

Natural Values Report

2015 and 2187 Bruny Island Main Road,
Great Bay

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1. Introduction

This report has been prepared in support of an application under S43A of the *Land Use Planning and Approvals Act 1995* (LUPAA) for a combined rezoning and subdivision in respect of two large rural parcels at 2015 and 2187 Bruny Island Main Road, Great Bay.

2. Background

2.1 Site description

The subject land lies on the southern side of the Bruny Island Main Rd near the northern end of the Bruny Island Neck. It is surrounded to the east, south and south-east by the Bruny Island Neck Game Reserve. The two parent titles are separated by a strip of road reserve that supports the walking track to Cape Queen Elizabeth.

The Vinkman property (CT 46800/1, 2015 Bruny Island Main Road) contains an existing dwelling in the north east of the property, along with two relatively large dams in sequence at the terminus of Big Scrub Creek. The eastern third of the property is relatively steep forested land with a westerly aspect. The balance of the property is flat and contains a mix of exotic pasture and scrub. The property is managed as a large 'hobby farm', with a small number of pigs, goats, sheep and emu kept within fenced paddocks.

The area of the proposed new lots on the Vinkman property is occupied by and surrounded by exotic pasture on flat land in the north-west of the block.

The only built infrastructure on the Elliston property (CT 167611/2, 2187 Bruny Island Main Road) is a 'standing camp' at an elevated site in the south-west of the block overlooking Big Lagoon. The north-east of the property was cleared for pasture in the recent past and is currently occupied by a mix of weedy exotic pasture and regenerating cleared land. The eastern edge of the property adjoining the Bruny Island Airstrip contains healthy mature forest. The balance of the property contains a mix of coastal woodland, scrub, heath and wetlands.

2.2 Development proposal

The proposed re-zoning is for both properties and is from Rural Resource to Environmental Living. The proposed three-lot subdivision is for the Vinkman property – two lots and balance from the parent title (see Proposal Plan at Figure 2).



Figure 1 – Site Location (Source: TheList 2020)

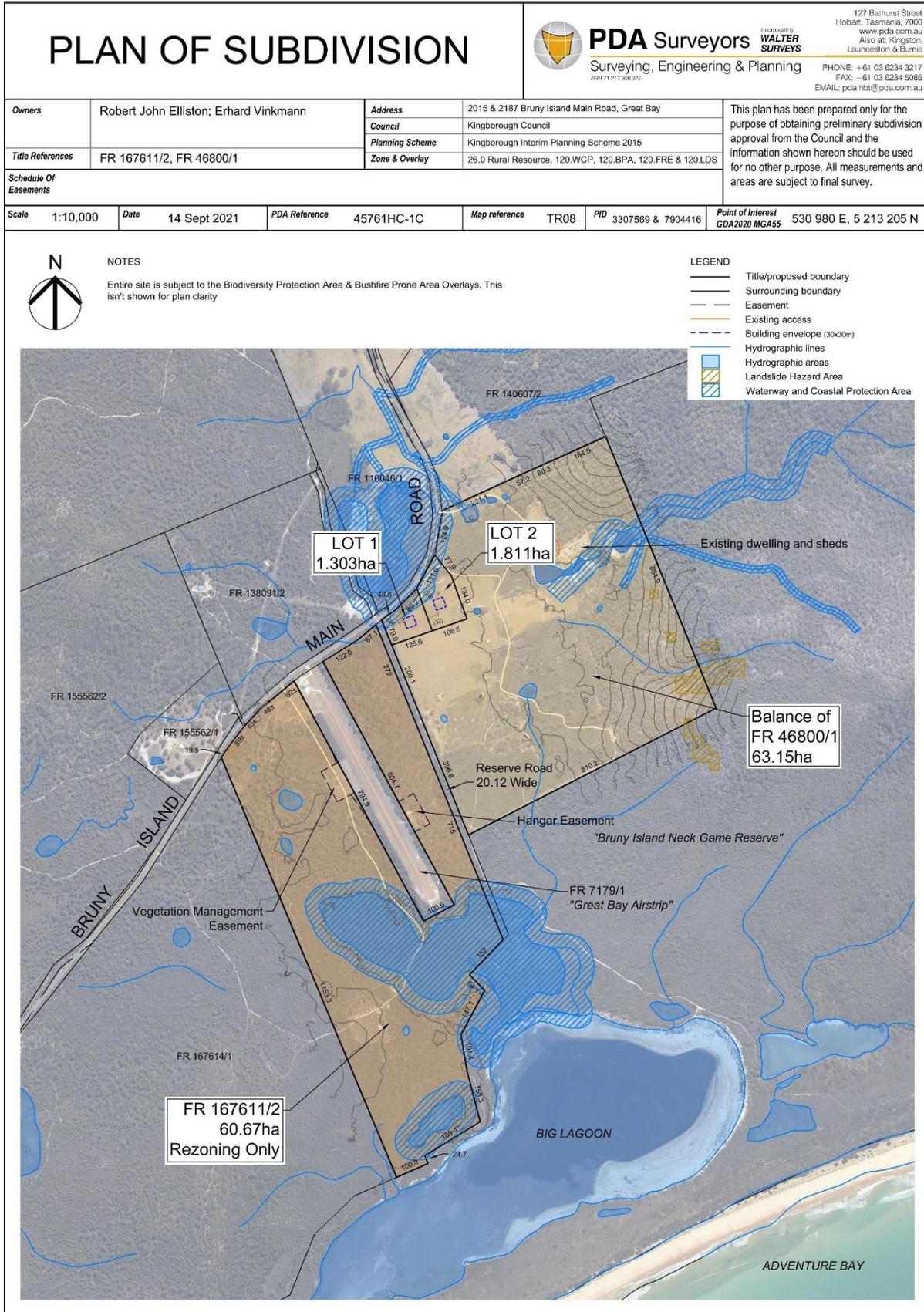


Figure 2 – Proposal Plan from PDA Surveyors

3. Methods

A rapid field survey of the native vegetation communities on the property was undertaken on 15 February 2021, using a timed-meander method. Areas of pasture were not surveyed in detail except for coarse mapping of weed distribution.

The site was broadly traversed to determine the vegetation communities present and their extent. All perceivable vegetation communities were mapped and classified according to TASVEG 4.0. A list of vascular plants was compiled. Potential threatened fauna habitat was recorded as encountered. Locations of significant weeds were mapped with a handheld GPS.

The field survey was supplemented by a desktop review of data from a variety of sources including the Natural Values Atlas (DPIPWE 2018) and LISTMap.

3.1 Limitations of the survey

The survey was undertaken in summer which is not optimal timing for detecting and identifying some flora species. The inherent limitations of the survey method (timed meander method and limited time) mean that some flora species may be present but were not encountered or were overlooked due to seasonal conditions and timing e.g. spring flowering ephemerals, grasses, orchids etc.

4. Natural Values Assessment

4.1 Vegetation Communities

The flatter parts of the subject land have been cleared and disturbed in the past, largely through 'slashing and burning' to create rough pasture. Historic aerial photography reveals that no areas of the land were converted to pasture in 1964/65, although the sparse tree cover and predominance of scrub at that time suggests some regular disturbance, which may have been frequent fire. By 1971/72 the flat land on the eastern half of the Vinkman property and at the northern end of the Elliston property had been cleared for pasture. Since then, there has been gradual regeneration of scrub across some of these cleared areas, with the current distribution of pasture and regenerating cleared land/scrub largely established by 1999/2000.

Excluding current areas of pasture, the flatter areas of the subject land are currently occupied by a mosaic of woodland, scrub, heathland, regenerating cleared land and wetlands. There is a successional transition occurring between some of these vegetation types. In some cases, it is clear that this transition is due to

recovery from past clearance and disturbance (eg regenerating cleared land to scrub and then potentially to woodland or forest). In other cases, it is not clear to what extent the succession may be due to the cessation of a previous disturbance regime (eg regular firing), to natural successional processes and/or to long term climatic trends (eg the apparent succession from ephemeral wetland communities to heathland and scrub).

Thirteen native vegetation communities and four communities resulting from human modification were mapped pursuant to the TASVEG 4.0 vegetation classification system (refer to Table 1). The current conservation status of these communities is summarised in Table 1 and a description of each community is provided below. The broad distribution of vegetation communities is shown in Figure 3.

Table 1 – Summary of vegetation communities occurring across the site and reservation status.

Vegetation Community	TASVEG Code	Conservation Status*	Biodiversity Values (KIPS) **	Status Priorities	Area (ha)
<i>Eucalyptus amygdalina</i> coastal forest	DAC	-	Low	Common community	36.48
<i>Eucalyptus obliqua</i> dry forest	DOB	-	Low	Common community	0.62
<i>Eucalyptus ovata</i> dry forest and woodland	DOV	E	High	Endangered on a state-wide basis	13.64
<i>Eucalyptus pulchella</i> dry forest	DPU	-	Low	Common community	13.52
<i>Eucalyptus tenuiramis</i> forest on mudstone	DTO	V	High	Vulnerable on a state-wide basis	5.82
Restionaceae rushland	MRR	-	High	Rare in Bioregion	0.37
<i>Leptospermum glaucescens</i> heathland and scrub	SGS	-	High	Rare in Bioregion	3.18
<i>Wet heathland</i>	SHW	-	High	Rare in Bioregion	11.89
<i>Leptospermum scoparium</i> heathland and scrub	SLS	-	High	Rare in Bioregion	18.48
<i>Melaleuca squarrosa</i> scrub	SMR	-	Low	Common community	3.37
Coastal scrub	SSC	-	Low	Common community	3.88
Lacustrine herbland	AHL	E	High	Endangered on a state-wide basis	0.38
Freshwater aquatic sedgeland and rushland	ASF	E	High	Endangered on a state-wide basis	0.28
Water/sea (dams)	OAQ	-	-	-	2.33
Cleared agricultural land	FAG	-	-	-	12.47
Regenerating cleared land	FRG	-	-	-	10.49
Extra-urban miscellaneous	FUM	-	-	-	1.43

*as per Schedule 3A of the *Nature Conservation Act 2002*

** as per Table E10.0 of the *Kingborough Interim Planning Scheme 2015*

The complex vegetation mosaic across much of the subject land creates challenges for vegetation mapping. The following are pertinent observations on mapping interpretation.

- As it was not possible to survey all areas of the property in detail, interpretation of aerial photography informed by field observations has been used to map vegetation communities. Inevitably the resultant mapping will involve some misinterpretation and some debatable interpretation.
- Differentiation of eucalypt woodland from scrub or heath communities with emergent eucalypts is challenging across much of the Elliston property due to the high variability in canopy cover. Interpretation has favoured eucalypt woodland except where there are only occasional emergent trees.
- The differentiation of scrub communities from FRG in previously cleared areas is also a matter of interpretation. Areas cleared within the last 10-15 years with only relatively young regrowth have been mapped as FRG, including previously wooded areas at the northern end of the Elliston property. Areas which were last cleared before 2000 and are subject to more mature and/or more diverse regrowth have been mapped as scrub communities.
- All disturbance-induced scrub on the flatter areas of the Vinkman property dominated by *Leptospermum scoparium* has been mapped as SLS because it provides the best floristic and structural fit. This interpretation is debatable, however, since SLS is described as a community of clay substrates (Forest to Fjaeldmark, 2020). The flatter areas of the Vinkman property are mapped as undifferentiated quaternary deposits (TheList 2021, 250k Geological boundaries). These areas do contain some clay substrate (owner, pers comm) but it is unlikely that all areas mapped as SLS are on clay soils.

The disturbance-induced scrub on the Vinkman property adjoining the Bruny Island Main Rd has been mapped to SSC because it occurs on deeper sands and at least some of the community is a floristic and structural fit with SSC.

Areas of SMR can be identified with some confidence from the aerial photography, but many of the relatively small patches mapped could arguably be subsumed within the broader mapping of SLS.

The scrub community at the southern end of the Elliston property is generally dominated by *Leptospermum scoparium* but has been mapped as SGS because it occurs on a sandy substrate, does not have species characteristic of coastal scrub and contains areas dominated by *Leptospermum glaucescens*.

- Arguably some small areas of *E. amygdalina* forest at the western end of the Vinkman property on a mudstone substrate could have been mapped as DAM rather than DAC, but general consistency in structure and floristics has led to consistency in mapping.

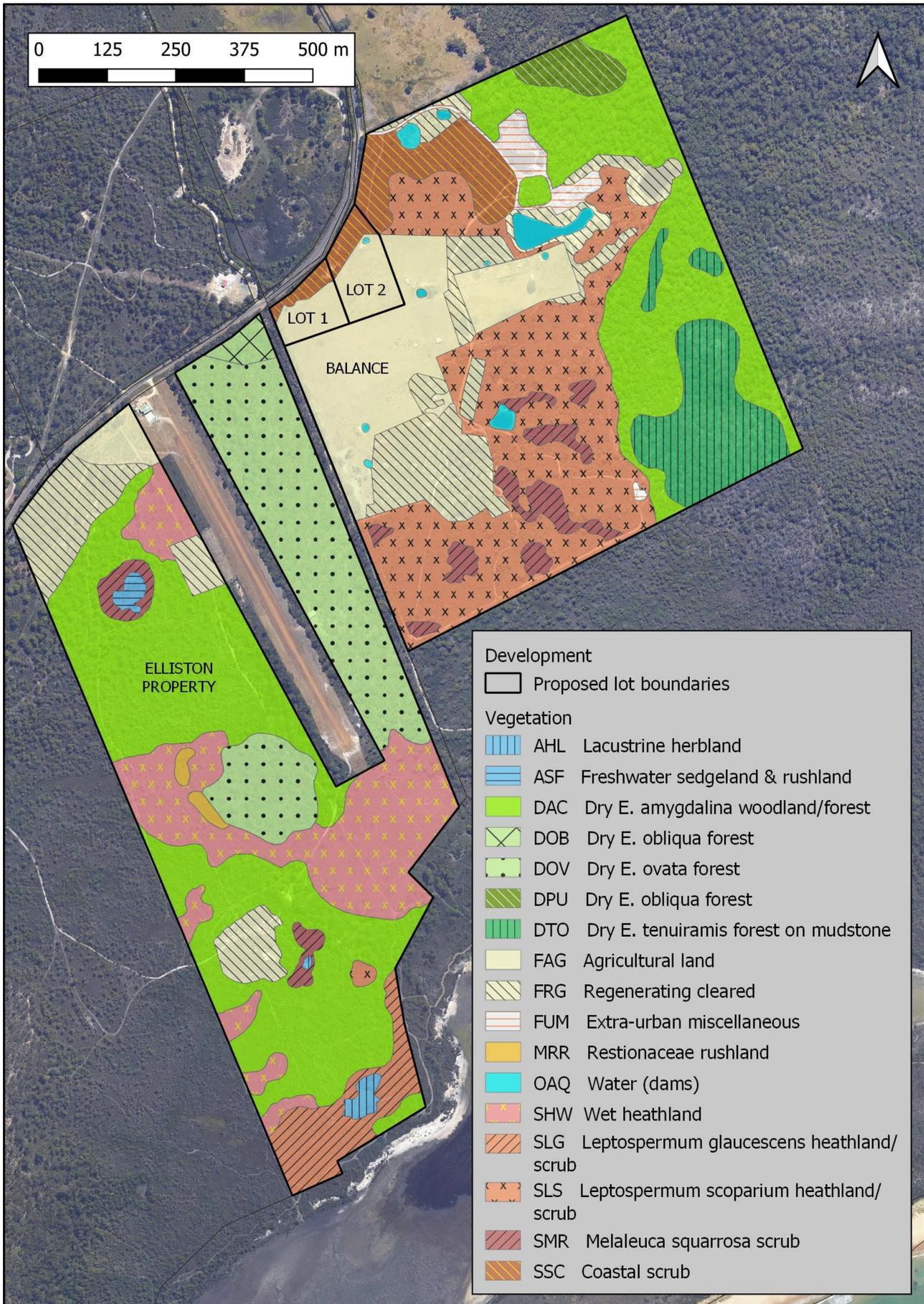


Figure 3 – Vegetation map

TASVEG Unit – *Eucalyptus amygdalina* coastal forest (DAC)

Forest and woodland dominated by black peppermint (*E. amygdalina*) occurs on forested slopes along the eastern boundary of the Vinkman property and on the areas of higher ground on the Elliston property.

Vinkman property

The north east of the Vinkman property supports mature DAC forest. The canopy is dominated by black peppermint but also contains some stringybark (*E. obliqua*) in the far north-east corner of the property. The understorey features a sparse layer of tall shrubs and small trees generally dominated by necklace she-oak (*Allocasuarina monilifera*), with occasional native cherry (*Exocarpos cupressiformis*), banksia (*Banksia marginata*), golden wood (*Monotoca glauca*) and small blackwoods (*Acacia melanoxylon*) in places.

The ground cover is dominated by bracken (*Pteridium esculentum*) on the upper slopes and by saggs (*Lomandra longifolia*) on the lower slopes. Other prominent groundcover species from place to place include sandhill sword sedge (*Lepidosperma concavum*), flax lily (*Dianella tasmanica*), common heath (*Epacris impressa*) and forest raspwort (*Gonocarpus teucroides*).



Figure 4 – DAC forest in the north-east of the Vinkman property with dense bracken groundcover

The DAC forest in the south-east of the Vinkman property contains fewer mature trees and less tall shrubs. The canopy includes some stringybark along drainage lines, as well as occasional white gums (*E. viminalis*) and black gums (*E. ovata*) in the gully associated with Big Scrub Creek.

The composition of the understorey and groundcover is generally similar to the bracken-dominated community described above. In addition to the species mentioned above, prominent understorey and groundcover species in places includes sweet wattle (*Acacia suaveolans*), pine heath (*Astroloma pinifolia*), scrambling guinea flower (*Hibbertia aspera*) and coral lichen (*Cladia retipora*).

Elliston property

There is a small area of mature DAC forest in the north-west corner of the Elliston property, with all other higher ground occupied by DAC woodland with sparse tree cover. The composition of the understorey and ground cover in the mature forest is similar to the bracken dominated mature forest described for the Vinkman property, except that blackwoods are absent and larger shrubs are generally limited to occasional banksia, manuka (*Leptospermum scoparium*), necklace she-oak or golden wood.



Figure 5 – Typical DAC woodland with a heathy understorey in the centre of the Elliston property

The DAC woodland mapped across much of the Elliston property captures a vegetation mosaic featuring numerous small treeless areas. The canopy is either sparse or comprised of small copses of trees interspersed with open heathland or scrub. The canopy is comprised entirely of black peppermint, although individual trees at the southern end of the block do not present as typical black peppermints. Trees are typically small and wind-pruned regardless of age, although historical aerial photography does suggest that most of this woodland is relatively young (perhaps re-establishing after cessation of a regular burning regime).

The understorey in DAC woodland is generally free of larger shrubs except necklace she-oak and manuka (which are generally low) and occasional banksia. The groundcover is variously shrubby, sedgey, heathy or bracken-dominated, depending on topography, drainage and recent disturbance history. Much of the understorey in the DAC woodland matches the description of coastal heathland (SCH), while some of the small treeless areas within the woodland correspond with the wet heath community described below.

In addition to most of the species already mentioned for DAC forest and woodland, prominent understorey and groundcover species in places include golden pea (*Aotus ericoides*), common beard heath (*Leucopogon virgatus*), small leaf paperbark (*Melaleuca gibbosa*), swamp heath (*Epacris lanuginosa*), rosy baeckia (*Euryomyrtus ramosissima*), common fringe myrtle (*Calytrix tetragona*), slender twine rush (*Leptocarpus tenax*) and spreading rope rush (*Empodisma minus*).

TASVEG Unit – *Eucalyptus obliqua* dry forest (DOB)

A small area of mature forest dominated by stringybark occurs in the north east of the Elliston property adjoining the carpark at the start of the walking track to Cape Queen Elizabeth. The understorey is open, with occasional large shrubs in the form of banksia (*Banksia marginata*), native cherry (*Exocarpos cupressiformis*) and drupe bush (*Leptomeria drupacea*) over a ground cover dominated by sags (*Lomandra longifolia*).



Figure 6 – DOB forest in the north-east of the Elliston property

TASVEG Unit – *Eucalyptus ovata* dry forest and woodland (DOV)

Mature forest dominated by black gum (*Eucalyptus ovata*) occurs in the north-eastern corner of the Elliston property between the Bruny Island Airstrip and the walking track to Cape Queen Elizabeth. Except for a small area near the Main Rd that contains some black peppermint (*E. amygdalina*), the canopy in this community is generally comprised entirely of black gum, with numerous mature trees and occasional over-mature trees.



Figure 4 – DOV forest in north east of Elliston property

The understorey features a sparse layer of tall shrubs and small trees, with prominent species from place to place including blackwood (*Acacia melanoxylon*), native cherry (*Exocarpos cupressiformis*), golden wood (*Monotoca glauca*), dogwood (*Pomaderris apetala*), banksia (*Banksia marginata*), yellow dogwood (*P. elliptica*) and drupe bush (*Leptomeria drupacea*).

The groundcover is variously shrubby, sedgey or heathy, with prominent species from place to place including short manuka (*Leptospermum scoparium*), small leaf paperbark (*Melaleuca gibbosa*), sagg (*Lomandra longifolia*), cutting grass (*Gahnia grandis*), slender twine rush (*Leptocarpus tenax*) and spreading rope rush (*Empodisma minus*).

There is also an area of open woodland dominated by black gum (*Eucalyptus ovata*) in a basin in the centre of the Elliston property. This area could arguably have been mapped as wet heath (SHW) with emergent eucalypts, but canopy cover is in the order of 5% and historic aerial photography suggests gradual succession to a woodland community. The understorey in this community has a similar structure and composition to adjoining areas of SHW (see descriptions below).

TASVEG Unit – *Eucalyptus pulchella* dry forest (DPU)

A small area of dolerite substrate in the north east of the Vinkman property supports mature DPU forest. The canopy is comprised entirely of white peppermint (*E. pulchella*) with numerous mature trees and occasional over-mature trees. The understorey features a sparse layer of tall shrubs and small trees dominated by banksia (*Banksia marginata*) and necklace she-oak (*Allocasuarina monilifera*), with occasional native box (*Bursaria spinosa*), golden wood (*Monotoca glauca*) and small blackwoods (*Acacia melanoxylon*) in places.

The ground cover is generally open and dominated by sedges and native grasses, with occasional small shrubs. Prominent species include saggs (*Lomandra longifolia*), variable sword sedge (*Lepidosperma concavum*), silver tussock (*Poa labillardierei*), wallaby grass (*Rytidosperma* sp.), spreading wattle (*Acacia genistifolia*), gorse bitter pea (*Daviesia ulicifolia*), native cranberry (*Astroloma humifusum*) and peach heath (*Lissanthe strigosa*).



Figure 6 - DPU forest in the north east of the Vinkman property

TASVEG Unit – *Eucalyptus tenuiramis* dry forest on mudstone (DTO)

Mature forest dominated by silver peppermint (*Eucalyptus tenuiramis*) occurs on forested slopes in the south-east of the Vinkman property. Except for a minor gully which features localised dominance of brown-topped stringybark (*E. obliqua*), the canopy in this community is generally comprised entirely of silver peppermint, with numerous mature trees and occasional over-mature trees.

The understorey features a sparse layer of tall shrubs, with prominent species including necklace she-oak (*Allocasuarina monilifera*), manuka (*Leptospermum scoparium*), banksia (*Banksia marginata*) and the occasional native cherry (*Exocarpos cupressiformis*). The groundcover is also typically sparse, with a high proportion of bare ground. Prominent groundcover species include bracken (*Pteridium esculentum*), prickly beauty (*Pultenaea juniperina*), peach heath (*Lissanthe strigosa*), scrambling guinea flower (*Hibbertia aspera*), common beard heath (*Leucopogon virgatus*) and coral lichen (*Cladia retipora*).



Figure 7 - DTO forest in the south east of the Vinkman property

TASVEG Unit – *Restionaceae* rushland (MRR)

Small area of *Restionaceae* rushland occur around the western margins of the circular depression in the centre of the Elliston property (most of which is occupied by DOV woodland and wet heathland). Arguably these relatively small areas could have been subsumed within adjoining mapping units but mapping separately helps

to highlight the mosaic of hydrophilic communities associated with low-lying land on the property and the potential for transition between these communities given disturbance or lack thereof. The community is free of trees and shrub. It is dominated by slender twine rush (*Leptocarpus tenax*), but contains a range of other rush species, including spreading rope rush (*Empodisma minus*), hair sedge (*Tetraria capillaris*), woolly chord rush (*Chordifex hookeri*), flat chord rush (*Eurychorda complanata*), tassel rope rush (*Hypolaena fastigiata*) and common scale rush (*Lepyrodia muelleri*).



Figure 8 – MRR in the centre of the Elliston property

TASVEG Unit – *Wet heathland* (SHW)

Wet heathland occurs on the flat, poorly drained sections of the Elliston property. It was not surveyed in detail due to time constraints and the density of the vegetation. Descriptions provided here are based on vegetation encountered along vehicle tracks passing through the community.

Except for occasional emergent black gums (*E. ovata*), this community is treeless. A mix of woody shrubs are present in varying proportions, including scented paperbark (*Melaleuca squarrosa*), manuka (*Leptospermum scoparium*), small-leafed paperbark (*Melaleuca gibbosa*) and swamp heath (*Epacris lanuginosa*). The dense sedgey ground cover includes a diverse range of species, including slender twine rush (*Leptocarpus tenax*) and spreading rope rush (*Empodisma minus*).



Figure 9 – SHW with occasional emergent back gums in the south-east of the Elliston property

TASVEG Unit – *Leptospermum glaucescens* heathland and scrub (SGS)

A small area of scrub in the south of the Elliston property (north of big Lagoon) has been mapped as SGS. While most areas of this community are dominated by manuka (*L. scoparium*), the community occurs on sand and as such, does not match the description of SLS. Arguably some areas included in this community could have been mapped as coastal heathland (SCH).

The SGS community is treeless except for the occasional emergent black peppermint (*E. amygdalina*). It is generally dominated by a dense cover of manuka, but contains areas dominated by smoky tea tree (*Leptospermum glaucescens*). Where the density of the taller shrubs allows for a ground cover, it is similar in composition to the adjoining DAC woodland (ie similar floristics to coastal heathland).

TASVEG Unit – *Leptospermum scoparium* heathland and scrub (SLS)

All disturbance-induced scrub on the flatter areas of the Vinkman property dominated by *Leptospermum scoparium* has been mapped as SLS. This interpretation is debatable, however, since SLS is described as a community of clay substrates (Forest to Fjaeldmark, 2020). The flatter areas of the Vinkman property are mapped as undifferentiated quaternary deposits (TheList 2021, 250k Geological boundaries) and do contain some clay substrate (owner, pers comm) but it is unlikely that all areas mapped as SLS are on clay soils. Arguably a least some of this area could have been mapped as SCH.



Figure 10 – SGS dominated by *Leptospermum glaucescens* in the south of the Elliston property



Figure 11 – SLS with emergent black peppermint in the south of the Vinkman property

Areas mapped as SLS are treeless except for occasional emergent black peppermint (*E. amygdalina*) individuals or small copses. The community is dominated by a dense cover of manuka (*L. scoparium*), with localised dominance of scented paperbark (*Melaleuca squarrosa*) and occasional banksia (*Banksia marginata*), golden wood (*Monotoca glauca*) and prickly moses (*Acacia verticillata*). Where the density of the taller shrubs allows for a ground cover, bracken (*Pteridium esculentum*) is often dominant, with other prominent species including golden pea (*Aotus ericoides*) and swamp heath (*Epacris lanuginosa*).

TASVEG Unit – *Melaleuca squarrosa* scrub (SMR)

SMR occurs as discrete units completely dominated by scented paperbark (*M. squarrosa*) of a relatively uniform height and tending to a closed canopy. This community occurs along drainage lines and poorly drained sites within SLS on the Vinkman property and fringing ephemeral wetlands on the Elliston property. The dense canopy generally limits the ground cover to scattered sedges and rushes such as pithy and variable sword sedges (*Lepidosperma longitudinale* and *L. laterale*), as well as occasional shade tolerant shrubs.



Figure 12 – SMR around the fringes of an ephemeral wetland in the north of the Elliston property

TASVEG Unit – Coastal Scrub (SSC)

A disturbance-induced scrub community on wind-blown coastal sand along the north-western margins of the Vinkman property has been mapped as SSC. This interpretation has been based on the substrate and the presence of coast wattle (*Acacia longifolia sophorae*) and banksia (*Banksia marginata*).

Except for a few small black gum saplings emerging in the far north-west corner of the community, there are no trees present. A range of large shrubs occur in varying proportions, including banksia, coast wattle, manuka (*Leptospermum scoparium*), golden wood (*Monotoca glauca*) and the environmental weed Spanish heath (*Erica lusitanica*). Ground cover is generally dominated by bracken, with Spanish heath prominent in places. Poorly drained swales and depressions within the SSC contain assemblages not typical of SSC, including scented paperbark (*Melaleuca squarrosa*), ferns such as water fern (*Blechnum sp.*), sedges and rushes.



Figure 13 – SSC between Bruny Island Main Rd and the paddocks at the northern end of the Vinkman property

TASVEG Unit – *Lacustrine herbland (AHL)*

Small areas of AHL occur within circular depressions on the Elliston property. As these ephemeral wetlands were surveyed during summer, they were in a desiccated state with a high proportion of bare ground and few typical wetland species present.

Apart from occasional individuals and copses of manuka (*Leptospermum scoparium*), the AHL is comprised of a low herbfield which was dominated at the time of survey variously by the introduced white cudweed (*Vellereophyton dealbatum*) and creeping cudweed (*Euchiton japonicus*) or swamp weed (*Selliera radicans*). Other prominent species included dwarf sundew (*Drosera pygmaea*), mossy pennywort (*Hydrocotyle muscosa*), hairy centrolepis (*Centrolepis strigosa*), a lobelia (*Lobelia sp.*) and the introduced hawkbit (*Leontodon taraxacoides*).



Figure 14 – Desiccated area of AHL in the south of the Elliston property



*Figure 15 – ASF in the north of the Elliston property with encroaching *Melaleuca squarrosa**

TASVEG Unit – *Freshwater aquatic sedgeland and rushland (ASF)*

A small area of ASF occurs in the north of the Elliston property in association with a circular depression which is largely occupied by SMR. Arguably this relatively small areas could have been subsumed within the SMR mapping but mapping separately helps to highlight the mosaic of hydrophilic communities associated with low-lying land on the property and the potential for transition between these communities given disturbance or lack thereof. The community was not surveyed in detail but is generally dominated by pithy sword sedge (*Lepidosperma longitudinale*), with more diverse patches of sedges and rushes (including *Juncus sp.*) and occasional ferns in the form of screw fern (*Lindsaea linearis*), ruddy ground fern (*Hypolepis rugosula*) and water fern (*Blechnum sp.*).

TASVEG Unit – *Regenerating cleared land (FRG)*

There are several areas of regenerating cleared land on both properties (last cleared within the last 10-15 years). At the northern end of the Elliston property, FRG takes the form of regenerating eucalypt forest characterised by numerous small black peppermint (*E. amygdalina*) saplings and an ‘understorey’ variously dominated by bracken (*Pteridium esculentum*) or manuka (*Leptospermum scoparium*). The margins of the FRG where it intergrades with FAG are affected by infestations of Spanish heath (*Erica lusitanica*). Around the standing camp in the south of the Elliston property where the vegetation is slashed periodically, FRG takes the form of low ‘heathland’ dominated by bracken (*Pteridium esculentum*) and golden pea (*Aotus ericoides*).

On the Vinkman property, FRG is typically dominated by low, dense regrowth of manuka and is often affected by infestations of Spanish heath (*Erica lusitanica*).

4.1.1 Conservation status of the vegetation communities

DOV forest, DTO forest and ‘Wetlands’ are listed as threatened vegetation communities under Schedule 3A of the *Nature Conservation Act 2002*. ‘Wetlands’ includes both ASF and AHL (Tasmanian Threatened Native Vegetation Communities, DPIPWE 2018). Parts of the site are classified as a ‘High Priority Biodiversity Value’ under Table E10.0 of the Kingborough Interim Planning Scheme due to their rarity within the South East Bioregion and the Municipality (total area on a Bioregional basis being less than 1000ha).

4.2 Flora

A cursory plant species list was recorded during the survey, including introduced species (see Appendix 1). Whilst every effort was made to record all species encountered, the limitations of the author’s knowledge, the survey technique, available time and seasonal factors mean that not all species present on the subject land will

have been recorded. No effort was made to survey areas of pasture or regenerating cleared land in any detail and very little of the scrub and wet heath were traversed due to the dense nature of the vegetation.

4.2.1 Threatened Flora

No threatened flora species have been recorded from the property in the past and none were recorded in this survey. A search of the Natural Values Atlas database (DPIPWE 2021) revealed that four threatened flora species have been recorded within 500m of the site and a further six threatened flora species have been recorded within a 5km radius of the site (see Table 2)

Table 2 – Threatened flora recorded within a 5 km radius of the site.

Species	Status TSPA	Status EPBCA	Comments
Species recorded within 500 m			
<i>Conospermum hookeri</i> (Tasmanian smokebush)	v	VU	Suitable habitat appears to be present on the subject land based on nearby population
<i>Microtidium atratum</i> (yellow onion-orchid)	r	-	Recorded from adjacent airstrip; suitable habitat may be present on the Elliston property given a sympathetic management regime
<i>Thelymitra holmesii</i> (bluestar sun-orchid)	r	-	Recorded from adjacent airstrip; suitable habitat may be present on the Elliston property given a sympathetic management regime
<i>Thelymitra mucida</i> (plum sun-orchid)	e	-	Recorded from adjacent airstrip; suitable habitat may be present on the Elliston property given a sympathetic management regime
Species recorded within 5 km			
<i>Hydrorchis orbicularis</i> (swamp onion-orchid)	r	-	Suitable habitat present on the Elliston property
<i>Lepidosperma viscidum</i> (sticky swordsgedge)	r	-	The subject land does not provide suitable habitat for this species
<i>Parietaria debilis</i> (shade pellitory)	r	-	The subject land does not provide suitable habitat for this species
<i>Teucrium corymbosum</i> (forest germander)	r	-	The subject land does not appear to provide suitable habitat for this species
<i>Thelymitra atronitida</i> blackhood sun-orchid	e	-	Given current distribution, it seems unlikely that this species would occur on the subject land
<i>Velleia paradoxa</i> (spur velleia)	v	-	The subject land does not appear to provide suitable habitat for this species

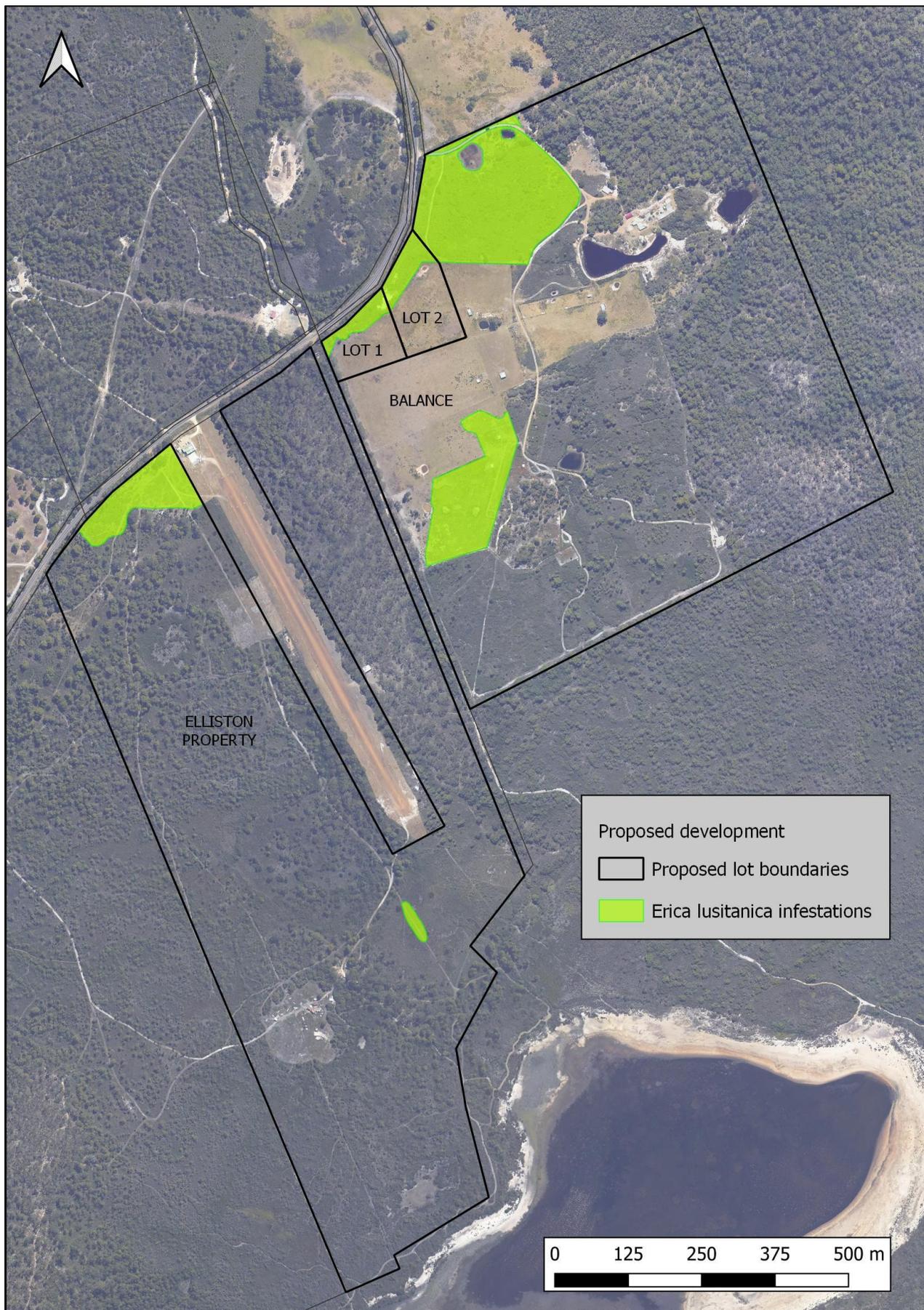


Figure 16 – Distribution of Spanish heath across the subject land (excluding scattered small patches and individual plants)

4.3 Weeds

Spanish heath (*Erica lusitanica*), which is a declared weed under the *Weed Management Act 1999*, is the only declared weed or recognised environmental weed recorded on the subject land. The broad distribution of Spanish heath across the site is shown in Figure 4. There are also scattered small infestations and individual plants outside the mapped areas, particularly within pasture on the Vinkman property, but it is beyond the scope of this report to map at a finer detail.

Spanish heath appears to have established on the subject land from roadside infestations. In the case of the Elliston property, it has probably invaded via the Bruny Island Airstrip during a period of disuse and little active management. It has subsequently spread into the subject land in the wake of disturbance caused by management activities and movement of vehicles. Unfortunately, vehicle traffic has transported this weed deep into the Elliston property, where it has the potential to invade native vegetation, particularly areas of wet heath (SHW). Given that vehicle tracks extend from the Elliston property into the adjoining Bruny Island Neck Game Reserve, it also has the potential to invade this public reserve if it is not subject to active management efforts.

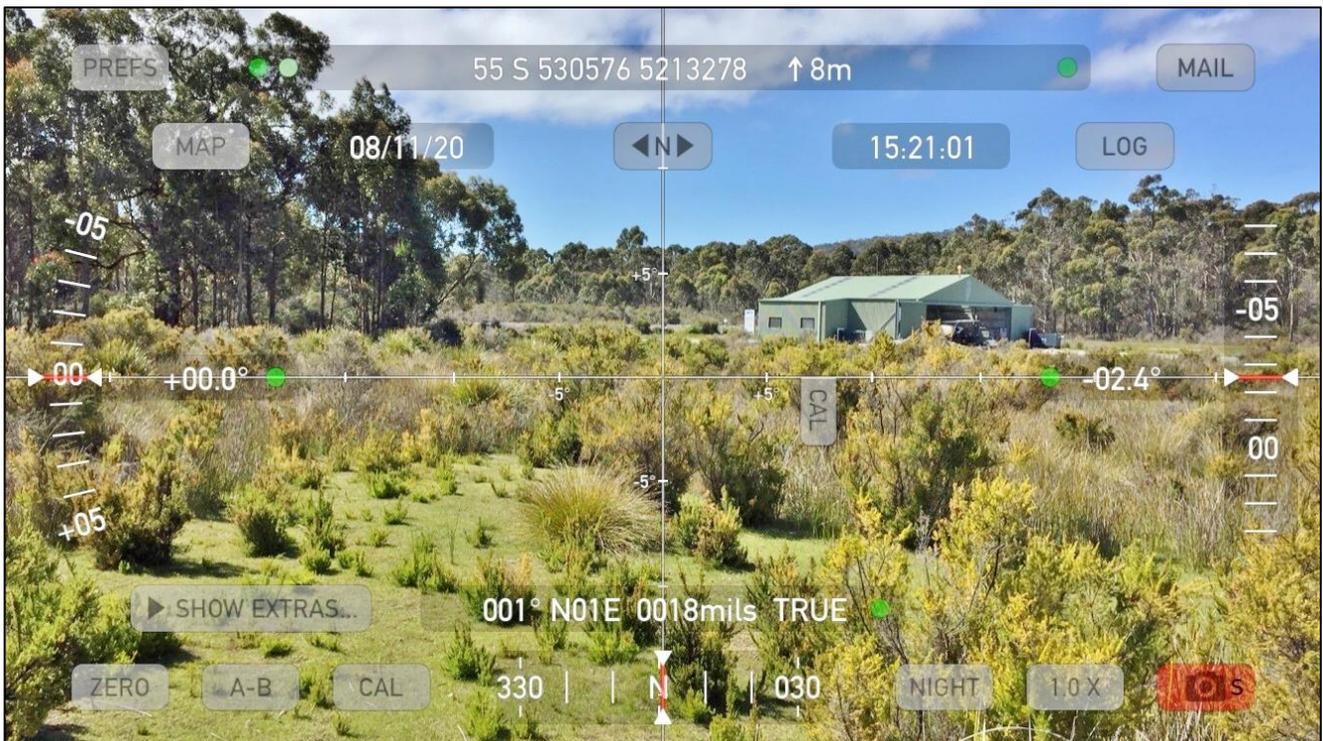


Figure 17 –Spanish heath infestation in pasture at the northern end of the Elliston property
(Bruny Island Airstrip at rear)



Figure 18 –Spanish heath invading wet heathland along a vehicle track in the south of the Elliston property

4.4 Fauna

The site provides a wide range of habitat for native fauna species, including woodland and forest, scrub, heathland and wetlands. A diverse range of birds, reptiles, mammals and invertebrate species are likely to occur across the multiple habitat types, including a number of threatened species. No specific fauna surveys were undertaken due to time constraints, but potential threatened fauna habitat was noted during survey work.

4.4.1 Threatened fauna

An individual wedge-tailed eagle (*Aquila audax fleayi*) was observed during the survey roosting in a tree adjoining the Vinkman property. The owner reports that his property is part of the foraging range of an established breeding pair that are seen regularly. This was the only threatened fauna species recorded.

A search of the Natural Values Atlas database (DPIPWE 2021) revealed that five terrestrial and coastal threatened fauna species have been recorded within 500m of the site and a further six terrestrial and coastal threatened fauna species have been recorded within a 5km radius of the site (see Table 3).

Table 3 – Threatened fauna recorded within a 5km radius of the site.

Species	Status TSPA	Status EPBCA	Comments
Species recorded within 500 m			
<i>Aquila audax fleayi</i> (wedge-tailed eagle)	e	EN	The subject land contains good foraging habitat but probably no suitable nesting habitat
<i>Calidris ferruginea</i> (curlew sandpiper)	-	CR	No suitable habitat on the subject land
<i>Haliaeetus leucogaster</i> (white-bellied sea-eagle)	v	-	The subject land provides foraging habitat and potential nesting habitat along big Scrub Ck (overlooking the larger dams)
<i>Lathamus discolor</i> (swift parrot)	e	CR	Good foraging habitat present in DOV forest and woodland on the subject land and some potential nesting habitat present
<i>Pardalotus quadragintus</i> (forty-spotted pardalote)	e	EN	No suitable habitat on the subject land (virtually no white gums present), but may provide an important corridor for juvenile birds dispersing between areas of better habitat
Species recorded within 5 km			
<i>Accipiter novaehollandiae</i> (grey goshawk)	e	-	Potential foraging habitat present in the north-east of the Vinkman property along Big Scrub Ck
<i>Dasyurus viverrinus</i> (eastern quoll)	-	EN	Bruny Island is a hotspot for this species and it is likely to be present in healthy numbers on the subject land
<i>Numenius madagascariensis</i> (eastern curlew)	e	CR	No suitable habitat on the subject land
<i>Sterna nereis nereis</i> (fairy tern)	v	VU	No suitable habitat on the subject land
<i>Thinornis rubricollis</i> (hooded plover)	-	VU	No suitable habitat on the subject land
<i>Tyto novaehollandiae castanops</i> (masked owl)	e		The subject land contains good foraging habitat but there are limited old growth trees suitable for nesting.

5. Impacts of proposed subdivision

This section of the report outlines the impact of the proposed three-lot subdivision on the natural values of the site.

5.1 Impact on native vegetation

Indicative building areas and associated hazard management areas for the proposed new lots (Lot 1 and Lot 2) are located within cleared agricultural land (FAG). The proposed new property access to service Lot 1 and Lot 2 will be constructed through a narrow strip of weedy coastal scrub (SSC).

The area of SSC along the northern boundary of Lot 1 and Lot 2 impacted by construction of property access is a weedy, disturbance-induced community containing no significant natural values. As a result, the proposed development will have no significant impact on native vegetation or natural values.

5.2 Impact on threatened species

Based on available information, the proposal is unlikely to impact any threatened flora habitat. In the case of orchid species, more regular disturbance associated with future use and occupation of the Elliston property may actually create a more favourable management regime for the species previously recorded on the adjoining Bruny Island Airstrip.

Given the placement of the new lots, no significant impact on threatened fauna habitat is anticipated as a direct result of the proposed development. Future residential use of the lots is also unlikely to significantly impact any threatened species, unless it creates a bird strike risk for swift parrots foraging within the DOV forest in the north-east of the Elliston property. This risk can be minimised through appropriate design measures, which may include the following:

- avoiding corner windows or windows that align and allow birds to see through the dwelling,
- use of low reflective glass, and
- use of 'visual noise' on large windows, eg
 - attaching external screens to windows,
 - designing visually interesting facades that create a physical barrier (eg vegetated screens), or
 - installing external or internal blinds or other temporary visual barriers that can be lowered or installed during the breeding season (November to March).

6. Conclusion and recommendations

The proposed rezoning and development will have little impact on natural values while delivering a significant nett conservation gain through application of Clause 14.5.1 P1 (c) and (d) of the *Kingborough interim Planning Scheme 2015*:

P1 Each lot, or a proposed lot in a plan of subdivision ... must satisfy the following:

- (c) a net conservation benefit is provided through mechanisms on titles for collective responsibility and management of natural values on private land outside those areas required for building areas, private open space and bushfire protection measures; (and)
- (d) mechanisms on large titles, with nominal future subdivision potential under A1, prevent further subdivision (applicable to the balance lots).

The following recommendations are made in relation to any subdivision approval and works.

- Control of Spanish heath should be a priority action to prevent further encroachment into native vegetation on the subject land and to minimise the risk of spread as a result of subdivision works.
- Machinery and vehicles used for the construction of property access for the subdivision are to adhere to vehicle hygiene protocols and be washed down prior to entering and before leaving the site to prevent the introduction or spread of declared weeds to or from the site.
- Any soil or gravel imported to the site for construction or landscaping purposes should be from a weed-free source to prevent the establishment of further introduced species on the site.
- Development of dwellings in the vicinity of the DOV forest on the Elliston property should be subject to measures to minimise bird strike.

Appendix 1 – Cursory species list for 2015 and 2187 Bruny Island Main Rd, Great Bay

Recorders: J. Mulcahy; N. Fitzgerald Date: 15 February 2021

e = endemic i = introduced d = declared weed r = Rare (as per TSPA)

Family name	Species name	Common name
DICOTYLEDONAE		
APIACEAE		
	<i>Hydrocotyle muscosa</i>	Mossy Pennywort
ASTERACEAE		
	<i>Argentipallium dealbatum</i>	White Everlasting
	<i>Euchiton japonicus</i>	Father-and-child Plant
i	<i>Leontodon taraxacoides</i>	Hawkbit
	<i>Leptinella longipes</i>	Long Cotula
	<i>Olearia ramulosa</i>	Twiggy Daisy Bush
	<i>Senecio</i> sp.	Fireweed
i	<i>Vellereophyton dealbatum</i>	White Cudweed
CAMPANULACEAE		
	<i>Lobelia</i> sp.	Lobelia
	<i>Wahlenbergia</i> sp.	Bluebell
CASUARINACEAE		
e	<i>Allocasuarina monilifera</i>	Necklace Sheoak
CUNONIACEAE		
	<i>Bauera rubioides</i>	Wiry Bauera
DILLENIAACEAE		
	<i>Hibbertia aspera</i>	Scrambling Guinea-flower
DROSERACEAE		
	<i>Drosera pygmaea</i>	Dwarf Sundew

ERICACEAE

	<i>Astroloma humifusum</i>	Native Cranberry
	<i>Astroloma pinifolium</i>	Soft Cranberry Heath
	<i>Epacris impressa</i>	Common Heath
	<i>Epacris lanuginosa</i>	Swamp Heath
i	<i>Erica lusitanica</i>	Spanish Heath
	<i>Leucopogon parviflorus</i>	Currant Bush
	<i>Leucopogon virgatus</i> var. <i>virgatus</i>	Common Beard-heath
	<i>Lissanthe strigosa</i>	Peach Heath
	<i>Monotoca glauca</i>	Golden Wood

FABACEAE

	<i>Aotus ericoides</i>	Common Aotus
	<i>Bossiaea prostrata</i>	Creeping Bossiaea
	<i>Daviesia ulicifolia</i>	Gorse Bitter pea
	<i>Gompholobium huegelii</i>	Common Wedge-pea
	<i>Pultenaea juniperina</i>	Prickly Beauty

GOODENIACEAE

	<i>Selliera radicans</i>	Swamp-weed
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HALORAGACEAE

	<i>Gonocarpus teucrioides</i>	Raspwort
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LAURACEAE

	<i>Cassytha glabella</i>	Slender Dodder-laurel
	<i>Cassytha pubescens</i>	Hairy Dodder-laurel

MIMOSACEAE

	<i>Acacia genistifolia</i>	Spreading wattle
	<i>Acacia melanoxylon</i>	Blackwood
	<i>Acacia suaveolens</i>	Sweet wattle
	<i>Acacia verticillata</i> subsp. <i>verticillata</i>	Prickly mooses

MYRTACEAE

	<i>Calytrix tetragona</i>	Fringe-myrtle
e	<i>Eucalyptus amygdalina</i>	Black peppermint
	<i>Eucalyptus obliqua</i>	Stringybark
	<i>Eucalyptus ovata</i>	Black Gum
e	<i>Eucalyptus pulchella</i>	White Peppermint
e	<i>Eucalyptus tenuiramis</i>	Silver Peppermint
	<i>Euryomyrtus ramosissima</i>	Rosy baeckea
e	<i>Leptospermum glaucescens</i>	Semi-glaucous Tea-tree
	<i>Leptospermum scoparium</i>	Manuka
	<i>Melaleuca gibbosa</i>	Small-leaved Melaleuca
	<i>Melaleuca squarrosa</i>	Scented Paperbark

PITTOSPORACEAE

e	<i>Billardiera longiflora</i>	Climbing Blue berry
	<i>Bursaria spinosa subsp. spinosa</i>	Prickly Box

PROTEACEAE

	<i>Banksia marginata</i>	Silver Banksia
e	<i>Lomatia tinctoria</i>	Guitar Plant
	<i>Persoonia juniperina</i>	Prickly Geebung

RHAMNACEAE

	<i>Pomaderris apetala</i>	Dogwood
e	<i>Pomaderris elliptica var. elliptica</i>	Yellow Pomaderris

RUBIACEAE

	<i>Coprosma quadrifida</i>	Native Currant
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RUTACEAE

	<i>Boronia parviflora</i>	Swamp Boronia
	<i>Boronia pilosa subsp. pilosa</i>	Hairy Boronia

SANTALACEAE

Exocarpos cupressiformis Native Cherry

Leptomeria drupacea Drupe Bush

STYLIDIACEAE

Stylidium graminifolium Trigger Plant

THYMELAEACEAE

Pimelea linifolia Tall Rice-flower

MONOCOTYLEDONAE

ASPARAGACEAE

Lomandra longifolia Sagg

CENTROLEPIDACEAE

Centrolepis strigosa Hairy Centrolepis

CYPERACEAE

Ficinia nodosa Knobby club rush

Gahnia grandis Cutting Grass

Gymnoschoenus sphaerocephalus Button Grass

Lepidosperma concavum Hill Sword-sedge

Lepidosperma longitudinale Common Sword-sedge

Tetraria capillaris Hair-sedge; Bristle Twig-rush

JUNCACEAE

Juncus sp. Rush

HEMEROCALLIDACEAE

Dianella tasmanica Flax lily

IRIDACEAE

Patersonia fragilis Short Purple-flag Iris

LUZURIAGACEAE

Drymophila cyanocarpa Turquoise Berry

ORCHIDACEAE

Eriochilus cucullatus Pink autumn orchid

POACEAE

Poa labillardierei var. *labillardierei* Tussock Grass

Rytidosperma sp. Wallaby Grass

RESTIONACEAE

e *Chordifex hookeri* Woolly Cord-rush

Empodisma minus Spreading Rope-rush

Eurychorda complanata Flat Cord-rush

Hypolaena fastigiata Tassel Rope-rush

Leptocarpus tenax Slender Twine-rush

Lepyrodia muelleri Common Scale-rush

PTERIDOPHYTA

BLECHNACEAE

Blechnum sp. Water-fern

DENNSTAEDTIACEAE

Hypolepis rugosula Ruddy Ground-fern

Pteridium esculentum Bracken

LINDSAEACEAE

Lindsaea linearis Screw fern

LICHENS

CLADONIACEAE

Cladia retipora Coral lichen