Central Coast Hunter Range Region
Wambina Nature Reserve

Fire Management Strategy (Type 2) 2006

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

Location

Map Details

Projection	UTM AGD 1966
Air Photo 1:25,000 Topo Map	(GIS: Wamberal_air.sid) Gosford 9131-2S (GIS: Gosford.sid)
UBD Map	Page 79 (GIS: UBD_terrigal.tif)
LGA	Gosford
Electorate	The Entrance

Contact Details

Agency	Position	Number
NSW National Parks & Wildlife Service	Duty Officer (24 hour)	4320 4255
Central Coast Hunter Range Region	Gosford Area Manager	4320 4215
	Regional Operations Coordinator	4320 4232
	Regional Office (Gosford)	4320 4204
NSW Rural Fire Service Gosford	Fire Control Centre	4340 2911 4340 4908 (24 Hrs)
SES	Gosford	4325 4355
Police	Gosford	4323 5599
Ambulance	Bookings	131 233
	Emergency	000
Hospital	Gosford Hospital Holden Street, Gosford	4320 2111
Council	Gosford City Council	4325 8222

Communication Resources

Service	Channel	Location / Comments
NPWS – VHF	CH 27-39	Mangrove
RFS – PMR (Gosford)	Main -107 Other - 97, 100, 104, 113 (other)	Somersby
RFS – GRN (Gosford)	181	
UHF – CB		
Mobile Phone Coverage		Good Coverage
Satellite Phone	118 727 618 815 78	

Strategy Information

Fire Season Information

Wildfires
- Most extreme fire weather conditions occur during spring and early summer resulting from higher mean temperatures, lower relative humidity and strong winds.
- Winds from the north-southwest sector which are warmer and lower in humidity will significantly raise the bushfire danger rating when higher windspeeds occur and generally provide the most difficult fire weather conditions.

Prescribed Burning
- General season is Autumn to late Winter. Burning is possible in early Spring but not desirable on a regular basis from an ecological point of view.

Suppression Strategies

- Where possible avoid fire in the rainforest gullies.
- Subject to crew safety, undertake direct attack to minimise area burnt.
- If conditions require indirect attack, aim to minimise impact on Fire Exclusion Zone.
- Hand tool lines can be used to minimise burnt area if conditions are suitable.
- Subject to crew safety and where possible, implement threatened species and cultural heritage management guidelines.

** Important**

Crew Safety Should Always be First Priority

Operational Guidelines

Refer to Strategy for Fire Management 2003 and Current Fire Management Manual

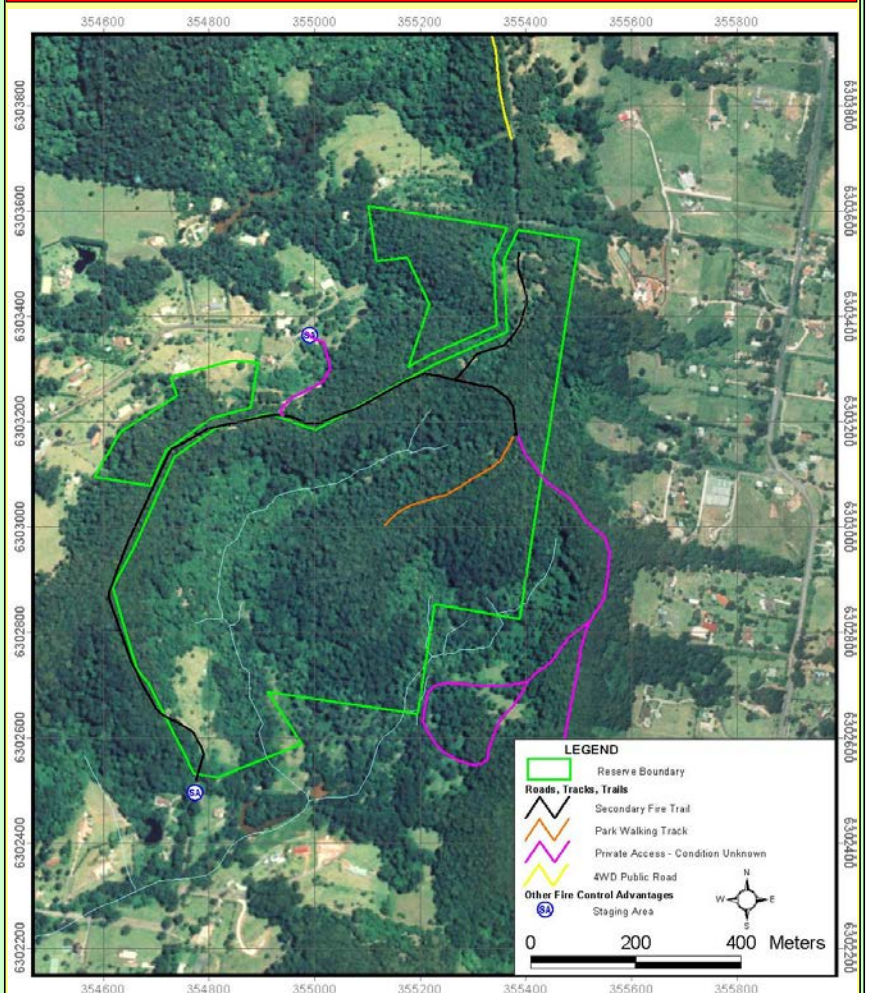
Brief all personnel involved in suppression operations on the following guidelines:

Resource	Guidelines
Threatened Fauna Management (NPWS FMM 4.12 & 5.2)	
Dasyurus maculatus Tiger Quoll V (recorded to north of reserve)	- Individuals likely to escape low to moderate intensity fires - Maintain a mosaic of burns (vary the size and intensity of fire) within known habitat to prevent inappropriate fire regimes reducing habitat and prey diversity - Highest populations known from long unburnt sites - Infrequent high intensity wildfires may encourage the growth of a dense understorey favouring this species
Melomys cervinipes Fawn-footed Melomy (southern limit)	- Fire is likely to impact upon the habitat, den sites and food supply of this species - Avoid all fires within potential habitat, especially during the breeding season
Potorous Tridactylus Long-nosed Potoroo V	- This species is sensitive to the loss or removal of habitat. High frequency fires modify the density of important shrubs and ground cover, making this species more susceptible to predation - Low intensity fires should be implemented adjacent to potential habitat in order to minimise the effect of a high intensity fire - High intensity fires should be avoided over large areas of habitat - Mosaic burn to maintain a variety of age classes within each vegetation community
Petaurus australis Yellow-bellied Glider V	- Species should not be adversely affected by low to moderate intensity fires - Prescribed burns to be implemented outside breeding season. Low intensity burn recommended
Petaurus norfolkensis Squirrel Glider V	- Maintenance of a mosaic of fire regimes will ensure that adequate habitat and feed trees are always available - High intensity crown fires to be avoided over large areas
Phascolarctos Cinereus Koala V (recorded to north of reserve)	- Species likely to be unaffected by low to moderate intensity fires - High intensity crown fires have potential to kill individuals and directly reduce habitat - Prescribed burns within known or potential habitat should be low intensity and restricted to <10ha - Protect known populations from fire, especially during the breeding season
Miniopterus Australis Little Bent-wing Bat V	- Frequent fires near nursery cave may impact upon breeding success - Potential for inappropriate fire regimes to reduce prey (invertebrate) diversity - Avoid fire management works within close proximity (<100m) to known den sites, especially during the breeding season - Maintain mosaic of fire frequencies and intensities within habitat to increase/maintain a diverse food supply
Miniopterus schreibersii Common Bent-wing Bat V	
Saccolaimus flaviventris Yellow-bellied Sheathtail-bat V	- Frequent fires within habitat containing roost sites may impact upon breeding success - Avoid fire management works within close proximity (<100m) to known den sites, especially during the breeding season
Pteropus poliocephalus Grey-headed Flying Fox V	- Low to moderate intensity fires are unlikely to affect the foraging area of this species - Moderate to high intensity fires likely to destroy camp sites used for mating, birth and breeding of young - Prescribed burns should be avoided within known camp site locations
Scoteanax rueppellii Greater Broad-nosed Bat	- Frequent fires within habitat containing roost sites may impact upon breeding success - Potential for inappropriate fire regimes to reduce prey (invertebrate) diversity - Avoid fire management works within close proximity (<100m) to known roost sites, especially during the breeding season - Maintain a mosaic of fire frequencies and intensities within habitat to increase/maintain a diverse food supply
Calyptorhynchus lathami Glossy Black Cockatoo V	- Protect potential nest sites from all fire management activities - Low intensity fires should not impact upon this species. Moderate to high intensity fires could be detrimental to this species if fire reaches the canopy - Avoid 100% burn of *Allocasuarina* communities - Long term lack of fire can potentially reduce the abundance of *Allocasuarina* foraging trees
Ninox connivens Barking Owl V	- Fire is unlikely to impact upon the adults, however, fire may decrease the reproductive success if nests are damaged - Keep fire out of canopy of trees to prevent damage to nests - Avoid burning within potential habitat during the breeding season - Any prescribed burns within habitat should be low intensity, to minimise the potential for high intensity fires occurring - mosaic burn - High intensity, frequent fires may decrease the prey (invertebrate) diversity and abundance
Ninox strenua Powerful Owl V	
Tyto tenebricosa Sooty Owl V	- Fire unlikely to impact upon adults - High intensity fires may significantly decrease nesting sites and the suitability of habitat for this species as well as decreasing the diversity and abundance of prey - Fire during the breeding season, may lead to the death of nestlings due to the intense heat and smoke - Only low to moderate intensity burns should be implemented within potential habitat (avoid potential nesting sites)
Hypsilurus spinipes Southern Angle-headed Dragon (southern limit)	- Avoid fire during the breeding season within known or potential habitat
Threatened Flora Management (NPWS FMM 4.12 & 5.2)	
Aspinia pruinifoliana Native Ginger (limit of southern distribution)	- Perennial herb to 2 metres high. Grows in rainforest or wet sclerophyll forest. Flowers November to January.
Calanthe triplicata Christmas Orchid (restricted species)	- Terrestrial to 1.5 metres high. Grows on floor of rainforest or occasionally in wet sclerophyll forest in dense shade on coast/coastal ranges and escarpment.

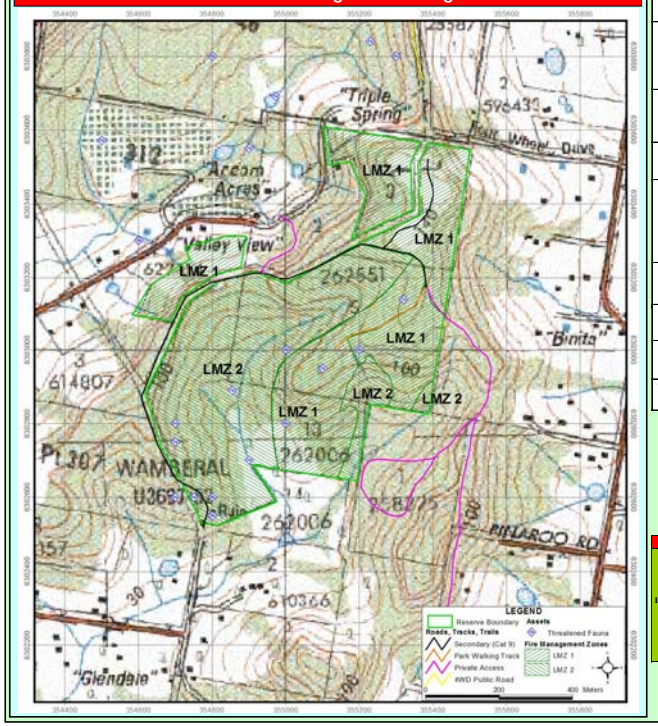
Operational Guidelines Cont.

Resource	Guidelines
Callistemon sfirieseii ROTAP	- Species able to resprout following a fire from epicormic stem and root buds. Seed stored within hard woody capsules upon the plant. - Sufficient time between fires must be allowed to ensure seed numbers build up. Minimum time to produce seed is 4-5 years. - Time taken to produce fire resistant rootstock is 8-10 years. - Minimum inter-fire interval should be no less than 8-10 years
Endiandra discolor Tick Wood (special conservation significance to area)	- A 100% scorch may kill the plant. Seeds stored on plant or in soil. Species may include obligate seed regeneration.
Parsonsia velutina (limit of southern distribution)	- Woody climber to 8 metres high. Common in warmer rainforest. - Fire should be avoided.
Rhodomyrtus psidioides Native Guava (special conservation significance to the area)	- Shrub/small tree to 12 metres high. Grows in warmer rainforest and on rainforest margins. - Fire should be avoided.
Ripogonum fawcettianum Small Supplejack (special conservation significance to the area)	- Small climber to 4 metres long, sometimes shrubline. Flowers winter to spring.
Syzygium francisii Giant Watergum (limit of southern distribution)	- Medium to large buttressed tree. Grows in subtropical, dry and littoral rainforest, often in alluvial valleys. - Fire should be avoided.
Tetrastigma nitens Three-leaved Water Vine (limit of southern distribution)	- Decline predicted if more than 2 fires in a row occur at less than intervals of 8 years apart. - Decline predicted if more than 2 fires in a row occur at intervals of more than 15 years apart.
Operation	**Guidelines**
Aerial Water Bombing (NPWS FMM 4.4 / NSW Fire Agencies Aviation SOPs C2 / NPWS Guidelines for Effective Aircraft Management)	The use of bombing aircraft to minimise fire size is appropriate in this reserve. - The use of bombing aircraft without the support of ground based suppression crews should be limited to very specific circumstances. - Foam should not be used due to sensitive vegetation and water sources. - Ground crews must be alerted to water bombing operations.
Visitor Management (NPWS FMM 3.6 & 4.13)	The park may be closed to the public during periods of extreme fire danger or during wildfire suppression operations.
Rehabilitation (NPWS FMM 5.1)	- Where practicable containment lines should be stabilised and rehabilitated as part of the wildfire suppression operation.
Aerial Ignition (NPWS FMM 4.2 20 & 4.4 / NSW Agencies Aviation SOPs C2-4 / NPWS Guidelines for Effective Aircraft Management)	- Aerial ignition would generally be inconsistent with excluding fire from the rainforest gullies. - Aerial ignition is only permitted with consent of senior NPWS officers.
Backburning (NPWS FMM 4.8)	- Minimise burnt area where possible. Avoid burning in Fire Exclusion Zones. - Where practicable, clear a 1m radius around dead and fibrous barked trees adjacent to containment lines prior to backburning, or well down these trees as part of the backburn ignition. - Avoid ignition of backburns at bottom of slopes where a long and intense upslope burn is likely.
Command & Control (PWS FMM 4.2)	- The first combatant agency onsite may assume control of the fire, but than must ensure the relevant land management agency is promptly notified. - On the arrival of other combatant agencies, the initial incident controller will consult with regard to the ongoing command, control and incident management requirements as per the relevant BFMC Plan of Operations.
Fire Suppression Chemicals (NPWS FMM 4.2.20 & 4.9)	- The use of wetting and foaming agents and retardant should be avoided. Consent of a senior NPWS Officer would be required. - Areas where fire suppression chemicals are used must be mapped and the used product's name recorded. - The Threatened Species Operational Guidelines are to be observed.
Fire Advantage Recording	All fire control advantages used in wildfire suppression operations must be mapped and where relevant added to the database.
Containment Lines (NPWS FMM 2.2 and 3.9)	- Construction of new containment lines should be avoided, where practicable except where they can be constructed with minimal environmental impact. New containment lines require prior consent from senior NPWS Officer. - Where practicable, containment lines should be stabilised and rehabilitated as part of the wildfire suppression operation. - All containment lines not required for other purposes should be closed at the cessation of the incident. - All personnel involved in containment line construction should be briefed on both natural and cultural heritage sites in the location. - Use Wambina and Booralie Roads for containment lines to the west and north of the reserve (Category 9 accessible). Booralie Road is only accessible by foot beyond cleared area in north of reserve. Trail to south-east only accessible by foot beyond reserve boundary.
Smoke Management (NPWS FMM 3.4)	- The potential impacts of smoke and possible mitigation tactics must be considered when planning for wildfire suppression and prescribed burning operations. - If smoke becomes a hazard on local roads or highways, the police and relevant media must be notified. - Smoke management must be in accordance with relevant RTA traffic management guidelines.
Earthmoving Equipment (NPWS FMM 4.2.20 & 4.3)	- The use of earth moving equipment is this reserve should be avoided. - Earthmoving equipment may only be used with the prior consent of senior NPWS Officer, and then only if the probability of success is high. - Earthmoving equipment must be always guided and supervised by an experienced officer, and accompanied by a support vehicle. When engaged in direct or parallel attack this vehicle must be a fire fighting vehicle. - Containment lines constructed by earthmoving equipment should consider the protection of drainage features, observe the Threatened Species and Cultural Heritage Management Operational Guidelines, and be surveyed, where possible to identify unknown cultural heritage sites. - Earthmoving equipment should be washed down, where practicable, prior to entering NPWS Estate.

Bushfire Suppression



Bushfire Risk Management Strategies



Fire Management Zones

	Zone	Action	Responsibility
Land Management Zones	The objective of **LMZ**s is to conserve biodiversity and protect cultural heritage. Manage fire consistent with fire thresholds.		
	LMZ 1	As far as possible maintain fire regimes within specified intervals. As far as possible implement specified threatened species management guidelines	NPWS
	LMZ 2	Exclude all fires from these zones. Rapidly supress all fires that occur within these zones.	

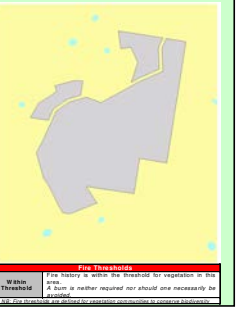
Fire Interval Guidelines

Vegetation Community	Fire Intervals (years) Minimum	Maximum
Coastal Narrabeen Moist Forest	25	60
Coastal Warm Temperate Rain Forest	Avoid fire	
Disturbed – Canopy Only	N/A	
Disturbed Regrowth	N/A	
Tumbi Spotted Gum Ironbark Forest	7	30

Fire History

Vegetation Communities

Current Threshold Status



Fire Thresholds

Within Threshold	Fire history is within the threshold for vegetation in this area. *A burn is neither required nor should one necessarily be avoided.*

NB: Fire thresholds are defined for vegetation communities in reserve boundaries