# Hunter Region
# Bretti Nature Reserve
## Fire Management Strategy (Type 2)
## 2005
**Sheet 1 of 1**

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



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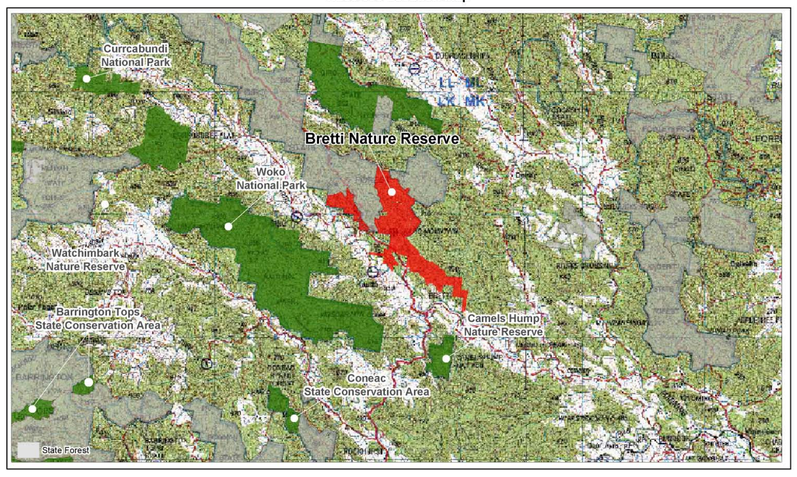
Department of Environment and Conservation (NSW)

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

**Endorsed by:** _____ **Date:** / /

*Director Northern, Parks & Wildlife Division*

### 1:250 000 Location Map



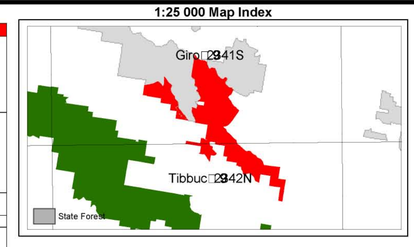

### CONTACT DETAILS

| Agency | Position | Number |
|---|---|---|
| NPWS | Hunter Region Duty Officer (24 hr) | 016 301161 / 0429 144880 |
| | Barrington Tops Area Manager | 6538 5301 / 0429 144873 |
| | Fire Management Officer | 4984 8206 / 0429 144870 |
| | Operations Coordinator | 4984 8212 / 0429 144872 |
| | Barrington Tops Area Office | 6538 5300 / (fax) 6558 2476 |
| | Hunter Regional Office | 4984 8200 / (fax) 4981 5913 |
| RFS – Manning Team | Gloucester District | |
| | Fire Control Centre | 6558 9222 / (fax) 6558 1723 |
| | 24hr Duty Officer | 0500 589222 |
| | Taree District | |
| | Fire Control Centre | 6592 6990 / (fax) 6592 6970 |
| | 24hr Duty Officer | 6592 6666 |
| | State Operations | 8741 5400 / (fax) 8741 5300 |
| NSW Fire Brigade | Newcastle Communications (24 hr) | 49297 177 / (fax) 4927 2580 |
| SES | Gloucester | 6558 1788 / (fax) 6558 1636 |
| Police | Gloucester Station | 6558 1204 |
| | Emergency | 000 |
| Ambulance | Bookings | 131233 |
| | Emergency | 000 |
| Hospital | Gloucester | 6558 1307 |
| DIPNR | Newcastle | 4929 4346 |
| Council | Gloucester Shire | 6558 1601 / (fax) 6558 2343 |

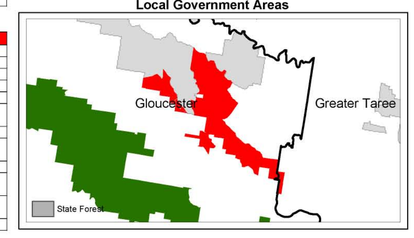
### COMMUNICATION RESOURCES

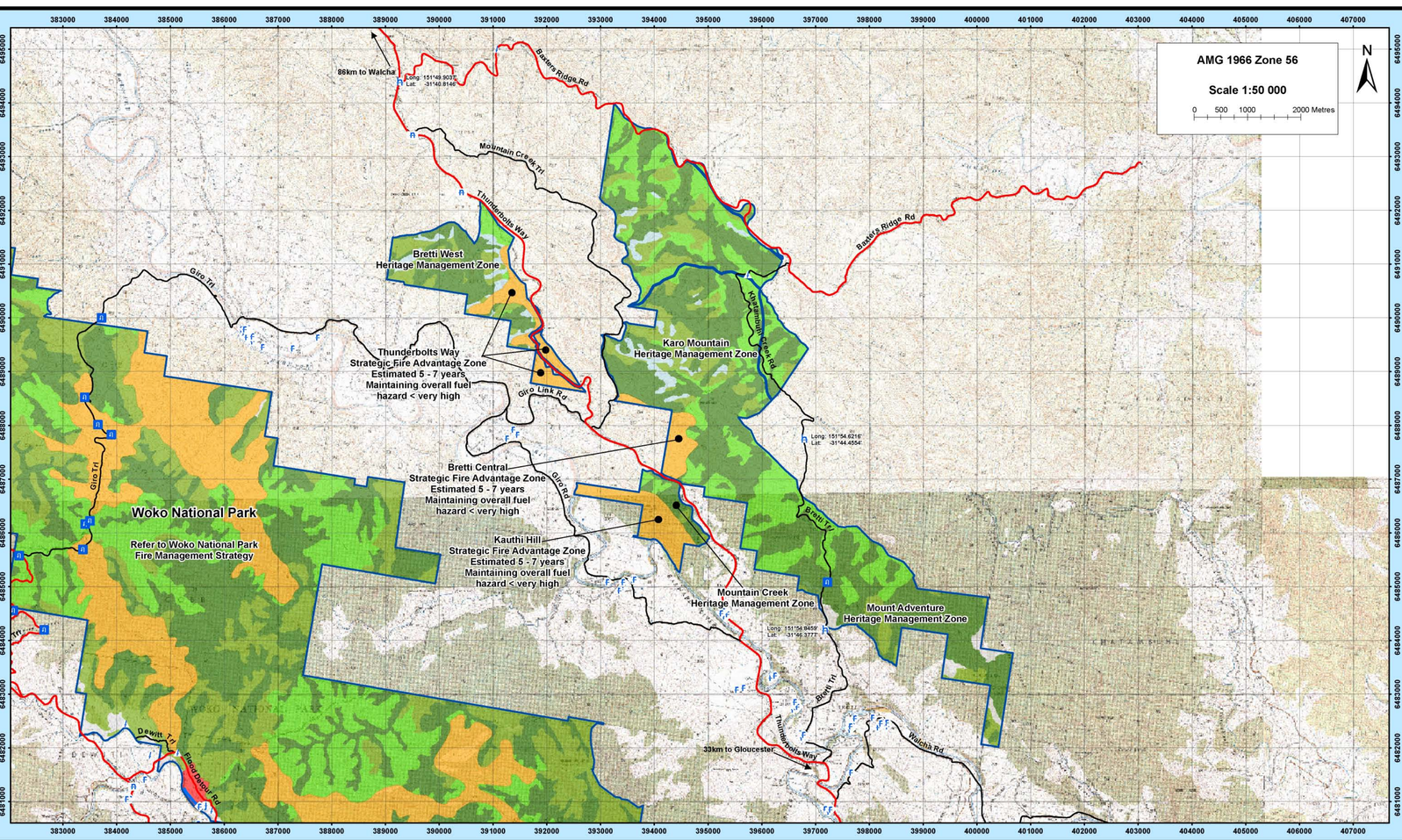
| Service | Channel | Location/Comments |
|---|---|---|
| NPWS - VHF | 26/31/32 | • Select channel with best reception |
| RFS - PMR | 81 RFSPMR | • Mount Berrico – Country Energy Site |
| | 82 RFSPMR | • Mount Myra – NPWS Site |
| | 34 RFSPMR | • Mount Gangghat – Radio 2RE Site |
| | 58 RFSPMR | • Mount Marie – Prime TV Site |
| | Awaiting allocation | • Mount Talawhal – Optus Site |
| | 19 RFSPMR | • Middle Brother – Fettells Site |
| | 128 | • Mount Berrico - Strategic Network to State Operations |
| RFS - GRN | - | • No service available |
| UHF - CB | 1-99 | • Available in most RFS vehicles<br>• Choose channel on fire-ground with RFS |
| NPWS-VHF Portable Repeater | 15 | • Can be located anywhere<br>• Kept at Regional Office |
| Mobile Phone | - | • Poor coverage |

### 1:25 000 Map Index




### Local Government Areas




# Bushfire Risk Management Strategies

**This map illustrates the strategies NPWS plans to implement between 2004 - 2009 in the reserve.**

### BUSHFIRE RISK MANAGEMENT STRATEGIES MAP LEGEND

- Bretti Nature Reserve
- **Fire Management Zones**
  - Strategic Fire Advantage Zone
- **Heritage Management Zones**
  - Dry Sclerophyll Forest (5 - 50 years)
  - Wet Sclerophyll Forest (25 - 60 years)
  - Rainforest (Avoid all fire)
  - Cleared
- **Roads and Trails**
  - Primary (Cat 1)
  - Secondary (Cat 9)
  - Proposed (Cat 9)
- Threatened Property
- **Other Fire Control Advantages**
  - Existing Staging Area
  - Existing Water Vehicle Point
  - Existing Helipad
  - Existing Turning Point

### LEGEND DESCRIPTION

| | |
|---|---|
| **Fire Management Zones** | • Note that some fire management zones extend beyond the boundaries of the reserve onto adjacent land. While the strategies proposed for adjacent land are not binding on the neighbouring property owner/occupier, NPWS will pursue these strategies with neighbours because if they are not implemented it may result in assets remaining at high risk. Where possible, NPWS will assist neighbours to undertake the proposed strategies.<br>• Strategic Fire Management Zones: The objective of strategic fire management zones is to help reduce detrimental fire behaviour. The proposed burning frequency for strategic fire management zones is indicated on the adjacent map.<br>• Heritage Management Zones: The objective of heritage management zones is to conserve biodiversity and protect cultural heritage. The proposed burning frequency for heritage management zones is that which is required to conserve biodiversity in the vegetation communities occurring within the zone (see Bushfire Risk Management Strategies Map Legend above). |
| **Other Fire Control Advantages** | • Other fire control advantages are features that may be used to support bushfire suppression operations and include water points (both helicopter and vehicle accessible), helipads, landing grounds, staging areas and refuge areas. Other fire control advantages that will be maintained or constructed in and around the reserves are illustrated in the adjacent map. |

| | |
|---|---|
| **Roads & Trails** | • The adjacent map illustrates existing trails that are considered important for fire management andare proposed to be maintained. In general, it is proposed that NPWS maintains trails within the reserve and the owner/occupier maintain trails on their properties. However, NPWS may enter into agreements with neighbouring property owners about maintenance of trails on their property.<br>• The adjacent map also illustrates new trails that are considered important for fire management and proposed to be constructed. Unless noted otherwise it is proposed that these trailsare to be constructed by NPWS.<br>• Note the illustration of roads and trails on this map does not necessarily indicate a right of way and unless there is an existing access agreement permission should always be sought from the relevant land holders before using trails on their property.<br>• Primary Category 1 Trails are existing trails that will be maintained to a standard sufficient to allow the passage of Category 1 fire tankers (4wd Heavy Tanker 3001 to 4000 litre capacity).<br>• Secondary Category 9 Trails are existing trails that will be maintained to a standard sufficient to allow the passage of Category 9 fire tankers (4wd ute up to 400 litre capacity). |

# Bushfire Suppression Information 2004/05

**The information in this section will be updated annually based on fire history and completed fire management works.**

### GENERAL OPERATIONAL GUIDELINES

| Issue/Area | Operational Guidelines |
|---|---|
| Aerial Ignition | • May be used where considered appropriate. |
| Backburning | • As far as possible, backburning should take account of threatened species and cultural heritage guidelines.<br>• On days when the fire danger > High, as far as possible delay backburning until early evening.<br>• Backburning may be safely undertaken during the day when the fire danger < High.<br>• Take particular care backburning when there are fibrous/paper bark trees close to control lines. |
| Command and Control | • ICS system will be implemented during all fire suppression activities. |
| Water Bombing | • Can be used to slow the spread of a fire but will not extinguish a fire without support from ground crews.<br>• Ground crews must be warned of water bombing operations.<br>• As far as possible, foam should be used to increase the effectiveness of the water.<br>• Foam/water should not be used for building control lines because it is ineffective. |
| Visitor Safety | • Close roads if smoke or fire fighting operations are likely to cause a traffic hazard.<br>• Check and evacuate walking tracks and known remote camping areas within and adjacent to the fire area. |
| Restoration | • All new fire breaks will be restored as part of the fire suppression operation. |
| Earth Moving Machinery | • Can only be used with consent of NPWS and only if the probability of success is considered high.<br>• As far as possible, restrict use to dormant trails and other previously disturbed areas.<br>• Subject to operational constraints, minimise the length of break construded.<br>• As far as possible, take account of threatened species and cultural heritage management guidelines.<br>• The route to be taken by earth moving machinery must be scouted to identify possible cultural heritage sites. |
| Foams & Wetting Agents | • Use permitted where considered appropriate.<br>• As far as possible, minimise use in rainforest communities. |
| Fire Advantage Recording | • All fire advantages used during wildfire suppression operations are to be mapped so they can be added to the database. |
| Retardant | • Retardant is ineffective and should not be used in communities with a dense canopy cover.<br>• Retardant is ineffective and should not be used against high intensity fires producing large numbers of spot fires.<br>• Retardant is most applicable to building short lengths of control line to link existing control lines.<br>• Areas where retardant has been used shall be mapped. |
| Roads and Trails | • Many trails in the reserve are narrow and have limited passing bays.<br>• Develop a traffic plan that minimises the need for fire fighting vehicles to pass each other.<br>• Note the illustration of roads and trails on this map does not necessarily indicate a right of way and unless there is an existing access agreement permission should always be sought from the relevant land holders before using trails on their property. |
| Remote Area Fire Fighting | • Remote area fire fighting will not be undertaken unless there is a safe area (at least 5 x flame height wide and not flammable at the time of the fire) immediately adjacent to where crews will be working.<br>• Remote area operations shall cease when:<br>- there is a high risk of storms,<br>- severe weather conditions are predicted. |
| Natural Fire Control Advantages | • Bretti NR and surrounds contain a large number of potential natural fire control advantages including cleared land, wet sclerophyll forest, rainforest and cliftlines.<br>• Experience has shown that wildfires may effectively be contained by linking these natural fire control advantages with wet lines, hand tool lines etc.<br>• Potential natural fire control advantages should be checked prior to being relied upon to contain a wildfire because their strength varies according to prevailing environmental conditions. |

### FUELS AND FIRE BEHAVIOUR CHARACTERISTICS

| Fuel Type | Fire Behaviour Characteristics |
|---|---|
| Dry Sclerophyll Forest | • Flammable under a wide range of conditions.<br>• High fire intensity and flame heights under hot, dry, windy conditions.<br>• Heavy short distance spotting (<500m), occasional long distance spotting (>500m).<br>• Forests and woodlands with a heathy understorey typically exhibit higher levels of fire behaviour than those with a more open understorey.<br>• Use McArthur Mark 5 Forest Fire Behaviour Model to estimate ROS. |
| Wet Sclerophyll Forest | • Generally only flammable when BKDI > 80.<br>• May function as control line when BKDI < 50.<br>• Ground (peat) fires common when BKDI > 125.<br>• When flammable, often burns at extreme intensities (higher than any other fuel type).<br>• When flammable, often results in long distance spotting (>500m). |
| Rainforest | • Generally only flammable when BKDI > 100.<br>• May function as control line when BKDI < 60.<br>• Ground (peat) fires common when BKDI > 125.<br>• When flammable, fires are usually slow and of low intensity although vines may allow flames to climb trees.<br>• Due to palms dropping large numbers of dead fronds, palms may be flammable when other rainforest species are not. |
| Cleared | • Only flammable when grass >50-70% cured.<br>• May function as control line when grass <50% cured.<br>• When grass >70% cured, burns with the highest ROS of any fuel type but comparatively low flame height and intensity.<br>• When grass >70% cured, ROS highly sensitive to wind speed.<br>• When grass >70% cured, flame height and intensity, but not ROS, strongly influenced by grass height and continuity.<br>• Spotting >100m uncommon.<br>• Use CSIRO Grassland Fire Behaviour Model to estimate ROS. |

### INTERPRETATION OF BIODIVERSITY THREATENED CATEGORIES

| Category | Interpretation |
|---|---|
| Overburnt | • Protect from fire as far as possible.<br>• Past fire frequency has already exceeded biodiversity thresholds. |
| Vulnerable | • Protect from fire as far as possible.<br>• The occurrence of fire this year will result in biodiversity thresholds being exceeded. |
| Underburnt | • If possible, allow area to burn.<br>• Fire frequency has already been too low to conserve biodiversity. |
| Almost Underburnt | • If possible, allow area to burn.<br>• The absence of fire this year will result in a fire frequency outside biodiversity thresholds. |

### FIRE SUPPRESSION STRATEGIES

| Current Fire Danger | Forecast Fire Danger | Guidelines |
|---|---|---|
| Low - Mod | Low - Mod | • As far as possible, undertake indirect, parallel or direct attack along existing control lines taking advantage of Natural Fire Control Advantages (NFCA).<br>• As far as possible, maximise area burnt without threatening assets, including biodiversity<br>• Identify and survey backup control lines. |
| Low - Mod | >= High | • Undertake indirect, parallel or direct attack to minimise the time taken to contain the fire.<br>• Construct new control lines if necessary to minimise the time to contain the fire.<br>• Identify and survey backup control lines taking advantage of NFCA. |
| High | All | • Undertake indirect attack along existing or newly constructed control lines taking advantage of NFCA.<br>• Secure and deepen control lines along the next predicted downwind side of the fire.<br>• Identify and survey backup control lines taking advantage of NFCA. |
| All | All | • Ensure there is sufficient time to secure control lines before the fire gets to them.<br>• If there is insufficient time to secure control lines, fall back to the next potential control line.<br>• As far as possible, implement threatened species and cultural heritage management guidelines.<br>• Test NFCA before relying on them. |

### ABORIGINAL SITE MANGEMENT STRATEGIES

| Label | Treatment |
|---|---|
| AH1 | • As far as possible protect site from fire.<br>• Do not cut down trees.<br>• Use of foams, wetting agents & retardant is acceptable. |
| AH2 | • As far as possible protect site from fire.<br>• Avoid ground disturbance including handtools, dozers.<br>• Avoid water bombing which may cause ground disturbance. |
| AH3 | • Avoid ground disturbance including handtools, dozers.<br>• Avoid water bombing which may cause ground disturbance.<br>• Site may be burnt by wildfire, backburn, prescribed burn. |

### HISTORIC HERITAGE SITE MANAGEMENT STRATEGIES

| Label | Treatments |
|---|---|
| HH1 | • High RCHMS* priority.<br>• Avoid fire, including wildfire, backburning & HR.<br>• Avoid all water bombing activities. |
| HH2 | • High RCHMS* priority.<br>• Avoid fire, including wildfire, backburning & HR. |
| HH3 | • High or low RCHMS* priority.<br>• Heritage site unlikely to be effected by fire.<br>• Danger to any fire crew activity. Avoid site at all costs. |
| HH4 | • Low RCHMS* priority.<br>• Avoid fire, including wildfire, backburning & HR.<br>• Avoid all water bombing activities. |
| HH5 | • Low RCHMS* priority.<br>• Avoid fire, including wildfire, backburning & HR. |
| HH6 | • High or low RCHMS* priority.<br>• Heritage site unlikely to be effected by fire.<br>• Avoid use of earth moving machinery. |
| HH7 | • High or low RCHMS* priority.<br>• Heritage site unlikely to be effected by fire.<br>• Avoid use of earth moving machinery.<br>• Avoid all water bombing activities. |

*RCHMS: Regional Cultural Heritage Management Strategy.
- *In areas where the asset may be in or close to a water body, wetland or swamp, no foam or retardant is to be used.*
- *Earth-moving machinery is to be used around, rather than over/through assets.*

### THREATENED FAUNA MANAGEMENT STRATEGIES

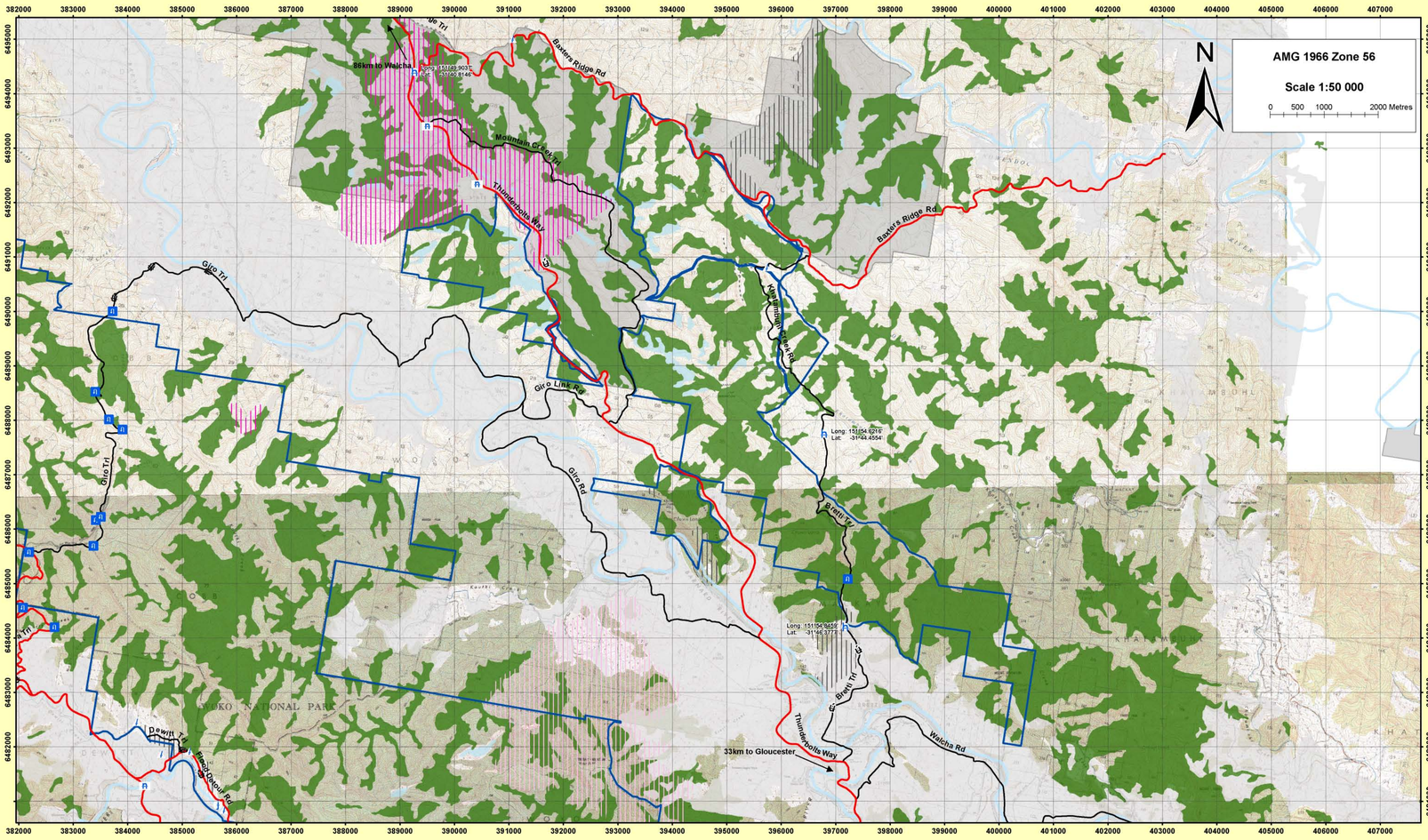
| Label | Treatments |
|---|---|
| FA1 | • Protect large and hollow bearing trees. |
| FA2 | • Protect large and hollow bearing trees.<br>• Avoid interfire intervals of < 10 yrs.<br>• Avoid high intensity fires that consume tree canopies and fallen logs. |
| FA3 | • Avoid interfire intervals of < 10 yrs. |
| FA4 | • Habitat unlikely to be effected by fire.<br>• Avoid use of earth moving machinery in wetland habitats.<br>• Avoid use of retardant and foam in wetland habitats. |
| FA5 | • Habitat unlikely to be effected by fire.<br>• Avoid use of earth moving machinery in dune habitats. |
| FA6 | • Avoid fire, including wildfire, backburning & HR, as far as possible in wetland habitat.<br>• Avoid use of earth moving machinery in wetland habitats.<br>• Avoid use of retardant and foam in wetland habitats. |
| FA7 | • Avoid high intensity fires that consume tree canopies and fallen logs. |
| FA8 | • Avoid fire, including wildfire, backburning & HR, as far as possible.<br>• Avoid use of earth moving machinery. |

### THREATENED FLORA MANAGEMENT STRATEGIES

| Label | Treatments |
|---|---|
| FL1 | • Avoid interfire intervals of < 10 yrs.<br>• Avoid the use of earthmoving machinery.<br>• Avoid the use of retardant. |
| FL2 | • Avoid fire, including wildfire, backburn, HR, as far as possible.<br>• Avoid the use of earthmoving machinery.<br>• Avoid the use of retardant. |
| FL3 | • Avoid high intensity fire.<br>• Avoid interfire intervals <10 years, effect unknown.<br>• Avoid the use of earth moving machinery. |
| FL4 | • Avoid summer fire.<br>• Avid high intensity fire.<br>• Avoid earth moving machinery. |
| FL5 | • Avoid low intensity fire.<br>• Avoid interfire intervals <5 years.<br>• Avoid earth moving machinery.<br>• Avoid the use of retardant. |

# Fire Control Advantages

**This map illustrates fire control advantages that may be used during bushfire suppression operations.**




# Assets & Fire Fuels

**This map illustrates fire fuels and the location of assets for use in bushfire suppression operations.**