lead to exist Impact from retardants Predicted weed invasion 	ppagation store is exhausted in first instance after is 2-3 years. Should 2 consecutive fires occur v t be restocked and <i>Senecio garlandii</i> may becon xtinctions, however the impact of infrequent fire and foams is unknown. Avoid application where n with frequent fire may compete with threatener hould be managed within the vegetation group g	vithin 2-3 years of each othen ne locally extinct. events is unknown. species occur. I flora.

The vegetation group numbers should be referenced against the vegetation communities in the Vegetation section of this plan, as some community regimes may be in conflict with species management guidelines.

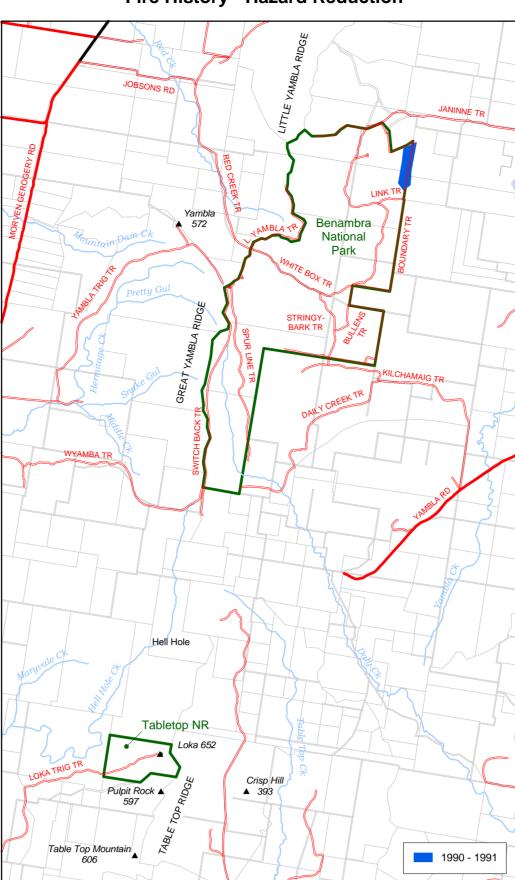
Risk Assessment - Cultural & Natural





Fire History - Wildfire

Fire History - Hazard Reduction



Fire Group	Commor	n Name	Scientific Name	TSC Schedule	Vulnerable Period	
Α	Greater lo	ong-eared bat	Nyctophilus timoriensis	V	Apr-Sept	
В	Black-chi	nned honeyeater	Melithreptus gularis gularis	V	Jul-Dec	
	Regent h	oneyeater	Xanthomyza phrygia	E	Jul-Feb	
	Squirrel g	lider	Petaurus norfolcensis	V	Jun-Dec	
	Eastern p	ygmy-possum	Cercartetus nanus	V	Mar-Dec	
~	Grey-crow Hooded ro	wned babbler	Pomatostomus temporalis temporalis	V	Jul-Feb	
С		obin	Melanodryas cucullata	V	Jul-Nov	
	Diamond	firetail	Stagonopleura guttata	V	Aug-Jan	
	Painted h	ioneyeater	Grantiella picta	V	Aug-Feb	
	Swift parr		Lathamus discolor	E	Sept-Dec	
	Turquoise	e parrot	Neophema pulchella	V	Aug-Dec	
D	Brown tre	ecreeper	Climacteris picumnus	V	May-Dec	
D	Speckle	d warbler	Pyrrholaemus sagittatus	V	Aug-Dec	
ire	Veg					
oup	Group		Threatened Fauna Management G	Guidelines		
B	 41 11 27 32 11 27 	 Altered fire regime Inappropriate fire Fire should be key HR's should ensu Implement mosaid Benambra is iden Least likely period Where possible; This species does Where possible, fi Vegetation manage Protect areas of h 	or high intensity fires will effect this species. as are suspected to be a major cause of the decl regimes remove nectar-producing understorey p of to the smallest possible size. re large patches of shrubs and standing and fall c fire regimes designed to maintain the floristic & tified as having a high conservation value within l of vulnerability to fire is between January and N is not persist in remnants less than 200 ha in size ire should be kept to a small area (<25% of any gement guidelines should be managed at maxim abitat from fire, which consumes the canopy & o mall, long-term mosaic burns that are more suita	ants vital to species su en timbers are left in tar structural diversity of the the recovery outlines for larch. vegetation group in any um fire intervals (25-10 r large & hollow bearing	ct. he understorey. or this species. r fire season). 10 years). g trees.	
с	• 11 • 32 • 27	Where possible; Maintain (maximu Frequent fire and Fire often leads to Fire should be key HR's should ensu Implement mosaid Infrequent high ini- the Swift parrot or Felling hollow bea	I of vulnerability to fire is between January and J m) vegetation management guidelines. or high intensity fires will effect most species. a decline in insect abundance and diversity, wh ot to smallest possible size. re large patches of shrubs, standing and fallen ti c fire regimes designed to maintain the floristic & tensity fire may promote dense understorey grow Turquoise parrot uring trees during 'mopping up' activities potentia I of vulnerability to fire is between March and Ap	ich some species are c mbers are left in tact. structural diversity of t vth, which benefit some lly decreases nest hollo	he understorey. species, but no	
D	 Least likely period of vulnerability to fire is between March and April. Where possible; Maintain vegetation communities within vegetation management guidelines Avoid frequent and or high intensity fires. Frequent fire may disadvantage these species by simplification of forest structure Protect areas of habitat from any fire that consumes the canopy & or large & hollow bearing trees. Removal of dead and down trees limits potential available foraging & nesting sites. HR's should be of minimal in size (not exceeding 20% of vegetation group across the reserves). Small, long-term mosaic burns (may be more suitable in protecting this species habitat. The decrease in invertebrate abundance and diversity following fire effects these species. Least likely period of vulnerability to fire is between January and July. 					

CULTURAL HERITAGE

- Identified sites must be protected. • DEC Databases, AHIMS and HHIMS, must be accessed during incidents and or for preparation of Review of Environmental Factors for fuel reduction burning or other works programs to ensure new records are included. Aboriginal site information from AHIMS is sensitive and subject to a Memorandum of Understanding. Site data must respect this agreement and must be used appropriately.
- For fuel reduction burning programs, protection measures will be outlined in the Review of Environmental Factors and burning program outlines. • Where possible, trained officers will provide advice on site protection methods.

Benambra and Tabletop are isolated vegetation communities without corridors or linkage to other reserves.

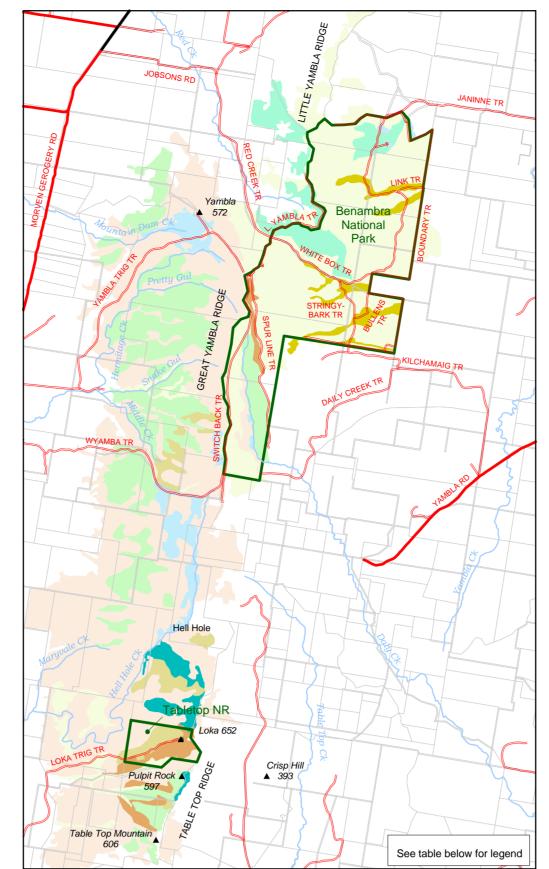
Key Management Guidelines

- Comply with all conservation management plans. • Sites must be clearly identified and protected during fire suppression and fuel reduction burning programs. original Heritage • Identified sites include, stone & rock arrangements, rock engravings and open camp sites.
- Potential site locations include over hangs around Tabletop Nature Reserve.
- The entrance of Morgan's cave in the southern gully line of Daly Creek of Benambra National Park is Historic Heritage susceptible to disturbance during fire suppression and works programs. • Timber lined pits along Stringy Fire Trail may pose an OH & S issue to ground crews and vehicle operations. Note: Cultural heritage sites are based on data recorded on AHIMS and HHIMS databases as at November 2004.

RISK ASSESSMENT – PROPERTY Asset Vulnerability & Impacts Fire Management Guidelines Located on ridge top with steep westerly and
 Maintain asset access Trails. easterly slopes. Apply a 30 M Asset Protection Zone around the Asset NPWS Weather • Access via Switchback and Wyamba Trails perimeter (this complies with weather station Station & (Secondary Trails). installation and maintenance guidelines). Vegetation is sparse with grass fire brea Minimise hushfire Communications grazing land to the immediate west. • There is no accommodation associated with the sites. Potential cost if damaged by fire >\$50K. Located on ridge top with steep westerly and
 Leasee or Licensee takes all responsible precautions to minimise fire risk in accordance with the Property & easterly slopes. Access sites limited to ridge line, one road in
 Leasing Manual and access agreements. Fuels are low, with minimal grass and shrub
 Ensure any APZ works comply with REF's to prevent Communications impacts on TSC or Cultural Heritage. cover Bushfire behaviour would be Tower considerable during extreme summer weather conditions. There is no accommodation associated with the site. Potential cost if damaged by fire >\$500K. Fences & gates surrounding and accessing
 Be aware that fence lines do not always denote the the reserves may be damaged by fire. reserve boundary. Roads & culverts may be damaged during
 Where possible reduce potential impact of fire by control line construction during incidents and removing debris near neighbours fences and gates. Other Assets or poor maintenance implementation.

• Follow guidelines for control line and road Signs can be destroyed by fire or if not construction & maintenance maintained, may not be visible when needed
• Maintain road signs and keep clear of obstructions in an emergency. and fuels (clear visibility).

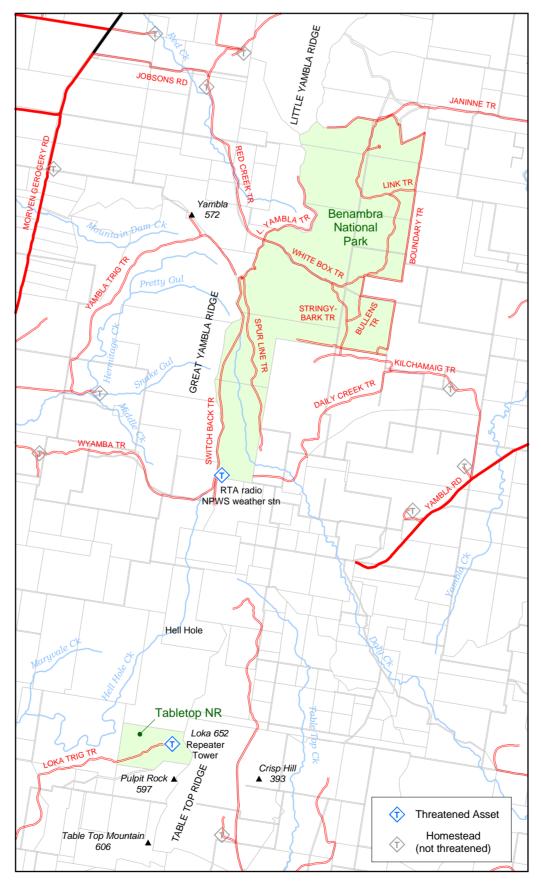
Vegetation Communities



VegGroup	Vegetation Description		Ha's	% Cover
11	Rough barked Red Box - Swampy Flat Woodland			7%
32	Red Box & Long Leaved Box - Grassy Forest			8%
173	Remnant Vegetation		53	4%
178 & 199	Natural Vegetation - Partially C	leared	37	2%
27	Rough barked Red Box & White Box - Dry Shrub/Forb Open Forest		1035	69%
174	Rocky Shrubland		<1	<1%
28	Dry Shrub/Forb Open Forest		57	4%
41	Dwyer's Red Gum & Black Cyp	ress Pine - Grass/Heath Woodland	72	5%
42	Currawang Wattle & She-Oak S	Shrubland	31	2%
Fire Interval	Vegetation Group	Vegetation Manageme	nt Guidelines	
10-100	Red Box & Long Leaved Box Grassy Forest 32	 Species decline predicted if successive fires occur <10 years apart. Community decline predicted if fires occur >60 years apart. Grassy understorey & ground fuels predicted to establish rapidly after fire. This vegetation community is susceptible to simplification. Daviesia, platylobium, pteridium and cassinia species, persistent after fire, a predicted to increase in cover, abundance and density. This has the potenti to increase the bushfire behaviour within the community within 3-5 years of disturbance. Soils prone to erosion and weed invasion predicted with frequent fire. 		
10-90	Currawang Wattle & She-Oak Shrubland 42	 Species decline predicted if successive fires occur <10 years apart. Community decline predicted if fires occur >90 years apart. Soils prone to erosion. 		
15-60	Rough barked Red Box & White Box - Dry Shrub/Forb Open Forest 27	 Species decline predicted if successive fires occur <15 years apart. Community decline predicted if fires occur >60 years apart. Grassy understorey and ground fuels predicted to establish rapidly after fire. Soils prone to erosion with high intensity & or frequent fire. 		
15-110	Dwyers Red Gum & Black Cypress Pine - Grass/Heath Woodland 41	 Species decline predicted if successive fires occur <15 years apart. Community decline predicted if fires occur >110 years apart. Understorey predicted to establish rapidly after fire. Soils prone to erosion and weed invasion with frequent fire. Cypress pine regeneration after intense fire may resemble wheat fields. Unplanned fire should be of low intensity and applied over the long term in mosaic patterns. 		
25-100	Rough barked Red Box - Swampy Flat Woodland & Dry Shrub/Forb Open Forest 11 & 28	Species decline predicted if successive fires occur <25 years apart. Community decline predicted if fires occur >100 years apart. Understorey and ground fuels predicted to establish rapidly after fire Predicted weed invasion with frequent fire.		

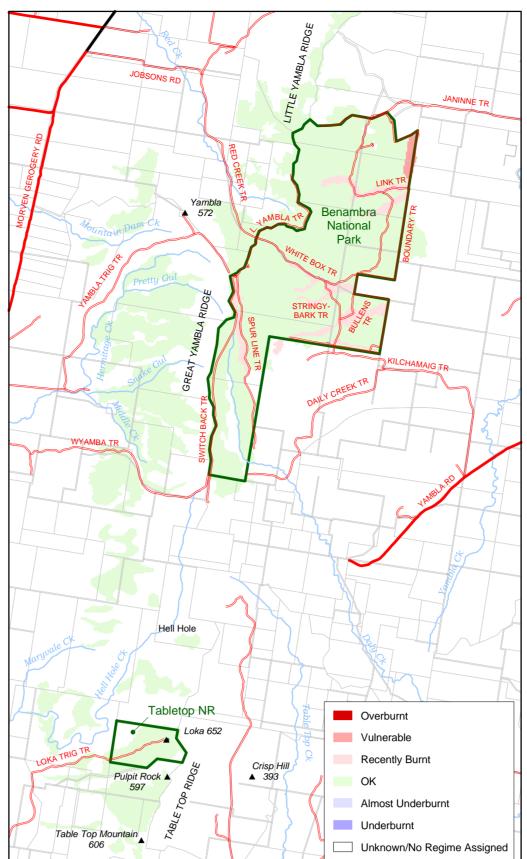
Risk Assessment - Property

conjunction with vegetation management guidelines.





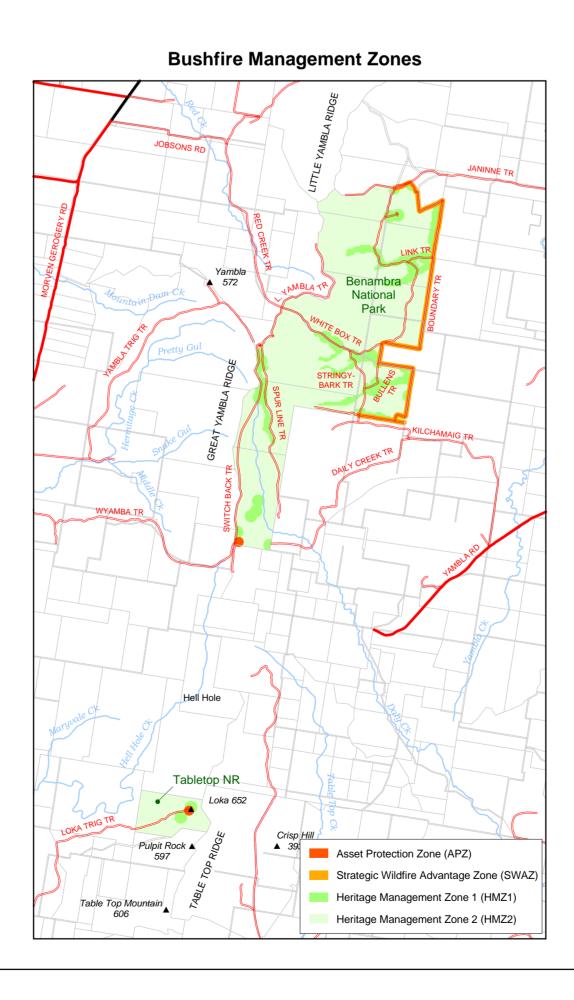
Vegetation Threshold Analysis



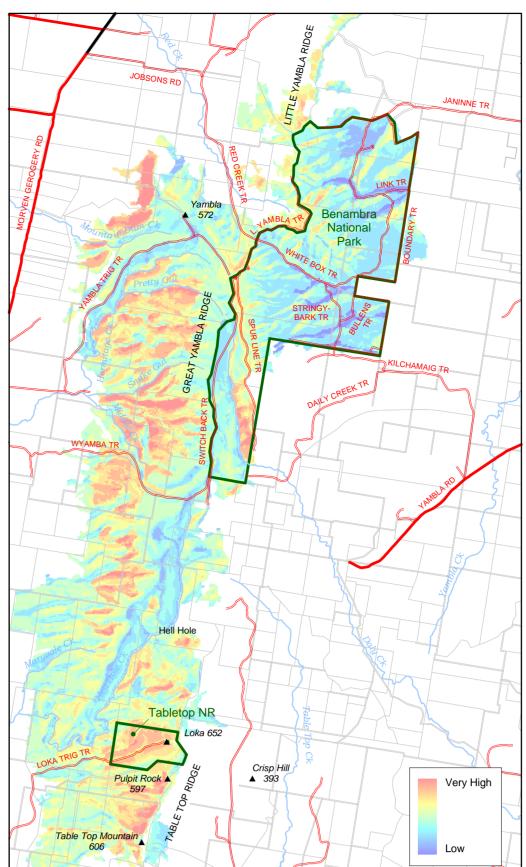
	VE	GETA	TION THRESHOLD ANALYSIS
Threshold	Vegetation Group	% of Reserves	Interpretation & Management Guidelines
Over burnt	N/A	0%	 According to the vegetation regime thresholds, two consecutive inter-fire intervals have been recorded too close together and the area is over burnt. Fire in this area will lead to adverse fire regimes and may threaten community biodiversity.
Vulnerable	27	<1%	 Will be over burnt if the area burns before 2006. Fire should be avoided for this year and until another analysis of thresholds is modelled to reassess threats.
Recently burnt	11 & 28	8%	 Time since fire is less than the threshold intervals, but will be considered OK after 2005. Fire this year will push this vegetation into the vulnerable class. Fire should be avoided for this year, but could be assessed for proposed burning or other fuel reduction program for 2006, if the area remains unaffected by fire
Underburnt	N/A	0%	 May require fire after 2005 – either for Asset protection, strategic or biodiversity reasons, if it remains unaffected by fire. Planned fire may be introduced for fuel reduction burning for asset or strategic protection programs. Unplanned fire events may be allowed to burn if conditions are suitable and the intensity meets desirable vegetation community, flora and fauna guidelines.
Almost Underburnt	N/A	0%	 Planned fire may be introduced for fuel reduction burning for asset or strategic protection programs. This area will fall into the underburnt category by the end of 2006 if it remains unaffected by fire, but would fall into recently burnt if burnt in 2005.
ок	27, 28, 32, 41 & 42	85%	 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.
Unknown/ No Regime Assigned	N/A	6%	 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 no available data for the community thresholds

LANDSCAPE FUELS				
Fuel Landscape T/ha Notes		Notes		
Minimum Fuels (Modelled April 2004)	3.3			
Maximum Fuels (Modelled April 2004)	16.6	used to determine the relationship of fuel sites with NDVI (Vegetation Index) from LANDSAT Imagery to calculate fuel loads. Courtesy of		
Average Fuels (Modelled April 2004)	8.6	Chris Chaffer (2004). 30 extra sample sites required to test accuracy.		
Average Fuels (Recorded April 2004)	8.7	60% of sites measured under 10 t/ha		
Highest Fuels (Recorded April 2004	12.5	Recorded in Vegetation Group 11 – moist gully line		

Note: The vegetation threshold analysis are derived from calculations from vegetation community fire thresholds and fire history.

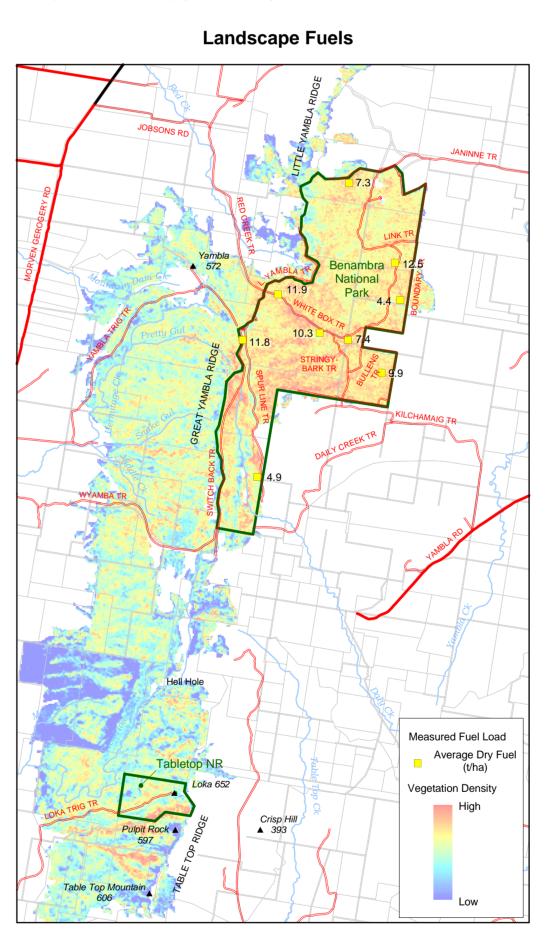


Bushfire Behaviour Potential



egetation E	Bushfire Behaviour Rating				
Rating	Vegetation Type			Hectares	% of Reserve
Low	Rough Barked Red Box - Swamp	by Flat Woodland		103	7%
Medium	Red Box & Long Leaved Box - Grassy Forest Remnant Vegetation Natural Vegetation - Partially Cleared			114 53 37	8% 4% 3%
High	Rough barked Red Box & White Rocky Shrubland	Rough barked Red Box & White Box - Dry Shrub/Forb Open Forest Rocky Shrubland			69% <1%
Very High	Dry Shrub/Forb Open Forest Dwyer's Red Gum & Black Cypress Pine - Grass/Heath Woodland Currawang Wattle & She-Oak Shrubland			57 72 31	4% 5% 2%
spect Busl	nfire Behaviour	Slope Bushfire Beha	aviour		
Ratin	g Aspect in degrees	Rating	Slo	ope in degrees	
Low	60 - 160	Low	0 -	10 degrees	
Mediu	m 160 - 220 & 30 - 60	Medium	11 - 20 degrees		
High	220 - 260 & 350 - 30	High	20 -30 degrees		
Very High 260 - 350		Very High	>30 degrees		

Note: To determine the Bushfire Behaviour Potential, Vegetation (dominant communities), aspect and slope ratings where utilised to identify areas or predicted low to very high fire behaviour, using Arcview 3.2 and DEC developed Fire Tools extension.



Management Zone	Definition	Management Guidlines
Asset (APZ)	Life, property and commercial assets in high risk Bushfire Behaviour Potential on DEC estate	 Assets should be evaluated annually to measure potential hazard build up. Works program to follow Risk Assessment of Economic & Private Property Guidelines.
Strategic (SWAZ)	Areas used to minimise the risk of fire intensity, spread, spotting distance or consolidate Asset Protection Zones. This zone may assist in limiting the potential of fires escaping reserves and breaks up large areas of high Bushfire Behaviour Potential.	 Strategic areas must be assessed annually to measure potential hazard build up. Strategic areas are suitable for implementing hazard reduction burns (where appropriate). Strategic areas should be used only in conjunction with asset protection and heritage management zones.
Heritage 1 (HMZ1)	Areas of high priority conservation value. It identifies areas of recorded cultural assets and natural values. This zone is important for the protection of cultural heritage and the conservation of some species habitat to prevent extinctions.	 Heritage areas should be assessed annually to determine potential hazard, threats and thresholds to Cultural Heritage, species and habitat (vegetation group communities). Prescribed burns may be applied in these areas if appropriate for the protection of cultural heritage or for ecological principles.
Heritage 2 (HMZ2)	This zone identifies areas of significance for natural and cultural features across the broader landscape.	 These heritage zones should be monitored to determine threats to thresholds and biodiversity. Implement programs and or recovery plan guidelines

South West Slopes Region **Benambra National Park &** Tabletop Nature Reserve Fire Management Strategy 2005

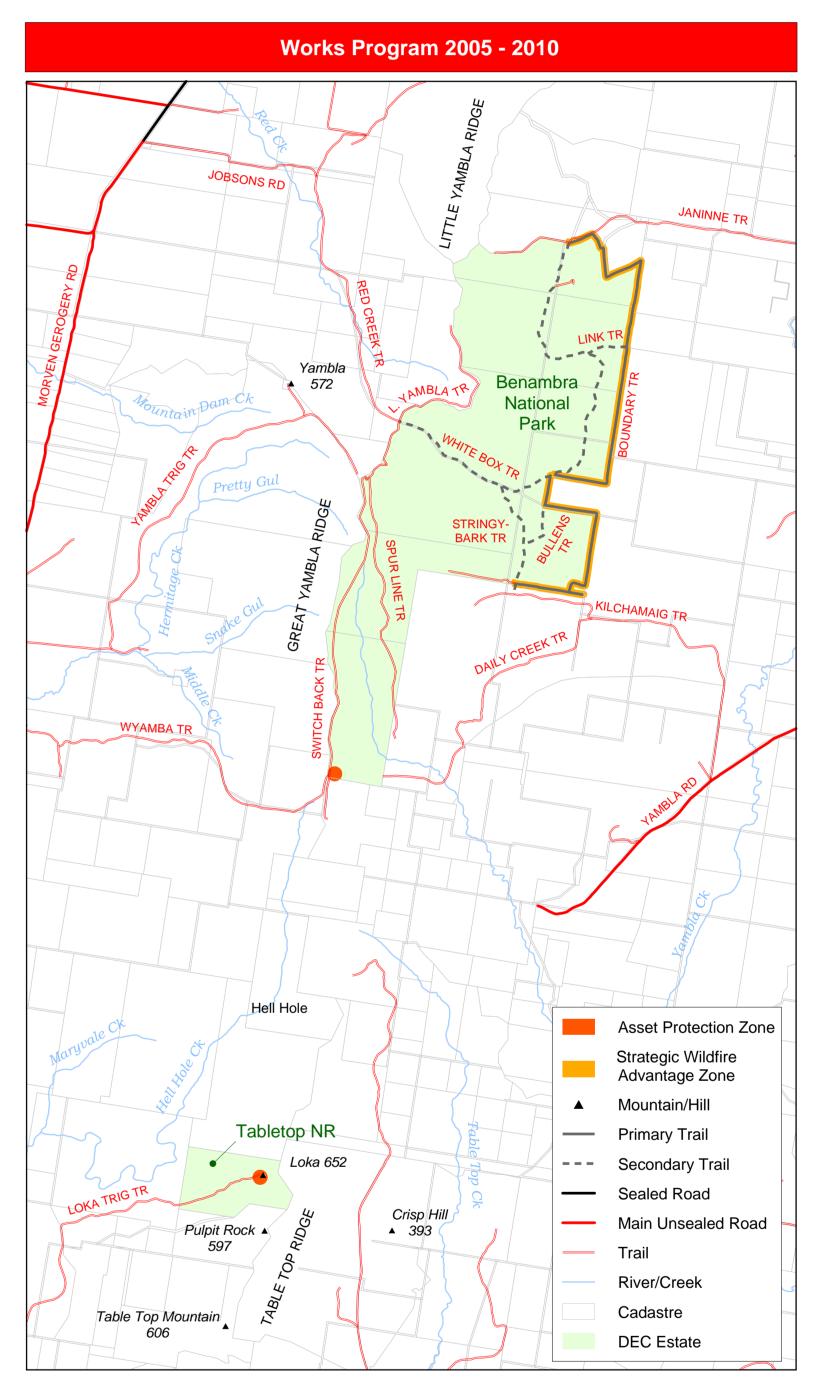


Scale: Works Program map 1:50000, Location map 1:500000, other maps 1:75000 Version: May 2005 ISBN: 1 74137 340 9 DEC: 2005/181

This Map should be used in conjunction with air photos and ground reconnaissance during incidents and the development of incident action plans.

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WORKS PROGRAM						
Asset	Priority	Name, Area or Detail	Management Strategy	Proposed Works	Completed	
Reserve Trails	High Medium	 Boundary Fire Trail. White Box, Stringybark, Bullens & Link 	 Maintain access for Slip-ons & Cat 1-9 Vehicles (RFS Primary Trail). Maintain access for Slip-ons & Cat 1-9 Vehicles (RFS Secondary Trails). 	Assess Annually. Maintain as required or as		
	Low	Trails & Loka Trig Trail.Other internal access trails.	 Maintain access for Slip-ons & Cat 9 Vehicles (RFS Dormant Trails). 	specified in Regional Operations Program.		
Asset PZ	High	Economic, commercial and private property Assets.	 Reduce bushfire behaviour potential using the Asset Risk Assessment Fire Management Guidelines. 	Assess annually.Maintain as required.		
Strategic WAZ	Medium	 North/South running trails. 	Maintain trails "as above".	As Above.		
Heritage MZ 1	Medium	 Cultural heritage, threatened, vulnerable & endangered species, habitats, communities and the landscape. 	 Manage and protect natural & cultural heritage values with appropriate fire management regimes. 	 Monitor thresholds every 2 years, before works programs or directly after fire. 		
Heritage MZ 2	Low	Landscape	 Monitor vegetation structure, bushfire behaviour potential (including fuels) that may increase vulnerability of biodiversity. 			
Information & Research	Low	Fuel and vegetation monitoring.	 Continue measuring/monitoring fuels at all established sites. Maintain photographic site records. 	Every 2 years (min).Every 2 years & after fire.		
Fuel or Hazard Reduction Burns	Low	 No burns proposed for life of this plan (5 years). 	 Monitor and assess changes in potential hazards to assets. Any proposed hazard reduction burns must be in line with DEC policy and managed in accordance with Local Bush Fire Management Committee. 	 Negotiated at Bushfire Management Committee Meetings. 		