

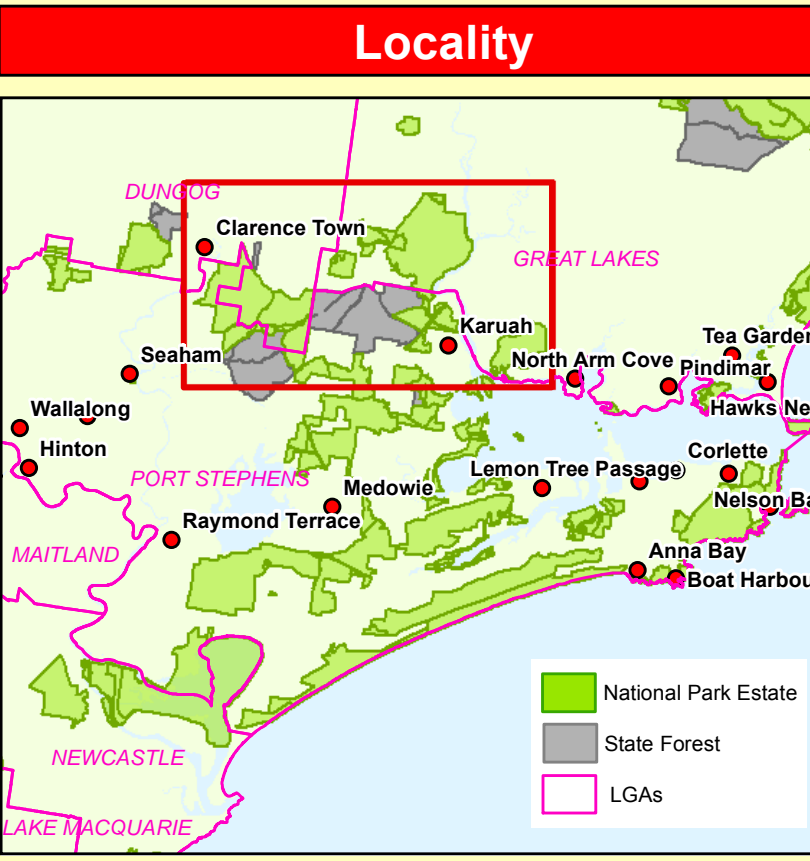
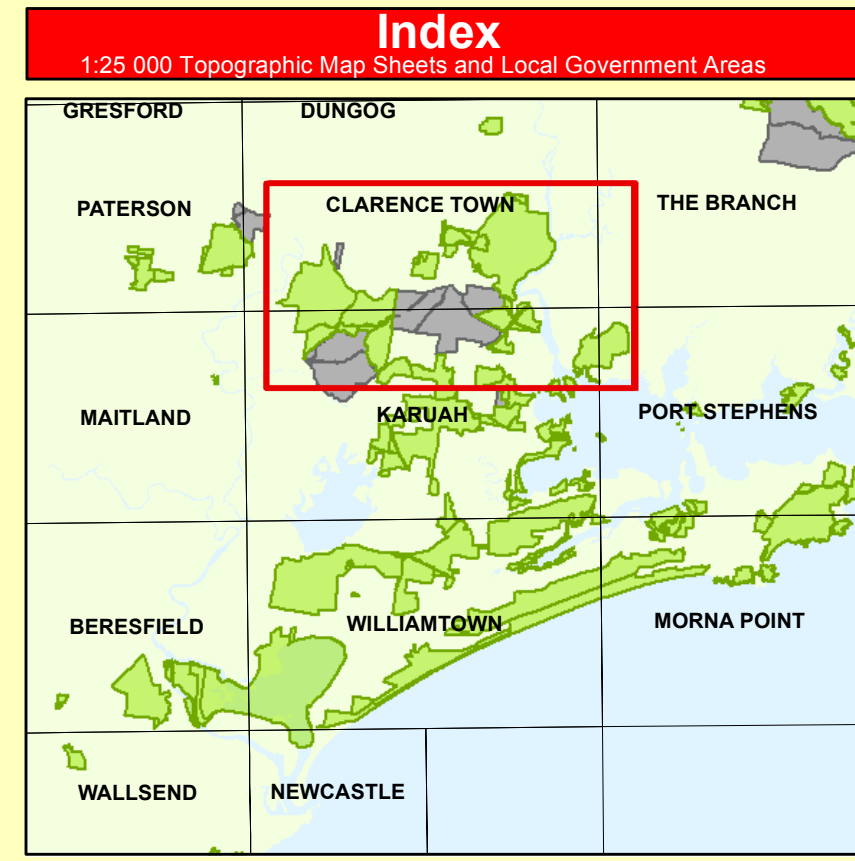
Lower North Coast Region
Karuah NP, NR & SCA, Medowie NR & SCA, Wallaroo NP
 Fire Management Strategy (Type 2)
 2015
 Sheet 1 of 2

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 is not liable for any action taken on the information in this data and any consequences of such use of the information. This document is copyright. Apart from any fair dealing for the purposes of private study, research, criticism or review, no part may be reproduced by any process without written permission. The NSW National Parks and Wildlife Service is a part of the Office of Environment and Heritage, established by the Office of Environment and Heritage (EOH), March 2014. Contact: NSW National Parks and Wildlife Service, Lower North Coast Region, Locked Bag 59, Nelson Bay Delivery Centre, NSW 2255.

ISBN: 978 1 74359 863 2 EOH Number: 2015/0039 Last Updated: 28/01/2015

Office of Environment and Heritage (EOH)
 This strategy is a relevant Plan under Section 30 (4) and Section 44 (3) of Rural Fires Act 1997.

Endorsed by: _____ Date: / /
 Director Coastal, Parks & Wildlife Division



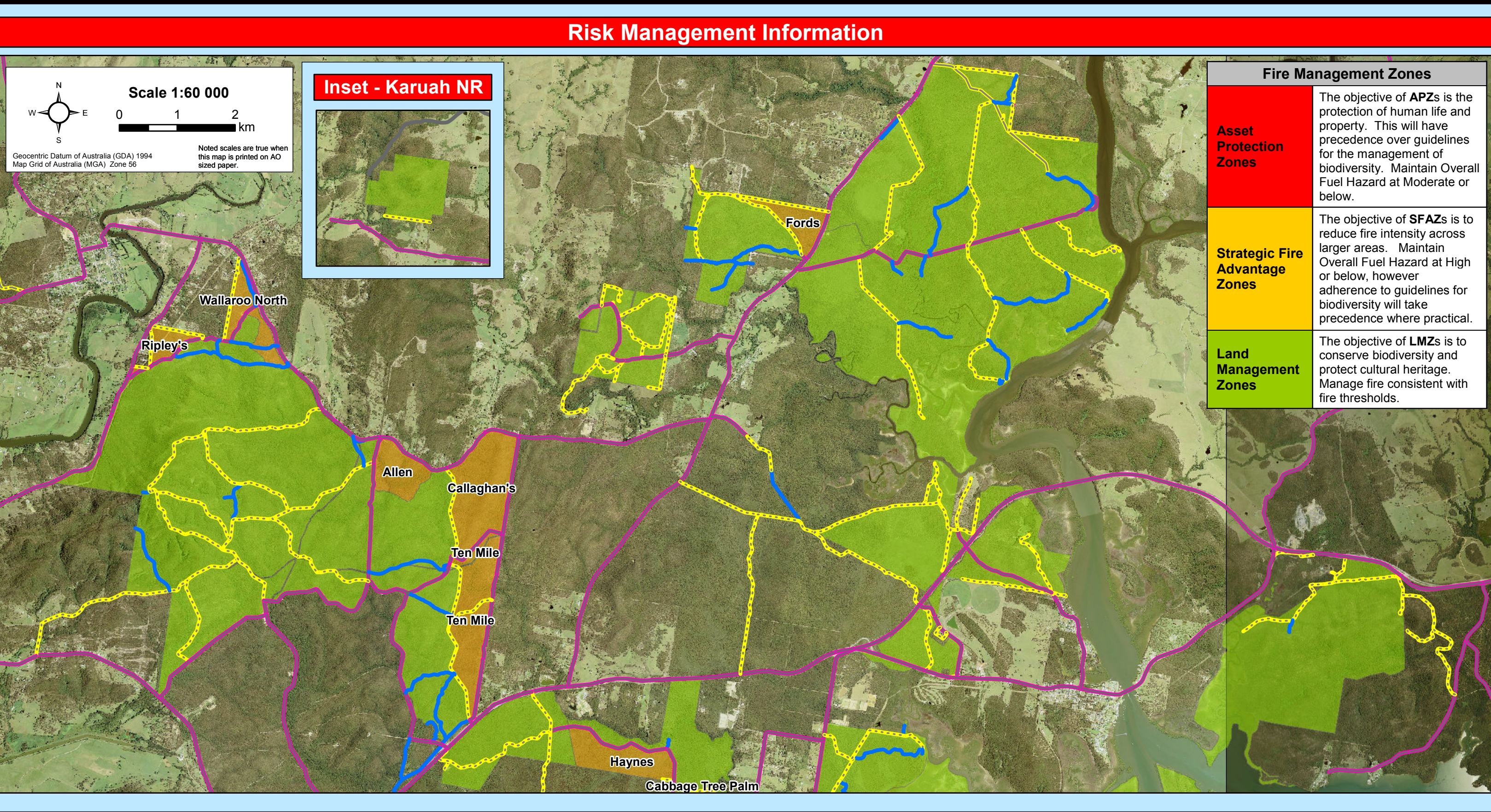
Vegetation Type

Plantation	Sedgeland/Rushland
Artificial Communities	Serpentine Community
Softwood Plantation	Riparian Vegetation
Grassy Dry Sclerophyll Forest	Wet Heath
Grassy Dry Sclerophyll Forest	Freshwater Wetland
Heathland	Mangrove/Saltmarsh
Endangered Box Open Forest	Saltine Wetland
Shrubby Dry Sclerophyll Forest	Severely Disturbed Vegetation
Semi-Mesic Grassy Forest	Endangered Sub-Alpine Wet
Native Grassland	Endangered Box Snow Grass
Grassland	Sub-Alpine Woodland
Arid & Semi-Arid Shrubland	Swamp Sclerophyll Forest
Foreland	Wet Sclerophyll Forest
Palm Forest	Rainforest
	Unknown

Vegetation Fire Thresholds

Too Frequently Burnt	Fire thresholds have been exceeded. Protect from fire as far as possible.
Vulnerable to Frequent Fire	The area will be Too Frequently Burnt if it burns this year. Protect from fire as far as 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.
Long Unburnt	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.
No Regime Assigned	Areas which do not have recommended fire intervals assigned to them eg. cleared land, rock.

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



Bushfire Suppression

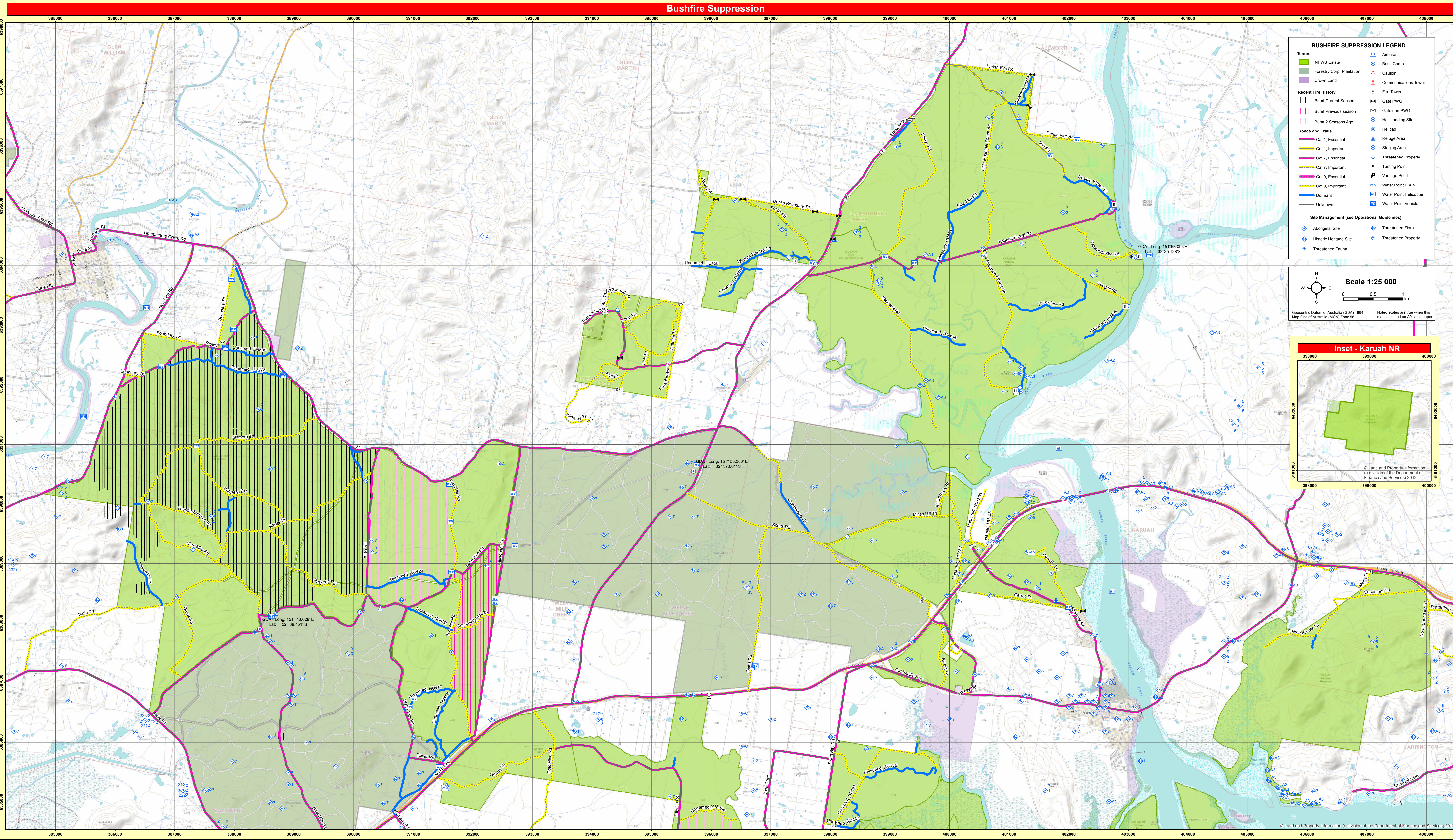
Fire Season Information	
Wildfires	Have been known to start as early as late August, but usually the potential for a large fire event is greatest between October and December. This period may extend into January in more severe years.
Prescribed Burning	General season is Autumn to late Winter. Burning is possible in early Spring but desirable on a regular basis from an ecological or tourism point of view.
Current FDR	Forecast FDR
Low - Mod	Low - Mod
Low - Mod	High
High	All
All	All

Communications Information

Service	Channel	Location and Comments
LNCR - VOTE GROUP EAST	170	Best for SHVA, GJA and HCA
		• Mt Mary (171)
		• Cabbage Tree (172)
		• Gan Gan (173)
		• Tawani (174)
LNCR - VOTE GROUP WEST	160	Best for STA
		• Mt Allyn (161)
		• Mt Myra (162)
		• Mt Barrington (163)
		• Mt Myra (162)
NPWS Fireground	11 - 17	
NPWS Portable Repeaters	21 - 26	
NPWS Portable Repeaters (simplex)	31 - 36	
RFS Fireground	41 - 60	
RFS Portable Repeaters	61 - 73	

Contact Information

Agency	Position / Location	Phone
OEH - NPWS	Regional Duty Officer / After Hours Area Manager: Andrew Bond	0429 144 890
	Fire Management Officer: Andy Bolyn	0429 144 875
	Hunter Coast Area Office	0429 144 870
	Hunter Coast Area Depot	(02) 4984 8200
RFB	Regional Office	(02) 4981 9006
	Fire Control Office Supervisor: Jason Klabar	(02) 4984 8200
NSW Fire Brigade	Emergency	000
	Newcastle Station	(02) 4929 7177
SEIS	Emergency	000
	Port Stephens Unit	(02) 4987 2255
Police	Emergency	000
	Nelson Bay Station	(02) 4981 1244
Ambulance	Emergency	000
	John Hunter (Newcastle)	(02) 4921 3000
NSW Forest Corp.	Wauchoppe Office	(02) 6585 3744
	Port Stephens Council	(02) 4980 0255
Local Aboriginal Land Council	Wormi LALC - Murrumbidgee	(02) 4033 8800



Operational Guidelines

Refer to NPWS Fire Management Manual. Brief all personnel involved in suppression operations on the following issues:

Resource	Guidelines
Aboriginal Cultural Heritage	<ul style="list-style-type: none"> A1 - As far as possible protect site from fire, do not cut down trees. A2 - As far as possible protect site from fire. Avoid all ground disturbance including the use of earthmoving machinery, handline construction and driving over sites. Avoid water bombing which may cause ground disturbance. A3 - Avoid all ground disturbance. Avoid water bombing. Sites may be burnt by bushfire, back-burn or prescribed burn without damage. If new sites are located consult with a senior NPWS officer.
Historic Heritage Management	<ul style="list-style-type: none"> H1 - As far as possible protect site from fire. Avoid all ground disturbance including the use of earthmoving machinery, handline construction and driving over sites. Avoid water bombing which may damage site. H2 - As far as possible protect site from fire. Avoid all ground disturbance including the use of earthmoving machinery, handline construction and driving over sites. If new sites are located consult with a senior NPWS officer.
Threatened Fauna Management	<ul style="list-style-type: none"> FAT - As far as possible, protect large and hollow-bearing trees in locations where these species are known to occur. FAT2 - As far as possible, protect large and hollow-bearing trees in locations where these species are known to occur. Avoid inter-fire intervals of <10 years in locations where these species are known to occur. Avoid high intensity fires that consume canopies and fall logs in locations where these species are known to occur. If new sites are located consult with a senior NPWS officer.
Threatened Flora Management	<ul style="list-style-type: none"> FL1 - Avoid inter-fire intervals of <10 years in locations where these species are known to occur. Avoid the use of earth moving machinery in locations where these species are known to occur. Avoid the use of retardant in locations where these species are known to occur. FL2 - As far as possible, exclude all fire from locations where these species are known to occur. Avoid the use of earth moving machinery in locations where these species are known to occur. Avoid the use of retardant in locations where these species are known to occur. If new sites are located consult with a senior NPWS officer.
Threatened Property	<ul style="list-style-type: none"> 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.
General	<ul style="list-style-type: none"> 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. Where practicable, ground crews should be used to increase the effectiveness of the water. Ground crews must be alerted to water bombing operations. Utilise incendiaries to rapidly progress back-burns down slope where required. Aerial ignition may be used during back-burning or fuel reduction operations where practicable, but only with the consent of a senior NPWS officer. Temperature and humidity trends must be monitored carefully to determine the safest times to implement back-burns. Generally, when the RH is Very High or greater, backburning should commence when the humidity begins to rise in the late afternoon or early evening. With lower RH backburning may be safely undertaken during the day. Where practicable, clear a 1m radius around dead and felled 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 intense up slope burn is likely. The first constant agency on site may assume control of the fire, but then must ensure the relevant land management agency is notified promptly. On the arrival of other constant agencies, the initial incident controller will consult with regard to the ongoing command, control and incident management team requirements as per the relevant BPAC Plan of Operations. Due to the inventory nature of the park, use of dozers should be avoided where possible with due to risk of major bogging. Before using dozers or other heavy machinery consult with NPWS regarding on-ground conditions. 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 personnel involved in containment line construction should be briefed on both natural and cultural heritage sites in the location. Earthmoving equipment may only be used with the prior consent of a 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 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 entering NPWS estate.
Fire Advantage Recording	<ul style="list-style-type: none"> All fire advantages used during wildfire suppression operations must be mapped and where relevant added to the database.
Fire Suppression Chemicals	<ul style="list-style-type: none"> 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 and swamps. Areas where fire suppression chemicals are used must be mapped and the use products names recorded. The Threatened Species Operational Guidelines are to be observed. Where practicable, containment lines should be stabilised and rehabilitated as part of the wildfire suppression operation. 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 RMS traffic management guidelines.
Smoke Management	<ul style="list-style-type: none"> The reserve may be closed to the public during periods of extreme fire danger or during wildfire suppression operations.
Visitor Management	

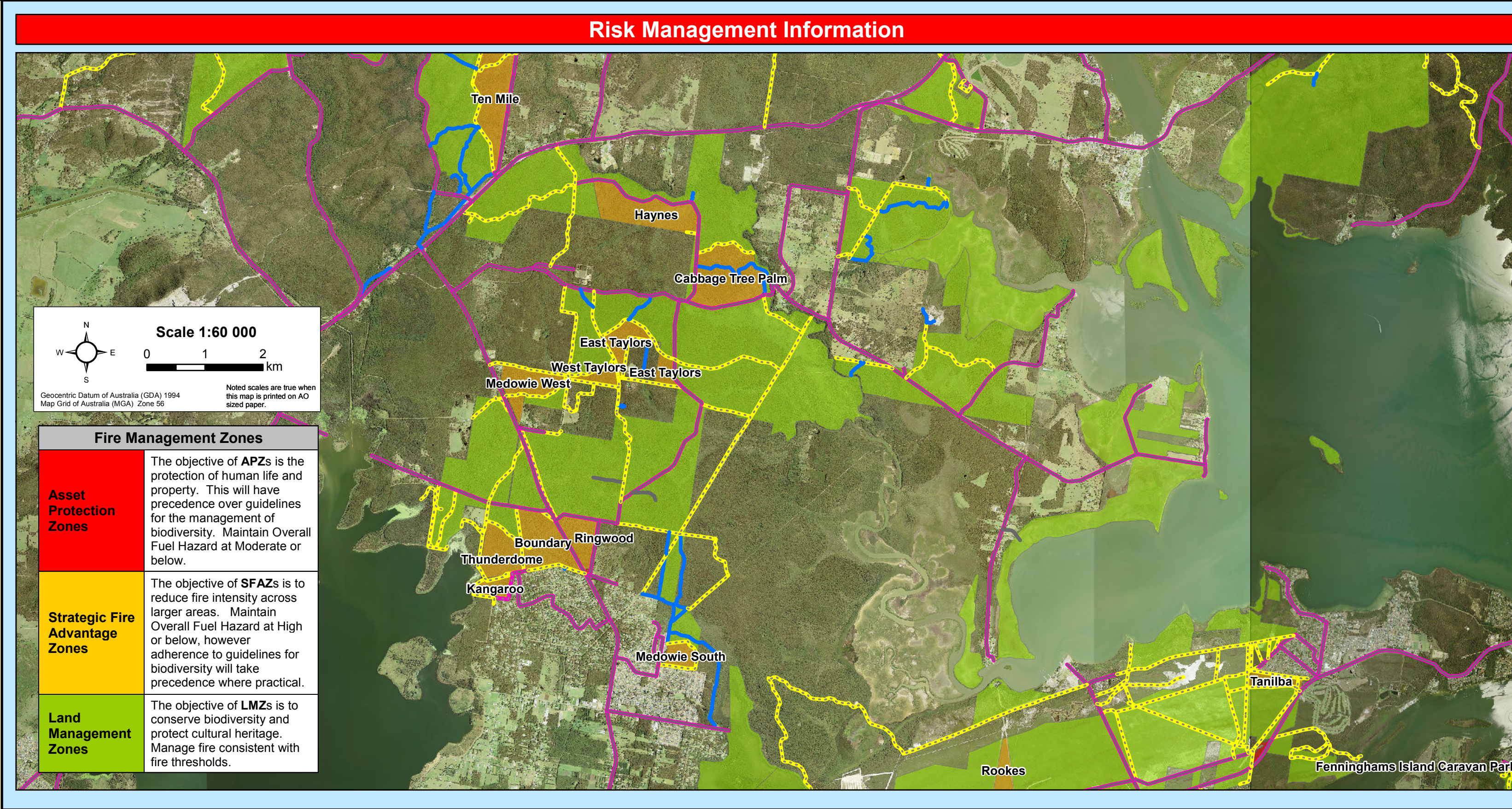
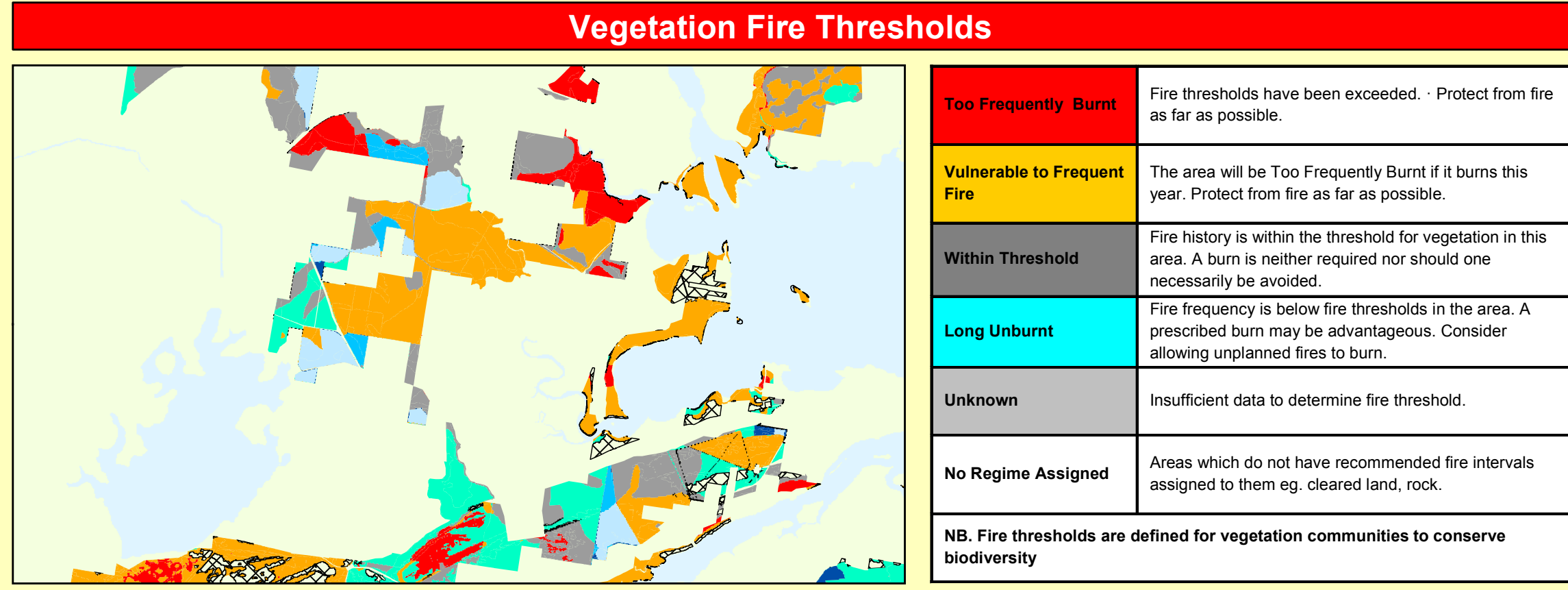
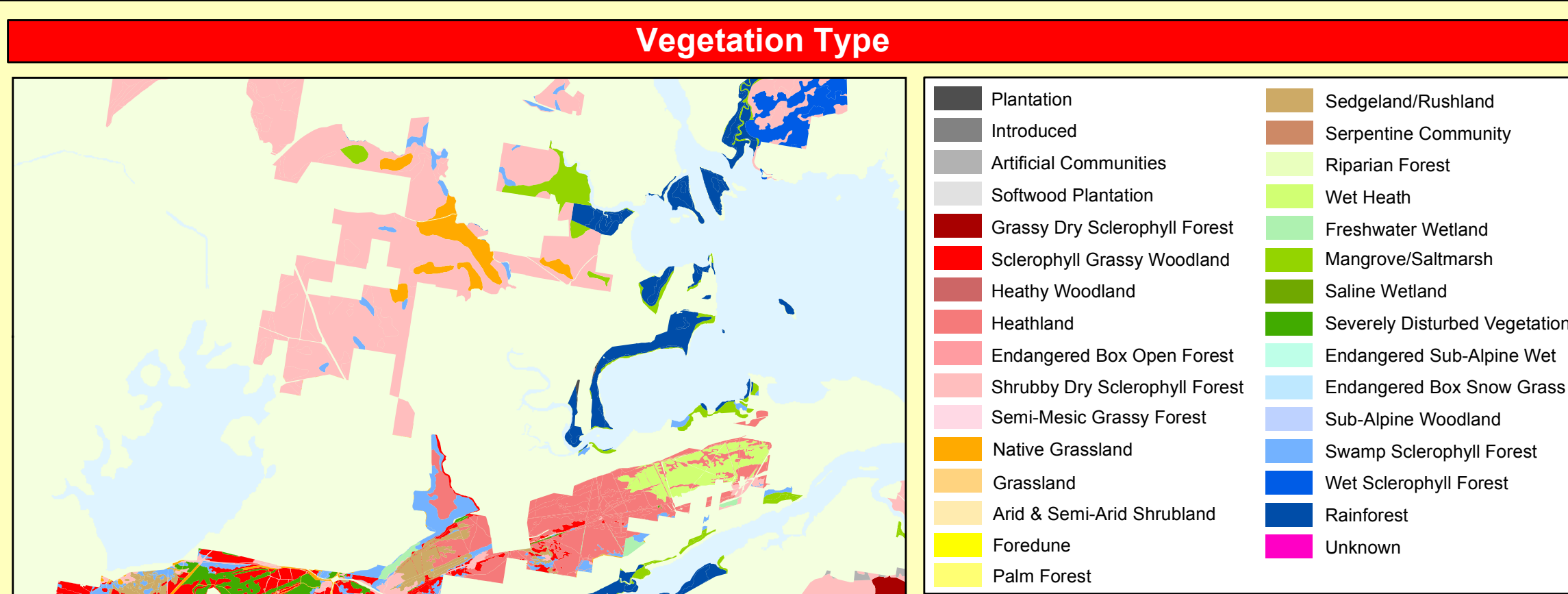
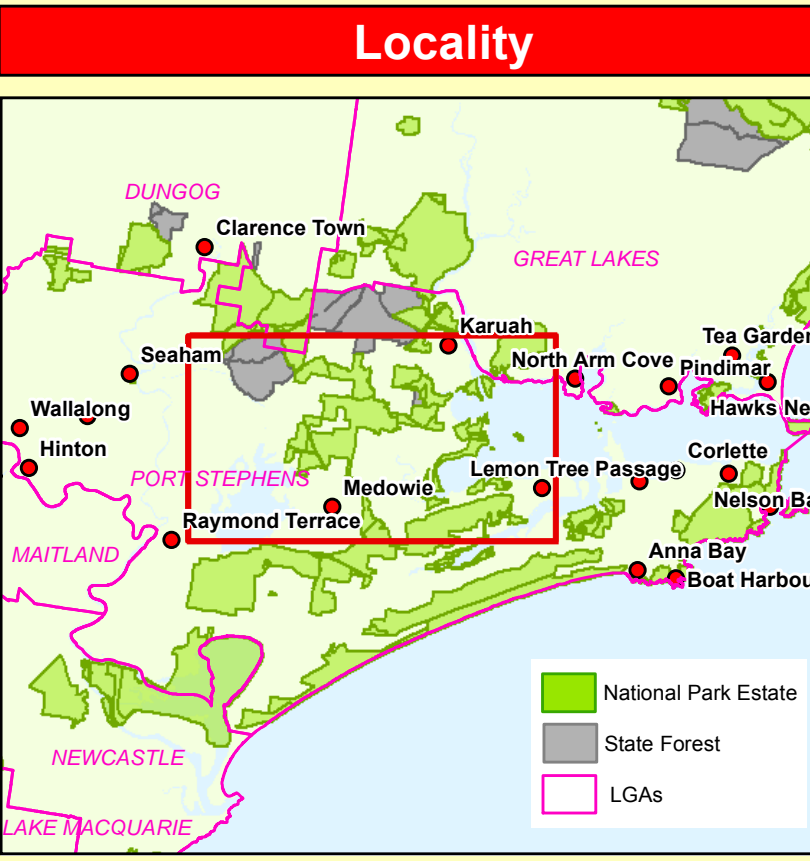
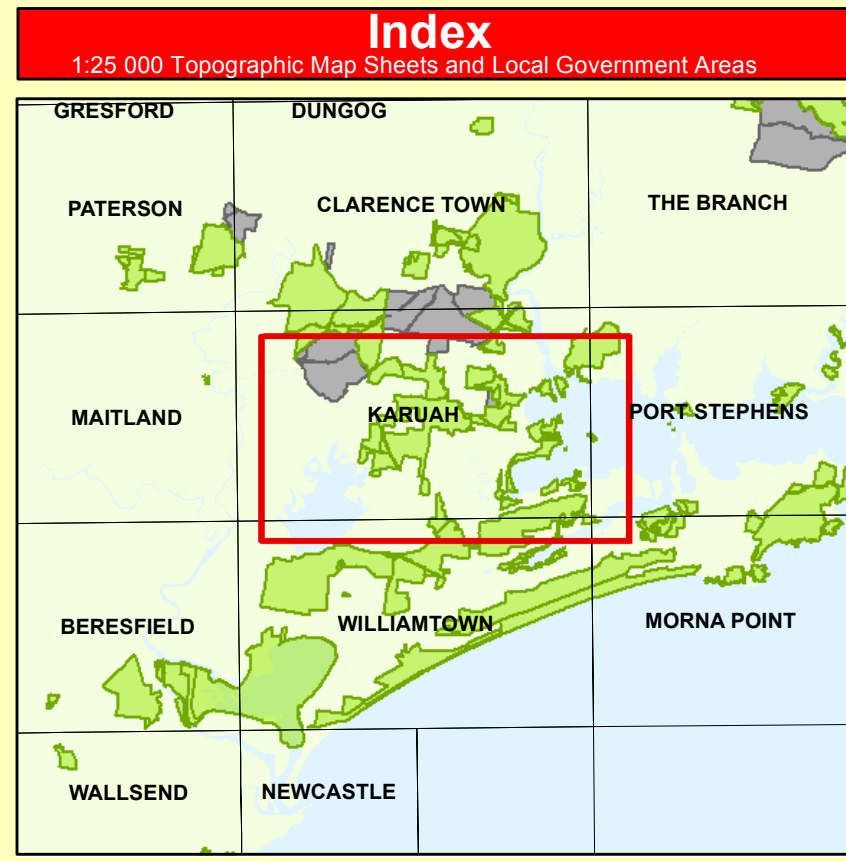
Lower North Coast Region
Karuah NP, NR & SCA, Medoway NR & SCA, Wallaroo NP
Fire Management Strategy (Type 2)
2015
Sheet 2 of 2

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Office of Environment and Heritage (NSW)
 This strategy is a relevant Plan under Section 39 (4) and Section 44 (3) of Rural Fires Act 1997.

Endorsed by: _____ Date: / /
 Director Coastal, Parks & Wildlife Division



Bushfire Suppression

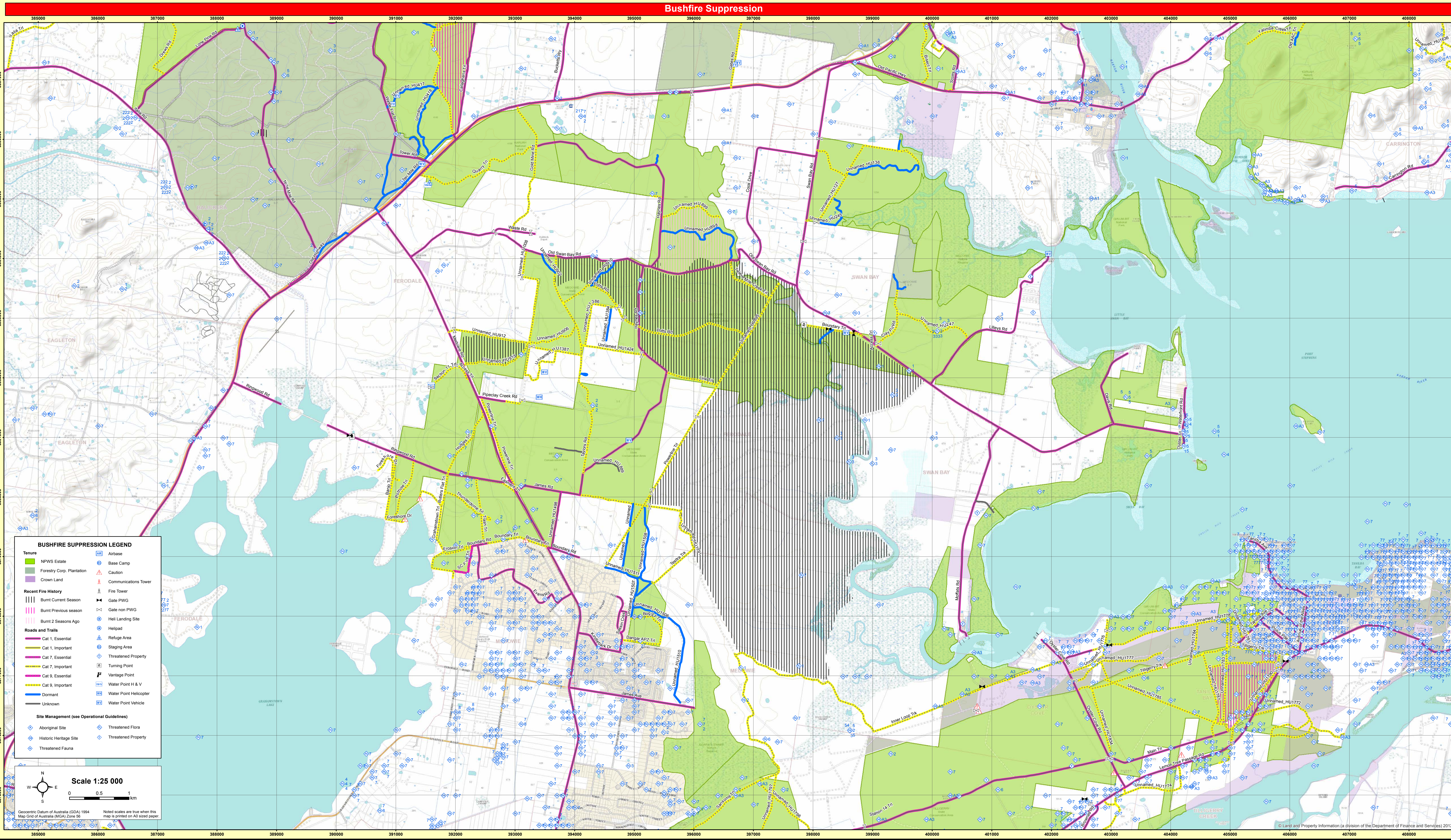
Strategy Information	
Wildfires	<ul style="list-style-type: none"> Have been known to start as early as late August, but usually the potential for a large fire event is greatest between October and December. This period may extend into January in more severe years.
Prescribed Burning	<ul style="list-style-type: none"> General season is Autumn to late Winter. Burning is possible in early Spring but not desirable on a regular basis from an ecological or tourism point of view.
Current FDR	Forecast FDR
Low - Mod	Low - Mod
Low - Mod	=> High
High	All
All	All

Communications Information

Service	Channel	Location and Comments
LNCR - VOTE GROUP EAST	170	<ul style="list-style-type: none"> Best for SHVA, GCA and HCA • Mt Mary (171) • Cabbage Tree (172) • Gan Gan (173) • Tawari (174) • Middle Brother (175) • Book (176)
LNCR - VOTE GROUP WEST	160	<ul style="list-style-type: none"> Best for STA • Mt Allyn (161) • Mt Myra (162) • Mt Barrington (163)

Contact Information

Agency	Position / Location	Phone
OEH - NPWS	Regional Duty Officer / After Hours	0422 144 880
	Area Manager, Active Band	0429 144 875
	Fire Management Officer: Andy Boleyn	0429 144 870
	Hunter Coast Area Office	(02) 4984 8200
RFB	Regional Office	(02) 4984 8200
	Fire Control Office Superintendent: Jason Atkinson	0429 107 442



Operational Guidelines

Refer to NPWS Fire Management Manual

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

Resource	Guidelines
Aboriginal Cultural Heritage Site Management	<ul style="list-style-type: none"> A1 - As far as possible protect site from fire, do not cut down trees. A2 - As far as possible protect site from fire. Avoid all ground disturbance including the use of earthmoving machinery, handline construction and driving over sites. Avoid water bombing which may cause ground disturbance. A3 - Avoid all ground disturbance. Avoid water bombing. Site may be burnt by bushfire, back-burn or prescribed burn without damage.
Historic Heritage Management	<ul style="list-style-type: none"> H1 - As far as possible protect site from fire. Avoid all ground disturbance including the use of earthmoving machinery, handline construction and driving over sites. Avoid water bombing which may damage site. H2 - As far as possible protect site from fire. Avoid all ground disturbance including the use of earthmoving machinery, handline construction and driving over sites.
Threatened Fauna Management	<ul style="list-style-type: none"> FAT - As far as possible, protect large and hollow-bearing trees in locations where these species are known to occur. FAT2 - As far as possible, protect large and hollow-bearing trees in locations where these species are known to occur. Avoid inter-fire intervals of <10 years in locations where these species are known to occur. Avoid high intensity fires that consume canopies and fall logs in locations where these species are known to occur.
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Threatened Property	<ul style="list-style-type: none"> 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.
General	<ul style="list-style-type: none"> The use of bombing aircraft should support containment operations by aggressively attacking hotspots and spot fires. The use of bombing aircraft without the support of ground based suppression crews should be limited to very specific circumstances. Where practicable foam should be used to increase the effectiveness of the water. Ground crews must be alerted to water bombing operations.
Aerial Water Bombing	<ul style="list-style-type: none"> Aerial ignition may be used during back-burning or fuel reduction operations where practicable, but only with the prior consent of a senior NPWS officer. Utilise incendiaries to rapidly progress back-burns down slope where required.
Aerial Incendary	<ul style="list-style-type: none"> Temperature and humidity trends must be monitored carefully to determine the safest times to implement back-burns. Generally, when the RH is Very High or greater, backburning should commence when the humidity begins to rise in the late afternoon or early evening. With lower RH backburning may be safely undertaken during the day. Where practicable, clear a 1m radius around dead and fornicus 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 intense up slope burn may result.
Command & Control	<ul style="list-style-type: none"> The first constant agency on site may assume control of the 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 the ongoing command, control and incident management team requirements as per the relevant BPAC Plan of Operations. Due to the swiftness of the fire, use of dozers should be avoided where possible with due to risk of major bogging. Before using dozers or other heavy machinery consult with NPWS regarding on-ground conditions. 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 personnel involved in containment line construction should be briefed on both natural and cultural heritage sites in the location. Earthmoving equipment may only be used with the prior consent of a senior NPWS officer, and then only if the probability of its success is high. Earthmoving equipment must be always be operated 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 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.
Containment Lines	<ul style="list-style-type: none"> All containment lines not required for other purposes should be closed at the cessation of the wildfire suppression operation. All personnel involved in containment line construction should be briefed on both natural and cultural heritage sites in the location. Earthmoving equipment may only be used with the prior consent of a senior NPWS officer, and then only if the probability of its success is high. Earthmoving equipment must be always be operated 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 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	<ul style="list-style-type: none"> All fire advantages used during wildfire suppression operations must be mapped and where relevant added to the database. Waiting and lowering agents (aerialists) 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 and swamps. Areas where fire suppression chemicals are used must be mapped and the use products names recorded. The Threatened Species Operational Guidelines are to be observed. Where practicable, containment lines should be stabilised and rehabilitated as part of the wildfire suppression operation. 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 RMS traffic management guidelines.
Fire Advantage Recording	<ul style="list-style-type: none"> All fire advantages used during wildfire suppression operations must be mapped and where relevant added to the database. Waiting and lowering agents (aerialists) 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 and swamps. Areas where fire suppression chemicals are used must be mapped and the use products names recorded. The Threatened Species Operational Guidelines are to be observed. Where practicable, containment lines should be stabilised and rehabilitated as part of the wildfire suppression operation. 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 RMS traffic management guidelines.
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Rehabilitation	<ul style="list-style-type: none"> All fire advantages used during wildfire suppression operations must be mapped and where relevant added to the database. Waiting and lowering agents (aerialists) 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 and swamps. Areas where fire suppression chemicals are used must be mapped and the use products names recorded. The Threatened Species Operational Guidelines are to be observed. Where practicable, containment lines should be stabilised and rehabilitated as part of the wildfire suppression operation. 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 RMS traffic management guidelines.
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Visitor Management	<ul style="list-style-type: none"> All fire advantages used during wildfire suppression operations must be mapped and where relevant added to the database. Waiting and lowering agents (aerialists) 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 and swamps. Areas where fire suppression chemicals are used must be mapped and the use products names recorded. The Threatened Species Operational Guidelines are to be observed. Where practicable, containment lines should be stabilised and rehabilitated as part of the wildfire suppression operation. 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 RMS traffic management guidelines.

BUSHFIRE SUPPRESSION LEGEND

Green	NPWS Estate	Blue square	Airbase
Light Green	Forestry Corp. Plantation	Red triangle	Base Camp
Dark Green	Crown Land	Yellow diamond	Caution
Red	Recent Fire History	Black circle	Fire Tower
Blue	Burnt Current Season	Black square	Gate PWG
Orange	Burnt Previous Season	Black triangle	Gate non PWG
Yellow	Burnt 2 Seasons Ago	Black diamond	Helipad
Blue line	Roads and Trails	Black circle	Refuge Area
Red line	Cat 1, Essential	Black square	Staging Area
Orange line	Cat 2, Important	Black triangle	Threatened Property
Yellow line	Cat 3, Essential	Black diamond	Turning Point
Green line	Cat 4, Important	Black circle	Verge Point
Blue line	Cat 5, Essential	Black square	Water Point H & V
Black line	Dominant	Black triangle	Water Point Helicopter
White line	Unknown	Black diamond	Water Point Vehicle
Blue circle	Aboriginal Site	Black square	Threatened Flora
Blue triangle	Historic Heritage Site	Black circle	Threatened Property
Blue diamond	Threatened Fauna		

Site Management (see Operational Guidelines)

Scale 1:25 000