

**TABLE 1 - Fire management requirements of vegetation types in Mount Gibraltar Reserve**

FIRE MANAGEMENT CLASS	PLANT COMMUNITIES INCLUDED	DESCRIPTION	FIRE IMPACTS AND FIRE MANAGEMENT AIMS
Tall wet forest	Brown Barrel Tall Forest Manna Gum Tall Forest	Tall forest with a rather open understorey, weedy in some places.	<p>Generally eucalypts only regenerate successfully following fire.</p> <p>Frequent extensive fires may eliminate fire sensitive species and those that only regenerate from seed following fire resulting in these communities changing to shrubby dry forest.</p> <p>Extended fire intervals will create a single age class of eucalypts.</p> <p>Repeated intense wildfires reduce life expectancy of trees and remove old growth elements.</p> <p>Absence of fire for a period exceeding the life expectancy of particular eucalypt species will result in the local disappearance of those species.</p> <p>Natural fire frequency for this forest type is considered to be between 20 and 100 years. Wetter areas of this forest type will generally not carry a cool burn.</p> <p><b>Major fires every 100 years are sufficient to maintain tall forests.</b></p> <p><b>No management burning except for weed control or regeneration, or for hazard reduction if close to assets at risk.</b></p>
Grassy/Shrubby dry sclerophyll forest on syenite	Gully Gum Tall Forest/Forest Peppermint Forest Red Gum Woodland	Tall forest to forest, very variable shrubby to grassy understorey.	<p>Fire provides an opportunity for fire dependent species to germinate.</p> <p>Some of these communities may displace tall wet forest communities in areas that are frequently burnt.</p> <p><b>Optimal fire interval for maintaining these communities is 12-25 years.</b></p> <p><b>Exclude fire from representative areas to provide controls for monitoring the effects of fire.</b></p>

FIRE MANAGEMENT CLASS	PLANT COMMUNITIES INCLUDED	DESCRIPTION	FIRE IMPACTS AND FIRE MANAGEMENT AIMS
Shrubby dry sclerophyll forest on sandstone	Peppermint-Silvertop Ash Forest Silvertop Ash-Stringybark Forest	Heathy to shrubby understorey, rocky in places.	<p>Fire controls the establishment of a dense shrubby understorey which would reduce light penetration to the ground layer. This can help maintain a diversity of heathy shrubs and herbs.</p> <p>Frequent fires can encourage a dense bracken layer that can suppress other ground layer species.</p> <p>Fire provides an opportunity for fire dependent species to germinate.</p> <p>Fuel reduction burns should not be undertaken at intervals &lt; 8 years.</p> <p><b>Optimal fire interval for maintaining these communities is 15-25 years.</b></p> <p><b>Exclude fire from representative areas to provide controls for monitoring the effects of fire.</b></p>
Non eucalypt woodland/shrubland	Wattle Forest/Woodland/Shrubland	Variable, dense shrubs and small trees, rock surfaces common.	<p>Recovery after fire possibly slow on shallow, dry soils.</p> <p>Significant shrub <i>Leptospermum brevipes</i> present.</p> <p><b>Very localised in the reserve and so appropriate to exclude fire for the duration of the plan.</b></p>

**TABLE 2 – Fire Risk Assessment for Built and Cultural Assets in Mt Gibraltar Reserve**

ASSET AT RISK	RISK ANALYSIS								COMMENTS	PROPOSED MANAGEMENT STRATEGIES
	A	B	C	D	E	F	G	Level of Risk		
Telecommunication towers and associated structures at the summit of Mount Gibraltar	4	2	3	2	2	1	4	384 Moderate	Buildings are of brick, concrete and steel however vents could allow embers to enter buildings.	Maintain fuel free conditions within the compounds, and clear all trees, shrubs and bushes within 10 m of the towers and associated buildings.  Advise operators to install wire mesh screens (< 2 mm mesh) on all vents to prevent embers entering buildings.
Water reservoirs (summit, Oxley Drive, Bowral Road)	5	3	3	0	2	2	1	0 Minimal	Concrete tanks, no combustible components.	No fire protection measures required.
Power line to the telecommunications towers	4	5	3	3	3	1	4	2160 High	Major risk is where the line runs along the western side of the loop road.	Maintain existing easement.  Clear at least 1 m around the base of each pole.
Dwellings bordering the reserve along Bowral Road	3	2	1	2	2	1	6	144 Low	Dwellings on large lots, some have adequate APZs. Ample room to maintain adequate APZs outside the reserve.	Burn area between the Gib West Fire Trail and the boundaries of adjoining properties as required to maintain fuel loads less than 10 tph.  RFS to issue Section 66 notices as required to ensure that APZs are maintained on adjoining private properties.
Dwellings bordering the reserve along Soma Avenue, Cliff Street and Ellen Street	5	2	1	2	2	2	6	480 Moderate	Some dwellings close to the reserve boundary have inadequate APZ, others have room to provide ample APZs within the property.	Maintain portions of APZs required around adjoining dwellings within the reserve as shown in Figure 5.  RFS to issue Section 66 notices as required to ensure that APZs are maintained on adjoining private properties.

ASSET AT RISK	RISK ANALYSIS								COMMENTS	PROPOSED MANAGEMENT STRATEGIES
	A	B	C	D	E	F	G	Level of Risk		
Dwellings bordering the southern side of the reserve along Oxley Drive and Gladstone Road.	5	1	3	2	1	1	6	180 Low	Dwellings are separated from Mount Gibraltar Reserve by Oxley Drive, a two way sealed road. This provides an adequate APZ provided the area between the road and the dwellings is maintained as an IPA.	RFS to issue Section 66 notices as required to ensure that APZs are maintained on adjoining private properties.
Dwellings bordering the reserve at the northern end of Carlisle Street.	2	1	3	2	1	2	6	144 Low	Dwellings at greater risk from fires on adjoining private property which is continuous with bushland in the reserve. Sufficient room to maintain APZs between dwellings and the reserve.	RFS to issue Section 66 notices as required to ensure that APZs are maintained on adjoining private properties to ensure adequate protection of dwellings.
Dwellings bordering the reserve along Duke Street.	3	2	3	2	2	1	6	432 Moderate	Most dwellings on large lots with enough room for APZs within the lots. Two lots require a portion of their APZ to be maintained on the reserve.	Maintain portions of APZs required around adjoining dwellings within the reserve as shown in Figure 5. RFS to issue Section 66 notices as required to ensure that APZs are maintained on adjoining private properties.
Dwellings bordering the reserve along Earl Street.	3	2	3	2	1	2	6	432 Moderate	Dwellings on large lots, most have adequate APZs. Ample room to maintain adequate APZs outside the reserve.	RFS to issue Section 66 notices as required to ensure that APZs are maintained on adjoining private properties.
Dwellings along Oxley Drive on the western side of Chinamans Creek	5	5	3	2	2	1	6	1800 High	Dwellings have inadequate APZs. Dwellings at greater risk from fires on adjoining private property which is continuous with bushland in the reserve. Portion of the APZs required within the reserve has recently been established. Recent hazard reduction burn carried out to reduce fuel loads around dwellings.	Maintain portions of APZs required around adjoining dwellings within the reserve as shown in Figure 5. Carry out regular hazard reduction burning on private property between the dwellings in this area and the reserve boundary. RFS to issue Section 66 notices as required to ensure that APZs are maintained on adjoining private properties.

ASSET AT RISK	RISK ANALYSIS								COMMENTS	PROPOSED MANAGEMENT STRATEGIES
	A	B	C	D	E	F	G	Level of Risk		
Dwellings along Oxley Drive on the eastern side of Chinamans Creek.	5	5	3	2	1	1	6	900 Moderate	Dwellings on large lots, most have adequate APZs. Ample room to maintain adequate APZs outside the reserve.	Burn strip of bushland between the Gib East Loop Trail and property boundaries as required to maintain fine fuel loads below 10 tph.  RFS to issue Section 66 notices as required to ensure that APZs are maintained on adjoining private properties.
Dwellings to the east of the reserve boundary between Oxley Drive and the railway.	5	3	3	2	2	2	6	2160 High	Dwellings on large lots, some have adequate APZs. Ample room to maintain adequate APZs outside the reserve.	RFS to issue Section 66 notices as required to ensure that APZs are maintained on adjoining private properties.
Gibraltar Day Care Centre (Oxley Drive)	5	2	1	2	2	1	6	240 Low	This is considered a special protection development by the RFS and requires a larger Asset Protection Zone than ordinary dwellings.	Maintain the portion of the APZ required around the day care centre within the reserve as shown in Figure 5.  RFS to issue Section 66 notices as required to ensure that APZs are maintained around the day care centre.
Timber signage and steps along tracks.	5	3	3	3	3	4	2	3240 High	Variable fire approach but most are highly vulnerable to fire damage.	Ensure that timber signs and steps are not damaged during management burns.  Replace signs and steps damaged by wildfires.
Viewing platform at the top of the old quarry	4	2	3	2	2	2	2	768 Moderate	Steel and timber structure on rocky area.	Ensure platform is not damaged during management burns.  Repair if damaged by wildfires.
Shelters and picnic tables at lookouts and the inner bowl	3	2	3	3	2	2	2	432 Moderate	Variable fire approach, some shelters are in cleared areas that afford some protection from fires.	Ensure furniture and shelters are not damaged during management burns.  Repair if damaged by wildfires.

ASSET AT RISK	RISK ANALYSIS								COMMENTS	PROPOSED MANAGEMENT STRATEGIES
	A	B	C	D	E	F	G	Level of Risk		
Timber barriers at car parking areas and along public roads	3	2	3	3	2	2	2	432 Moderate	Variable fire approach but most are vulnerable to fire damage.	Ensure barriers are not damaged during management burns. Repair if damaged by wildfires
Toilet blocks at Bowral lookout and the Inner Bowl.	3	2	3	0	2	1	0	0 Minimal	Toilets are constructed of brick and concrete.	No fire protection measures required.

**TABLE 3 - Condition and maintenance of fire trails in Mount Gibraltar Reserve**

Trail accessibility code:

- trail width; 1w - single lane, 2w - double lane
- trail access; alt - alternative access, dead - dead end
- fire service tanker type; L - light tanker only (Cat 7 & 9), H - light and heavy 4WD tankers.

Trail classification and maintenance priority:

- PRIMARY fire trail – strategic performance or a primary feeder route (high priority)
- SECONDARY fire trail - important fire control lines (medium priority)
- DORMANT fire trail – not maintained but can be quickly reopened if required as a fire control line for fire suppression or management burning. May be maintained for other management purposes.

The trail accessibility code describes the suitability of the fire trail if properly maintained, not necessarily its condition at the time of inspection.

FIRE TRAIL Ref. No.	CODE	CLASSIFICATION	LOCATION AND CONDITION AT MAY 2004	ACTION REQUIRED
MG1 Gib West Trail	1w/alt/H	Primary	Runs from the northern end of Soma Avenue to the Gib East Fire Trail. Has an access from Bowral Road near the railway overbridge, and from the eastern end of Tulloona Avenue. Trail is in good condition. Access to the Gib West Fire Trail is controlled by locked gates, except at the entry off Bowral Road. There is no gate on the section of the trail running south from the water reservoir to Tulloona Avenue, and the gate on the section running east from the Bowral Street entrance can be easily bypassed.	Periodic inspection and maintenance as required (MP 2). Install gates and barriers to control access to the trail from Bowral Road.
MG2 Gib East Trail	1w/alt/H	Primary	Runs from the western end of Railway Parade to Oxley Drive along the eastern boundary of the reserve. Trail is in good condition. The southern end of the trail is also the driveway to "Graylaydes Farm".	Periodic inspection and maintenance as required (MP 2).
MG3 Gib East Loop Trail	1w/alt/H	Secondary	Loop trail on the western side of the Gib East Fire Trail. Provides access to the rear of properties bordering the reserve along Oxley Drive. Trail is in good condition except for the southern end where it joins the Gib East Fire Trail which has become overgrown. There is no gate to control access to the trail from the southern end if the gate on the Gib East Fire Trail at Oxley Drive is open. This gate is also used for access to "Greylaydes Farm" and is now often left open. The trail is currently blocked by a fallen tree.	Periodic inspection and maintenance as required (MP 2). Clear encroaching vegetation from the southern end of the trail. Remove fallen trees blocking the trail. Install a locked gate or chain to control access to the southern end of this trail.
MG4	1w/dead/H	Secondary	Access road from Oxley Drive to the old quarries on the western side of Mt Gibraltar. Trail is in good condition with adequate room to turn vehicles in the old quarries.	Periodic inspection and maintenance as required (MP 2).

FIRE TRAIL Ref. No.	CODE	CLASSIFICATION	LOCATION AND CONDITION AT MAY 2004	ACTION REQUIRED
MG5	1w/dead/H	Dormant	Trail runs from Oxley Drive to the end of Earl Street and provides useful access for management burning. Trail is grassed and stable but blocked by fallen trees.	Periodic inspection and maintenance as required (MP 2). Clear fallen trees and branches off the trail when required for fire management.
MG6	1w/dead/L	Dormant	Trail runs from Oxley Drive to the top of an old quarry. Trail is rough and the southern portion is badly overgrown.	Periodic inspection and maintenance as required (MP 2). Re-open trail if required for fire suppression or management burning.
MG7	1w/dead/H	Dormant	Trail runs south along Chinamans Creek from the Gib West Fire Trail. Trail surface is stable but it is blocked by fallen trees.	Re-open trail if required for fire suppression or management burning.

**TABLE 4 - Response to fire of introduced species known, or considered likely to occur in Mount Gibraltar Reserve**

WEED SPECIES	WHOLE PLANT KILLED	RE-SPROUTS FROM ROOTSTOCK <sup>2</sup>	RE-SPROUTS FROM EPICORMIC BUDS	SEED GERMINATION LIKELY AFTER FIRE	COMMENTS
<i>Acer pseudoplatanus</i> (Sycamore)	X			X	
<i>Acer negundo</i> (Box Elder)	X			X	
<i>Ailanthus altissima</i> (Tree of Heaven)		X			Sprouts from suckers rather than main stem
<i>Arbutus unedo</i> (Strawberry Tree)	X			X	
Bamboo		X			
<i>Berberis vulgaris</i> (Barberry)		X			
<i>Buddleja davidii</i> (Butterfly Bush)		X			
<i>Chamaecytisus prolifer</i> (Tree Lucerne)		X		X	
<i>Chrysanthemoides monilifera</i> ssp. <i>monilifera</i> (Boneseed)		X		X	Resprouts if fire is not hot enough to kill plant
<i>Cotoneaster</i> spp. (Cotoneaster)		X			
<i>Cortaderia selloana</i> (Pampas Grass)		X			
<i>Crataegus monogyna</i> (Hawthorn)		X		X	
<i>Crocsmia X crocosmiflora</i> (Montbretia)		X			
<i>Cupressocyparis leylandii</i> (Leylandii)	X			X	
<i>Cytisus scoparius</i> (English Broom)		X		X	Seeds may remain viable up to 70 years
<i>Erica lusitanica</i> (Spanish Heath)	X	X		X	Resprouts if fire is not hot enough to kill plant
<i>Foeniculum vulgare</i> (Fennel)		X			
<i>Fraxinus angustifolia</i> (Desert Ash)		X		X	
<i>Genista monspessulana</i> (Canary Broom)		X		X	
<i>Hedera helix</i> (English Ivy)		X			
<i>Ilex aquifolium</i> (Holly)		X			
<i>Ligustrum</i> sp. (Privet)		X		X	
<i>Lonicera japonica</i> (Honeysuckle)		X			
<i>Leucanthemum vulgare</i> (Ox-eye Daisy)	X			X	
<i>Lycium ferocissimum</i> (Boxthorn)		X		X	
<i>Myosotis sylvatica</i> (Forget-me-not)	X			X	
<i>Myrsiphyllum asperagoides</i> (Bridal Creeper)		X			

WEED SPECIES	WHOLE PLANT KILLED	RE-SPROUTS FROM ROOTSTOCK <sup>2</sup>	RE-SPROUTS FROM EPICORMIC BUDS	SEED GERMINATION LIKELY AFTER FIRE	COMMENTS
<i>Olea europaea</i> ssp. <i>europaea</i> (Olive)		X			
<i>Oxalis pes-caprae</i> (Soursob)		X			
<i>Passiflora</i> sp. (Passionfruit)	X			X	
<i>Pennisetum clandestinum</i> (Kikuyu)		X			
<i>Populus alba</i> (Silver poplar)		X		X	Sprouts from suckers rather than main stem
<i>Pinus radiata</i> (Monterey Pine)	X			X	
<i>Prunus</i> sp. (Prunus)		X	X		Degree of resprouting depends on fire intensity
<i>Pyracantha</i> sp (Fire Thorn)		X		X	
<i>Rosa rubiginosa</i> (Briar Rose)		X			
<i>Rubus fruticosus</i> (Blackberry) <sup>1</sup>		X			
<i>Salix alba</i> X <i>fragilis</i> (Crack Willow) <sup>1</sup>		X			
<i>Ulex europaeus</i> (Gorse) <sup>1</sup>		X	X	X	Seeds may remain viable for up to 40 years
<i>Vinca major</i> (Periwinkle)		X			

1 WONS = Weed of National Significance – National Weed Strategy 1999

2 Some plants may resprout after low intensity fires but will be killed by high intensity fires.

**TABLE 5 - Burning regimes for Mount Gibraltar Reserve**

UNIT	SIZE (ha)	DOMINANT PLANT COMMUNITY	OPTIMAL FIRE FREQUENCY (years)	NOTES & PRECAUTIONS	BURNING SCHEDULE				
					FIRST 3-YEAR PERIOD 2004 TO 2006	SECOND 3-YEAR PERIOD 2007 TO 2009	THIRD 3-YEAR PERIOD 2010 TO 2012	FOURTH 3-YEAR PERIOD 2013 TO 2015	FIFTH 3-YEAR PERIOD 2016 TO 2018
Gib1	3.9	Gully Gum Tall Forest/Forest	12 – 25	Strategic hazard management unit	Burn when average fine fuel loads exceed 10 tonnes per hectare but not in same year as the adjoining units.				
Gib2	8.7	Silvertop Ash – Stringybark Forest	15 - 25	Strategic hazard management unit Part of the unit is on private property, landowner permission required	Burn when average fine fuel loads exceed 10 tonnes per hectare but not in same year as the adjoining units.				
Gib3	1.5	Manna Gum Tall Forest	12 – 25	Strategic hazard management unit Part of the unit is on private property, landowner permission required	Burn when average fine fuel loads exceed 10 tonnes per hectare but not in same year as the adjoining units.				
Gib4	11.5	Gully Gum Tall Forest/Forest	12 – 25	Ecosystem management unit Maintain a 10 m wide fire break with fuel loads less than 5 tonnes per hectare along the Gib West Fire Trail on the northern boundary of this unit by slashing and/or burning.				Burn	
Gib5	9.3	Peppermint Forest	12 – 25	Ecosystem management unit Protect signage on tracks					Burn
Gib6	6.5	Gully Gum Tall Forest/Forest	12 – 25	Ecosystem management unit			Burn		
Gib7	3.5	Peppermint-Silvertop Ash Forest	15 - 25	Ecosystem management unit			Burn		
Gib8	3.5	Peppermint-Silvertop Ash Forest	15 - 25	Ecosystem management unit				Burn	
Gib9	3.2	Gully Gum Tall Forest/Forest	12 – 25	Ecosystem management unit Protect signage on tracks and seat at lookout		Burn			
Gib10	5.6	Peppermint-Silvertop Ash Forest	15 - 25	Ecosystem management unit		Burn			

UNIT	SIZE (ha)	DOMINANT PLANT COMMUNITY	OPTIMAL FIRE FREQUENCY (years)	NOTES & PRECAUTIONS	BURNING SCHEDULE				
					FIRST 3-YEAR PERIOD 2004 TO 2006	SECOND 3-YEAR PERIOD 2007 TO 2009	THIRD 3-YEAR PERIOD 2010 TO 2012	FOURTH 3-YEAR PERIOD 2013 TO 2015	FIFTH 3-YEAR PERIOD 2016 TO 2018
Gib11	4.6	Gully Gum Tall Forest/Forest	12 – 25	Strategic hazard management unit Most of the unit is on private property, landowner permission required.	Burn when average fine fuel loads exceed 10 tonnes per hectare but not in same year as the adjoining units.				
Gib12	6.3	Peppermint Forest	12 – 25	Ecosystem management unit Protect adjoining telecommunications infrastructure				Burn	
Gib13	2.7	Gully Gum Tall Forest/Forest	12 – 25	Ecosystem management unit		Burn			
Gib14	3.1	Brown Barrel Forest	20 - 60	Ecosystem management unit Protect power line and adjoining telecommunications infrastructure				Burn	
Gib15	8.5	Brown Barrel Forest	20 - 60	Ecosystem management unit, burn to assist with proposed weed management operations. Most of the unit is on private property, landowner permission required			Burn		
Gib16	4.0	Brown Barrel Forest	20 - 60	Ecosystem management unit, no burning for the duration of this plan. Protect power line during management burning. Protect the shelter at the lookout.					
Gib17	8.7	Brown Barrel Forest	20 - 60	Ecosystem management unit, no burning for the duration of this plan. Part of the unit is on private property, landowner permission required Protect picnic facilities. Contains an unusual growth form of <i>Acacia stricta</i> of local conservation value.					
Gib18	1.4	Brown Barrel Forest	20 - 60	Ecosystem management unit, no burning for the duration of this plan. Protect facilities at the Bowral Lookout.					

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					FIRST 3-YEAR PERIOD 2004 TO 2006	SECOND 3-YEAR PERIOD 2007 TO 2009	THIRD 3-YEAR PERIOD 2010 TO 2012	FOURTH 3-YEAR PERIOD 2013 TO 2015	FIFTH 3-YEAR PERIOD 2016 TO 2018
Gib19	3.5	Brown Barrel Forest	20 - 60	Ecosystem management unit, no burning for the duration of this plan.					
Gib20	6.9	Brown Barrel Forest	20 - 60	Ecosystem management unit, no burning for the duration of this plan.					
Gib21	2.7	Brown Barrel Forest	20 - 60	Ecosystem management unit, no burning for the duration of this plan.					
Gib22	6.0	Brown Barrel Forest	20 - 60	Ecosystem management unit, no burning for the duration of this plan.					
Gib23	4.0	Brown Barrel Forest	20 - 60	Ecosystem management unit, no burning for the duration of this plan.					
Gib24	7.4	Brown Barrel Forest	20 - 60	Ecosystem management unit. Part of the unit is on private property, landowner permission required.	Burn				

## NOTES:

- 1 The optimal season for low intensity burning is autumn or winter. However, early spring burning is not necessarily unsuitable and can be implemented if the opportunity for autumn burns has been missed, or vegetation is too damp to burn at this time of year.
- 2 It will generally not be possible to achieve a uniform fire intensity and flame height during a burn due to variations in topography and fuel loads, however flame height should be kept below 1.5 m wherever possible to minimise canopy scorch.

## MANAGEMENT ACTION SUMMARY

FIRE MANAGEMENT OBJECTIVE	RECOMMENDED ACTION	PRIORITY	PERFORMANCE INDICATORS
1. Minimise the risk of wildfires starting in the reserve.	a) On total fire ban days, erect fire ban warning signs and regularly patrol the area to ensure that no fires are lit. b) Implement a community education program to request residents near the reserve to report any smoke or suspicious persons on days of total fire bans. c) Maintain a 10 m wide fire break with fuel loads less than 5 tonnes per hectare along the Gib West Fire Trail on the northern boundary of Fire Management Unit 4 by slashing and/or burning.	a) E  b) REC	<ul style="list-style-type: none"> <li>No wildfires started by accident in the reserve.</li> </ul>
2. Minimise the risk of fire to users of the reserve.	a) Erect appropriate signs on tracks and roads to warn reserve users of management burns. b) Implement the recovery procedures in MP 13 following fires.	a) E  b) REC	<ul style="list-style-type: none"> <li>Post-fire recovery carried out after wildfires.</li> <li>No users of the reserve injured by wildfires or the effects of wildfires.</li> </ul>
3. Minimise the risk of wildfire damaging built and cultural heritage assets in and surrounding the reserve.	a) Implement the fire protection measures listed in Table 2, including the establishment and maintenance of adequate Asset Protection Zones around dwellings and assets. b) Ensure properties surrounding the reserve are inspected at the beginning of the bushfire danger period and Section 66 notices issued as required (RFS responsibility). c) Ensure that authorities planning wildfire control operations in the reserve are aware of built and cultural heritage assets and ensure they are not damaged by machinery movement or other activities. d) Following fires implement the recovery procedures in MP 13.	a) E  b) REC  c) REC  d) REC	<ul style="list-style-type: none"> <li>Fire protection measures in the reserve implemented and maintained.</li> <li>Asset Protection Zones maintained on properties adjoining the reserve</li> <li>No assets lost to fires originating in, or moving through, the reserve.</li> <li>No cultural heritage assets damaged during fire management or control operations in the reserve.</li> <li>Post-fire recovery carried out after wildfires.</li> </ul>

FIRE MANAGEMENT OBJECTIVE	RECOMMENDED ACTION	PRIORITY	PERFORMANCE INDICATORS
4. Minimise the impact of fire and fire management activities on water quality.	a) Minimise the risk of wildfires starting and spreading. b) Maintain a minimum 10 m wide unburnt buffer on either side of Chinamans Creek and 5 m wide unburnt buffer along other watercourses during management burning wherever possible. c) Implement the recovery procedures in MP 13 following fires. d) Do not spray fire fighting foams or retardants onto water courses during prescribed burning or wildfire suppression operations.	a) E b) REC c) REC d) REC	<ul style="list-style-type: none"> <li>• Minimal impact on water quality from wildfires, management burning and fire management activities.</li> <li>• Unburnt buffers maintained along creeklines.</li> <li>• Post-fire recovery carried out after wildfires.</li> </ul>
5. Implement planning controls on new developments within and adjoining the reserve to ensure they incorporate adequate bushfire protection measures.	a) All new buildings in the reserve must be constructed in accordance with the relevant construction level in Australian Standard 3959 - 1999 <i>Construction of Buildings in Bushfire Prone Areas</i> . b) All new buildings in the reserve should be surrounded with an Asset Protection Zone as detailed in MP 5. c) All new developments within 100 m of the reserve boundary should meet the requirements of the RFS document <i>Planning for Bushfire Protection</i> .	a) E b) E c) REC	All new developments in and within 100 m of the reserve incorporate fire protection measures to Rural Fire Service standards.
6. Maintain existing emergency vehicle access points and fire trails shown on Figure 5 in a trafficable condition.	a) Carry out fire trail repairs and maintenance listed in Table 3. b) Ensure all fire trails shown on Figure 5 are inspected and maintained in a trafficable condition at all times according to MP 2.	a) E – 1A b) ROU - A	Access routes inspected as required in MP 2, and maintained in a trafficable condition for fire service vehicles.

FIRE MANAGEMENT OBJECTIVE	RECOMMENDED ACTION	PRIORITY	PERFORMANCE INDICATORS
7. Minimise damage to the fire trail system by preventing unauthorised vehicle access.	<p>a) Implement a security lock system (keys that can't be copied without permission) to control access to fire trails in the reserve. Issue copies of the key to the NSW Fire Brigades, the Rural Fire Service and other emergency services. Each brigade to be provided with a key for each vehicle likely to be used to respond to a fire in the reserve.</p> <p>b) Install additional gates as recommended in Table 3 and shown in Figure 5.</p> <p>c) Inspect gates regularly to ensure that locks are in place and functioning.</p>	<p>a) REC - 3</p> <p>b) REC - 2</p> <p>c) ROU - A</p>	<ul style="list-style-type: none"> <li>No unauthorised use of fire trails in the reserve.</li> <li>Security lock system implemented, keys distributed to fire brigades and other emergency services.</li> <li>Minimal damage to fire trails in the reserve.</li> </ul>
8. Signpost all fire trails at their access points, and at trail intersections.	<p>a) Erect appropriate signage at all vehicle access points, and at fire trail intersections, to guide emergency service vehicles. Signs should include commonly used names and/or codes. Dead end trails should be marked as such on the signs.</p> <p>b) Consult with the NSW Fire Brigades and the Wingecarribee Bushfire Risk Management Committee on the most appropriate form and location for the signs.</p>	<p>a) REC - 5</p> <p>b) REC - 5</p>	Signs erected at all fire trail entry points and intersections.
9. Close and rehabilitate all vehicle trails not designated as fire trails in Figure 5, and not required for other management purposes.	Rehabilitate any vehicle trails not designated as fire trails in Figure 5, and not required for other purposes, using the procedure in MP 3.	REC	Trails not required for management purposes stabilised and revegetated.
10. Construct any future foot tracks so as to maximise their use for fire management.	Locate any new foot tracks along the boundaries of fire management units wherever possible, and construct to MP 4.	REC	New foot tracks routed along fire management unit boundaries, and constructed and maintained according to MP 4.

FIRE MANAGEMENT OBJECTIVE	RECOMMENDED ACTION	PRIORITY	PERFORMANCE INDICATORS
11. Ensure an adequate and accessible water supply for fire fighting.	a) Ensure fire hydrants within and surrounding the reserve are clearly marked, and maintained to Australian Standard AS 2419.1 – 1996 wherever possible. b) Investigate the feasibility of improving the mains supply in Oxley Drive, Duke Street and Earl Street to the east of the reserve to meet the requirements of AS 2419 – 1996 <i>Fire Hydrant Installations</i> . c) Encourage residents in areas with poor mains pressure to install stored water supplies for fire fighting that are accessible by fire brigade vehicles. d) All stored water supplies should be registered with the Stored Water Supply Program, and identified with special markers available from the NSW Fire Brigades.	a) E - A  b) REC  c) E  d) E	<ul style="list-style-type: none"> <li>• Fire hydrants in and surrounding the reserve are clearly marked and meet current standards of flow rate and pressure where possible.</li> <li>• Feasibility of improving flow rate and pressure in the mains on the eastern side of the reserve investigated.</li> <li>• Stored water supplies installed where the mains supply does not meet the requirements of AS 2419 – 1996, registered with the SWS program, and marked.</li> </ul>
12. Apply the appropriate fire regime to populations of flora and fauna of conservation value in the reserve that require periodic fire for their long-term survival.	a) Consult with the NPWS Threatened Species Unit when planning prescribed burns in units containing populations or communities listed in the Threatened Species Conservation Act, 1995. b) Avoid burning the whole of any population of a threatened or rare plant species in a single management burn. c) Monitor the recovery of any populations of threatened or rare flora and fauna burnt by wildfires or prescribed burns.	a) E  b) E  c) E	<ul style="list-style-type: none"> <li>• All burns in units designated for Ecosystem Management carried out according to the requirements of flora and fauna of conservation value.</li> <li>• No decline in the populations of threatened or rare flora and fauna due to fire.</li> </ul>
13. Exclude fire from shrubland at the summit of Mount Gibraltar.	Do not burn shrubland at the summit of Mount Gibraltar for the duration of this plan.	REC	Shrubland at the summit remains unburnt for the duration of this plan.
14. Implement a mosaic burning program in selected forest plant communities to maintain and enhance existing habitat diversity, and reduce overall fuel loads in bushland areas.	a) Carry out prescribed burning according to the schedule in Table 5 using the procedure in MP 8. b) Regularly revise burning prescriptions to ensure they incorporate the most recent information on the fire ecology of flora, fauna and plant communities of conservation value in the reserve.	a) E - A/S  b) REC - A/S	<ul style="list-style-type: none"> <li>• Mosaic of burnt fire management units maintained.</li> <li>• No decline in the populations or distribution of threatened species.</li> <li>• No decline in the area or distribution of plant communities of conservation value.</li> </ul>

FIRE MANAGEMENT OBJECTIVE	RECOMMENDED ACTION	PRIORITY	PERFORMANCE INDICATORS
15. Control of unwanted plant species through coordinating fire management and weed control activities.	a) Treat any weeds in areas to be burnt under this fire management plan according to MP 9. b) Coordinate fire management and weed management activities using the procedure in MP 10. c) Integrate the prescribed burning program and its associated weed control activities into any weed management program for the reserve. d) Ensure that all vehicles involved in fire management activities in the reserve (excluding emergencies) are washed to remove any mud, soil or plant material prior to entering the reserve, particularly vehicle underbodies, in order to control the spread of weeds and plant diseases. This is the responsibility of the owner of the vehicle.	a) REC – A/S b) REC – A c) REC d) REC	<ul style="list-style-type: none"> <li>• Pre and post fire weed control carried out in any weed infested fire management units burnt under this plan. Minimal coppicing or regrowth of weeds from treated rootstock.</li> <li>• All declared noxious weeds removed, reduction in extent of other weeds.</li> <li>• Any weed management plan integrated with this fire management plan.</li> </ul>
16. Coordination of fire management activities in the reserve amongst the various stakeholders.	a) Implement the procedures for coordinating fire management activities in MP 10. b) Preparation of pre-fire season map updates and distribution to the NSW Fire Brigades and Rural Fire Service. c) Approach all landowners who have works or activities recommended on their land in this fire management plan and obtain their cooperation in implementing the relevant activities on their land. d) Units scheduled for burning should be inspected by representatives of Council, the Mt Gibraltar Landcare and Bushcare, and the person who will be in charge of the burn approximately 3 months prior to the burn to determine if the scheduling is suitable and if any works need to be carried out prior to the burn.	a) E b) REC – A c) E - 1 d) REC	<ul style="list-style-type: none"> <li>• Meetings held and minuted as outlined in MP 10.</li> <li>• Landowner cooperation for works on adjoining properties obtained.</li> <li>• Units scheduled for burning inspected by those involved in the burn prior to the burn.</li> </ul>

FIRE MANAGEMENT OBJECTIVE	RECOMMENDED ACTION	PRIORITY	PERFORMANCE INDICATORS
17. Ensure all personnel carrying out fire management activities in the reserve are suitably trained, equipped and supervised.	a) Ensure all personnel engaged in prescribed burning activities in the reserve have the appropriate level of training and equipment as outlined in Section 6.4, and the minimum equipment listed in MP 8. b) Ensure all personnel engaged in fire management activities in the reserve, including fire trail maintenance, are provided with appropriate instruction in the recognition and protection of items of natural and cultural heritage value, or are supervised by a person with this knowledge.	a) E b) REC	<ul style="list-style-type: none"> <li>All personnel are able to demonstrate the required level of training and minimum levels of equipment.</li> <li>All personnel instructed in the recognition and protection of items of natural and cultural heritage value, or properly supervised.</li> </ul>
18. Develop, assist development of, or utilise existing education programs and materials aimed at: <ul style="list-style-type: none"> <li>reducing arson</li> <li>informing residents adjacent to the reserve of fire safety issues, and measures to improve protection of themselves and their property</li> <li>informing residents of adjoining properties about the potential impact of their fuel management activities on environmental and other values</li> <li>interpreting fire management activities for the public, particularly the role of fire in maintaining biodiversity.</li> </ul>	Prepare an information sheet as outlined in Section 6.1 and Appendix F of this plan, and distribute to adjoining residents, reserve users and other interest groups.	a) REC - 1	<ul style="list-style-type: none"> <li>Information sheets distributed and problem solving sessions offered as required when complaints or unfavourable comments are received.</li> <li>Educational material distributed to adjoining residents.</li> <li>Reduction in the incidence of illegal fires on and around the reserve.</li> </ul>
19. Encourage the setting up of Community Fire Units in moderate and high risk urban areas adjoining the reserve.	Consider setting up Community Fire Units at the top of Chinamans Creek, and other suitable moderate and high risk locations (NSW Fire Brigades).	REC	Community fire units set up in urban areas with moderate and high bushfire risk.
20. Maintain up-to-date information on location of dwellings, fire trails and their condition, water supply points, Asset Protection Zones, and areas burnt in prescribed fires and wildfires.	a) Record fire management activities and wildfires using the procedures in MPs 11 and 12. b) Enter details of each management burn and wildfire in the Bushfire Risk Information Management System (BRIMS).	a) REC - A/S b) REC - A/S	Records maintained of all fire management activities.

FIRE MANAGEMENT OBJECTIVE	RECOMMENDED ACTION	PRIORITY	PERFORMANCE INDICATORS
<p>21. Monitor the impact of fire management activities in the reserve. Adjust practices to achieve relevant objectives, and periodically review the fire management plan.</p>	<p>a) Monitor the impacts of fires as outlined in Section 6.5.</p> <p>b) Review this fire management plan at regular intervals using the procedures in Section 6.5.4. and Table 6.</p> <p>c) Regularly revise burning prescriptions to ensure they incorporate the most recent information on the fire ecology of flora, fauna and plant communities of conservation value in the reserve.</p> <p>d) Carry out further research on the impacts of fire on the reserve.</p>	<p>a) REC - A/S</p> <p>b) ROU - 5</p> <p>c) REC - A/S</p> <p>d) REC</p>	<ul style="list-style-type: none"> <li>• Monitoring and review carried out as scheduled in the plan.</li> <li>• New information on the fire management requirements of threatened flora and fauna incorporated into the fire management plan.</li> </ul>