The Bay of Fires

A New National Park for Northeast Tasmania

BAY of FIRES
Coastal Preservation
LOBBY
'88

North East Bioregional Network

May 2009

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This National Park proposal has been developed by: Bay of Fires Coastal Preservation Lobby & North-East Bioregional Network.

www.northeastbioregionalnetwork.org.au

Cover photograph: coastal sand dune vegetation at Taylors Beach.

"The Bay of Fires has been a drawcard for locals and tourists for years, and has provided inspiration for everything from artists workshops to family holidays. I am pleased to announce today the intention of this Government to establish the Bay of Fires National Park. This is a stunning part of Tasmania that deserves to be protected for future generations." – Premier David Bartlett, State of the State Address, 3rd March 2009.

Executive Summary

The Bay of Fires is an area of sublime beauty and important biodiversity values with strong cultural links for Tasmania's Aboriginal community. It is also highly valued by East Coast residents, treasured by the Tasmanian community as a whole and attracts visitors from Tasmania, Australia and beyond.

Locals, experts, politicians and conservationists have for many years called for this landscape to receive full recognition and protection, and in March 2009, Tasmania's Premier, David Bartlett announced his Government's intention to create a Bay of Fires National Park – an announcement that has been warmly welcomed. Presently there are several reserves of different types in the area which provide some degree of protection and management for cultural and natural values.

This report outlines the opportunity to consolidate the existing reserves to form a new National Park which would also include areas of adjacent unprotected land to fully protect this important landscape, and improve its overall integrity and connection with other natural landscapes in the northeast.

The proposed Bay of Fires National Park, covering approximately 180 km^2, will deliver proper protection of this important landscape. Furthermore it will build on the high profile that the Bay of Fires has as a tourist attraction. As a National Park, the Bay of Fires has considerable potential for natural and cultural heritage interpretation and education.

Recommendations

1. The proposed Bay of Fires reserve as defined in this report be proclaimed a National Park or equivalent status of reserve under the *Nature Conservation Act 2002*.
2. The State Government consult the Tasmanian Aboriginal community to determine cultural values of the Bay of Fires landscape.
3. A management plan for the Reserve to be developed in conjunction with relevant stakeholders following biological, geological, historical and cultural surveys of the area.
4. The Tasmanian Government and Break O'Day Council prepare a comprehensive environmentally sustainable planning strategy for the Bay of Fires region including Binalong Bay and Ansons Bay.
5. Adequate resourcing is allocated to ensure optimal management of the natural and cultural values of the area, including significant core funding for the Parks & Wildlife service for maintenance, conservation management, rangers, etc.
6. Consider the possibility of developing an adjacent Bay of Fires Marine National Park to protect some of the unique marine wildlife adjacent to the Park, after assessment and consultation with experts and fishing industry groups. This would add substantially to the ecological protection of a terrestrial National Park and reflect the world-class image of the Bay of Fires.

L: looking east to Mount Pearson from Albion Creek – buttongrass moorland, *Melaleuca* scrub on creekline and *Eucalyptus sieberi* dry forest; R*:* coastal heathland and sedgeland and Sloop Lagoon, looking west to Mount Pearson

Proposed Bay of Fires National Park

The new National Park, comprising 18 020 hectares (180 km^2) will provide improved protection of the coastal environment and a landscape linkage between Georges Bay in the south and the existing Mount William National Park in the north. Protection of landscapes and ecological connectivity is increasingly recognised as essential for nature conservation, particularly in the context of human-induced land changes and climate change.[1]

The proposed reserve will consolidate existing reserves and other areas of Crown Land into a single land tenure and management plan.

Land Tenure

The proposed National Park is around 18 020 hectares of State Government administered land presently allocated to several tenures managed by Forestry Tasmania and the Department of Environment, Parks, Heritage and the Arts. It is mostly comprised of existing reserves administered

[1] Australia's Biodiversity Conservation Strategy 2010-2020, consultation draft; Mackey et al. (2007) Applying landscape-ecological principles to regional conservation: the WildCountry Project in Australia.

under the *Nature Conservation Act 2002*, although nearly half of the area is administered under the *Forestry Act 1920*.

Two Crown Land parcels at Binalong Bay have been included in this proposal. The Crown Land Assessment and Classification Project recommended that the substantial portion of one of these parcels (PID 2161190) be appended to the adjacent Humbug Point Nature Recreation Area.[2] The second Crown Land parcel covers 5 hectares and is also contiguous with Humbug Point NRA.

Table 1. Existing land tenure in the proposed reserve area.

Name	Land tenure	Authority	Area (ha)
Bay of Fires CA	Conservation Area	DEPHA	3465
Doctors Peak FR	Forest Reserve	Forestry Tasmania	3038
Mount Pearson SR	State Reserve	DEPHA	4594
Humbug Point NRA	Nature Recreation Area	DEPHA	1565
	Crown Land	DPIW	46
	State Forest	Forestry Tasmania	5312

Proposed tenure

A National Park is the appropriate tenure to adequately recognise and manage the significant cultural and natural values of the Bay of Fires region.

A relatively low and inadequate proportion of northeast Tasmania is in secure reserves. The proposed National Park is on the boundary of two bioregions: Ben Lomond and Flinders bioregions have 4.1 % and 8.4 % of their land area in National Parks or reserves of equivalent status compared to the Tasmanian average of 22.2 %.[3] The lack of secure reserves in North-East Tasmania leaves a currently inadequate level of protection for the region's unique natural values and wildlife, something that can be addressed through the protection of the Bay of Fires and other iconic landscapes in the North-East like the Blue-Tier, the North-East Highlands and Constable Creek.

Boundary Justification

In the northern half of the proposed reserve the boundary is determined by land tenure, that is all public land (State Forest and Conservation Area) is included in the reserve. The northernmost boundary of the proposed reserve adjoins the Mount William National Park, providing for protection of contiguous high quality native vegetation. There is potential for the consolidation of the existing and proposed National Parks into one reserve.

State Forest which has been subject to selective logging around Pretty Marsh Hill and Big Creek in the northwest of the proposed area is included because the forest type in this area is different from elsewhere in the proposed reserve, it contains significant threatened species habitat (important populations of *Pomaderris elachophylla*) and has good potential for restoration. Protection of this area will also ensure scenic preservation on the increasingly popular tourist route of Ansons Bay Road.

State Forest between Doctors peak FR and Bay of Fires CA provides an important habitat connection between the existing reserves and is included to preserve the integrity of the region and protect the natural values on a landscape scale. Forestry has occurred in limited places in this area.

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[2] DPIW (2006) Crown Land Assessment and Classification Consultation Report and Recommended Allocations for the Municipality of Break O'Day.

[3] McQuillan *et al.* (in press) The importance of ecological processes for terrestrial biodiversity conservation in Tasmania – a review.

To the west of Doctors Peak Forest Reserve, the upper catchment of Dead Horse Creek has been added. This 583 hectare area of State Forest comprises a good intact example of moorland-heathland-forest mosaic with little commercial timber. The proposed boundary follows existing minor roads which coincide with the catchment boundary.

South of here the boundary follows Doctors Peak Forest Reserve and Mount Pearson State Reserve except in the middle catchment of Littlechilds Creek where nearly 800 hectares of State Forest is included. The Littlechild Creek block contains the most extensive areas of *Eucalyptus ovata* forest and woodland (an endangered vegetation type) in the proposed reserve. The diverse variety of moorland, heath and forest communities provides a range of habitats not well represented in the adjoining dry forests of Mount Pearson SR. Some selective logging has occurred in this area but the logging coupes are relatively small and have regeneration potential.

The eastern and southeastern boundaries of the proposed reserve coincide with the eastern and southern boundaries of Humbug Point NRA and eastern boundary of Bay of Fires CA, which is mostly the high water mark. Exceptions to this are a number of private land blocks at Binalong Bay, The Gardens, in the south of Humbug Point NRA and between Pebbly Beach and Ansons Bay at the northern end of Bay of Fires. Most of the adjoining private land on the eastern side of the proposed reserve has been subject to vegetation clearing and agricultural or residential development and thus tends to have lower nature conservation values.

The two Crown Land blocks at Binalong Bay include forest which is complementary to Humbug Point NRA and also the larger block provides connectivity between Grants Lagoon and the native vegetation of Humbug Hill, since the lagoon is surrounded by unprotected private land on the western side.

Possible extensions

It must be noted that this is a minimum from a nature conservation perspective. There needs to be full consultation with the Aboriginal community, including the potential to expand the boundaries to include areas of cultural significance.

Private land between Mount Pearson State Reserve and Grants Lagoon provides an important landscape connection between protected areas and significant threatened species values. As such this land would make a worthwhile addition to the proposed National Park. The State Government should investigate purchase of this land for inclusion in the Park. As at May 2009 a significant land parcel here is for sale.

Bells Marsh reserve extension

Additional to the National park proposal, a contiguous area of intact native forest and other vegetation was identified around Bells Marsh Forest Reserve to the west of Mount Pearson SR. This ‘Bells Marsh Reserve Extension’ is suggested as a complementary reserve to the proposed National Park. This extension includes Bells Marsh FR and intact forest to the west and northeast which is presently State Forest (some of which is designated ‘Informal Reserve’). The proposed extension would involve expanding the boundaries of the existing reserve. This would protect some of the most significant patches of old-growth forest in the lower George catchment and provides a landscape linkage from the coastal hills of Mount Pearson toward Siamese Ridge and the Northeast Highlands.

L: old-growth *Eucalyptus obliqua* dry forest at The Shades; R: Bay of Fires granite coastline, photo by Phill Pullinger; B: *Eucalyptus ovata* heathy woodland and heathland at Kates Marsh

Overview of the Bay of Fires region

The Bay of Fires is a broad arc of coastline comprising mostly sandy beaches with low relief and occasional rocky outcrops, spanning 28.5 kilometres from Binalong Bay in the south to Eddystone Point in the north. The northern part of the Bay of Fires, from Ansons Bay to Eddystone Point, is in the Mount William National Park.

The Bay of Fires area is mostly in the Flinders bioregion which comprises generally dry coastal and lowland environments, however the Ben Lomond bioregion which is inland and generally wetter and more elevated, extends eastward as far as Mount Pearson. Hence the proposed National Park covers two of Tasmania's nine bioregions. This indicates that the area has a diverse range of environments and is likely to be important for evolutionary processes and climate change refugia.

Climate

The Bay of Fires has a mild maritime climate. The Eddystone Point weather station, on the coast approximately 9 km NNE of the proposed National Park, has an annual average rainfall of 755 mm with no major seasonal patterns although January-February are slightly drier months. Easterly weather patterns can bring heavy rainfalls with more than 100 mm possible in 24 hours. Average monthly maximum temperatures range from 13℃ (July) to 21℃ (February) and the maximum daily temperature very rarely exceeds 30℃. Average month ly mimima range from 7℃ (July) to 14℃ (February) and the minimum temperature rarely falls below 2℃. Inland from the coast the temperature range and total rainfall are likely to increase, as at St Helens which is climatically similar with the major difference being colder winter minimum temperatures (July average 2.5℃ and frequently below 0℃).

Geology

The proposed reserve and surrounding region is comprised of the Devonian igneous geology typical of coastal northeastern Tasmania (granite, granodiorite and adamellite). This represents part of the Blue Tier batholith, a large body of granitic rocks which formed in several phases of magma intrusions between around 395 and 368 million years ago, during a period of massive geological upheaval and mountain-building. During the Devonian period there were also some small intrusions of dolerite.

Older sedimentary rocks of the Mathinna Supergroup occur in the northeast corner of the proposed reserve. These Mathinna beds form sections of rocky coastline at the northern end of the Bay of Fires Coastal Reserve. Isolated outcrops of more recent basalt occur in and near the proposed reserve.

Landscape and hydrology

The granite outcrop of Mount Pearson is the most rugged terrain in the area with steep upper slopes and relatively broad lower creek gullies. From the highest point, 360 metres elevation at the summit of Mount Pearson, a string of granitic hills extends to the north forming a drainage divide generally 150 to 300 metres high, including The Doctors Peak, The Shades and Cliffords Hill.

To the southwest of The Doctors Peak is the catchment of the George River. The major subcatchment in this area, Littlechilds Creek, is characterised by gentle gradients in the middle and lower catchment with meandering watercourses and several marshes.

Numerous creeks on the west of the drainage divide (the land north and west of The Doctors Peak) feed the north-flowing Ansons River which then flows east to Ansons Bay at the northern edge of the proposed reserve. The catchments of Dead Horse Creek, Fight Creek and Last River have relatively

subdued topography with extensive marshes occurring on broad creek flats. Steeper gullies are formed in the small catchments in the northwest of the proposed reserve.

North of Cliffords Hill the topography becomes more subdued with gentle slopes and maximum elevations under 150 metres.

In the eastern part of the proposed reserve a number of small east-flowing creeks feed coastal lagoons or drain directly into the Tasman Sea. The three major coastal lagoons are brackish and have small catchments.

Vegetation

The vegetation is primarily dry sclerophyll forest dominated by one or more of the following eucalypt species: *Eucalyptus amygdalina, E. obliqua, E. sieberi*. On steep sunny slopes and ridges *E. sieberi* tends to form pure stands. *E. amygdalina* is common on lower slopes and near the coast. There are small patches of forest or woodland dominated by *E. globulus*, on the coast, and *E. ovata*, in gullies.

Patches of heathland and moorland occur on flats where soils are prone to waterlogging. Heath communities typically characterised by tea-tree (*Leptospermum* species) and bottlebrush (*Melaleuca* species) occur along watercourses and in swampy areas. Buttongrass moorland occupies similar situations and reflects a high fire frequency. Moorland, heath and forest tend to form a mosaic across the landscape, particularly in the west and north of the proposed reserve where the terrain is gently undulating. Several distinct vegetation types can coexist in a small area primarily due to differences in soil moisture.

Looking south towards St Helens from Mount Pearson, granite boulders and *Eucalyptus sieberi* dry forest.

The Outstanding Natural Values of the Bay of Fires area

The Bay of Fires contains a variety of environments from coastal beaches and lagoons to moorlands, marshes and forested hills. The landscape is largely intact and supports considerable biodiversity including a variety of vegetation types and numerous threatened species.

Flora of Conservation Significance

The Bay of Fires region is important for threatened plant species with 25 species recorded from the proposed National Park[4] (Table 2). Many more threatened species have been observed in the wider area (Table 3) and it is anticipated that some of these plants do also occur in the proposed Park given the diversity of habitats present and the limited botanical surveys.

Table 2. Threatened flora known from the Proposed Reserve

Name	Common Name	Tasmanian status[5]	National status[6]
Acacia ulicifolia	juniper wattle	r	
Baumea gunnii	slender twigsedge	r	
Caladenia caudata	tailed spider-orchid	v	VU
Caladenia pusilla	tiny fingers	r	
Caustis pentandra	thick twistsedge	r	
Conospermum hookeri	tasmanian smokebush	v	VU
Cyrtostylis robusta	large gnat-orchid	r	
Deyeuxia densa	heath bentgrass	r	
Euphrasia collina subsp. *deflexifolia*	eastern eyebright	r	
Hibbertia rufa	brown guineaflower	x	
Hibbertia virgata	twiggy guineaflower	r	
Hierochloe rariflora	cane holygrass	r	
Lepidosperma forsythii	stout rapiersedge	r	
Lepidosperma tortuosum	twisting rapiersedge	r	
Lepilaena patentifolia	spreading watermat	r	
Lepilaena preissii	slender watermat	r	
Microtidium atratum	yellow onion-orchid	r	
Phebalium daviesii	davies waxflower	e	CR
Pomaderris elachophylla	small-leaf dogwood	v	
Sowerbaea juncea	purple rushlily	r	
Sporobolus virginicus	salt couch	r	
Spyridium parvifolium var. *molle*	soft dustymiller	r	
Stenopetalum lineare	narrow threadpetal	e	
Utricularia australis	yellow bladderwort	r	
Xanthorrhoea bracteata	shiny grasstree	v	EN

[4] only spatially accurate records have been included in this list, several additional species have been recorded from the region but without precise locations

[5] *Threatened Species Protection Act 1995* (Tasmania): r = rare, v = vulnerable, e = endangered, x = extinct

[6] *Environmental Protection and Biodiversity Conservation Act 1999* (Commonwealth): VU = vulnerable, EN = endangered, CR = critically endangered

Table 3. Threatened flora recorded from within 5 km of Proposed Reserve

Name	Common Name	Tasmanian status[7]	National status[8]
Acacia siculiformis	dagger wattle	r	
Austrodanthonia induta	tall wallabygrass	r	
Austrostipa blackii	crested speargrass	r	
Baumea articulata	jointed twigsedge	r	
Bolboschoenus caldwellii	sea clubsedge	r	
Brachyloma depressum	spreading heath	r	
Corunastylis nuda (Genoplesium nudum)	tiny midge-orchid	r	
Cynoglossum australe	coast houndstongue	r	
Desmodium gunnii	southern ticktrefoil	v	
Eutaxia microphylla var. microphylla	spiny bushpea	r	
Glossostigma elatinoides	small mudmat	r	
Hovea corrickiae	glossy purplepea	r	
Hypolepis muelleri	harsh groundfern	r	
Lepidium pseudotasmanicum	shade peppercress	r	
Lepidosperma viscidum	sticky swordsedge	r	
Lotus australis	australian trefoil	r	
Phyllangium divergens	wiry mitrewort	v	
Plantago debilis	shade plantain	r	
Pomaderris intermedia	lemon dogwood	r	
Pomaderris paniculosa subsp. *paralia*	shining dogwood	r	
Prostanthera rotundifolia	roundleaf mintbush	v	
Pterostylis grandiflora	superb greenhood	r	
Schoenus brevifolius	zigzag bogsedge	r	
Scleranthus brockiei	mountain knawel	r	
Scutellaria humilis	dwarf skullcap	r	
Thelymitra antennifera	rabbit ears	e	
Triglochin minutissimum	tiny arrowgrass	r	
Villarsia exaltata	erect marshflower	r	
Xanthorrhoea arenaria	sand grasstree	v	VU

The proposed National Park includes major populations of several threatened species, such as cane holygrass, thick twist-sedge, Tasmanian smokebush and small-leaf dogwood.

Small-leaf dogwood (*Pomaderris elachophylla*) is known from only 8 sites in Tasmania, none of which are in reserves.[9] The Sampsons Creek population, which is partly within the proposed National Park, is the only location for this species in northeast Tasmania.

[7] *Threatened Species Protection Act 1995* (Tasmania): r = rare, v = vulnerable, e = endangered, x = extinct

[8] *Environmental Protection and Biodiversity Conservation Act 1999* (Commonwealth): VU = vulnerable, EN = endangered, CR = critically endangered

[9] Threatened Flora of Tasmania notesheet, Threatened Species Unit, DPIW, <http://www.dpiw.tas.gov.au/inter.nsf/Attachments/SSKA-76H7QQ/$FILE/Pomaderris%20elachophylla.pdf>

Twiggy guinea-flower (*Hibbertia rufa*) was presumed extinct in Tasmania, having only been collected on one occasion in the 19th century, until the species was rediscovered by Roy Skabo in 2008 in the Doctors Peak Forest Reserve. The Threatened Species Protection Act schedules have yet to be updated, hence this species is currently listed as extinct, but will likely be changed to endangered.

Fauna of Conservation Significance

The Bay of Fires region provides important habitat for a number of threatened animal species, including eight listed species which are known to inhabit the proposed National Park (Table 4). Several more threatened animal species, such as the masked owl, are likely to occur in the area but have not been recorded with certainty (Table 5).

Table 4. Threatened fauna recorded from Proposed Reserve

Name	Common Name	Tasmanian status[10]	National status[11]	Habitat in Proposed Reserve
Aquila audax subsp. *fleayi*	wedge-tailed eagle	e	EN	Nesting habitat present. Widespread foraging habitat.
Dasyurus maculatus subsp. *maculatus*	spotted-tail quoll	r	VU	Likely to be widespread in denser forests.
Haliaeetus leucogaster	white-bellied sea eagle	v		Suitable nesting and foraging habitat.
Lathamus discolor	swift parrot	e	EN	Suitable nesting and foraging habitat occurs in coastal blue gum forest.
Mirounga leonina	southern elephant seal	e	VU	Not resident. Very infrequent visitor to the Tasmanian coast.
Pseudemoia rawlinsoni	glossy grass skink	r		Heathland associated with coastal wetlands.
Pseudomys novae-hollandiae	new holland mouse	e		Coastal heathland.
Sarcophilus harrisii	tasmanian devil	e	VU	Suitable habitat throughout most of the area.
Sterna nereis subsp. *nereis*	fairy tern	v		Sandy beaches are suitable nesting habitat.

Coastal heathland at the Bay of Fires is a key habitat for Tasmania's rarest mammal, the New Holland Mouse (*Pseudomys novae-hollandiae*). This native rodent is restricted to coastal areas in the north-east and appears to have undergone a dramatic decline in range and numbers.

The glossy grass skink (*Pseudemoia rawlinsoni*) is very rare in Tasmania, being known from only four locations including the Bay of Fires. This small secretive lizard inhabits heathy vegetation near wetlands and marshes.[12]

[10] *Threatened Species Protection Act 1995* (Tasmania): r = rare, v = vulnerable, e = endangered, x = extinct

[11] *Environmental Protection and Biodiversity Conservation Act 1999* (Commonwealth): VU = vulnerable, EN = endangered, CR = critically endangered

TL: Tasmanian smokebush (*Comesperma hookeri*), photo by Wendy Potts

TR: brown guineaflower (*Hibbertia rufa*), photo by Roy Skabo

BL: small-leaf dogwood (*Pomaderris elachophylla*), photo from Threatened Species Unit (DPIW)

BR: thick twist-sedge (*Caustis pentandra*)

[12] Forest Practices Authority (2002) *Threatened Fauna Manual for Production Forests in Tasmania*.

Table 5. Threatened fauna recorded from within 5 km of Proposed Reserve[13]

Name	Common Name	Tasmanian status[14]	National status[15]	Habitat in Proposed Reserve
Accipiter novaehollandiae	grey goshawk	e		Suitable habitat in wet forest on shaded slopes. Potential nesting habitat in blackwood forest.
Beddomeia tasmanica	hydrobiid snail (terrys creek)	r		None. Apparently confined to Terrys Creek near Goshen.
Hoplogonus bornemisszai	bornemissza's stag beetle	e		None. Outside of known range.
Hoplogonus simsoni	simson's stag beetle	v		None. Outside of known range.
Hoplogonus vanderschoori	vanderschoor's stag beetle	v		None. Outside of known range.
Litoria raniformis	green and golden frog	v	VU	Suitable habitat in wetlands.
Numenius madagascariensis	eastern curlew	e		Suitable foraging habitat near estuaries and coastal lagoons.
Perameles gunnii gunnii	eastern barred bandicoot		VU	Likely to occur in areas of grassy habitat such as Humbug Point area.
Podiceps cristatus	great crested grebe	v		Suitable habitat in estuaries and lagoons.
Prototroctes maraena	australian grayling	v	VU	Suitable habitat in lower reaches of streams.
Sterna albifrons subsp. sinensis	little tern	e		Sandy beaches are suitable nesting habitat.
Tasmanipatus barretti	giant velvet worm	r		Potential habitat in wet gullies.
Tyto novaehollandiae castanops	masked owl	e		Suitable nesting habitat in old growth dry forest.

[13] marine species not included

[14] *Threatened Species Protection Act 1995* (Tasmania): r = rare, v = vulnerable, e = endangered, x = extinct

[15] *Environmental Protection and Biodiversity Conservation Act 1999* (Commonwealth): VU = vulnerable, EN = endangered, CR = critically endangered

T: treeferns (*Cyathea australis*) occupy a small gully in dry *Eucalyptus sieberi* forest near the summit of Mount Pearson

R: transition from *Eucalyptus amygdalina* dry forest with open sedgey understorey on northwest-facing slope to *E. obliqua* damp shrubby forest on fire-protected easterly slope, The Shades

B: dry eucalypt forest at Moulting Bay, Humbug Point SRA, *Melaleuca ericifolia* swamp forest is on the flats on the left

Vegetation Communities of Conservation Significance

Five communities listed as rare, vulnerable or endangered in Tasmania occur within the proposed reserve. Blackwood (*Acacia melanoxylon*) forest on slopes is adequately reserved at a statewide level but not in the Ben Lomond bioregion.

Black gum (*Eucalyptus ovata*) heathy woodland is a relatively new addition to the TASVEG classification scheme and is yet to be mapped. Some areas that are mapped as wet heath are actually this community.

Black gum (*E. ovata*) forest is frequently not adequately mapped because it generally occurs in small patches amongst other eucalypt forest types from which it is difficult to distinguish by aerial photography interpretation. This is the case in the proposed reserve where several instances of black gum forest (e.g. along Thomas and Littlechilds creeks) have not been mapped. A 7.4 hectare patch of *E. ovata* forest has been mapped on Littlechilds Creek in the proposed Bells Marsh extension.

For detailed descriptions of the vegetation communities refer to *From Forest to Fjaeldmark: Descriptions of Tasmania's Vegetation*.[16]

Table 5. Rare, endangered, under-reserved and old-growth TASVEG communities known from the proposed reserve.

Vegetation community	TASVEG code	Old-growth	Statewide status[17,18]	Bioregional status[19,20,21]	Extent in proposed reserve[22]
Acacia melanoxylon forest on slopes	NAR	no	Adequately reserved	Rare. Under-reserved*	10 ha
Eucalyptus globulus dry forest	DGL	no	Vulnerable*	Under-reserved*	13 ha
Eucalyptus ovata forest	DOV	no	Endangered*	Under-reserved*	0.5 ha*
Eucalyptus ovata heathy woodland	DOW	no	Endangered*	?	not mapped*
Eucalyptus sieberi forest on granite	DSG	yes	Under-reserved	Under-reserved*	~150 ha
Eucalyptus obliqua dry forest	DOB	yes	Under-reserved	Under-reserved[23]	~1180 ha
Eucalyptus obliqua wet forest	WOU	yes	-	Under-reserved*	~120 ha
E. obliqua/E.ovata/E. viminalis damp sclerophyll forest	DSC	yes	Under-reserved	Under-reserved*	~40 ha
Melaleuca ericifolia swamp forest	NME	no	Rare and Endangered*	Under-reserved*	9 ha
Riparian scrub	SRI	no	Vulnerable*	Rare	4 ha
Wetland	AWU	n/a	Vulnerable*	Rare	3 ha

* reservation target is 100 %

[16] Harris & Kitchener (2005), available at <http://www.dpiw.tas.gov.au/inter.nsf/WebPages/LJEM-6K2749?open>

[17] Nature Conservation Amendment (Threatened Native Vegetation Communities) Bill 2006

[18] Forest Conservation Fund – Conservation Value Index Technical Report (Eiganraam et al. 2007)

[19] for Ben Lomond or Flinders bioregion or both depending on distribution of the vegetation type within the proposed National Park

[20] 'Tasmanian Native Non Forest Nature Conservation Priorities', DPIWE 2003

[21] Forest Conservation Fund Technical Report

[22] based on TASVEG mapping, requires verification

[23] reservation target is 60 % in Flinders bioregion, 100 % in Ben Lomond bioregion, under-reserved in both

Biodiversity

A number of surveys for various elements of biodiversity in this area have resulted in numerous flora and fauna records available on the Natural Values Atlas. However these are mostly confined to areas accessible by road and therefore much of the proposed reserve area has received little attention from biologists and naturalists.

The National Estate assessment of Mount Pearson Area[24] notes that this area is important for primitive and relictual fauna, fauna at the limit of biogeographic range, core fauna habitat, contemporary refugia and for fauna species richness. Notable floristic values of this area include flora species richness, plant community richness and old-growth forests.

Table 6. Vegetation communities of the proposed Bay of Fires National Park.

Vegetation community	**TASVEG code**	**Phytophthora susceptibility[25]**
Blackwood (*Acacia melanoxylon*) forest on slopes	NAR	low
Blue gum (*Eucalyptus globulus*) dry forest	DGL	?
Black gum (*Eucalyptus ovata*) forest	DOV	?
Black gum (*Eucalyptus ovata*) heathy woodland	DOW	(moderate?)
Ironbark (*Eucalyptus sieberi*) forest on granite	DSG	moderate
Black peppermint (*Eucalyptus amygdalina*) coastal forest	DAC	high
Stringybark (*Eucalyptus obliqua*) dry forest	DOB	moderate
White gum (*Eucalyptus viminalis*) heathy woodland	DVS	moderate
Paperbark (*Melaleuca ericifolia*) swamp forest	NME	?
Silver wattle (*Acacia dealbata*) forest	NAD	(low?)
Drooping sheoak (*Allocasuarina verticillata*) forest	NAV	?
Riparian scrub	SRI	?
Coast wattle (*Acacia sophorae*) scrub	SAC	?
Broad-leaf scrub	SBR	(low?)
Dry scrub	SDU	?
Tea-tree (*Leptospermum*) scrub	SLW	?
Scented paperbark (*Melaleuca squarrosa*) scrub	SMR	?
Coastal scrub	SSC	moderate
Coastal heathland	SCH	high
Inland heathland	SHU	high
Wet heathland	SHW	high
Lowland sedgey heathland	SHL	moderate
Buttongrass (*Gymnoschoenus*) moorland	MBU	moderate
Wetland	AWU	low
Saltmarsh	AUS	low
Coastal grassland	GCL	low

[24] defined as the Mount Pearson, Doctors Peak and Humbug Point reserves

[25] Schahinger *et al.* 2003 *Conservation of Tasmanian plant species and communities threatened by* Phytophthora cinnamomi*. Strategic regional plan for Tasmania.* (except where indicated by ?)

Under the Tasmanian vegetation mapping scheme, there are 26 native vegetation types[26] in the proposed National Park (Table 6). However it should be noted that significant areas are mapped incorrectly and ground-truthing is required to accurately map the vegetation.

The proposed National Park includes some of the largest patches of old growth eucalypt forest close to the coast in northeast Tasmania. These include oldgrowth *E. amygdalina*[27], *E. obliqua* and *E. sieberi* (Table 5) and provide habitat for numerous hollow-nesting species such as the yellow-tailed black cockatoo (*Calyptorhynchus funereus*), swift parrot (*Lathamus discolor*) and Tasmanian masked owl (*Tyto novaehollandiae castenops*).

> A significant threat to the masked owl is ongoing loss of old growth eucalypt forest, nesting habitat, from commercial timber harvesting, land clearance, tree felling for firewood and natural attrition of old growth trees.[28]

Fungi, bryophytes and invertebrates are poorly surveyed elements of the biodiversity.

Naturalness

The proposed reserve contains significant roadless areas, particularly in the Doctors Peak and Mount Pearson reserves. The proposed reserve area is notable for a lack of introduced species such as environmental weeds. Several catchments in the area have a high level of naturalness.

The Public Land Use Commission note that:

> Mount Pearson Area is important for natural landscapes. It is a large, relatively undisturbed area with topographic and catchment integrity where natural processes continue largely unmodified by human intervention.[29]

Around 600 hectares of State Forest in the proposed reserve has been subject to selective logging in recent years. These areas retain many mature trees and there are no impediments to the logged forest recovering to its natural state if protected from logging and roading in the future.

Development in this area is largely confined to the coast, mostly at Binalong Bay and The Gardens.

Geoconservation

Two geoconservation sites have been documented in the Bay of Fires area.[30]

The Bay of Fires Holocene Dunes are sand dunes which are considered significant at a regional level. Sand dunes are highly sensitive to damage (e.g. erosion caused by vehicles or foot traffic).

The Pebbly Beach Anorthosite is rock feature of statewide significance and is located close to but outside the proposed reserve.

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[26] for detailed descriptions see Harris & Kitchener (2005), available at <http://www.dpiw.tas.gov.au/inter.nsf/WebPages/LJEM-6K2749?open>

[27] a substantial area (~1880 hectares) of old growth Coastal *E. amygdalina* forest occurs in the proposed reserve, this forest type is considered adequately reserved in Tasmania

[28] Forest Practices Authority (2002) *Threatened Fauna Manual for Production Forests in Tasmania*.

[29] Australian Heritage Commission, Australian Heritage Database < http://www.environment.gov.au/cgi-bin/ahdb/search.pl>

[30] Tasmanian Geoconservation Database, accessed via the DPIW Natural Values Atlas

Recreation and education

The area currently attracts local residents, holiday makers, interstate and international tourists. Coastal scenery and pristine beaches are a major attraction. There are many campsites on public land at the Bay of Fires, particularly between Binalong Bay and The Gardens.

Recreational activities include swimming, surfing, snorkelling, bushwalking, picnicking and camping. Humbug Point in particular provides roads and walking tracks which offer experiences of bushland, wildflowers and diverse coastlines.

Management Issues & Threats

Fire

Eucalypt forests, heathlands and moorlands typically have good capacity to regenerate following burning. However changes in the frequency, intensity and seasonality of burning can lead to a shift in species and habitat diversity which may have a negative impact on biodiversity.

Repeated frequent fires due to arson and fuel reduction burning are typical of *E. sieberi* forests in northeast Tasmania[31]. A study of fire regimes in this region advocates leaving areas of *E. sieberi* forest unburnt for varying periods where there is no need for fuel reduction burning so as to allow a more diverse vegetation pattern in the landscape, particularly in regards to understorey.[32]

Blackwood forest is the only vegetation type in the proposed reserve that is threatened by fire since the surrounding eucalypt forest is likely to invade these areas following fires.

A management plan for the area would require fire management prescriptions which allow for fuel reduction burning near infrastructure and inhabitation while fire management in the more remote parts of the reserve is based on ecological principals.

Invasive species

There are few environmental weeds in the proposed reserve. This partly reflects the resilience of the intact native vegetation since weeds usually benefit from disturbance to soil and vegetation.

Presently, the most serious weed threat to native forest and heathland in this area is Spanish heath (*Erica lusitanica*). Weeds with potential to have major impacts include radiata pine (*Pinus radiata*), boneseed (*Chrysanthemoides monilifera*) and coastal tea-tree (*Leptospermum laevigatum*). Spanish heath is widespread in the region and tends to invade along roads and vehicular tracks. Radiata pine has potential to become established in native forest in this region as demonstrated at Skyline Tier south of St Helens where it is aggressively invading ironbark forest.[33]

Weeds are likely to be the most serious threat to coastal vegetation in the region.[34] Exotic species including sea spurge (*Euphorbia paralias*) and marram grass (*Ammophila arenaria*) not only displace native vegetation on sandy shorelines but also have negative impacts on the coastal geomorphology and the habitat of beach-nesting birds.

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[31] Neyland & Askey-Doran (1996) Effects of repeated fires on dry sclerophyll (*E. sieberi*) forests in northeast Tasmania.

[32] Neyland & Askey-Doran (1996)

[33] Fitzgerald (2007) Survey of Radiata Pine wildlings at Scamander Pine Plantation, northeast Tasmania.

[34] Harris & Kirkpatrick (1996) The coastal vegetation of northeast Tasmania.

Pathogens

The root-rot pathogen *Phytophthora cinnamomi* (Pc) occurs locally and can cause severe dieback of many native plant species. *Eucalyptus amygdalina* coastal forest is considered a highly susceptible community, as are some of the heathland types (see Table 6)[35]. A Tasmanian Government strategic plan identifies a number of management areas around the state where the aim is to prevent spread of Pc and protect susceptible plant species and communities. Two of these management areas occur in the proposed National Park, at Mount Pearson and The Gardens.[36] The plan also notes in regard to risk of Pc spread that "firewood harvesting and trail-bike riding are ongoing issues in the region".[37] *Phytophthora* is also a major threat to moorland and heathland vegetation where it kills many of the shrub and heath species resulting in a change in species composition and structure.

Climate change

Even under conservative models of climate change it will have a significant impact on biodiversity. The effects on individual species and communities is difficult to predict.

A CSIRO report offers these principles in regards to the challenge of conserving biodiversity and planning protected areas in a rapidly changing climate:

> Protecting habitat is probably the best way to conserve species under climate change. While the species and ecosystems in any one area will change over time, the greater the total area of habitat available, and the more diverse that habitat, the greater the number of ecosystems and species that will be able to survive.
>
> Connectivity of habitat at various scales can be important for facilitating the movement of different species, which may increase their viability and ability to respond to climate variability and change.[38]

Coastal landforms and vegetation are threatened by sea level rise. Most of the sandy coastline in the Bay of Fires has extensive areas of low-lying sandy land and lagoons close to presnt maximum high water mark. Sea level rise and storm surges threaten to erode and inundate these areas leading to dramatic changes to the geomorphology and vegetation. In the Bay of Fires region roads and farmland may pose a barrier to inland migration by coastal vegetation.

Other threats

Illegal firewood harvesting is a popular activity in accessible dry forests. There is evidence of firewood cutting in Mount Pearson SR and along the vehicular track between The Gardens and Ansons Bay Road. This practice is undesirable due to negative impacts on habitat (e.g. fallen logs required by the rare Giant Velvet Worm) and risk of Pc infection related to vehicular use. Creation of new roads and track associated with logging operations is likely to increase the incidence of illegal wood cutting.

Off-road vehicles can cause damage to soil and vegetation and are also a major Pc risk. Vehicles on beaches and sand dunes are particularly damaging and inappropriate due to the erodibility of sand dunes, potential for damage to cultural heritage and the disturbance to beach-nesting birds.

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[35] Schahinger *et al.* (2003) *Conservation of Tasmanian plant species and communities threatened by* Phytophthora cinnamomi*. Strategic regional plan for Tasmania.*

[36] Schahinger *et al.* (2003)

[37] Schahinger *et al.* (2003)

[38] Dunlop and Brown (2008)

Long-term regional planning

The sensitive coastal environment of the Bay of Fires is prone to damage and degradation related to inappropriate development and large numbers of visitors. However St Helens is an ideal visitor hub for the Bay of Fires region, with established services and accommodation a short drive from the proposed National Park.

A thorough planning strategy is needed for the greater Bay of Fires area (including Binalong Bay, The Gardens and Ansons Bay).

Conclusion

The Bay of Fires is one of Tasmania's most spectacular and precious natural and cultural landscapes. Its significance to the Tasmanian Aboriginal community is immense, and it is a region treasured by locals, the Tasmanian community as a whole and interstate and overseas visitors alike.

We congratulate the Tasmanian government on committing to the creation of a Bay of Fires National Park, and urge the government to consider full and proper protection of this region. The protection of the contiguity between the Bay of Fires coastal environment and the extraordinary and irreplaceable old-growth forests that extend beyond the coastal dune systems and into the hinterland, is crucially important if we are to properly protect this landscape and its wildlife for future generations.

It is also crucial that the now desperately under-funded Parks & Wildlife service is given the substantial core funding and human resources to properly protect and manage the region.

Such an outcome would add another feather in the cap of this iconic and treasured island state which is a beacon to the world for its natural beauty, landscapes, wildlife and people.

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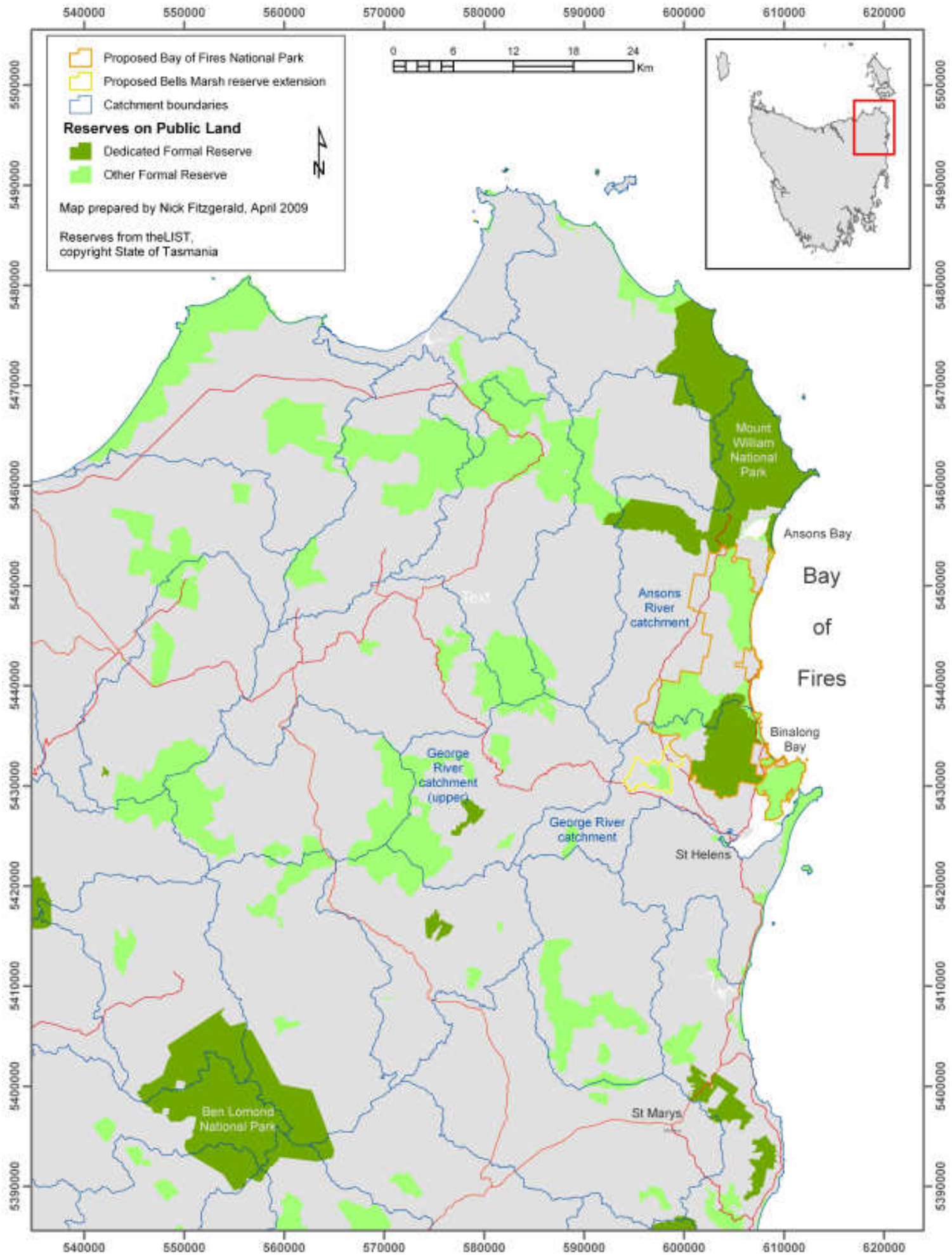
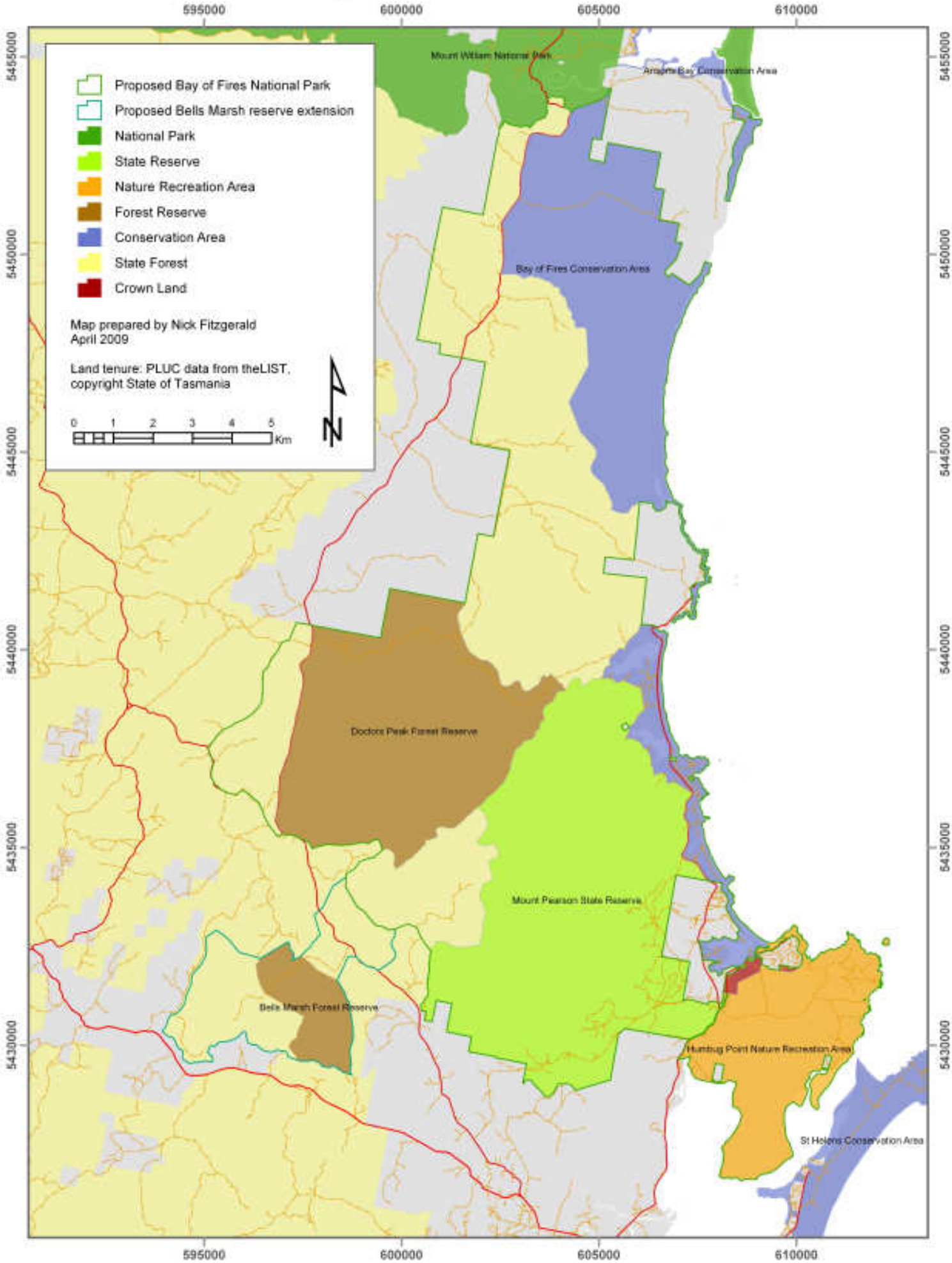
She-oak (*Allocasuarina verticillata*) forest on granite coast and sea eagle at Skeleton Bay

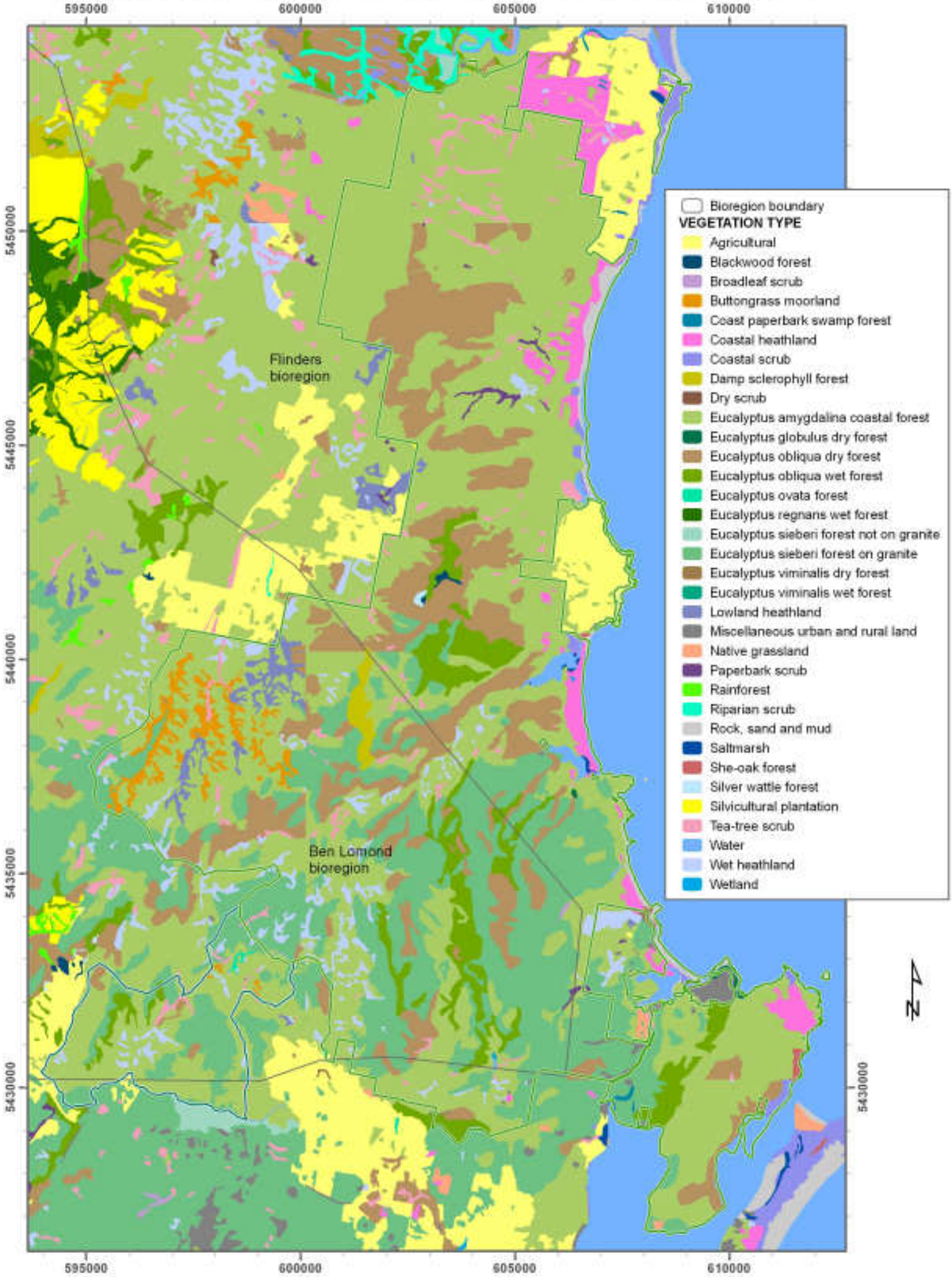
Location of the proposed Bay of Fires National Park



Existing land tenure and proposed boundaries for a Bay of Fires National Park

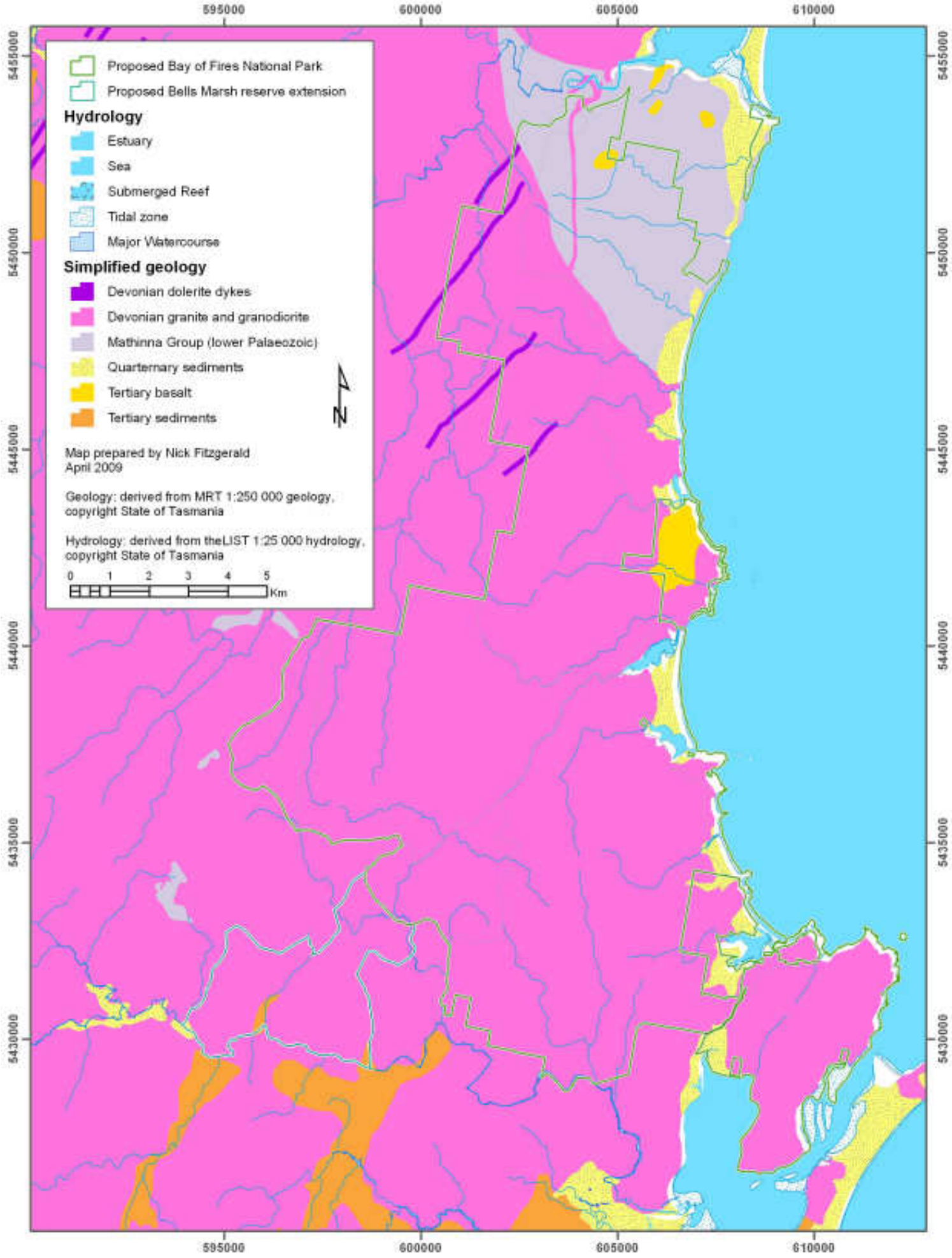


Vegetation of the southern Bay of Fires region



Vegetation types derived from TASVEG 1.2, copyright State of Tasmania

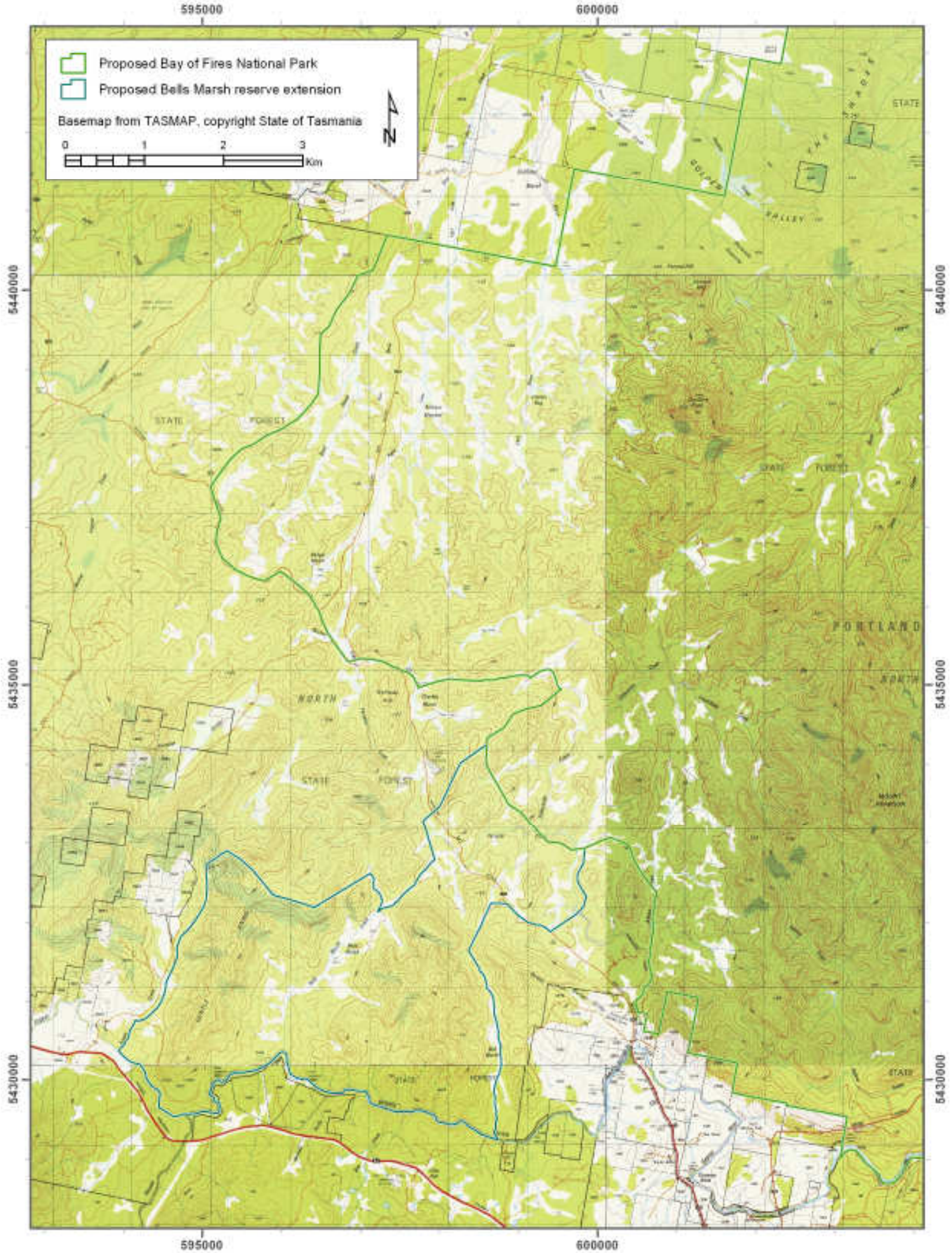
Geology of the Bay of Fires region



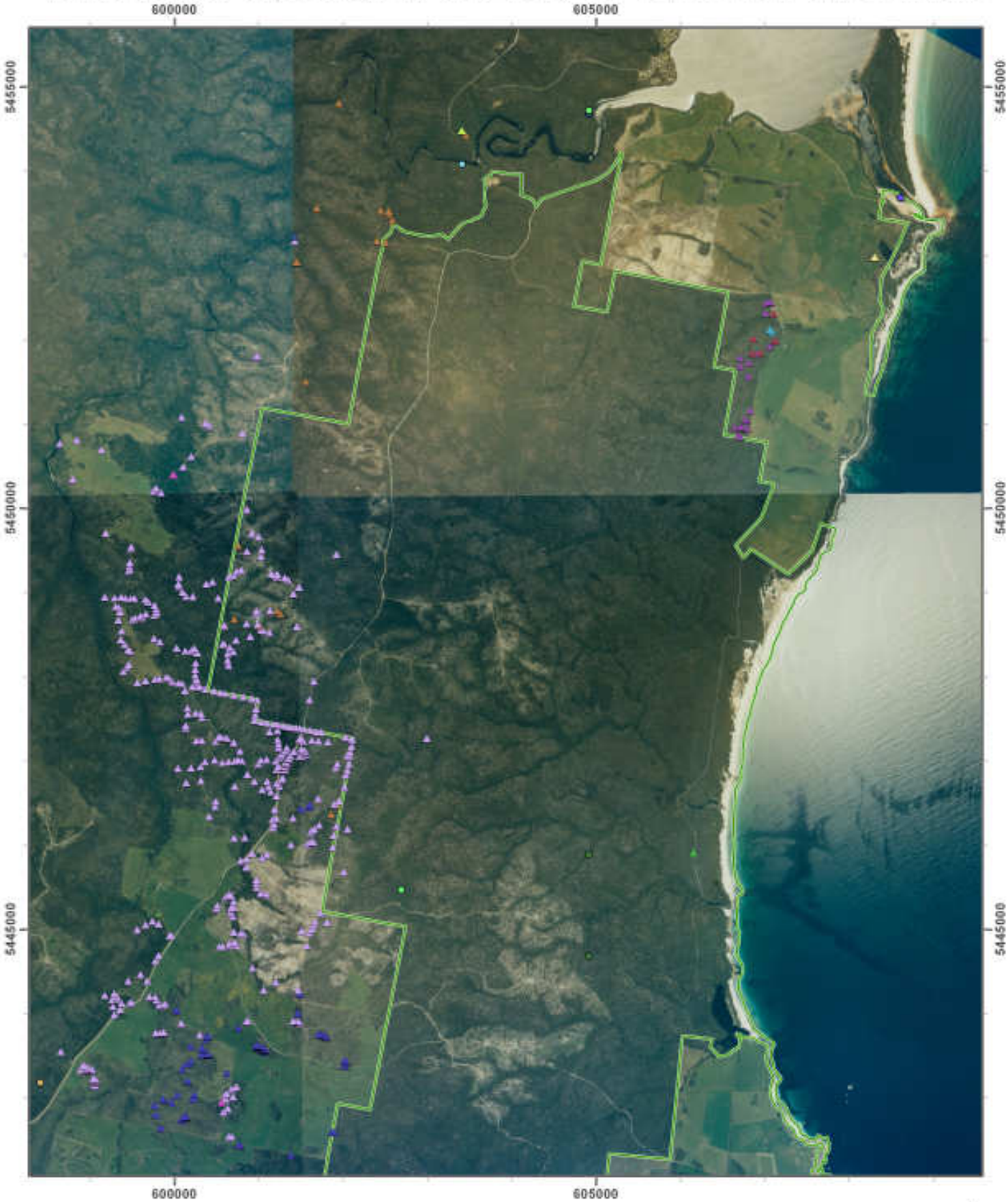
Proposed Bay of Fires National Park (north)

Proposed Bay of Fires National Park (southeast)

Proposed Bay of Fires National Park (southwest)



Threatened Species in the Bay of Fires and surrounds



Threatened flora species

- Acacia ulicifolia
- Conospermum hookeri
- Glossostigma elatinoides
- Hierochloe rariflora
- Hypolepis muelleri
- Lepidosperma forsythii
- Pomaderris elachophylla
- Pomaderris intermedia
- Prostanthera rotundifolia
- Sowerbaea juncea
- Sporobolus virginicus
- Xanthorrhoea arenaria
- Xanthorrhoea bracteata

Threatened fauna species

- Aquila audax subsp. fleayi
- Haliaeetus leucogaster
- Lathamus discolor
- Prototroctes maraena
- Pseudomys novaehollandiae
- Sterna nereis subsp. nereis
- Tasmanipatus barretti

0 1 2 Km

N

Species records from Natural Values Atlas, Tasmanian Government, as at March 2009 (NB: only records from within 5 km of proposed reserve are shown)

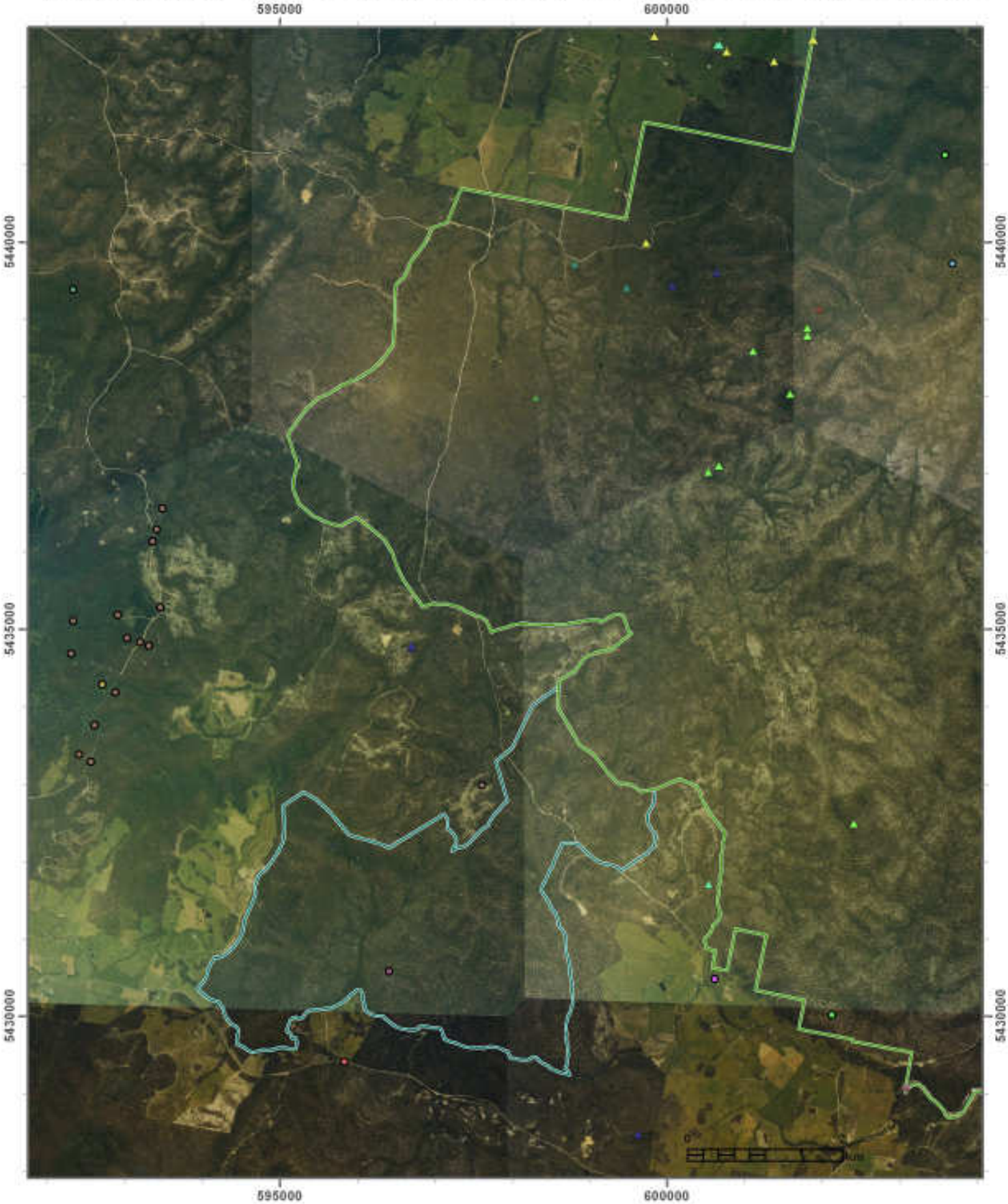
Threatened flora species

- Acacia ulicifolia
- Austrodanthonia induta
- Baumea gunnii
- Caladenia caudata
- Caladenia pusilla
- Caustis pentandra
- Conospermum hookeri
- Cynoglossum australe
- Cyrtostylis robusta
- Desmodium gunnii
- Deyeuxia densa
- Euphrasia collina subsp. deflexifolia
- Hibbertia virgata
- Hierochloe rariflora
- Hovea corrickiae
- Lepidosperma viscidum
- Lotus australis
- Microtidium atratum
- Phebalium daviesii
- Phyllangium divergens
- Pomaderris elachophylla
- Scutellaria humilis
- Sowerbaea juncea
- Sporobolus virginicus
- Spyridium parvifolium var. molle
- Stenopetalum lineare
- Triglochin minutissimum
- Utricularia australis
- Villarsia exaltata
- Xanthorrhoea arenaria
- Xanthorrhoea bracteata

Threatened fauna species

- Accipiter novaehollandiae
- Aquila audax subsp. fleayi
- Dasyurus maculatus subsp. maculatus
- Haliaeetus leucogaster
- Lathamus discolor
- Numenius madagascariensis
- Pseudemoia rawlinsoni

Threatened Species in the Bay of Fires and surrounds



Threatened flora species

- Baumea gunnii
- Caustis pentandra
- Conospermum hookeri
- Hibbertia rufa
- Hierochloe rariflora
- Hovea corrickiae
- Lepidosperma tortuosum
- Phebalium daviesii
- Pomaderris elachophylla
- Sowerbaea juncea
- Utricularia australis
- Xanthorrhoea bracteata

Threatened Fauna Species

- Accipiter novaehollandiae
- Aquila audax subsp. fleayi
- Beddomeia tasmanica
- Dasyurus maculatus subsp. maculatus
- Hoplogonus bornemisszai
- Hoplogonus simsoni
- Lathamus discolor
- Perameles gunnii
- Tasmanipatus barretti

Species records from Natural Values Atlas, Tasmanian Government, as at March 2009
(NB: only records from within 5 km of proposed reserves are shown)