

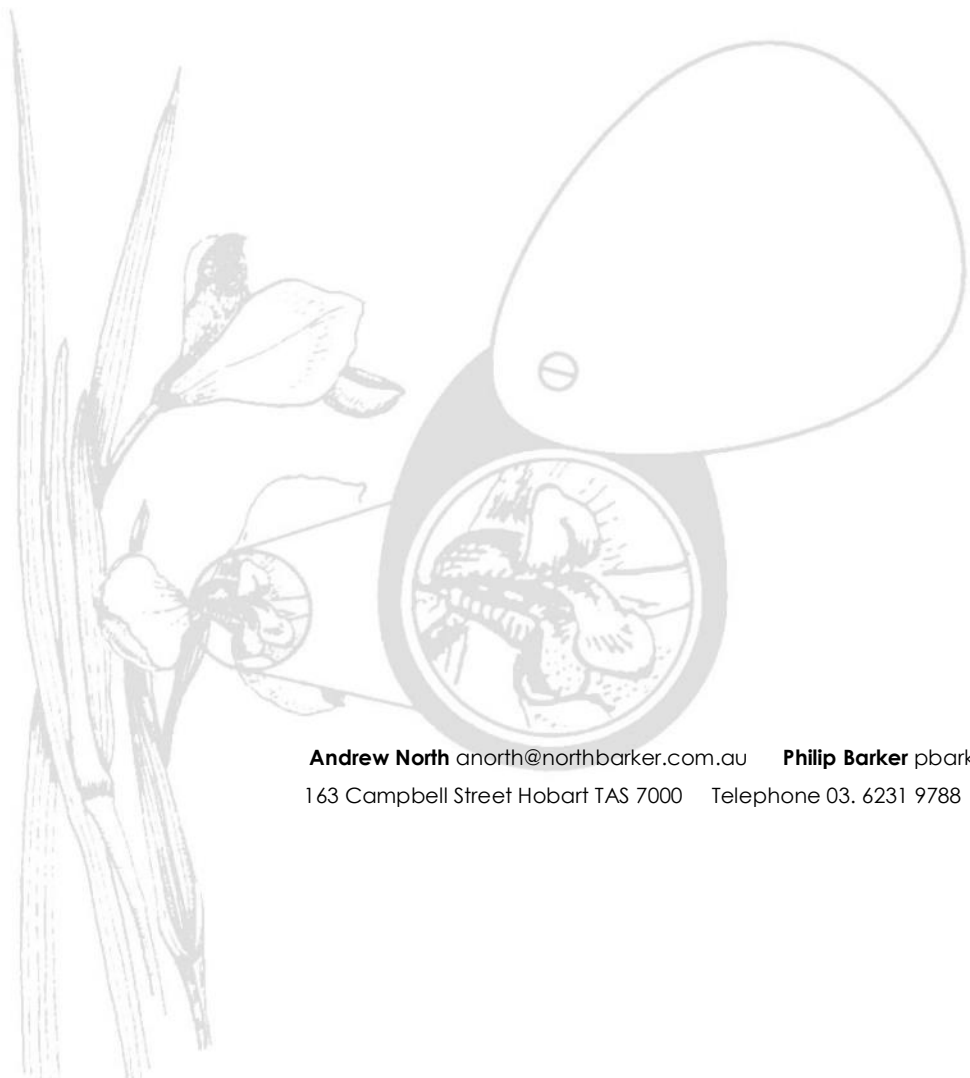


Ned's Point, Cape Barren Island
Proposed Dwelling

Natural Values Determination

6th September 2021

For Bird in the Hand (AUP010)



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SUMMARY

The proponent is submitting an application for a dwelling on Ned's Point, Cape Barren Island (PID 6432453, title reference 207077/1). This report provides evidence that the proposal can meet the standards of the Rural Code under the planning scheme. In doing so the report addresses the potential impact of a building proposal on the proposed housing envelope.

Vegetation

The site includes two TASVEG 4.0 units:

- Coastal Scrub (SSC) and
- dry *Eucalyptus globulus* forest and woodland on sediments (DGL)

The DGL is a threatened vegetation community listed under the Tasmanian *Nature Conservation Act 2002*.

Approximately 333 m² of DGL is estimated to be within the bushfire hazard management area. and therefore, will need to be thinned.

Threatened Flora

No plant species listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA) or the Tasmanian *Threatened Species Protection Act 1995* (TSPA) are known from the site. Although our survey was conducted in late winter, the probability of threatened species having been overlooked or seasonal absent from the site is considered to be negligible. Subsequently, no mitigative actions are recommended for threatened flora.

Threatened Fauna

The site contains trees of habitat conservation value for the EPBCA and TSPA listed swift parrot. This species may use the habitat trees onsite for foraging from time to time however no nesting hollows were evident and the site is not within the core breeding range.

The proposal will not cause a significant impact to species listed on the EPBCA or TSPA..

Weeds

No plants listed as 'declared weeds' under the *Weed Management Act 1999* were observed:

Best practice construction hygiene will be required to comply with the provisions of the Act and minimise the chance of introducing declared weeds during and following works.

Conclusion

The potential to build a dwelling on the lot constrained by the landscape. The nominated location is a good choice as new disturbance is minimised and is sufficiently set back from the coastal reserve.

The vegetation to be impacted by the proposal including the bushfire hazard management area is predominantly the the scrub community SSC but does include the NCA listed DGL which has been identified as having high biodiversity value.

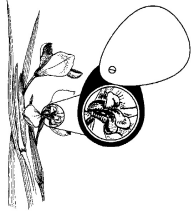
The proposal complies with the buildings and works standards of the Rural Code under the *Flinders Planning Scheme 1994* .

Contributors

Field Assessment: Karen Ziegler - date of survey: 19th August 2021

Report: Karen Ziegler and Phil Barker, North Barker Ecosystem Services

Mapping: Linda Drummond



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1. INTRODUCTION

The proponent is submitting an application for a dwelling on Ned's Point, Cape Barren Island (PID 6432453, title reference 207077/1) (Figure 1). This report provides evidence that the proposal can meet the standards of the Rural Code under the planning scheme. As such the report addresses the potential impact of a building proposal on the proposed housing envelope.

2. STUDY AREA AND METHODS

STUDY AREA

The title covers an area of about 135 ha hectares. This assessment covers the proposed development envelop a 100 m radius from it or about 3 ha and the existing track off Rooks River Road (which is approximately 1.5km in length) and bushfire hazard management. The site is zoned Rural (zone 14) under the *Flinders Planning Scheme 1994* and the whole of property is included as a special feature due to being visually sensitive. The coastal buffer is additionally, identified as special feature due to its proximity to the shoreline waterbody.

The property is surrounded by Aboriginal Land. The land is covered with predominantly natural vegetation. There is a low level of alteration in the form of a gravel all weather road and access road to the islands gravel quarry

The terrain on site consists of a moderate northeast facing slope extending from approximately 10-25 m a.s.l. The geology is comprised of undifferentiated Quaternary sediments over a base geology of Devonian granite.

METHODS

This assessment has been undertaken in accordance with the *Guidelines for Natural Values Surveys*¹. Fieldwork was undertaken by one observer on foot on the 19th August 2021. Vegetation was mapped at the community level according to TASVEG 4.0². At the species level vegetation was recorded in accordance with the most recent census of Tasmanian flora³ using an area search technique based on the Timed Meander Search Procedure⁴. Fauna habitat values were documented concurrently, with particular emphasis on species listed as threatened (Appendix A and B) at the state and/or national level under the Tasmanian *Threatened Species Protection Act 1995* (TSPA) and/or the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA).

LIMITATIONS

The survey was undertaken in late winter. There may be some seasonal or discreet species overlooked. To compensate for this, field data are supplemented with observations from the Tasmanian Natural Values Atlas (report nvr_10_Aug-2022)⁵.

¹ DPIPWE 2015

² Harris and Kitchener 2013; DPIPWE 2013

³ de Salas and Baker 2015

⁴ Goff *et al.* 1982

⁵ DPIPWE 2021, report created 10/08/2021

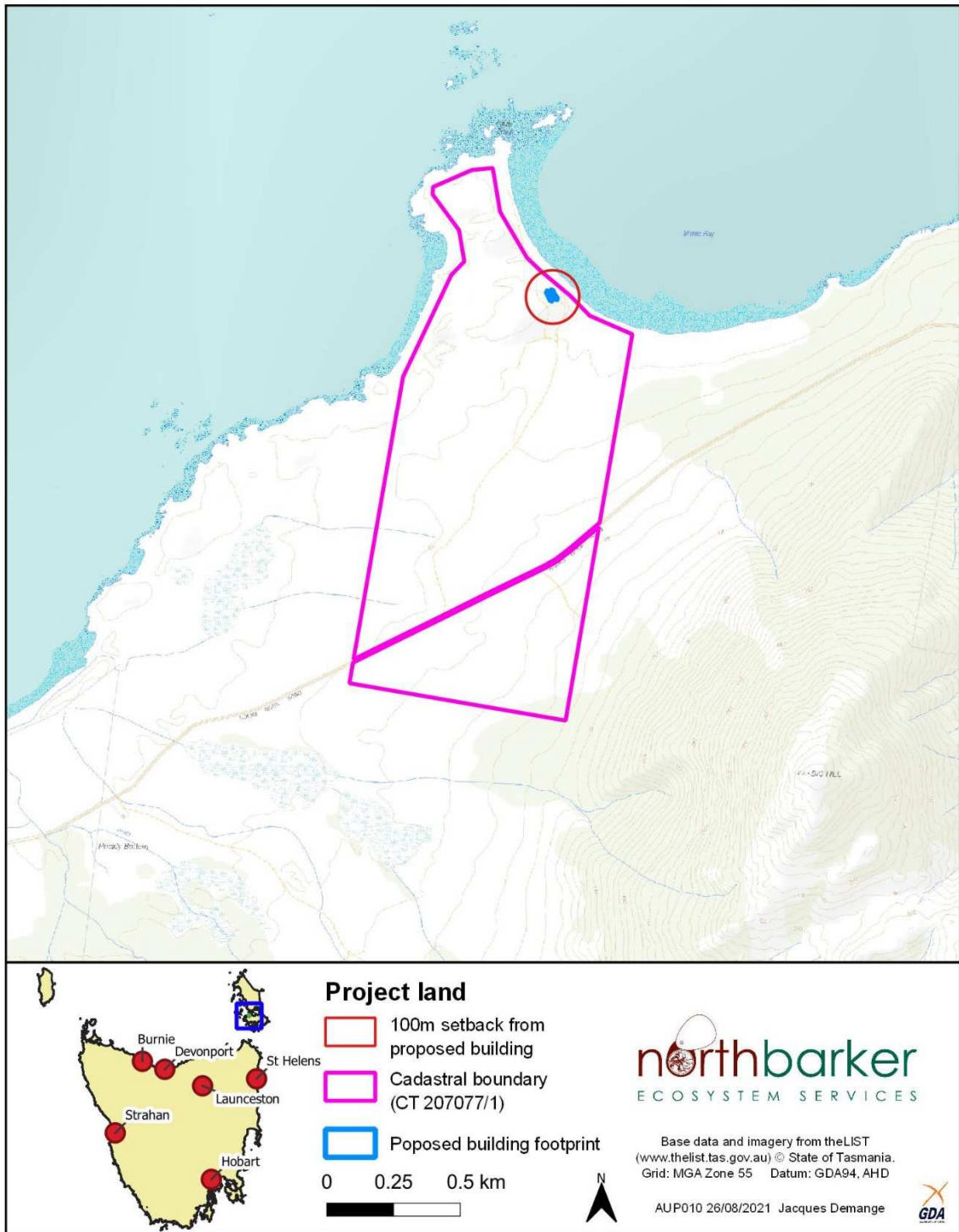


Figure 1 - Location of the survey area

3. BIOLOGICAL VALUES VEGETATION

The site includes two TASVEG 4.0 units:

- Coastal scrub (SSC) and
- Dry grassy *Eucalyptus globulus* forest and woodland (DGL)

Coastal Scrub– SSC

SSC occurs across the majority to the development envelope. It occurs extensively in the landscape locally, and it has regenerated in the vicinity of the proposed house site, which is located largely in a previously disturbed site, which already had a house located there. This largely in agreement with the TASVEG 4.0 mapping although the area mapped as GHC in the vicinity of the house site is also SSC

There area beyond the house site is undisturbed SSC (Plate 1.) while the site in the vicinity of the house site has a number of introduced species typical of sites which have been cleared at some point (Plates 2), there are also some introduced trees, *Pinus radiata* and European Ash *Fraxinus excelsior*.

The predominant shrub is *Leptospermum laevigatum*, coastal t-tree with scattered *Myoporum insulare* between 2 and 4 m tall and almost cover away from the tracks that have been reopened. There are scattered emergent sheoak *Allocasuarina verticillata*. and *Bursaria spinosa*. The low shrub layer is very sparse with occasional *Kunzea ambigua*, *Pimelea serpyllifolia* and *Astroloma humifusum*.

SSC is a community which is not threatened and is well represented in secure reserves and is thus not protected under the Tasmanian *Nature Conservation Act 2002* (NCA) or the EPBCA.

Dry *Eucalyptus globulus* forest and woodland - DGL

The TASVEG 4.0 digital layer indicates that this small patch of eucalypt forest was previously mapped as SCH, coastal heath. There is some eucalypt forest mapped as beyond the 100m buffer of the house envelope but this is incorrectly attributed to DNF or Furneaux E. nitida (DNF). This forest type is regrowth forest dominated by *Eucalyptus globulus* which conforms to DGL. The height of the canopy is approximately 8 m.

This small patch is generally smaller than would be mapped. Also, the regrowth eucalypts are only just emergent over the codominant *Allocasuarina verticillata* and could arguably be described as a small patch of NAV. The Tree layer is dominated by *Eucalyptus globulus* (blue gum) and *Allocasuarina verticillata*, with occasional *Bursaria spinosa*. The tree layer is almost continuous and therefore the understorey is typically sparse and species poor, with species such as *Dodonea viscosa*, *Leucopogon parvifolia*, and *Monotoca glauca* (Plate 3). The ground cover is predominantly heavy litter.

Eucalyptus globulus forest and woodland is a listed threatened community under Schedule 3A of the NCA. It is not a listed threatened ecological community under the EPBCA. It should be noted, that this is a very small patch, and an atypical facies of the community. Similar forest exists on the same title, much more extensively, outside the development envelope.



Plate 1 – coastal tea-tree in the vicinity of the boulders which are central to the house plans.



Plate 2 – Regenerating Coastal tea-trees on previously cleared area.



Plate 3: Regrowth DGL with sheoak

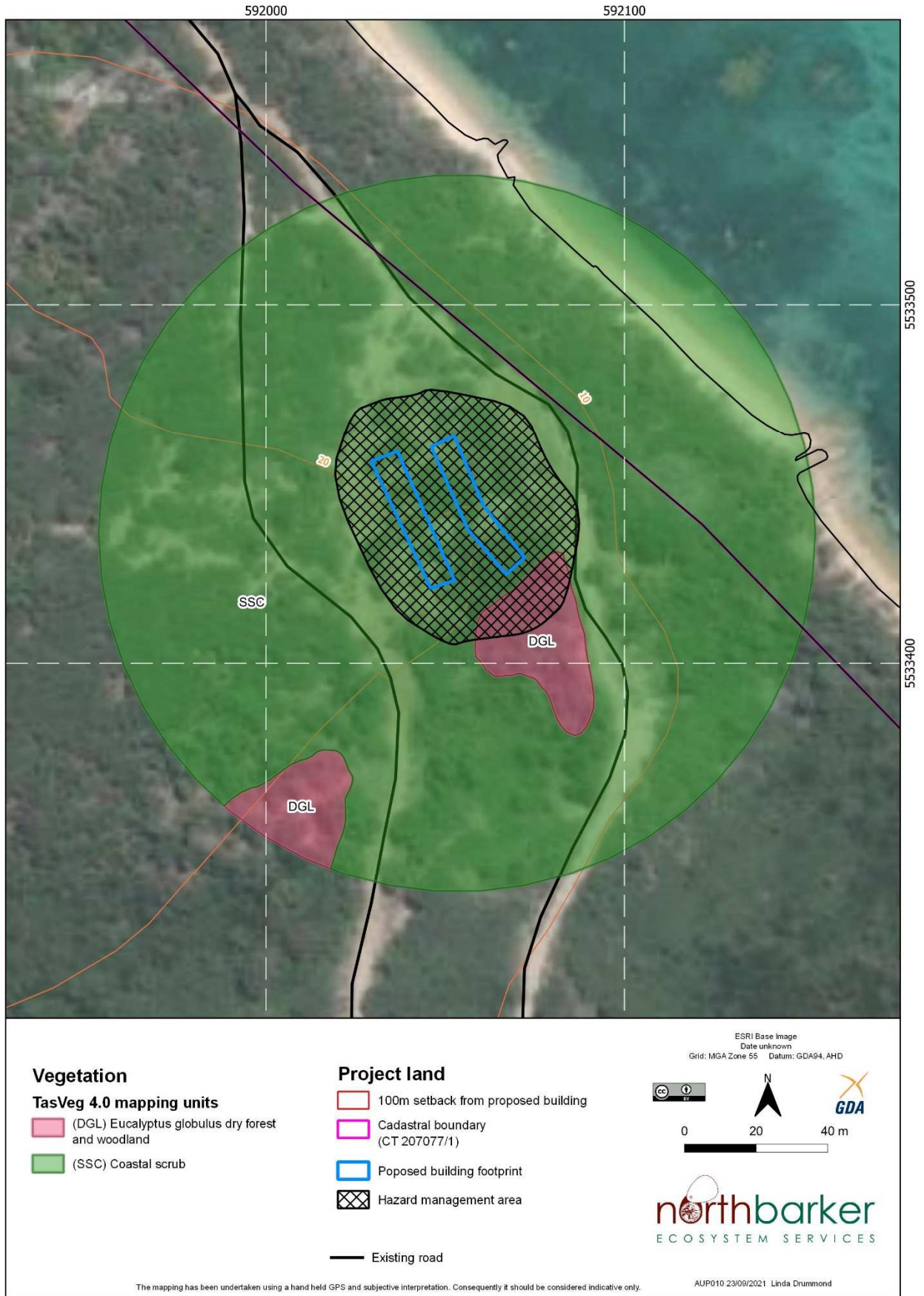


Figure 2 - TASVEG units in relation to building footprint and HMA

PLANT SPECIES

A total of 53 species of vascular plant were recorded during the survey (Appendix C), including 11 introduced species, none of which are declared weeds. No threatened species listed under the TSPA or the EPBCA were observed.

Previous surveys within 5 km of the property have identified a variety of threatened flora listed under the TSPA and EPBCA. These species (and others predicted by habitat mapping) are listed in Table 2 together with a description of their preferred habitat and an assessment of the likelihood of their occurrence on the building envelope should they have been overlooked or seasonally absent.

None of these species is considered likely to have been overlooked or seasonally absent on site. In particular, the areas of the proposed footprint and hazard management area are not viable habitat for threatened flora, as the site has had substantial past disturbance.

Table 1: Flora species of conservation significance known within a 5 km radius of the site⁶

Species	Status TSPA/EPBCA	Potential to occur	Observations and preferred habitat ⁷
Known within 500 m			
<i>Isopogon ceraphyllus</i> Horny conebush	Vulnerable/-	Very Low	Found on acidic, sandy soils in dry heathland and open Furneaux <i>E. nitida</i> woodland in the Furneaux group. The house site does not contain habitat although the property beyond the house site does. There are 3 records for this species within 5km
<i>Leucopogon squamatus</i> swamp beard heath	Rare/-	Very Low	Found in wet sandy heath on Flinders' and Cape Barren Islands. Potential habitat is present in the heathland beyond the house site. There are 4 records for this species within 5km
Known within 5 km			
<i>Bedfordia arborescens</i> Tree blanket	Vulnerable/ /-	None	<i>Bedfordia arborescens</i> is a robust tree, 6 to 8 metres tall. Which grows in cloud forest on Mt Munro on Cape Barren Island. Habitat includes wet eucalypt forest, mixed forest, warm temperate rainforest and dry rainforest There are 30 records for this species within 5km
<i>Caladenia caudata</i> tailed spider orchid	Vulnerable/ VULNERABLE	Very low	Occurs in heathy open forest and heathland on easterly to north-easterly aspects close to the coast. Proposed house site is not heathy. There are 3 records for this species within 5km

⁶ Natural Values report nvr_10_Aug-2021

⁷ Lazarus *et al.* 2003; Jones *et al.* 1999

Species	Status TSPA/EPBCA	Potential to occur	Observations and preferred habitat ⁷
<i>Caladenia patersonii</i> Parsons's spider orchid	Vulnerable/ /-	Very low	Known from heathland and sedgy open eucalypt forest and woodland. Only observable during its spring flowering period but the habitat on site is very low in suitability, particularly within the proposed footprint. There is 1 record for this species within 5km
<i>Calandrinia granulifera</i> Pygmy purslane	Rare/ -		<i>Calandrinia granulifera</i> (small purslane) is a small succulent annual herb that occurs on a variety of substrates in Tasmania, mostly in near-coastal areas in the northeast, with an outlying occurrence in the Northern Midlands. It grows in gravelly and sandy pockets in rocky outcrops in coastal situations (typically within the spray zone), and also on shallow rock-plate soils in the Midlands, substrates including Jurassic dolerite, Devonian granite and Tertiary basalt. There is 1 record for this species within 5km
<i>Calochilus campestris</i> Copper beard orchid	Endangered / -		The habitat of <i>Calochilus campestris</i> on mainland Australia is described as swamps and moist depressions in heathland, heathy forest and buttongrass moorland in grey to black sand and peaty sand (Jones 1998). The species is known to colonise embankments and road verges (Jones 1998). There is 1 record for this species within 5km
<i>Calystegia marginata</i> Forest bindweed	Endangered / -		<i>Calystegia marginata</i> occurs within areas of native vegetation dominated by blue gum (<i>Eucalyptus globulus</i>), with an understorey of <i>Melaleuca ericifolia</i> , <i>Leptospermum laevigatum</i> , <i>Pomaderris apetala</i> , <i>Acacia verticillata</i> and <i>Olearia lirata</i> (Whinray, pers. comm.). On Big Hill, it is listed as being found within 'dry scrub'. There are 13 records for this species within 5km
<i>Calystegia soldanella</i> sea bindweed	Rare/ -		<i>Calystegia soldanella</i> is a transient species that is dispersed by ocean currents along the coast (S. Harris pers. comm.). Propagation is both vegetative (by runners and suckers) and by seeds. The species is able to cope with dry,

Species	Status TSPA/EPBCA	Potential to occur	Observations and preferred habitat ⁷
			sandy conditions, heavy salt loads, and trampling disturbance There are 2 records for this species within 5km
<i>Centrolepis strigosa</i> ssp. <i>pulvinata</i> scarce centrolepis aka bassian bristlewort	Rare	Very Low	Record from base of eastern side of Stanley Hill, close to extreme eastern coast of Cape Barren Island. J Whinray Nov 2003. Very unlikely to occur on the landform element occupied by the study area.
<i>Comesperma defoliatum</i> leafless milkwort	Rare/ -	None	Occurs in buttongrass and moist coastal heathland. No suitable habitat present on site. There is 1 record for this species within 5km
<i>Comespermum hookeri</i> Tasmanian smokebush	Vulnerable / VULNERABLE	None	The species usually occurs in coastal heathland and heathy forest/woodland on granite or sandy, acid, low nutrient soils.
<i>Cotula vulgaris</i> var. <i>australasica</i>	Rare/-	None	In Tasmania, habitat includes saline herbfields, rocky coastal outcrops, and wet or brackish swamps.
<i>Cryptostylis leptochila</i> Small tongue orchid	Endangered	Very Low	Its occurrence on Flinders Island is regarded as an outlier of the Victorian distribution. Small tongue orchid is found in open eucalypt forest with a paperbark and tea-tree shrubby understorey and in heathland on clay loams. Flowers November to March
<i>Gratiola pubescens</i> Hairy brooklime	Rare/-	None	The species is located most commonly in permanently or seasonally damp to swampy ground and wetland margins, and has been observed colonising areas of cleared scrub and the margins of dams and reservoirs.
<i>Gynatrix pulchella</i> Fragrant hembush	Rare/-	None	In Tasmania, <i>Gynatrix pulchella</i> occurs as a riparian shrub, found along rivers and drainage channels, sometimes extending onto adjacent floodplains
<i>Gyrostemon thesioides</i> Broom wheelfruit	Rare/-	VERY LOW	This is a short lived small woody shrub - <10 years. It may be locally abundant following disturbance caused by fire or land clearing. It is unlikely to be seen in the study area as fire or disturbance has been absent for long periods. Seed is long lived in the soil and may germinate in abundance following disturbance and

Species	Status TSPA/EPBCA	Potential to occur	Observations and preferred habitat ⁷
			therefore could be recorded in an area following fire etc in area in which it has not previously recorded.
<i>Hakea ulicina</i> furze hakea	Vulnerable / -	Very LOW	In Tasmania restricted to heath and scrub on Flinders and Cape Barren Island. It is readily recognised as it has flattened phyllodes with is atypical of other hakeas in Tasmania.
<i>Hydrorchis orbicularis</i> Formerly <i>Microtis orbicularis</i>	Rare/ -	None	<i>Hydrorchis orbicularis</i> occurs in habitats subject to periodic inundation such as swamps and depressions. It has been recorded from herbfield, sedgeland, grassland and heathland on peats and sandy loams. Plants of <i>Hydrorchis orbicularis</i> may flower when partially or wholly submerged in swampy habitats Flowering of <i>Hydrorchis orbicularis</i> is enhanced by fire, with substantial numbers recorded in a swamp burnt two years previously (Jones et al. 1999).
<i>Hydrocotyle comocarpa</i> fringe-fruit pennywort	Rare/-	Very Low	An annual forb. Plants appear to be very short-lived and detectable for a very short period only. • In Tasmania, this species has been recorded from Cape Barren, Flinders and Deal islands. Habitat descriptions include a ridge crest with shallow soil with other forbs surrounded by shrubs and <i>Eucalyptus nitida</i> , and for Deal Island on penguin pads, with some plants in bare soil. Reserved in the Kent Group National Park, Wingaroo Nature Reserve, Patriarchs Conservation Area and Killiecrankie Nature Recreation Area
<i>Lasiopetalum discolor</i> Coast Velvet bush	Rare/-	None around house site	<i>Lasiopetalum discolor</i> grows in <i>Allocasuarina</i> forest on calcareous sandy soils and limestone around the north-west and on the Bass Strait Islands (Curtis & Morris 1975, Harris et al. 2001).
<i>Leucopogon affinis</i> Lanceleaf beardheath This species was formerly known as <i>Leucopogon lanceolatus</i> var. <i>lanceolatus</i>	Rare/-	Very Low	<i>Leucopogon affinis</i> is an erect shrub to 2 metres high. Its leaves are hairless, nearly stalkless and lance-shaped, being widest at about midway, with a pointed tip and a narrow base. They are flat and marked with longitudinal lines. The entire leaf is up to 5 cm long. The fruit is an ellipsoid drupe about c. 3 mm long, green at first, orange-reddish when ripe. Confusing species: <i>Leucopogon parviflorus</i> has leaves that are widest above midway, flowers that are

Species	Status TSPA/EPBCA	Potential to occur	Observations and preferred habitat ⁷
			<p>comparatively crowded, and fruit that is white when ripe.</p> <p>In Tasmania the species is known from the major islands of Bass Strait; records from the mainland's north and northwest coast require confirmation. Habitat includes tall scrub, mainly on stabilised dune sands and hinterlands, lagoon margins, and gullies and riverbanks in wet eucalypt forest</p> <p>Known from multiple reserves on Flinders Island; Darling Range Conservation Area, Foochow Conservation Area, Killiecrankie Nature Recreation Area, Lime Pit Road Conservation Area, Long Island Conservation Area, Mount Tanner Nature Recreation Area, Mulligans Hill Conservation Area, Patriarchs Conservation Area</p> <p>There is 1 record for this species within 5km</p>
<i>Microtidium atratum</i> yellow beard orchid	Rare/-	None	<p>Localised in lowland coastal and near coastal herbfield, grassland and sedgeland on peats and sandy loams on sites subject to periodic inundation. No suitable habitat present. Flowers mid-October to December. There are 2 records for this species within 5km.</p>
<i>Orthoceras strictum</i> Horned orchid or birds mouth orchid	Rare/-	LOW	<p><i>Orthoceras strictum</i> occurs in a wide range of habitat types including buttongrass moorland, sedgy and scrubby heathland, sedgy eucalypt shrubland and open forest, usually on poorly to moderately drained peaty, sandy and clay soils that are at least seasonally moist. It can also occur on thin mossy soils at soaks on and below rock faces. The species generally occurs at lower elevations in coastal and near-coastal Tasmania⁸.</p> <p>The flowering period of <i>Orthoceras strictum</i> on the mainland is October to January (Jones 2006) but in Tasmania most collections are from December to February (Wapstra et al. 2008). However, the climate on Flinders Island is likely to have greater affinity to mainland Australia than Tasmania and therefore flowering may be in the earlier period. Despite the highly distinctive appearance of <i>Orthoceras strictum</i>, flowering plants are</p>

⁸ Threatened Species Section (2010). Listing Statement for *Orthoceras strictum* (horned orchid), Department of Primary Industries, Parks, Water and Environment, Tasmania.

Species	Status TSPA/EPBCA	Potential to occur	Observations and preferred habitat ⁷
			difficult to spot as they simply blend into to the dense vegetation in which they usually grow. Detecting nonflowering plants is virtually impossible. The response of <i>Orthoceras strictum</i> to fire is not well understood. The habitat of the species is relatively fire-prone but the species does not appear to require regular fire for its life cycle, as flowering plants can emerge from dense vegetation (Jones et al. 1999). The study area has had no recent fire so the species may well be present but difficult to detect.
<i>Parietaria debilis</i> Shade pellitory -	Rare/-	LOW	This coastal ephemeral species can be found growing around mutton bird rookeries, on cliffs/rocks both in salt spray zone and in more sheltered locations. It is also recorded from sand dunes with other forbs and coastal scrub as a ground cover in <i>Allocasuarina verticillata</i> or <i>Leptospermum laevigatum</i> woodland. <i>Parietaria debilis</i> is found predominantly in northern Tasmania and on the islands of Bass Strait. The study area could be suitable but it would have been likely to be seen at this time of year.
<i>Phyllangium distylis</i> tiny mitrewort	Rare	None in proposed house site	Record from base of eastern side of Stanley Hill, close to extreme eastern coast of Cape Barren Island. J Whinray Nov 2003. Annual herb, often aquatic, In Tasmania the species occurs near the coast in the north and northeast of the State, with outlying populations on Bass Strait Island and the Midlands. The species may be locally abundant in its preferred habitat, which includes sandy humic heaths and open shrublands, muddy soaks and the margins of ephemeral wetlands. Known from Killiecrankie Bay and South Patriarch (Sellars Lagoon) on Flinders Island.
<i>Phyllangium divergens</i> Wiry mitrewort	Vulnerable / -	None	The species has a widespread distribution, occurring in mostly near-coastal situations where it grows on rock plates on a variety of substrates.
<i>Prasophyllum secutum</i> Northern leek orchid	Endangered / ENDANGERED	V	<i>Prasophyllum secutum</i> is a terrestrial orchid endemic to Tasmania. It grows in densely shrubby stabilised dune swales and is known from near-coastal occurrences in the State's north, some Bass Strait islands and an outlying site on the west coast. The species has a

Species	Status TSPA/EPBCA	Potential to occur	Observations and preferred habitat ⁷
			strong dependence of the species on fire to trigger emergence and good flowering
<i>Pterostylis sanguinea</i> banded greenhood	Rare/ -	Very low	Habitat includes coastal eucalypt, tea-scrub and scrubby heathland on well-drained gravelly peat and sandy and clay loams. Study area contains potential habitat although the dense overstorey vegetation make the site less suitable during this part of the successional phase. Peak flowering period is winter from June to September so would be covered by survey time
<i>Schenkia australis</i> Spike centuary	Rare/ -	None	<i>Schenkia australis</i> has been recorded from cleared forest pasture, rainforest/wet sclerophyll forest and heathland in the east and north of the State (Curtis 1963). This species may have been introduced to Tasmania.
<i>Spyridium parvifolium</i> var. <i>molle</i> Soft dustymiller	Rare/-	None	<i>Spyridium parvifolium</i> var. <i>molle</i> is endemic to Tasmania, occurring in a range of habitats including riparian, rocky slopes, open woodland and heath. This species is only found in the north-east and the Furneaux group (Curtis & Morris 1975). It is known to the author near Melrose Road in central Flinders Island. Reserved on Flinders Island in the Brougham Sugarloaf Conservation Area
<i>Stellaria multiflora</i> subsp. <i>nebulosa</i> Nebulous rayless starwort	Rare/-	None	An annual herb most likely to be recorded in August to October, however mature fruit are required to confirm identification to subspecies level. In Tasmania, <i>Stellaria multiflora</i> subsp. <i>nebulosa</i> occurs on sandy to rocky soils, often on dune sands and often in damp areas and can occur in coastal dune scrubs, heathland and open eucalypt forests
<i>Thelymitra atronitida</i> blackhood sun- orchid	Endangered/ -	None	<i>Thelymitra atronitida</i> has been recorded from near-coastal heathland, sedgeland and open heathy/sedgely eucalypt woodland on relatively poorly-drained sandy loams. The species is known from three disjunct locations: Kingston in the southeast, Freycinet Peninsula on the central east coast, and Cape Barren Island Peak flowering period, early to late November

Species	Status TSPA/EPBCA	Potential to occur	Observations and preferred habitat ⁷
<i>Thelymitra holmesii</i> Blue star sun-orchid	Rare/ -	None	This species was previously known as a variant of <i>T. pauciflora</i> . Known habitat is heathland and heathy open woodland with poor to moderate drainage. Peak flowering time for this species is November, extending into December. This species would need to be searched for on warm days as the flowers will not otherwise open.
<i>Thelymitra jonesii</i> skyblue sun-orchid	Endangered / ENDANGERED	None	The sky-blue sun orchid is endemic to Tasmania. It has been recorded from 4 widely distributed coastal localities including Rocky Cape, Cape Barren Island, Southport Bluff and the Tasman Peninsula. It is estimated to occupy less than one hectare in total. The species has been recorded growing in moist coastal heath on sandy to peaty soils and in Eucalyptus obliqua forest in deep loam soil over dolerite. The species flowers from October to early December.
<i>Tricostularia pauciflora</i> Needle bog sedge	Rare/ -	None	In Tasmania, <i>Tricostularia pauciflora</i> is found in sandy heaths, dunes and heath on clay soils around coastal areas (Curtis & Morris 1994).
<i>Triglochin minutissima</i> Tiny arrowgrass	Rare/ -	None	<i>Triglochin minutissima</i> inhabits fresh or brackish mudflats or margins of swamps in lowland, mostly coastal areas around the north-east and East Coast of mainland Tasmania and in the Furneaux group (Curtis & Morris 1994).
<i>Zygophyllum billardierei</i> Coast twin leaf	Rare/ -	None	A distinctive succulent plant, not likely to be overlooked. Occurs on limey sands in the Furneaux Islands.

INTRODUCED PLANTS

There are no introduced plants listed as 'declared' weeds under the *Weed Management Act 1999* recorded on the study site in the vicinity of the proposed house.

Other environmental weeds recorded include *Pinus radiata* (*radiata pine*), and petty spurge (*Euphorbia pepulus*). There was an occasional sea spurge on the beach.

FAUNA CONSERVATION VALUES (INCL. HABITAT TREES)

No threatened fauna was directly or indirectly observed on site. No threatened fauna nests or dens were observed. The site provides some marginal habitat for the foraging of threatened fauna, and no factors that could be considered critically limiting to any species potentially present.

In terms of habitat trees, a small number of regrowth trees (dbh less than 30 cm DBH) are present as a small discrete patch. The *E. globulus* are potential foraging habitat for the swift parrot (*Lathamus discolor*). The likelihood of this species (and all other threatened fauna previously recorded within 5 km) actually utilising the habitat on site is presented in Table 2.

Of the threatened fauna known from within 5 km, no species is highly likely to occur on site and the swift parrot is the only species with potential habitat, albeit limited within the vicinity of the house site.

Table 2: Fauna species of conservation significance previously recorded, or which may potentially occur, within 5 km of the property⁹

Species	Status TSPA/EPBCA	Likelihood of occurrence	Observations and preferred habitat ¹⁰
Known within 500 m			
None known			
Known within 5 km			
<i>Antipodia chaostola leucophaea</i> chaostola skipper	Endangered/ ENDANGERED	None	Host plant <i>Gahnia radula</i> (thatch saw sedge) was not observed present within the study area and not likely to have been overlooked. Highly localised known occurrences within 5 km.
<i>Aquila audax</i> subsp. <i>fleayi</i> wedge-tailed eagle	Endangered/ ENDANGERED	Low (foraging only)	Requires large sheltered trees for nesting and is highly sensitive to disturbance during the breeding season. No suitable nesting habitat present but may hunt over study area. No nests known within 500 m or 1 km line of sight.
<i>Engaeus martigener</i> Furneaux burrowing crayfish	Vulnerable/ Endangered	None	Known from medium to high altitudes on Fotheringate Creek along the banks of the upper reaches of small creeks in wet gullies (also known from other upper stream catchments in Strzelecki NP and on Cape Barren Is.). The study area is at low altitudes and nor were chimneys seen so it is unlikely that the species occurs.
<i>Haliaeetus leucogaster</i> white-bellied sea-eagle	Vulnerable/ -	No nesting habitat	Occurs in coastal habitats and large inland waterways. Suitable foraging habitat present. No known nests within 500 m or 1 km line of sight.

⁹ Natural Values report nvr_01_03_Oct-2018, DPIPWE – species with exclusively marine or sub-marine habitat requirements have been excluded

¹⁰ Bryant & Jackson 1999

Species	Status TSPA/ EPBCA	Likelihood of occurrence	Observations and preferred habitat ¹⁰
New holland mouse	Endangered/- Vulnerable	None	Habitat across the species' known range includes open heathlands, open woodlands with a heathland understorey, and vegetated sand dunes. The study area does not have heathy vegetation and therefore is not considered suitable habitat.
<i>Pseudoemoia rawlinsoni</i> Glossy grass skink	Rare / -	None	A ground-dwelling lizard, occurs in swampy and wetland sites
Predicted by habitat mapping only¹¹			
Birds			
<i>Lathamus discolor</i> swift parrot	Endangered/ CRITICALLY ENDANGERED	Low (occasional foraging) None (nesting)	Requires tree hollows for nesting, and feeds on nectar of blue gum (<i>E. globulus</i>) and black gum (<i>E. ovata</i>) flowers. There are occasional records of swift parrots north of the site on Flinders Island, and the blue gums on site may in the future as they mature represent an occasional and minor foraging resource compared to quality habitat elsewhere. No nesting habitat is present as the trees are too small to contain hollows. A house development will result in an increased risk of bird mortality through collision. Therefore it may be better to remove the bluegums closest to the proposed house.
Fish			
<i>Galaxiella pusilla</i> Eastern dwarf galaxias	Vulnerable/ Vulnerable	None	This small native fish lives in lowland slow-flowing freshwater including swamps and backwaters of creeks or rivers with aquatic vegetation. No suitable habitat present
<i>Prototroctes maraena</i> Australian grayling	Vulnerable/ VULNERABLE	None	No suitable aquatic habitat present.
Reptiles and amphibians			
<i>Pseudemoia pagenstecheri</i> tussock skink	Vulnerable/ -	None	Occurs in <i>Poa</i> tussock grassland and <i>Themeda</i> grassland without trees. No suitable habitat present.

¹¹ Natural Values report nvr_01_03_Oct-2018, DPIPWE; EPBCA protected matters database report E50602
- species with exclusively marine or sub-marine habitat requirements have been excluded

Species	Status TSPA/ EPBCA	Likelihood of occurrence	Observations and preferred habitat ¹⁰
<i>Limnodynastes peroni</i> Striped marsh frog frog	Vulnerable/ VULNERABLE	None	Occurs in well vegetated wetlands. No suitable habitat present.
<i>Litoria raniformis</i> Green and golden frog	Vulnerable/ Vulnerable	None	Permanent breeding associated with large ponds and slow rivers with emergent diverse vegetation. No suitable habitat associated with dams with emergent vegetation and present.

4. ASSESSMENT OF IMPACT AND MITIGATION

VEGETATION

Figure 2 shows the proposed location for the house and bushfire hazard management area (HMA). Approximately xx ha of DGL is estimated to be within the HMA or within the footprint of the dwelling. This does not include high conservation value trees.

THREATENED FLORA

No threatened plant species are known from the site. Although our survey was conducted in late winter, the probability of threatened species having been overlooked or seasonally absent from the site is considered to be negligible.

Subsequently, no mitigative actions are required for threatened flora for the house site.

THREATENED FAUNA HABITAT

The *Eucalyptus globulus* on site may be occasionally utilised by the EPBCA critically endangered and TSPA endangered swift parrot. The occasions would most likely be related to seasonal migration.

Residential developments in bushland are a threatening process to the conservation of this species through direct habitat loss (tree removal) and from increased mortality through collisions with windows.

In terms of habitat loss, the removal of small diameter regrowth blue gums from the house development is not considered to be significant in the context of the number of viable foraging trees on the property and in the local area. None of the trees that are to be removed are potential nest trees.

The likely rarity of occasional foraging use does not warrant specific mitigation actions in regard to building window design and arrangement.

WEEDS

The proposal provides an opportunity to control the minor infestations of *Pinus radiata* in the vicinity of the proposed building site. While *Pinus radiata*, is not a declared weed it can be a serious environmental weed. And there is evidence that there is regeneration of wildlings.

Long term weed management should focus on removal of the wildling pines.

5. LEGISLATIVE REQUIREMENTS

COMMONWEALTH ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999

The EPBCA is structured for self-assessment; the proponent must indicate whether or not the project is considered a 'controlled action', which, if confirmed, would require approval from the Commonwealth Minister.

The swift parrot may forage on the site or in the immediate surrounds from time to time. The breeding range of the Swift Parrot mirrors the natural range of Tasmanian blue gum on the east coast of the state, and there are occasional siting's of this bird on Flinders Island to the north. The blue gums that may potentially be impacted to achieve HMA are all small regrowth trees and generally less than 20cm DHB and certainly all less than the productive 40 cm DBH. Such trees would not provide a significant foraging resource as crowns are small. Clearance of potential habitat trees will not result in a significant impact and so would not trigger the EPBCA. Furthermore, protection of other *Eucalyptus globulus* on the property to allow them to mature would be more favourable to attract the birds away from potential window strike risk.

Consequently, referral to the Minister would not be considered necessary.

TASMANIAN THREATENED SPECIES PROTECTION ACT 1995

No implications

TASMANIAN WEED MANAGEMENT ACT 1999

No implications.

LAND USE PLANNING AND APPROVALS ACT 1993 (LUPAA)

LUPAA states that 'in determining an application for a permit, a planning authority must (amongst other things) seek out the objectives set out in Schedule 1¹².

Schedule 1 includes 'The objectives of the Resource Management and Planning System of Tasmania' which are (amongst other things):

'To promote sustainable development of natural and physical resources and the maintenance of ecological processes and genetic diversity'.

Sustainable development includes 'avoiding, remedying or mitigating any adverse effects of activities on the environment'¹³.

Regulation to fulfil these requirements will be administered through the Flinders Planning Scheme and through not breaching the other Acts mentioned.

FLINDERS PLANNING SCHEME 1994

Rural Zone

5.8.1 Zone Intent

(a) The Rural Zone on other islands within the Planning Area the zone is intended to preserve the existing character which displays minimal signs of European occupation.

¹² Section 51(2)(b) – Part 4 Enforcement of Planning Control – Division 2 Development Control (*LUPPA 1993*)

¹³ page 56 – *LUPPA 1993*

(b) Use and development in the Rural Zone is intended to accommodate agricultural uses and development predominantly, with some compatible non-agricultural uses and development in appropriate circumstances, including tourist operation and rural industries.

5.8.2 Desired Zone Character and Zone Guidelines

(a) The use or development of small existing rural lots for the purpose of residential living shall only be approved where such use or development is compatible with any existing or potential agricultural use of that land or surrounding lands. Amendment RZ02/01A 19/11/01

(b) Use or development should enhance the rural character of the zone. Buildings should be substantial distances from the road frontage and apart, unless inappropriate for operational or topographical reasons. Where land clearance is undertaken it should be visually sympathetic; important trees (or stands of trees) should be retained, important hilltop locations should not be cleared and location of trees and shrubs along fence lines, property boundaries, watercourses and at property entrances is encouraged.

The proposed house is a substantial distance from Rooks Road.

The house located is mid-slope and therefore the vegetation on the low hilltop can be retained. Clearing will be minimised to achieve Bushfire Hazard Management requirements.

(c) Land use or development and management practices shall be environmentally appropriate and shall avoid contamination or despoliation of the land, ground water, water courses, shorelines, lagoons and marshes. Sand-dunes and coastal vegetation and ecologically important areas shall be protected from degradation.

The proposed house has been sited to utilise a location which previously had a house and associated road access.

The waste water treatment plan which is likely to include French drains needs to be clear of the coastal reserve which is part of the adjacent Aboriginal Land.

(d) Forestry activities in the zone shall be in accordance with the Forest Practices Code.

NA

Development Standards

There are no development standards applicable to natural values protection.

8. CONCLUSION

The proposed location of the proposed dwelling is a viable choice on the basis of minimising impact to native vegetation. The site has been well chosen to use a site that has already been cleared for a house in the past. It also can utilise the existing access road.

The vegetation to be impacted by the proposal including the Bushfire HMA is predominantly the widespread and well reserved community SSC but with a minor area of the NCA listed DGL which has been identified as having high biodiversity value.

The design of the dwelling will impact the DGL community in that the regrowth forest will need to be thinned to meet bushfire HMA requirements.

There will also be a need to clear some vegetation along the 1.5 km access track that comes off Rooks Road. The existing road line was not surveyed.

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APPENDIX A – SPECIES CONSERVATION VALUES

SPECIES OF NATIONAL SIGNIFICANCE

Listed in Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*

The *EPBC Act* has six categories of threat status for species:

1. **Extinct** - If at a particular time there is no reasonable doubt that the last member of the species has died.
2. **Extinct in the wild** - If it is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or If it has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
3. **Critically endangered** - If at a particular time, it is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.
4. **Endangered** - If it is not critically endangered; and it is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.
5. **Vulnerable** - If at a particular time it is not critically endangered or endangered; and it is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.
6. **Conservation dependent** - If, at that time, the species is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.

SPECIES OF STATE SIGNIFICANCE

Listed in Tasmanian *Threatened Species Protection Act 1995 (TSP Act)*

Threatened flora and fauna species in Tasmania are listed in Schedules 3 (extinct or endangered), 4 (vulnerable) or 5 (rare). These three categories are defined in Section 15 of the Act.

1. **Extinct** - If no occurrence of the taxon in the wild can be confirmed during the past 50 years.
2. **Endangered** - If it is in danger of extinction because long-term survival is unlikely while the factors causing it to be endangered continue operating.
3. **Vulnerable** - If it is likely to become an endangered taxon while the factors causing it to be vulnerable continue operating.
4. **Rare** - If it has a small population in Tasmania that is not endangered or vulnerable but is at risk.”

Species that have been nominated and approved by the Scientific Advisory Committee for listing in the Act.

SPECIES OF REGIONAL OR GENERAL SIGNIFICANCE

The following definitions are from three publications: Flora Advisory Committee 1994, Vertebrate Advisory Committee 1994, Invertebrate Advisory Committee 1994.

Flora only - Species listed as rare but not necessarily 'at risk' (r3).

Fauna only – Species requiring monitoring (m).

Both – Species of unknown risk status (k) in Tasmania, or thought to be uncommon within region, or a species having a declining range or populations within the area.

Species considered being outside its normal range or of an unusual form as determined and justified in the body of the report.

Species identified in regional studies as being of conservation significance that are not listed in current legislation.

Species that have been recognised, but have not been formally described in a published journal, that are thought to be significant as determined and justified in the body of the report.

Plant species that are not known to be reserved. To be so it must be known to exist in at least one secure Reserve. Secure reserves include reserves and parks requiring the approval of both Houses of Parliament for their revocation. They include: National Parks, Aboriginal Sites, Historic Sites, Nature Reserves, State Reserves, Game Reserves, Forest Reserves, Wellington Park, and insecure reserves in the World Heritage Area which is protected by international agreement under the World Heritage Convention.

APPENDIX B – LEGISLATIVE IMPLICATIONS OF THREATENED SPECIES

Tasmanian Threatened Species Protection Act 1995

Threatened flora and fauna species in Tasmania are listed in Schedules 3 (endangered) and 4 (vulnerable) of the Threatened Species Protection Act, 1995. Rare species that are considered to be 'at risk' are listed in Schedule 5 of the Act. These three categories are defined in Section 15 of the Act.

1. "An extant taxon of native flora or fauna may be listed as **endangered** if it is in danger of extinction because long-term survival is unlikely while the factors causing it to be endangered continue operating.
2. A taxon of native flora or fauna may be listed as **vulnerable** if it is likely to become an endangered taxon while the factors causing it to be vulnerable continue operating.
3. A taxon of native flora or fauna may be listed as **rare** if it has a small population in Tasmania that is not endangered or vulnerable but is at risk."
4. The Act provides mechanisms for protecting these species from threatening processes the implementation of 'recovery plans', 'threat abatement plans', 'land management plans', public authority agreements', and 'interim protection orders'.

Section 51 (a) of the TSPA states that: "A person must not knowingly, without a permit - take, trade in, keep or process any listed flora or fauna". The Act defines 'take' as including: "kill, injure, catch, damage, destroy and collect. A land manager is therefore required to obtain a permit from the Development and Conservation Assessment Branch (DCAB) of the Tasmanian Department of Primary Industries and Water (DPIW) to carry out management that may adversely affect any of the species listed in the Act.

Commonwealth Environment Protection and Biodiversity Conservation Act 1999

The EPBC Act establishes a process for assessing actions that are likely to have impacts of *national environmental significance*. Such impacts include World Heritage Areas, RAMSAR Wetland sites of international importance, migratory species protected under international agreements, nuclear actions, the Commonwealth marine environment and **nationally threatened species and communities**. Threatened species are defined in several categories:

1. Extinct

- If at a particular time there is no reasonable doubt that the last member of the species has died.

2. Extinct in the wild

- If it is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or
- If it has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.

3. Critically endangered

- If at a particular time, it is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.

4. Endangered

- If it is not critically endangered; and it is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.

5. Vulnerable

- If at a particular time it is not critically endangered or endangered; and it is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.

6. Conservation dependent

- If, at that time, the species is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.

An action that is likely to affect species that are listed in any of the above categories may require ministerial approval unless the Commonwealth Environment Minister has granted an exemption. The Act establishes a **referral process** to Environment Australia to determine whether an action requires a formal **approval** and thus would be required to proceed through the **assessment and approval process**.

A referral must provide sufficient information to allow the Minister to make a decision. The Minister is then required to make a decision within 20 business days of the referral. The Minister may decide an approval is not necessary if the action is taken in a specified manner. The action may not require approval but may require a **permit** if undertaken on Commonwealth land. If an approval is required then an **environmental assessment** must be carried out. In such instances the environmental assessment approach will be determined by the Minister and may vary from preliminary documentation to a full public inquiry depending on the scale and complexity of the impact.

APPENDIX C – VASCULAR PLANT SPECIES BY COMMUNITY

Sites: SSC

Tall Shrubs:	<i>Acacia mucronata</i> , <i>Allocasuarina verticillata</i> , <i>Bursaria spinosa</i> subsp. <i>spinosa</i> , <i>Kunzea ambigua</i> , <i>Leptospermum laevigatum</i> , <i>Monotoca glauca</i>
Shrubs:	<i>Leucopogon parviflorus</i> , <i>Myoporum insulare</i> , <i>Pimelea serpyllifolia</i> subsp. <i>serpyllifolia</i> , <i>Rhagodia candolleana</i> subsp. <i>candolleana</i>
Low Shrubs:	<i>Astroloma humifusa</i>
Herbs:	<i>Acianthus pusillus</i> , <i>Bulbine bulbosa</i> , <i>Carpobrotus rossii</i> , <i>Clematis microphylla</i> , <i>Correa reflexa</i> , <i>Crassula sieberiana</i> , <i>Daucus glochidiatus</i> , <i>Dianella brevicaulis</i> , <i>Dichondra repens</i> , <i>Helichrysum luteoalbum</i> , <i>Hydrocotyle hirta</i> , <i>Pterostylis</i> <i>pedunculata</i> , <i>Ranunculus</i> sp., <i>Senecio</i> sp., <i>Urtica incisa</i>
Graminoids:	<i>Ficinia nodosa</i> , <i>Lepidosperma concavum</i> , <i>Schoenus</i> sp.
Grasses:	<i>Austrostipa stipoides</i> , <i>Ehrharta</i> sp., <i>Poa poiformis</i> , <i>Poa</i> sp., <i>Rytidosperma</i> sp.
Ferns:	<i>Asplenium flabellifolium</i> , <i>Pteridium esculentum</i> subsp. <i>esculentum</i>
Climbers:	<i>Cassytha melantha</i>
Weeds:	<i>Cerastium glomeratum</i> , <i>Euphorbia paralias</i> , <i>Melilotus</i> sp., <i>Pinus radiata</i> , <i>Poa</i> <i>annua</i> , <i>Sagina maritima</i> , <i>Stellaria media</i> , <i>Trifolium</i> sp., <i>Vulpia</i> sp.

Sites: DGL

Trees:	<i>Eucalyptus globulus</i> subsp. <i>globulus</i>
Tall Shrubs:	<i>Allocasuarina verticillata</i> , <i>Bursaria spinosa</i> subsp. <i>spinosa</i> , <i>Dodonaea viscosa</i> subsp. <i>spatulata</i> , <i>Leptospermum laevigatum</i> , <i>Monotoca glauca</i>
Shrubs:	<i>Leucopogon parviflorus</i> , <i>Myoporum insulare</i> , <i>Rhagodia candolleana</i> subsp. <i>candolleana</i>
Herbs:	<i>Crassula sieberiana</i> , <i>Daucus glochidiatus</i> , <i>Dichondra repens</i> , <i>Hydrocotyle hirta</i> , <i>Oxalis</i> sp., <i>Ranunculus</i> sp.
Grasses:	<i>Poa labillardierei</i>
Ferns:	<i>Pteridium esculentum</i> subsp. <i>esculentum</i>
Climbers:	<i>Clematis aristata</i>
Weeds:	<i>Sagina maritima</i> , <i>Trifolium repens</i> , <i>Euphorbia peplus</i> ,