

# South West Slopes Region Courabryra Nature Reserve Fire Management Strategy 2006

Scale: Works Program map 1:30000, Location map 1:90000, other maps 1:40000  
Version: June 2006, ISBN: 1 74137 275 5, DEC. 2005/101

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

Copyright Department of Environment and Conservation. These data are not guaranteed to be free from error or omission. The Department of Environment and Conservation and its employees disclaim liability for any act done on the information in the data and any consequences of such acts or omissions. This map is based on Land and Property Information Standard 1:25000 Topographic Map Series. Reproduced with permission of Land and Property Information.



### MAPS 1 & 2: FIRE HISTORY

Ignitions	There are no recorded ignitions within the reserve.
Prescribed Burns	No prescribed burns have been implemented within the reserve by NPWS since the land was transferred in 2001. There have been no known prescribed burns applied during previous land management operations.
Wildfires	There are no records from the previous land management agency either written or mapped for the reserve. Neighbours can not recall observing fire within the reserve during the period of land management.
Fire Frequency	There are no indications that there has been fire in the last 50 years. There are no fire scars present or trace within the reserve. Neighbours support this, stating they have not witnessed any fire within the reserve in that period of land management.

The frequency and intensity of fire has important implications for biodiversity and future fire management. This reserve and Courabryra Nature Reserve is a rare example of the natural succession of grassy woodland communities. Further notes, examples of fire levels in reserve communities within the 'History of fire as a natural process or through the implementation of fire through land management practices.

### MAP 6: SIGNIFICANT FAUNA

Fire Group	Common Name	Scientific Name	Vulnerable Period
A	Fauna Sided gird	Acridipyraxia	New Feb
B	Potential amphibian & invertebrate species that may be vulnerable to fire or the suppression techniques.		

### FAUNA GUIDELINES

Intense fires may destroy or add to existing nesting hollows. The hollow of hollow bearing trees during 'topping up' activities potentially decreases or hollow availability. Fire may reduce flowering and seed production, an important component of their habitat. Any fire should be kept to a suitable size. These species are documented as breeding in open low intensity fire, so long as large patches of habitat exist in the landscape remains intact. Local fire period of vulnerability for the 2005-2006 season is:

- Between November and February
- Where possible:
  - Protect areas from high intensity and frequent fires and contain to small areas.
  - Fire should be managed to produce long-term water systems.
  - Avoid holding large or mature trees during incidents and planned fires during map up and maintenance.
  - Protect dead, down and hollow trees, which may be utilized by small mammals.
  - Vegetation management guidelines should be managed at maximum fire intervals.

All areas affecting catchments or where species can be found within soil or other debris. Fire and soil disturbance can result in the loss of important species, which from significant sites within the ecology of the reserve and form an integral part of the local chain. Increased erosion and run off into streams and waterways, sedimentation and weed invasion, potentially impacts on native species. High intensity fire can remove riparian vegetation, including the filtering benefits of vegetation. Loss of nutrient from the site can affect water quality and may lead to algal blooms in streams or riparian pools. Riparian vegetation burning is expected to have serious impacts on these habitats.

Where possible:

- Maintain the potential for frequent and/or high intensity fire.
- If prescribed burns are deemed necessary, keep fire at least 100m from gully lines & riparian areas.
- Avoid the use of fire suppression chemicals within 100m of gully lines & riparian areas.
- Avoid soil disturbance when 50m of gully lines & riparian areas.

### MAP 3: VEGETATION COMMUNITIES & THRESHOLDS

Veg Group	Vegetation Description	Reserve Area	% Reserve Cover
17	Narrow Leaved Popgum - Moist Grassland Forest	27	11
26	Broad Leaved Popgum & Apple Box - Grassy Forest	71.8	30
48	Broad Leaved Popgum & Narriara Box - Grassy Forest	139.2	59
194	Wineyats	0	0
198	Pine Plantation	0	0

### MAP 4: VEGETATION THRESHOLD ANALYSIS

Threshold	Vegetation Group	% of Reserve	Interpretation & Management Guidelines
Overburn	N/A	0	Where identified, additional fire in this area will lead to address the regimes and may threaten community biodiversity, cause decline and/or reduction in resilience to resources threats.
Vulnerable	N/A	0	Where identified, fire should be avoided until another analysis of thresholds is possible to resources threats.
Recently burnt	N/A	0	Where identified, fire is less than threshold intervals. Additional fire will push the vegetation into the vulnerable class. Fire should be avoided until 2006.
Underburnt	N/A	0	May require fire after for ecological or cultural heritage purposes. <ul style="list-style-type: none"> <li>Planned fire may be introduced for prescribed burning for ecological or cultural heritage purposes, avoid and strategic protection programs where appropriate.</li> <li>Unplanned fire events may be allowed to burn if:               <ul style="list-style-type: none"> <li>The vegetation community requires fire for ecological purposes.</li> <li>Conditions are suitable.</li> <li>The intensity meets vegetation, fauna and fauna community requirements.</li> <li>Heritage Management Zone requirements are met.</li> <li>&gt;50% of the vegetation community group in the reserve is currently degraded.</li> </ul> </li> </ul>
Almost Underburnt	N/A	0	This area will fall into the Underburnt category by the end of 2006 if remains unburnt by fire. This area will be considered for prescribed burning for ecological or cultural heritage purposes, avoid and strategic protection programs where appropriate. <ul style="list-style-type: none"> <li>The vegetation community requires fire for ecological purposes.</li> <li>Conditions are suitable.</li> <li>The intensity meets vegetation, fauna and fauna community requirements.</li> <li>&gt;50% of the vegetation community group in the reserve is currently degraded.</li> <li>OK, Almost Underburnt and Underburnt.</li> </ul>
Unknown No Regime Assigned	N/A	0	This is minimal data available, which limits the modelling capabilities of DEC GIS. Fire should only be applied in areas where required for ecological purposes.

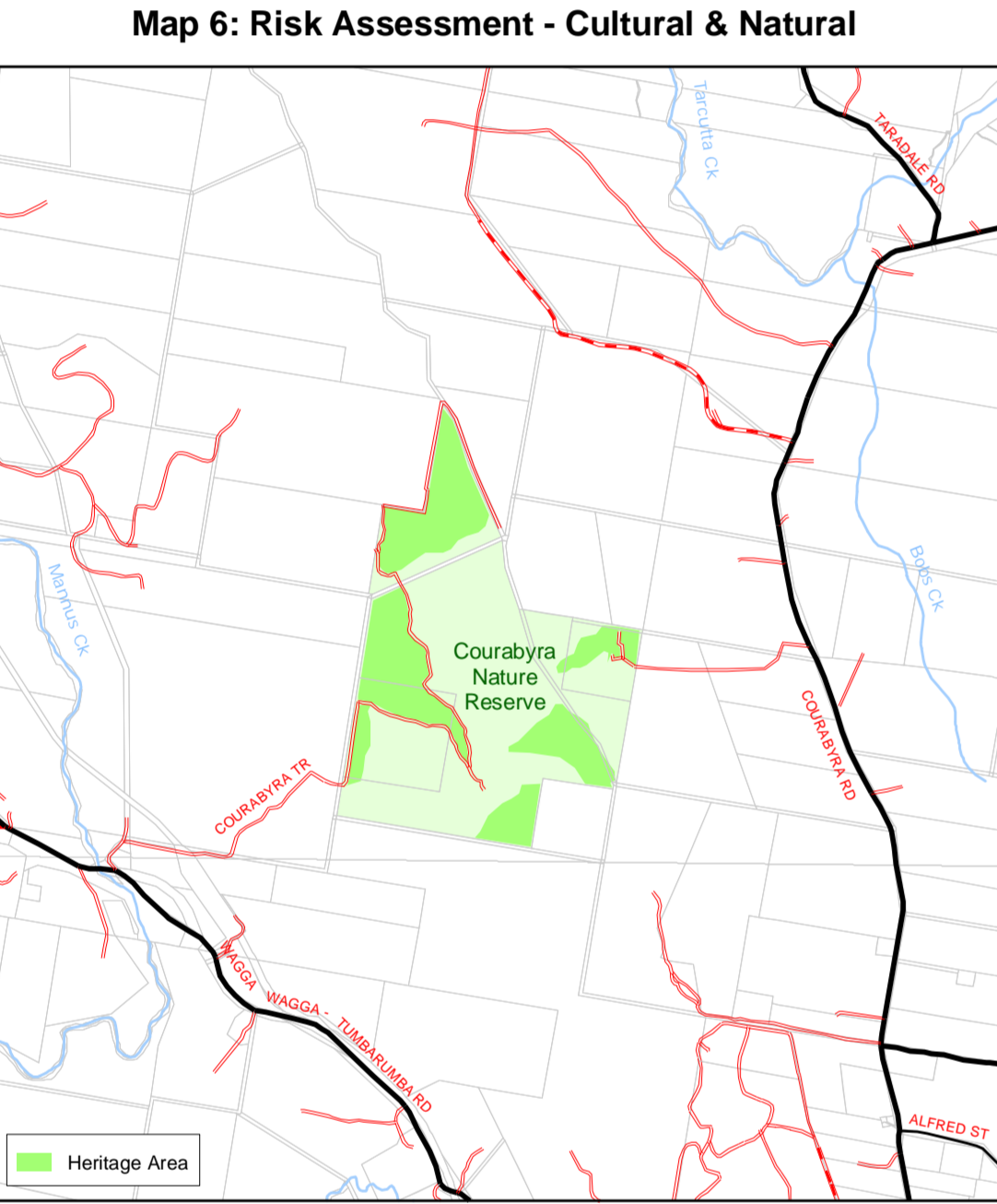
Note: The threshold analysis is derived from vegetation community thresholds and recorded fire history including the frequency and intensity. All vegetation communities should be monitored and planned fire should only be applied in areas identified as APT's or SFMZ's. In the event of fire in this reserve, the analysis will be updated again to establish new threshold values.

### MAP 5: BUSHFIRE BEHAVIOUR POTENTIAL

Rating	Vegetation Description	Reserve Area	% of Reserve
Low	Wineyats Pine Plantation (2 years of age)	0	0
Medium	Broad leaved Popgum & Apple Box - Grassy Forest Pine Plantation (5-15 years of age)	212	89
High	Narrow leaved Popgum & Blue Gum - Moist Grassland Forest Pine Plantation (5-10 years of age)	27	11
Very High	Pine Plantation (1-15 years of age)	0	0
Extreme	Pine Plantation (1-15 years of age)	0	0

### ASPECT BUSHFIRE BEHAVIOUR

Rating	Aspect in degrees	Rating	Slope in degrees
Low	30 - 150	Low	0 - 10 degrees
Medium	150 - 250	Medium	10 - 20 degrees
High	250 - 300	High	20 - 30 degrees
Very High	300 - 350	Very High	>30 degrees



### MAP 6: CULTURAL HERITAGE

**Key Guidelines:**

- Identified sites must be protected.
- DEC Database, AHMS and IAHMS must be accessed during incidents and for preparation of Review of Environmental Factors for fuel reduction burning or other works programs to ensure no records are included. Aboriginal site information from AHMS is to be included in a Management of Landscapes. Site data must be included in the Review of Environmental Factors and burning program outlines.
- Where possible, raised alarms will provide advice on protection methods.
- Comply with all conservation management plans (where they exist).

**Aboriginal Heritage:**

- No recorded sites have been documented within the reserve. The potential for the area to be a part of the broader landscape and associated with the local landscape should not be discounted. Potential sites may be found around riparian areas, springs, and gullies. Sites may include modified trees and artefacts.
- Any new sites must be recorded on AHMS and IAHMS databases systems.
- Prescribed sites, when identified, in accordance with operating guidelines.

**Historic Heritage:**

- No tangible sites have been recorded within the reserve. Other sites may exist that have not yet been recorded and may include relics from grazing and logging periods. Other forms of records may include old maps and aerial photos. Sites should be identified and protected during the suppression and prescribed burning programs.
- Any new sites must be recorded on AHMS and IAHMS databases systems.
- Prescribed sites, when identified, in accordance with operating guidelines.

Cultural heritage sites are based on data recorded on AHMS and IAHMS databases and field data recorded at 4 January 2006.

### MAP 3: VEGETATION MANAGEMENT GUIDELINES

Fire Interval	Vegetation Group	Vegetation Management Guidelines
40*	Broad leaved Popgum & Narriara Box - Grassy Forest	Frequent regimes may cause declines if successive fires occur <20 years apart, however the majority of species within the community undergoing senescence should avoid successive fires <20 years apart. Some species like <i>Acrodon verticillatus</i> (Grassy forest and open woodland) require a fire interval of >50 years. Top soil erosion will increase with frequent fire.
25 - 100	Broad leaved Popgum & Apple Box - Grassy Forest	40* - Intensity is potential for high intensity or frequent fire. Especially where successive fires occur <20 years apart. Intensity is potential for fire that consumes shrub stands and fallen timber. Avoid killing mature trees during map up activities. Prescribed fire may be implemented in vegetation group, so long as > 15% of the community is targeted and successive fires occur <20 years apart. Prescribed fire should only be implemented in areas where there is a demonstrated loss of biodiversity. Found within broad, low lying, gullies this community is well represented within the reserve. Frequent fire may cause declines where successive fires occur <25 years apart and declines could be expected if fires occur <100 years apart when possible. Intensity is potential for successive fires occurring <25 years apart. Avoid killing mature trees during map up activities. Prescribed fire should be implemented in areas where there is a demonstrated loss of biodiversity and only target >10% of the local community. This community covers a small percentage of the reserve and requires careful management strategies for maintenance. Generally, regular fire regimes may cause declines or extinctions. Declines predicted if successive fires occur <25 years apart when fire is excluded for long periods (>100 years) in the near future. Mid and ground cover species may decline if fires occur <100 years apart when possible.
25 - 120	Narrow leaved Popgum - Moist Grassland Forest	40* - Intensity is potential for high intensity or high frequency fires in areas where successive fires occur <25 years apart. Prescribed fire should only be implemented in areas where there is a demonstrated loss of biodiversity and only <10% of the vegetation community is targeted.

\*All the above vegetation communities have a range of the prescribed species. Any fire in these communities may increase the cover and abundance of *Casotria*, *Drosera* and *Pteropoda* species. Fire and fauna management guidelines should be consulted in conjunction with vegetation management guidelines.

### MAP 9: FUEL LANDSCAPE

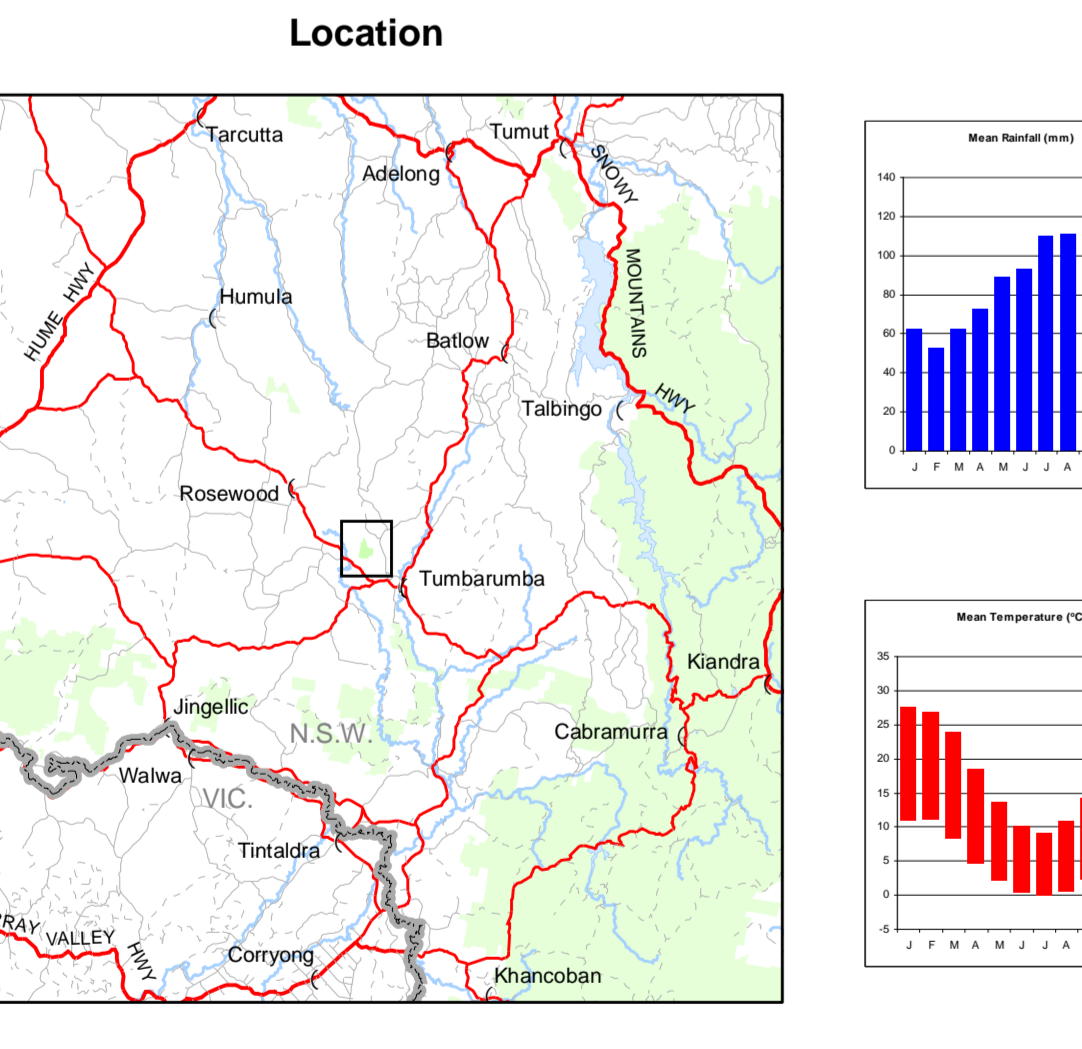
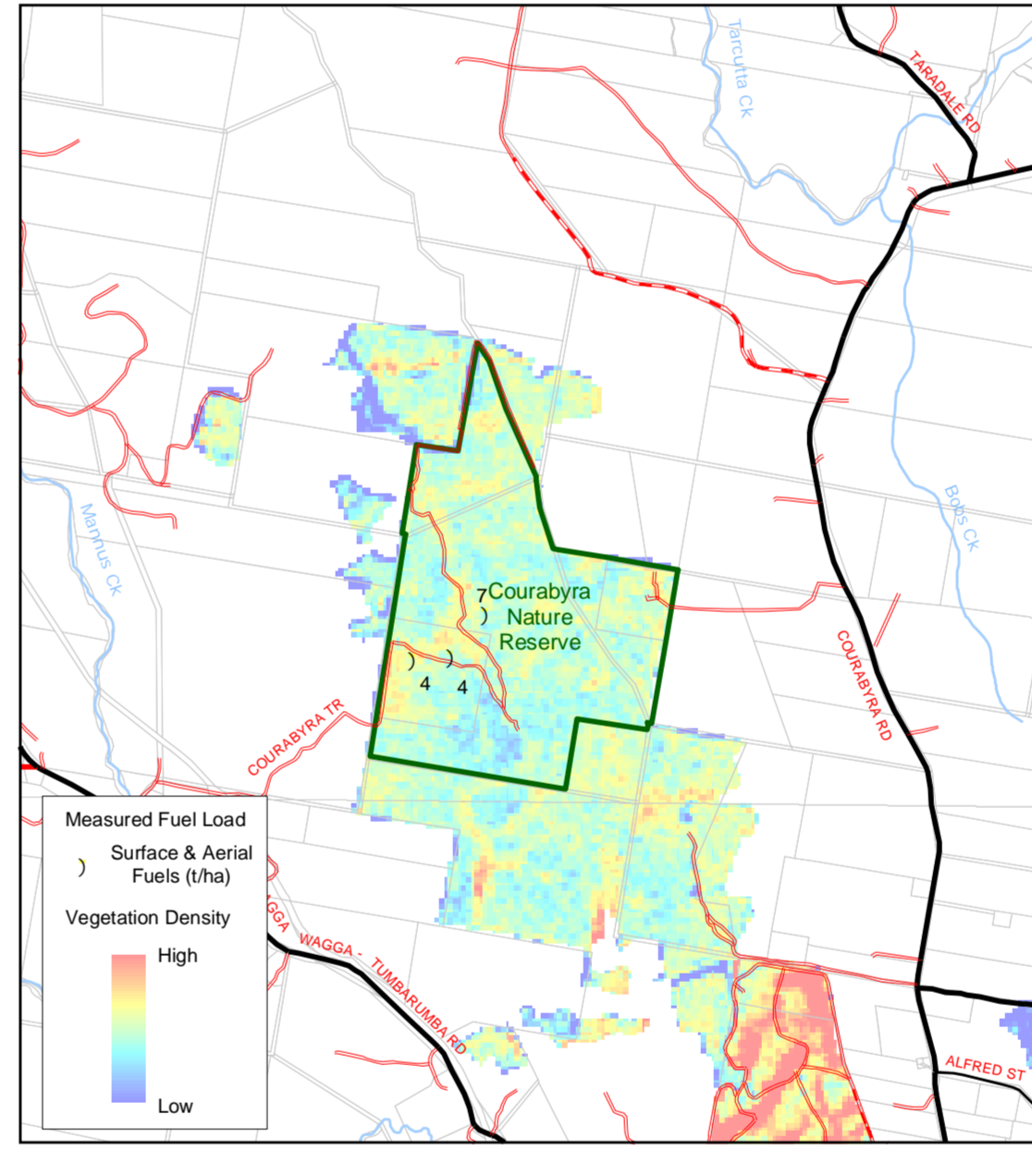
Recorded Fire Surface & Annual Fuels (Recorded Fire 2005)	1ha	Notes
Minimum Fuels	4.0	Vegetation Groups 26 and 48. Low NEMV & Low Modified fuels.
Maximum Fuels	7.0	Vegetation Group 48. Low NEMV & Low Modified fuels.
Average Fuels	5.0	All sampled sites measured below 8ha, which is considered a low threat.

**Management Notes:**

The reserve fuel landscape modelling results provide a guide to potential available fuels across the landscape. Fuel landscape modelling is specific to the reserve and may vary. The information should not be used for comparing purposes across the broader area managed by the NPWS South West Slopes Region. High fuels recorded on this reserve are reflected in the visual fuel assessment of 4.0 to 7.0 recorded in 2005. The base line for the fuel landscape map was extrapolated from NEMV (Vegetation Index) relationships from LANDSAT imagery (2004) and visual fuel sampling data to calculate the potential vegetation density across the landscape. To improve the understanding of this relationship, the LANDSAT imagery should be taken at a similar time as fuel assessments.

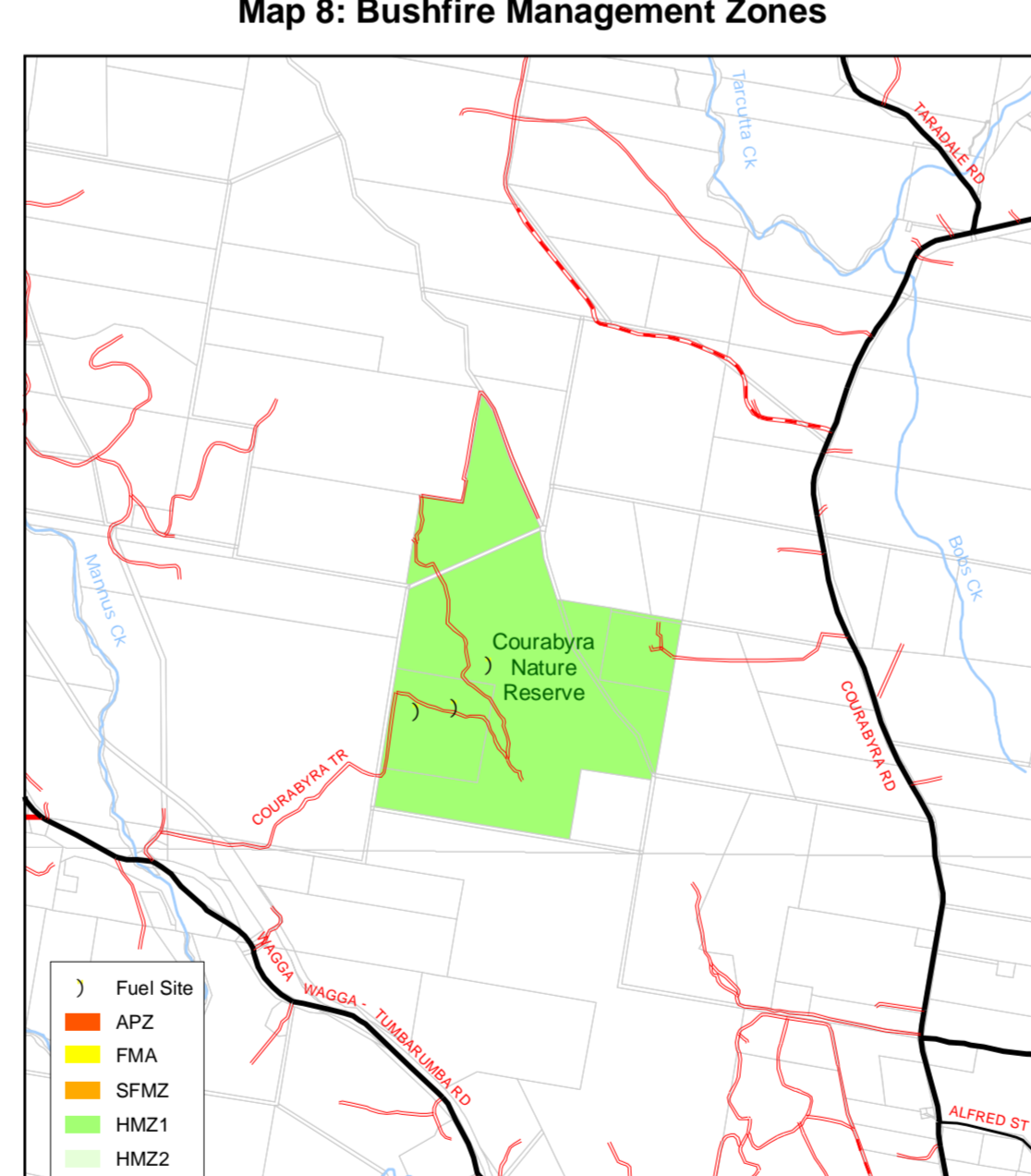
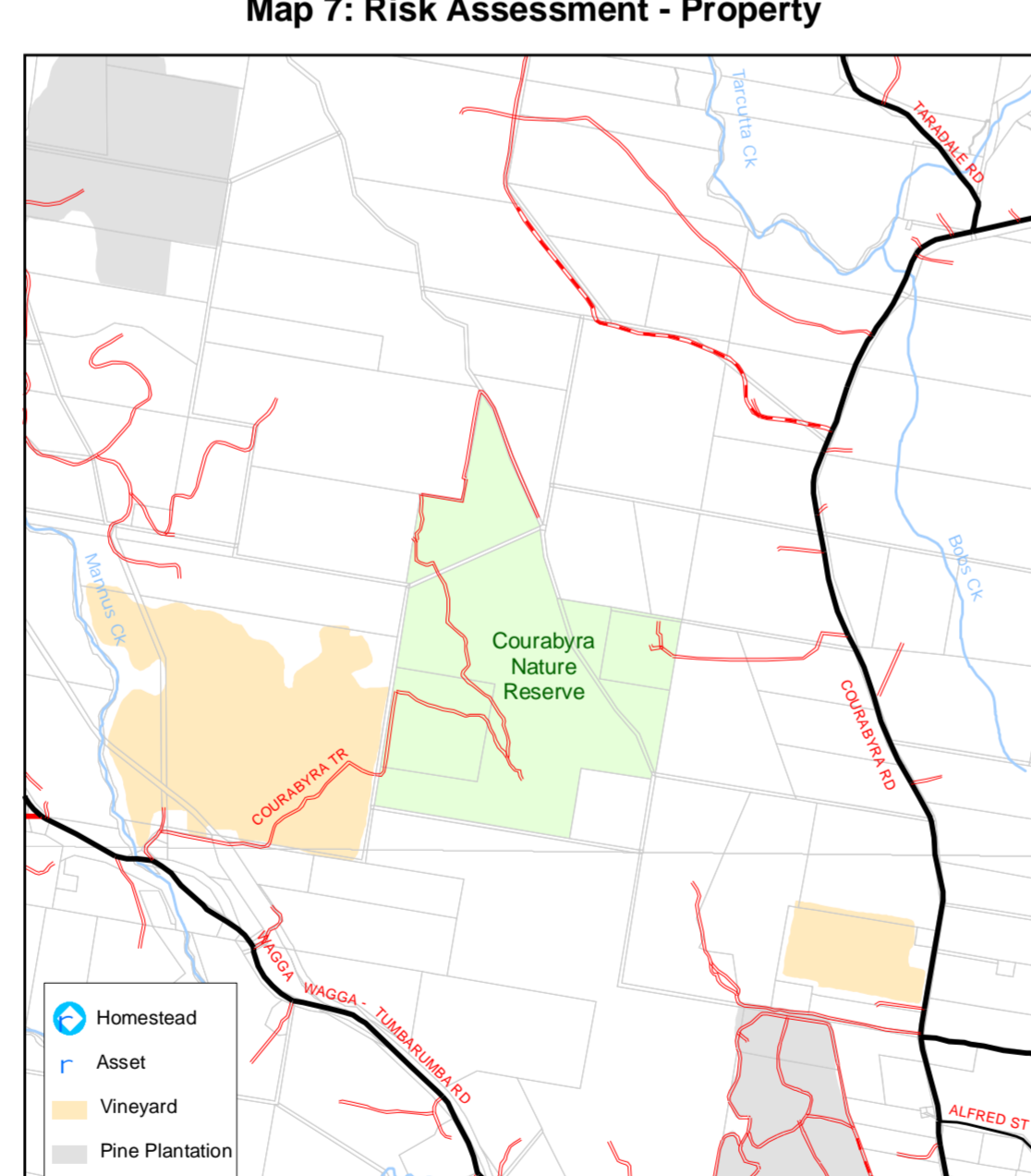
Approximately 5% of the reserve had fuel surface fuel and annual fuels between 5 to 8ha and 20% of the reserve between 2 to 5 ha during 2005. The data indicates, across the landscape, fuel loads generally continue to levels predicted for strategic fuel management zones (10ha for 40-60% of zone). Although strategic fuel management zones have not been established within the reserve, the sampled sites indicate the reserve may have a low to medium risk. Monitoring fuels and vegetation across the landscape is important over the long term to determine changes in environmental conditions.

Fuel monitoring sites with geographic information have been established in the reserve to monitor landscape fuel and vegetation conditions. These conditions and vegetation structure will change over time and the established fuel sites will be monitored regularly, provide data to update fuel landscape maps and review the risk management options.



### MAP 7: RISK ASSESSMENT - LIFE & PROPERTY

Asset	Vulnerability & Impacts	Fire Management Guidelines & Considerations
On-park Assets	There are no identified on-park assets.	Provide guidelines in the event assets are constructed within the reserve. <ul style="list-style-type: none"> <li>Maintain access trails and footpaths within the park that will assist in the fighting effort.</li> </ul>
Other assets (including private property or other lands adjacent to the park)	Property assets may be damaged by the incursion of the park. Vegetated and unburnt areas may be affected by smoke from fires.	During the fire season rapidly respond to all unplanned fires in the immediate vicinity of the park to contain them. Participate in fire management programs through RFS Zone Bush Fire Management Committee meetings. Neighboring and external neighbors should be consulted when developing prescribed burns to ensure commercial crops are not damaged by smoke (during September and April).



### MAP 8: BUSHFIRE MANAGEMENT ZONES

Management Zone	Definition	Management Guidelines
Asset (APT)	Life, property and commercial assets in high bushfire behaviour potential risk areas and/or on-site.	Assets should be evaluated annually to measure potential hazards and/or increased threats. <ul style="list-style-type: none"> <li>Works program to follow Risk Assessment (RFS) and Property Guidelines.</li> </ul>
Fuel (FMA)	Fuel Monitoring Areas are localities for monitoring the surface fuel, grasses, shrubs, dead and down material and ecological health.	Monitor regularly to quantify changes in the fuel landscape, which may indicate an increase in risk. <ul style="list-style-type: none"> <li>Monitor to improve knowledge ecological responses and health and identify undesirable changes in vegetation communities.</li> <li>Use areas to establish SFMZ's where appropriate.</li> </ul>
Strategic (SFMZ)	Strategic Fuel Management Zones are areas used to target potential areas of high fuels, high fire intensity, increased rate of spread, spotting or to consolidate reserve APT's. The zone is not a commitment to exclude prescribed burns in the target area, within the life of the plan.	The implementation of fuel management programs should comply with RFS guidelines and should be conducted in areas identified in this strategy as a SFMZ. Implement prescribed burns or other vegetation manipulation programs should only occur where more than 80% of the zone exceeds 15 the (RFS) guidelines. Any program must include monitoring before and after prescribed burns to determine effectiveness of the program on fuels and the ecological integrity.
Heritage 1 (HMZ1)	Areas of high priority natural and cultural conservation value. Identifies reserves that recorded cultural and natural assets. This zone is intended for the protection of cultural heritage and the conservation of some species that have never declining numbers or extinctions.	Heritage assets should be assessed annually to determine potential hazard threats to cultural heritage, and 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.
Heritage 2 (HMZ2)	This zone identifies areas of significance for natural and cultural values across the broader landscape. This generally means parts of the reserve that have not been surveyed and/or have no records of significant features or threatened species.	These heritage assets should be monitored to determine results to biodiversity and managed in accordance with conservation policy and 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.

### WORKS PROGRAM

Asset	Priority	Name, Area or Detail	Management Strategy	Proposed Works
Trails	High	Management Trails	Assess trails and signage annually and maintain or repair as required in Regional Operations Program. All trails to be clearly signposted at intersections and landmarks. Investigate options for improving trail network.	Assess trails and signage annually and maintain or repair as required in Regional Operations Program. Investigate options for improving trail network.
Fuel MA	High	Where and if they have been identified.	Maintain areas to determine potential increased risk or changes within areas within Bushfire Behaviour Potential and Landscape fuels are in areas that are.	Incorporate FMA's into Fuel Monitoring Information and Research section of this plan.
Heritage MZ1	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 vegetation changes across the landscape (coordinate with fuel monitoring).	Assess thresholds every 5 years, before works programs or directly after the events.
Heritage MZ2	Low	General landscape, natural and cultural conservation values.	Manage and protect natural & cultural values with appropriate fire management regimes.	Monitor thresholds every 5 years, and after fire events.
Information & Research	High	Fuel and vegetation monitoring.	Monitor and protect natural & cultural values with appropriate fire management regimes. Establish additional sites by end 2007 to assess the season. Maintain a 5 year monitoring regime and monitor directly after fire events.	Establish additional sites by end 2007 to assess the season. Maintain a 5 year monitoring regime and monitor directly after fire events.
Fuel Management & Prescribed Burns	Low	No planned fire has been proposed for the last 50 years.	Where bushfire risk and damage potential increases and the only practical solution is fuel management, review the Fire Management Strategy and determine the appropriate method and program to reduce the risk.	Any prescribed burns must be managed in accordance with DEC policy and through negotiations with the Bush Fire Management Committee. Prescribed burns must be managed in cooperation with neighbours.

These trails do not comply with the Bush Fire Coordinating Committee Guidelines for the Classification of Fire Trails - Policy No. 1003.