Kamay Botany Bay National Park, Kurnell
Fire Management Strategy 2009

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.
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Fire Season Information

Wildfires	● The statutory wildfire season occurs between 1st October and 31st March. This may be extended if weather conditions lead to increased fire danger outside of this period.
Prescribed Burning	● Prescribed burning in this are a is normally undertaken in Spring through to Autumn.

Related Documents

- National Parks and Wildlife Service Fire Management Manual.
- Botany Bay National Park Plan of Management.
- Botany Bay National Park Meeting Place Precinct Master Plan.
- Botany Bay Bearded Greenhood Recovery Plan.
- Kurnell Dune Forest Endangered Ecological Community Information.
- Sydney Freshwater Wetlands Endangered Ecological Community Information.
- *Melaleuca armillaris* Tall Shrubland Endangered Ecological Community Information, 2005.

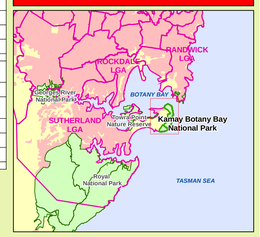
Contact Information

Agency	Position / Location	Phone
National Parks & Wildlife Service	Regional Duty Officer (24 hour)	0419 428 054
	Botany Bay Area Manager	9668 2001 0408 967 576
	Regional Fire Management Officer	9542 0636 0419 462 105
	Regional Operations Coordinator	9542 0644 0409 042 412
	Botany Bay Area Office	9668 2000 9668 2050 (fx)
	Botany Bay Workshop	9668 9312
	Sydney South Regional Office	9542 0666
	Communications Room	9542 1420 (fx) 9542 0628
Sutherland NSW Rural Fire Service	24 Hours	95206022
	Business Hours	9710 0408
SES	Emergency	000
	Sutherland SES	9548 6355
	Duty Officer	0419 242 250
Police	Emergency	000
	Miranda Local Area Command	9541 3899
Ambulance	Emergency	000
	Bookings	131 233
Hospital	Sutherland	9540 7111
	St George	9350 1111
Council	Sutherland Shire Council	9710 0333

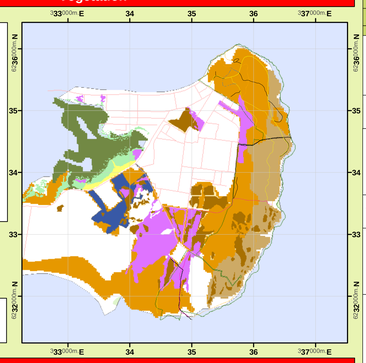
Map Details

Datum: Australian Geodedic Datum of Australia (AGD) 1966
Projection: Australian Map Grid (AMG) Zone 56 based on Universal Transverse Mercator (UTM)
Aerial Photography: **NSW Department of Lands (2006)**
1:25k Topographic Map: Port Hacking 9129-4N 3rd Ed.

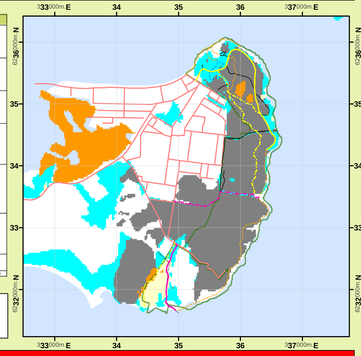
Locality of Reserve and Local Government Areas



Vegetation



Current Vegetation Status (Fire Thresholds)



Fire Thresholds

Overburnt	Fire thresholds have been exceeded. *- Protect from fire as far as possible.*
Vulnerable	The area will be Overburnt if it burns this year. *- Protect from fire as far as possible.*
Recently Burnt	Time since fire is less than the optimal interval, but before that it was within threshold. *- Avoid fires if possible.*
Within Threshold	Fire history is within the threshold for vegetation in this area. *- A burn is neither required nor should one necessarily be avoided.*
Almost Underburnt	The area is close to its threshold and may become underburnt with the absence of fire. *- A prescribed burn may be advantageous. Consider allowing unplanned fires to burn.*
Underburnt	Fire frequency is below fire thresholds in the area. *- A prescribed burn may be advantageous. Consider allowing unplanned fires to burn.*
Unknown	Insufficient data to determine fire threshold.

NB. Fire thresholds are defined for vegetation communities to conserve biodiversity.

Recent Fire History

Operational Guidelines

Refer to Strategy for Fire Management 2003 and Fire Management Manual.
Brief all personnel involved in suppression operations on the following issues:

General	Guidelines
Aerial Water Bombing	● The use of bombing aircraft should support containment operations by aggressively attacking hotspots and spot-overs. ● The use of bombing aircraft without the support of ground based suppression crews should be limited to very specific circumstances. ● Ground crews must be aware of the limitations and ineffectiveness of water. ● Ground crews must be alerted to water bombing operations. ● Foam is not to be used in the Pterostylis LMZ near Tabbagai ● Clearance from Sydney Air Traffic Control is required due to controlled airspace above Botany Bay National Park
Aerial Ignition	● Aerial ignition may be used during back-burning or fuel reduction operations where practicable, but only with the prior consent of NPWS Regional Manager or Section 44 delegate. ● Utilise incendiaries to rapidly progress back-burns down slope where required.
Backburning	● Temperature and humidity trends must be monitored carefully to determine the safest times to implement back-burns. Generally, when the FDI is Very High or greater, backburning should commence when the humidity begins to rise in the late afternoon or early evening. With a lower FDI backburning may be safely undertaken during the day. ● Where practicable, clear a 1m radius around dead and fibrous barked trees adjacent to containment lines prior to backburning, or wet down these trees as part of the backburn ignition. ● Avoid ignition of backburns at the bottom of slopes where a long and intensive burn-out is likely.
Command & Control	● The first combatant agency on site may assume control of fire, but then must ensure the relevant land management agency is notified promptly. ● On the arrival of other combatant agencies, the initial incident controller will consult with regard to ongoing command, control and incident management team requirements as per relevant BFMC Plan of Operations.
Containment Lines	● Construction of new containment lines should be avoided, where practicable, except where they can be constructed with minimal environmental impact. New containment lines require the prior consent of a 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 personal involved in containment line construction should be briefed on both natural and cultural heritage sites in the location.
Earthmoving Equipment	● Earthmoving equipment may only be used with the prior consent of a senior NPWS officer, & then only if the probability of its success is high. ● Earthmoving equipment must be always guided and supervised by an experienced operator to minimise environmental impacts. If being managed in direct or parallel attack this vehicle must be a firefighting vehicle. ● Containment lines constructed by earthmoving equipment should consider the protection of drainage features, observe the Threatened Species and Cultural Heritage Operational Guidelines, and be surveyed, where possible, to identify unknown cultural heritage sites. ● Earthmoving equipment should be washed down, where practicable, prior to it entering NPWS estate. ● Earthmoving equipment is to be excluded from the Meeting Place Precinct and in the Pterostylis LMZ.
Fire Advantage Recording	● All fire advantages used during wildfire suppression operations must be mapped and where relevant added to the database.
Fire Suppression Chemicals	● Wetting and foaming agents (surfactants) are permitted for use in wildfire suppression. ● The use of fire retardant is only permitted with the prior consent of the senior NPWS officer, and should be avoided where reasonable alternatives are available. ● Exclude the use of surfactants and retardants within 50m of rainforest, watercourses, dams, swamps and in the Pterostylis LMZ. ● 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.
Rehabilitation	● Where practicable, containment lines should be stabilised and rehabilitated as part of the wildfire suppression operation.
Smoke Management	● The potential impacts of smoke & possible mitigation tactics must be considered when planning for wildfire suppression & 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 and Airservices guidelines
Visitor Management	● The reserve may be closed to the public during periods of extreme fire danger or during wildfire suppression operations.

Suppression Strategies

Current FDR	Forecast FDR	Guidelines
Low – Mod	Low – Mod	● As far as possible, undertake indirect, parallel or direct attack along existing control lines. ● As far as possible, maximise area burnt without threatening assets, including biodiversity. ● Identify and survey backup control lines.
Low – Mod	= > High	● Undertake indirect, parallel or direct attack to minimise the time taken to contain the fire. ● Construct new control lines if necessary to minimise the time to contain the fire. ● Identify and survey backup control lines.
High	All	● Undertake indirect attack along existing or newly constructed control lines. ● Secure and deepen control lines along the next predicted downwind side of the fire. ● Identify and survey backup control lines.
All	All	● 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. ● As far as possible, implement threatened species and cultural heritage management guidelines.

Threatened Fauna Fire Ecology

Label	Name	Fire Ecology
FA	*Lathamus discolor* Swift Parrot *(Endangered)*	● Avoid fires that may impact winter flowering feed trees such as Eucalypt spp.
	Hoplocephalus bungarosides Broad-headed Snake Endangered	● No slashing, trittering or tree removal
	Pteropus poliocephalus Grey-headed Flying Fox *(Vulnerable)*	● Avoid fire in the vicinity of roost sites, especially during the breeding season (March – October).
	Crinia tinnula Wallum Froglet *(Vulnerable)*	● No burning adjacent to wetlands ● Protect swamps from fire, especially in breeding season in late winter
	Litoria aurea Green and Golden Bell Frog *(Endangered)*	● No burning within 50 metres of wetlands and other large water bodies ● Protect swamps from fire, especially during breeding season in summer/when it is warm and wet
	Botaurus poiciloptilus Australasian Bittern *(Vulnerable)*	● No fire ● Protect swamps from fire, especially during breeding in summer from October to January
	Pandion haliaetus Osprey *(Vulnerable)*	● No slashing, trittering or tree removal of (or around) known nesting sites
	Polytelis swainsonii Superb Parrot *(Vulnerable)*	● Only use low intensity fire, and only between May and end of July. Avoid burning of River Red Gum and Callitris, and protect hollow bearing trees
	Ninox strenua Powerful Owl *(Vulnerable)*	● No burning around known nesting sites at any time ● No slashing, trittering or tree removal of or around known nesting sites
	Xanthomyza phrygia Regent Honeyeater *(Endangered)*	● No removal of key nectar tree species
	Saccolaimus flaviventris Yellow-bellied Sheathtail-bat *(Vulnerable)*	● Avoid fire in the near vicinity of roost within known/potential habitat where possible, especially during the breeding season (December-Mid March).
	Miniopterus schreibersii oceanensis Eastern Bentwing-bat *(Vulnerable)*	● Avoid fire in the near vicinity of roost within known/potential habitat where possible, especially during the breeding season (Spring and Summer) ● Avoid damaging roost caves/structures.
	Myotis adversus Large-footed Myotis *(Vulnerable)*	● Protect swamps from fire ● Avoid fire in the near vicinity of roost within known/potential habitat where possible, especially during the breeding season (November-December).
	Petalura gigantea Giant Dragonfly *(Endangered)*	● Protect swamps and vegetation around swamps from fire

Resource	Guidelines
Aboriginal Cultural Heritage Site Management	
A1	● As far as possible protect site from fire. ● Do not cut down trees.
A2	● Use of foams, wetting agents & retardant is acceptable. ● As far as possible protect site from fire. ● Avoid ground disturbance including handtools, dozers.
A3	● Avoid water bombing which may cause ground disturbance. ● Avoid ground disturbance including handtools, dozers. ● Avoid water bombing which may cause ground disturbance. ● Site may be burnt by wildfire, backburn, prescribed burn.
Historic Heritage Management	*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.*
HS1	● High RCHMS* priority. ● Avoid fire, including wildfire, backburning & HR. ● Avoid all water bombing activities.
HS2	● High RCHMS* priority. ● Avoid fire, including wildfire, backburning & HR.
HS3	● High or low RCHMS* priority. ● Heritage site unlikely to be effected by fire. ● Danger to any fire crew activity. Avoid site at all costs.
HS4	● Low RCHMS* priority. ● Avoid fire, including wildfire, backburning & HR. ● Avoid all water bombing activities.
HS5	● Low RCHMS* priority. ● Avoid fire, including wildfire, backburning & HR.
HS6	● High or low RCHMS* priority. ● Heritage site unlikely to be effected by fire. ● Avoid use of earth moving machinery.
HS7	● High or low RCHMS* priority. ● Heritage site unlikely to be effected by fire. ● Avoid use of earth moving machinery. ● Avoid all water bombing activities.
Threatened Fauna Management	
FA1	● Protect large and hollow bearing trees.
FA2	● Protect large and hollow bearing trees. ● Avoid interfire intervals of < 10 yrs. ● Avoid high intensity fires that consume tee canopies and fallen logs.
FA6	● Avoid fire, including wildfire, backburning & HR, as far as possible in wetland habitat. ● Avoid use of earth moving machinery in wetland habitats. ● Avoid use of retardant and foam in wetland habitats.
FA7	● Avoid high intensity fires that consume tree canopies and fallen logs.
Threatened Flora Management	
FL1	● Avoid interfire intervals of < 10 yrs. ● Avoid the use of earthmoving machinery. ● Avoid the use of retardant.
FL2	● Avoid fire, including wildfire, backburn, HR, as far as possible. ● Avoid the use of earthmoving machinery. ● Avoid the use of retardant.
Threatened Property	● Where possible property owners with assets at risk from a wildfire event should be kept informed regarding the progress of the fire; and asked for an assessment of their current level of asset protection preparedness.

Vegetation Communities and Biodiversity Thresholds

Regime	Vegetation Community	Biodiversity Thresholds	Fire Behaviour
	Kurnell Dune Forest (EEC)	● No fire more than once every 10 years.	Low
	Sydney Freshwater Wetland (EEC)	● Fire should be avoided.	Low
I	Shrubby Dry Sclerophyll Forest	● Avoid successive fires at intervals of < 7 years. ● Avoid fire exclusion for a period of > 30 years.	Moderate
L	Heathlands	● Avoid successive fires at intervals of < 7 years. ● Avoid fire exclusion for a period of > 30 years.	Moderate
N	Freshwater Wetlands	● Avoid successive fires at intervals of < 6 years. ● Avoid fire exclusion for a period of > 35 years.	Moderate
C	Saline Wetlands	● Fire should be avoided.	Low

Threatened Flora Fire Ecology

Label	Name	Fire Ecology
FL	*Acacia terminalis subsp. terminalis* Sunshine Wattle Endangered	● No fire more than once every 7 years ● No slashing, trittering or tree removal
	Senecio spathulatus Coast Groundsel Endangered	● No fire more than once every 7 years ● No slashing, trittering or tree removal
	Thelymitra atronidda Black-hooded Sun Orchid Endangered	● No slashing, trittering or tree removal
	Pterostylis sp. 'Botany Bay' *(Endangered)*	● No fire ● No slashing, trittering or tree removal. ● Earthmoving equipment is to be excluded from known/potential habitat ● Exclude the use of surfactants and retardants within the Pterostylis LMZ ● Burns should be of low intensity preferably outside of the flowering season (August/September).

Bushfire Risk Management Strategies

Scale 1:7500
0 100 200 Metres
MAP LEGEND
NPWS Estate
10m Contour
Gate (assume all gates are locked)
Fire Management Zones (see adjacent table for details)
Asset Protection Zone
Strategic Fire Advantage Zone
Land Management Zone
NPWS
Roads and Trails
Essential Cat 1
Essential Cat 7
Essential Cat 9
Important Cat 1
Important Cat 7
Important Cat 9
Dormant (closed)
Management Trails
Walking Track
Public / Private Roads
Other Fire Control Advantages
Refuge Area
Staging Area
Control Centre
Water Point Vehicle
Water Point Helicopter
Helipad
RFS Station
Turning Point
Assembly Area
Commemoration Flat Shed
Meeting Place Shed
Discovery Center HQ
Kamay Botany Bay NPWS HQ
PRINCE CHARLES RDE
Cronulla Road
Meeting Place Road
Cronulla Road
Cronulla Road
Cronulla