

Hunter Region
Darawank Nature Reserve
Fire Management Strategy
2005

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

These data are not guaranteed to be free from error or omission. The NSW National Parks and Wildlife Service and its employees disclaim liability for any act done on the information in the data and any consequences of such acts or omissions.

This document is copyright. Apart from any fair dealing for the purpose of study, research criticism or review, as permitted under the copyright Act, no part may be reproduced by any process without written permission.

The NSW National Parks and Wildlife Service is part of the Department of Environment and Conservation.

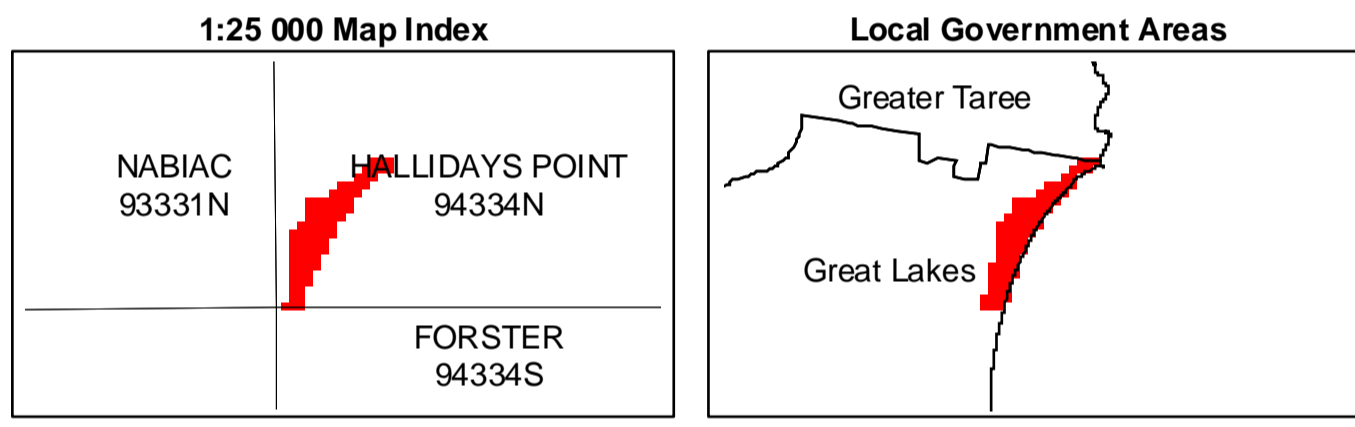
Published by the Department of Environment and Conservation (NSW), January 2005.
 Contact: NSW National Parks and Wildlife Service, Hunter Region,
 Locked Bag 99, Nelson Bay Delivery Centre, NSW 2315.

ISBN 1 7412 2188 9

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.

1:250 000 Location Map



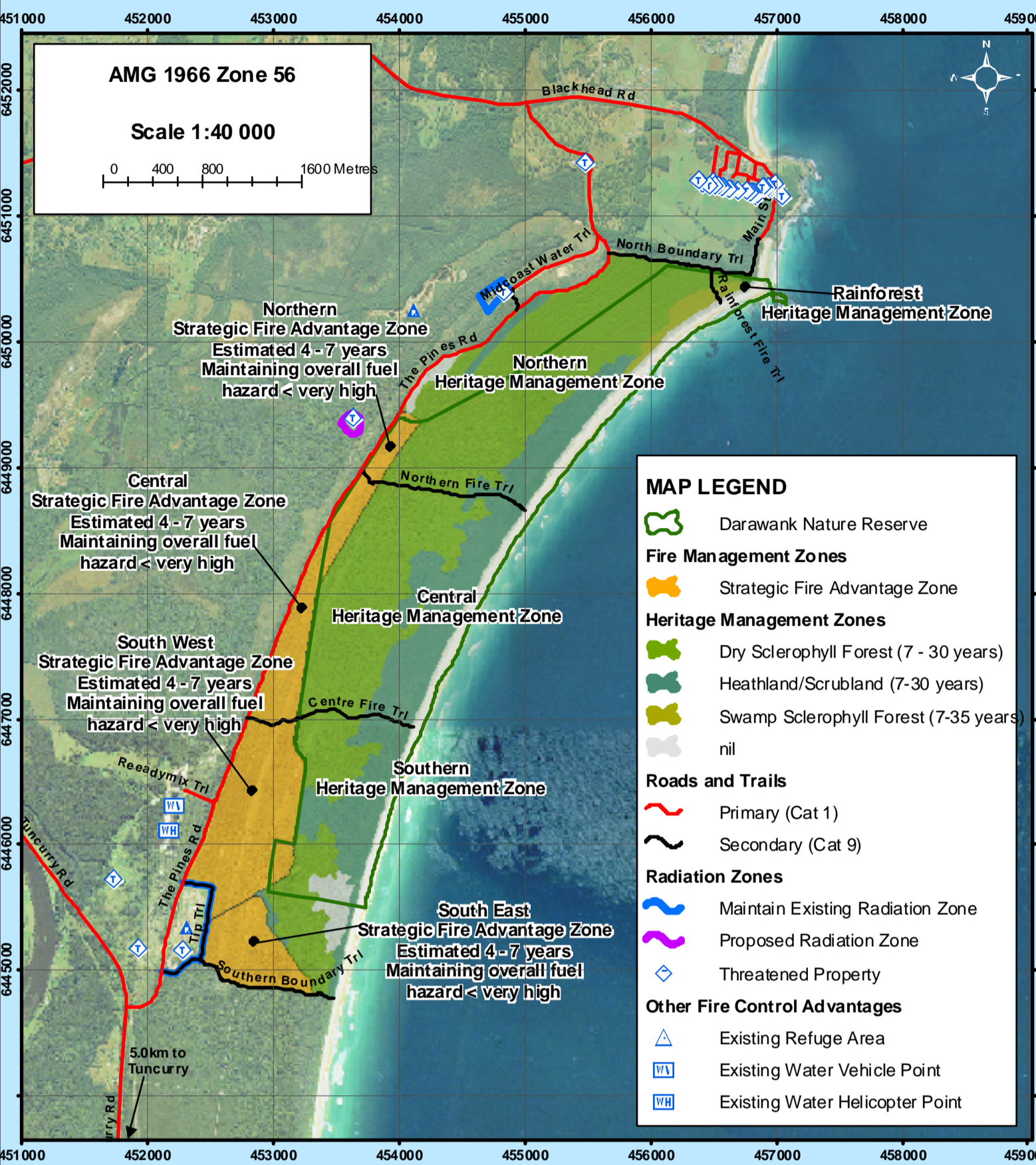
Contacts and Communications

Agency	Position	Number
NPWS	Hunter Region Duty Officer (24 hr)	016 301161 / 0429 144890
	Great Lakes Area Manager	6591 0301 / 0429 144874
	Fire Management Officer	4984 8206 / 0429 144870
	Operations Coordinator	4984 8212 / 0429 144872
RFS	Great Lakes	6551 0300 / (fax) 6554 0489
	Hunter Regional Office	4929 491868 / (fax) 4929 491868
NSW Fire Brigade	Newcastle Communications (24 hr)	49297 177 / (fax) 4927 2580
State Forests	Resource Protection Manager	4927 0977 / (fax) 4927 8030
	Fire Officer	4927 0977 / 0427 782772
	Fire Mobile	0429 491868
SES	Bulahdelah Office	4997 4206 / (fax) 4997 4812
	Forster	6554 0716
Police	Forster-Tuncurry Emergency	6555 1299 / (fax) 6555 1222
		000
Ambulance	Bookings	131233
	Emergency	000
Hospital	Forster	6554 6077
	Taree	6592 9111
DIPNR	Newcastle	4929 4346
Councils	Great Lakes	6591 7222 / (fax) 6591 6200

Service	Channel	Location/Comments
NPWS - VHF	26	• Mt Cabbage Tree
	21	• Nerong Mountain
RFS-PMR	31	• Coolongolook
	32	• Cabbage Tree Mountain
RFS - GRN	171	• Hunter Region RFS
UHF - CB	1-99	• Available in most RFS vehicles
		• Choose channel on fire-ground with RFS
NPWS-VHF Portable Repeater	15	• Can be located anywhere
Mobile Phone	-	• Kept at Regional Office
		• Generally good coverage

Bushfire Risk Management Strategies

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



Issue/Area	Operational Guidelines
Fire Management Zones	<ul style="list-style-type: none"> 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. Strategic Fire Advantage Zones: The objective of strategic fire management zones is to help reduce fire behaviour to reduce the chance of bushfire moving into or out of the reserve. This will be achieved by conducting prescribed burning at the frequency required to maintain the overall fuel hazard below very high. The estimated frequency of burning required to achieve this is indicated on the adjacent map. In many cases, the boundaries of strategic fire management zones are defined by roads and trails indicating a solid control line. Thus the mapped extent of strategic fire management zones should be viewed as the maximum area that is likely to be burnt in any prescribed burn. 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).
Roads & Trails	<ul style="list-style-type: none"> The above map illustrates existing trails that are considered important for fire management and are 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. 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. 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 up to 3000 litre capacity). 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).
Radiation Zones	<ul style="list-style-type: none"> There are a large number of rural residential properties close to the reserve. Many of these properties do not have existing radiation zones. It is recommended that the Rural Fire Service pursue the construction and maintenance of radiation zones around structures on all private properties surrounding the reserve.
Other Fire Control Advantages	<ul style="list-style-type: none"> 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.

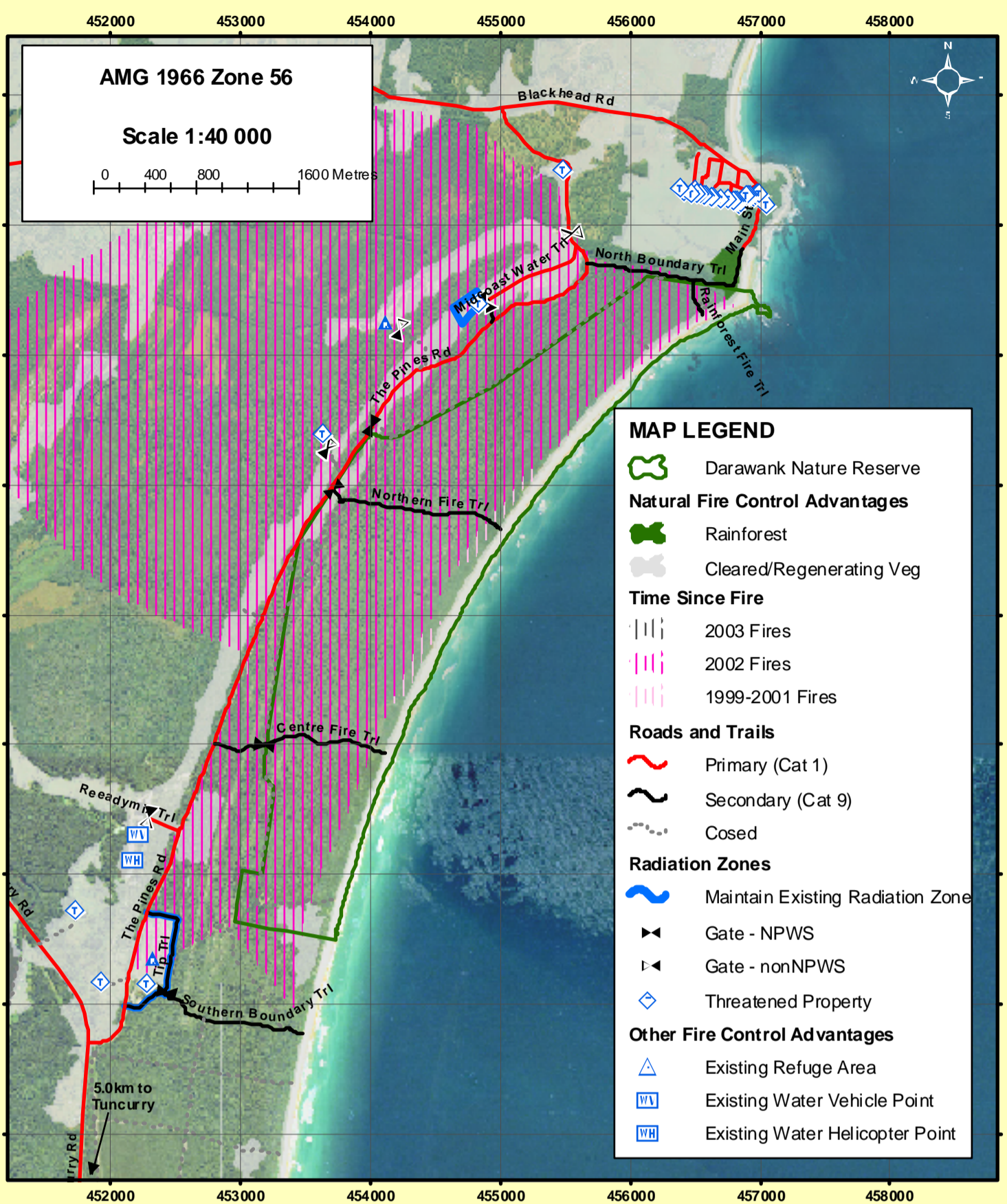
Issue/Area	Operational Guidelines
Aerial Ignition	<ul style="list-style-type: none"> May be used where considered appropriate. May be ineffective in heathlands due to a poorly developed surface fuel layer. Will be ineffective and should not be used when there is surface water covering the soil.
Backburning	<ul style="list-style-type: none"> As far as possible, backburning should take account of threatened species and cultural heritage guidelines. On days when the fire danger > High, as far as possible delay backburning until early evening. Backburning may be safely undertaken during the day when the fire danger < High. Take particular care backburning when there are fibrous/paper bark trees close to control lines.
Command and Control	<ul style="list-style-type: none"> ICS system will be implemented during all fire suppression activities.
Water Bombing	<ul style="list-style-type: none"> Can be used to slow the spread of a fire but will not extinguish a fire without support from ground crews. Ground crews must be warned of water bombing operations. As far as possible, foam should be used to increase the effectiveness of the water. Foam/water should not be used for building control lines because it is ineffective.
Trails	<ul style="list-style-type: none"> Many trails have a sandy surface and may become impassable after heavy use. Develop a traffic plan that minimises use of trails, especially by heavy vehicles. All new fire breaks will be restored as part of the fire suppression operation.
Earth Moving Machinery	<ul style="list-style-type: none"> Can only be used with consent of NPWS and only if the probability of success is considered high. As far as possible, restrict use to dormant trails and other previously disturbed areas. Subject to operational constraints, minimise the length of break constructed. As far as possible, take account of threatened species and cultural heritage management guidelines. The routes to be taken by earth moving machinery must be scouted to identify possible cultural heritage sites.
Foams & Wetting Agents	<ul style="list-style-type: none"> Use permitted where considered appropriate. As far as possible, minimise use in rainforest communities.
Fire Advantage Recording	<ul style="list-style-type: none"> All fire advantages used during wildfire suppression operations are to be mapped so they can be added to the database.
Retardant	<ul style="list-style-type: none"> Retardant is ineffective and should not be used in communities with a dense canopy cover. Retardant is ineffective and should not be used against high intensity fires producing large numbers of spot fires. Retardant is most applicable to building short lengths of control line to link existing control lines. Areas where retardant has been used shall be mapped.
Forster Land Fill Site	<ul style="list-style-type: none"> As far as possible, ensure fires do not ignite the tip face as it is extremely difficult to extinguish. If the tip face is ignited, extinguish using earth moving machinery and flooding with water.

Bushfire Suppression Information 2005/06

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

Fire Control Advantages

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

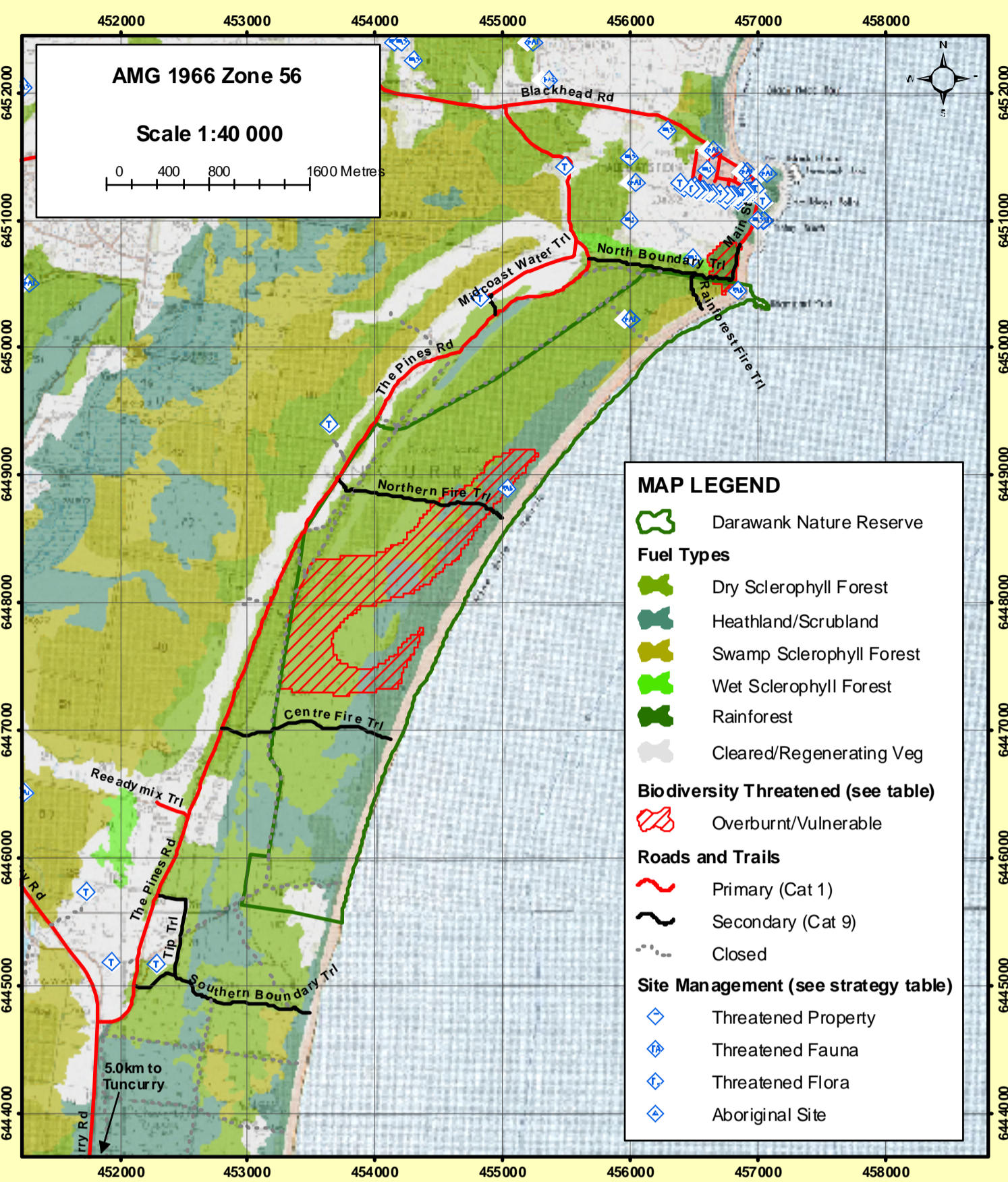


Fuel Type	Fire Behaviour Characteristics
Dry Sclerophyll Forest	<ul style="list-style-type: none"> Flammable under a wide range of conditions. High fire intensity and flame heights under hot, dry, windy conditions. Heavy short distance spotting (<500m), occasional long distance spotting (>500m). Forests and woodlands with a healthy understorey typically exhibit higher levels of fire behaviour than those with a more open understorey. Use McArthur Mark 5 Forest Fire Behaviour Model to estimate ROS.
Heathland/ Shrubland	<ul style="list-style-type: none"> High intensity, high ROS fires under most conditions, even shortly after rain. ROS and intensity highly sensitive to wind speed. At low wind speeds (<10 km/h) fires may not sustain, particularly in fuels <3 yrs. Heavy short distance spotting (<500m) common. Use Catchpole et al. Heathland Fire Behaviour Model to estimate ROS.
Swamp Sclerophyll Forest	<ul style="list-style-type: none"> Seasonally inundated. When inundated, requires winds >20km/h to sustain spread through aerial fuels. When not inundated, burns with high ROS, intensity and heavy short distance spotting (<500m). Crown fires and very high flame heights (3-5 x tree height) common due to high level of vertical fuel continuity. When inundated backfires usually self extinguish at night. Ground (peat) fires common when not inundated and soils dry. Use Catchpole et al. Heathland Fire Behaviour Model to estimate ROS.
Wet Sclerophyll Forest	<ul style="list-style-type: none"> Generally only flammable when BKDI > 80. May function as control line when BKDI < 80. Ground (peat) fires common when BKDI > 125. When flammable, often burns at extreme intensities (higher than any other fuel type). When flammable, often results in long distance spotting (>500m).
Rainforest	<ul style="list-style-type: none"> Generally only flammable when BKDI > 100. May function as control line when BKDI < 60. Ground (peat) fires common when BKDI > 125. When flammable, fires are usually slow and of low intensity, although vines may allow flames to climb trees. Due to palms dropping large numbers of dead fronds, palms may be flammable when other rainforest species are not.
Cleared	<ul style="list-style-type: none"> Only flammable when grass >50-70% cured. May function as control line when grass <50% cured. When grass >70% cured, flame height and intensity, but not ROS, strongly influenced by grass height and continuity. Spotting >100m uncommon. Use CSIRO Grassland Fire Behaviour Model to estimate ROS.
Sand/Rock/Bare Ground or Water	<ul style="list-style-type: none"> Not flammable.

Current Fire Danger	Forecast Fire Danger	Guidelines
Low - Mod	Low - Mod	<ul style="list-style-type: none"> As far as possible, undertake indirect, parallel or direct attack along existing control lines taking advantage of Natural Fire Control Advantages (NFCA). As far as possible, maximise area burnt without threatening assets, including biodiversity. Identify and survey backup control lines.
Low - Mod	>> High	<ul style="list-style-type: none"> Undertake indirect, parallel or direct attack to minimise the time taken to contain the fire. Identify and survey backup control lines taking advantage of NFCA.
High	All	<ul style="list-style-type: none"> Undertake indirect attack along existing or newly constructed control lines taking advantage of NFCA. Secure and deepen control lines along the next predicted downwind side of the fire. Identify and survey backup control lines taking advantage of NFCA. Ensure there is sufficient time to secure control lines before the fire gets to them. If there is insufficient time to secure control lines, fall back to the next potential control line.
All	All	<ul style="list-style-type: none"> As far as possible, implement threatened species and cultural heritage management guidelines. Test NFCA before relying on them.

Assets & Fire Fuels

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



Category	Interpretation
Overburnt	<ul style="list-style-type: none"> Protect from fire as far as possible. Past fire frequency has already exceeded biodiversity thresholds.
Vulnerable	<ul style="list-style-type: none"> Protect from fire as far as possible. The occurrence of fire this year will result in biodiversity thresholds being exceeded.
Underburnt	<ul style="list-style-type: none"> If possible, allow area to burn. Fire frequency has already been too low to conserve biodiversity.
Almost Underburnt	<ul style="list-style-type: none"> If possible, allow area to burn. The absence of fire this year will result in a fire frequency outside biodiversity thresholds.

Label	Treatment
AH1	<ul style="list-style-type: none"> As far as possible protect site from fire. Do not cut down trees. Use of foams, wetting agents & retardant is acceptable.
AH2	<ul style="list-style-type: none"> As far as possible protect site from fire. Avoid ground disturbance including handtools, dozers. Avoid water bombing which may cause ground disturbance.
AH3	<ul style="list-style-type: none"> Avoid ground disturbance including handtools, dozers. Avoid water bombing which may cause ground disturbance. Site may be burnt by wildfire, backburn, prescribed burn.

Label	Treatments
FA1	<ul style="list-style-type: none"> Protect large and hollow bearing trees.
FA2	<ul style="list-style-type: none"> Protect large and hollow bearing trees. Avoid interfire intervals of < 10 yrs. Avoid high intensity fires that consume tree canopies and fallen logs.
FA3	<ul style="list-style-type: none"> Avoid interfire intervals of < 10 yrs.
FA4	<ul style="list-style-type: none"> Habitat unlikely to be effected by fire. Avoid use of earth moving machinery in wetland habitats. Avoid use of retardant and foam in wetland habitats.
FA5	<ul style="list-style-type: none"> Habitat unlikely to be effected by fire. Avoid use of earth moving machinery in dune habitats.
FA6	<ul style="list-style-type: none"> Avoid fire, including wildfire, backburning & HR, as far as possible in wetland habitat. Avoid use of earth moving machinery in wetland habitats.
FA7	<ul style="list-style-type: none"> Avoid high intensity fires that consume tree canopies and fallen logs.
FA8	<ul style="list-style-type: none"> Avoid fire, including wildfire, backburning & HR, as far as possible. Avoid use of earth moving machinery.

Label	Treatments
FL1	<ul style="list-style-type: none"> Avoid interfire intervals of < 10 yrs. Avoid the use of earthmoving machinery. Avoid the use of retardant.
FL2	<ul style="list-style-type: none"> Avoid fire, including wildfire, backburn, HR, as far as possible. Avoid the use of earthmoving machinery. Avoid the use of retardant.
FL3	<ul style="list-style-type: none"> Avoid high intensity fire. Avoid interfire intervals < 10 years, effect unknown. Avoid the use of earth moving machinery.
FL4	<ul style="list-style-type: none"> Avoid summer fire. Avoid high intensity fire. Avoid earth moving machinery.
FL5	<ul style="list-style-type: none"> Avoid low intensity fire. Avoid interfire intervals < 5 years. Avoid earth moving machinery. Avoid the use of retardant.