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ECOSYSTEM SERVICES

Hollands Road, Cygnet
Assessment of proposed access road and HMA

Addendum Report
Natural Values Assessment

19 June 2021

For Stuart Tanner Architects obo Hayley and Greg Patten
STA001

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1. Project Details

Background: The proponent is considering a development application to build a house at Hollands Rd, Cygnet (CT 230909/1). The location of the site is shown in Figure 1. NBES undertook a Natural Values Assessment (NVA) in May 2020 which assessed a proposed house site, proposed cabin site and access road at the property[1]. This was submitted to Huon Valley Council (DA-41/2021 & 1552368) who has requested further information (RFI) regarding the proposed development[2]. The RFI requires an updated NVA which quantifies the clearance required for bushfire hazard management both for the access road/driveway and to maintain a hazard management area (HMA) around the proposed residential dwelling. In response to the RFI the proponent has amended the development application to include only one residence, located at the previously proposed cabin site. The proposed house site assessed in the previous NVA (2020) is no longer part of the development application and has not been assessed in this report.

This report assesses impacts associated with the upgrade of the existing access road to include passing bays and a turning area. Impacts associated with the establishment of the HMA around the proposed house are also considered. The extent of the HMA was defined by Southern Planning in their Preliminary Bushfire Hazard Report dated 8th May 2021.

Parts of the property are subject to the Biodiversity Code (E10.0) under the *Huon Valley Interim Planning Scheme 2015*. The land is zoned Rural Resource.

Date of Field Survey: 11th May 2021.

Methods: The HMA and access road were defined in electronic format on a handheld GPS unit. All significant trees within 5m of the proposed access road were located using an Emlid Reach RS2 GNSS. This included all blue gums over 30cm dbh and other native eucalypts over 70cm dbh. In addition, all trees over 30cm dbh were located within the HMA using the same method. The trunk diameter dbh was recorded for all trees surveyed.

Limitations: The presence of tree hollows was assessed from ground level only. Trees greater than 70 cm dbh are assumed as potential habitat trees. Accuracy of the handheld GPS unit is 10m and accuracy of the Emlid Reach RS2 GNSS used to locate the trees was between 0-3m at the time of the survey.

[1] NBES (May 2020) Hollands Rd, Cygnet: Natural Values Assessment (STA004)
[2] Letter dated 5 March 2021

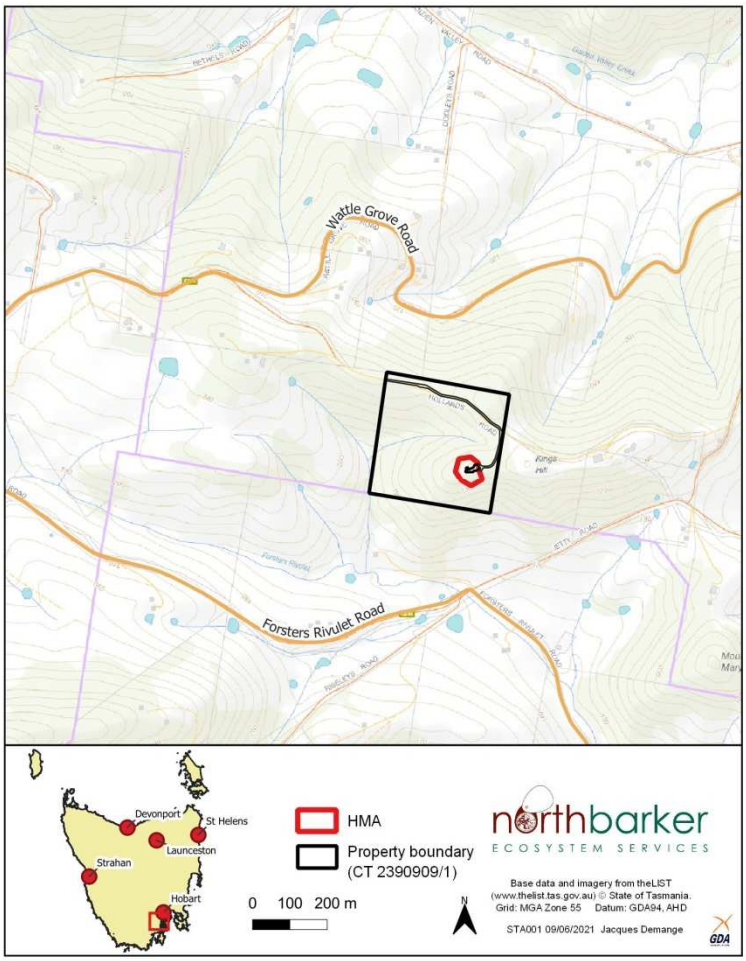


Figure 1 – Location of the Subject site

2. Site Values

Site Characteristics: The property is located off Hollands Road, 2.4 km west south of the Cygnet township. The land is predominately native bushland with access roads and two clearings. The site is approximately 200 to 250 m asl. The surrounding area is peri-urban housing and bushland. Geology is Basal tillite (Permian siltstone and mudstone) to the west and Pleistocene talus to the east.

Vegetation (Figure 2): The previous NVA undertaken in 2020 noted that the TASVEG mapping units were correct but required boundary adjustments. Blue gum forest (DGL) occurs on the sheltered slopes largely on the western area of the property with stringybark forest (DOB) on drier sections north and west of the property. A previously cleared area has silver wattle regrowth (NAD) to the south. Access roads and cleared areas are mapped as extra-urban miscellaneous (FUM).

DGL is listed as a threatened community under the Tasmanian *Nature Conservation Act 2002* (NCA). No ecological communities listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* were observed on site, nor likely to have been overlooked.

DOB, NAD and FUM are not listed communities.

Weeds: The previous NVA identified one 'declared' weed, gorse, and two environmental weeds, radiata pine and Monterey pine, on the property. The locations are shown in **Figure 2**.

Plate 1 – stringybark forest (DOB) just west of the proposed house site.

Plate 2 – blue gum forest looking south from the access road to the west of the property.

Plate 3 – access road to the proposed house site.

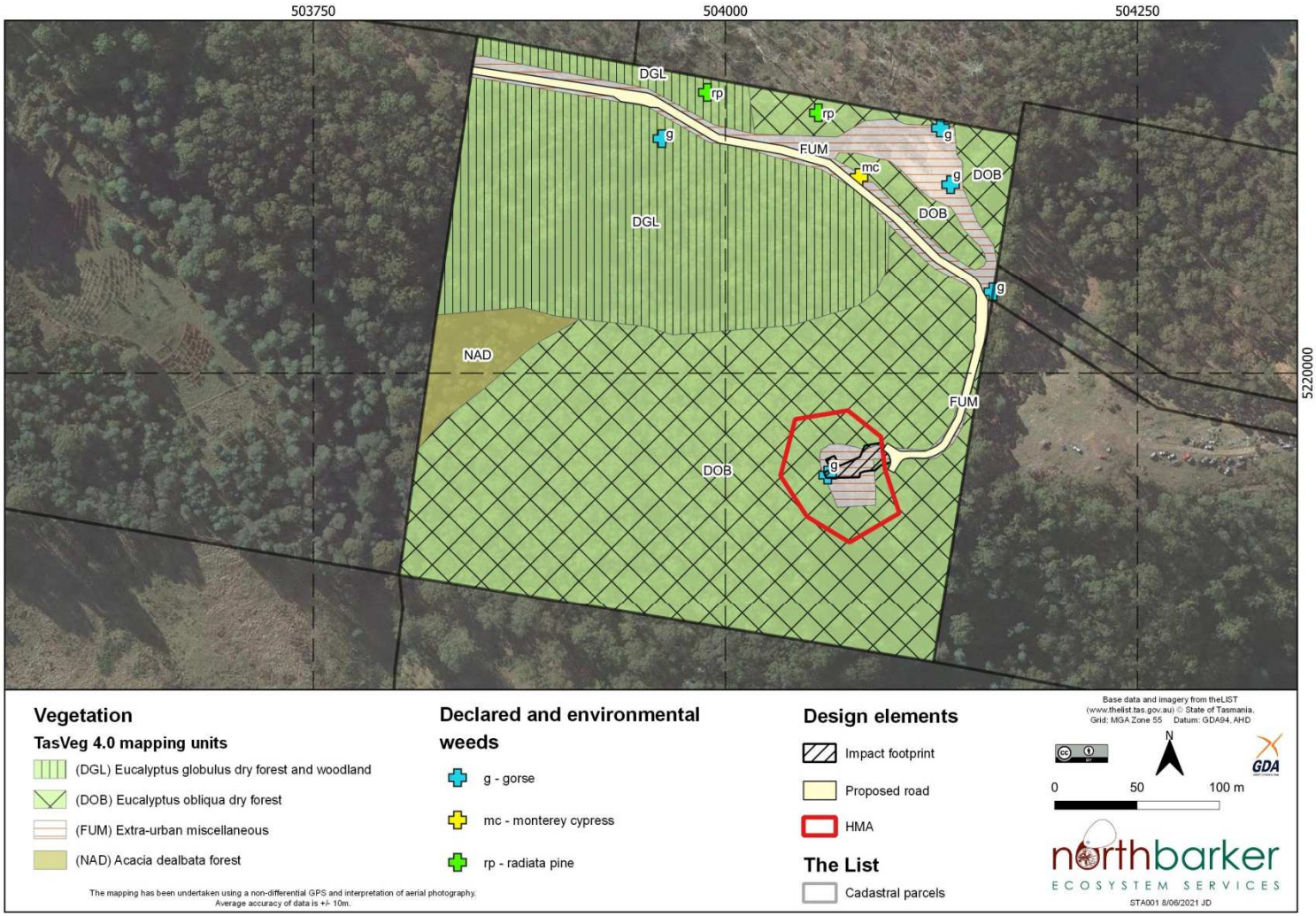


Figure 2 – Vegetation and weeds

Plant Species of Conservation Significance: No threatened flora species were recorded during the surveys and no threatened flora species are considered likely to occur (refer to previous NVA).

Threatened Fauna Habitat: The previous NVA (2020) identified potential fauna habitat values for several threatened fauna species likely to occur within the greater property area. The proposal has the potential to impact on foraging and nesting habitat for one threatened fauna species, the swift parrot.

The swift parrot is listed as endangered under the TSPA and critically endangered under the EPBCA. This species feeds mainly on the nectar of blue gum *Eucalyptus globulus,* but in some years relies on black gum *E. ovata* due to its flowering period overlapping with the arrival of the species in early spring from migration. The property occurs within a core area for this species, blue gums occur onsite and in the surrounding area. Swift parrots prefer to nest in trees with ample bush surrounds and prefer trees with a dbh exceeding 40 cm dbh for foraging[3]. Any species >70 cm dbh may well support hollows suitable for nests. The bushland onsite meets these criteria thus the property is part of this species foraging and breeding habitat.

This survey targeted significant habitat for this species which may be impacted by the upgrade of the existing access road and establishment of the HMA around the proposed dwelling. Suitable foraging and nesting trees for this species are shown in **Figure 3**.

[3] Brereton, R. Mallick, S. and Kennedy, S. (2004). Foraging preferences of Swift Parrots on Tasmanian Blue-gum: tree size, flowing frequency and flowering intensity. *EMU* 104:377-383.

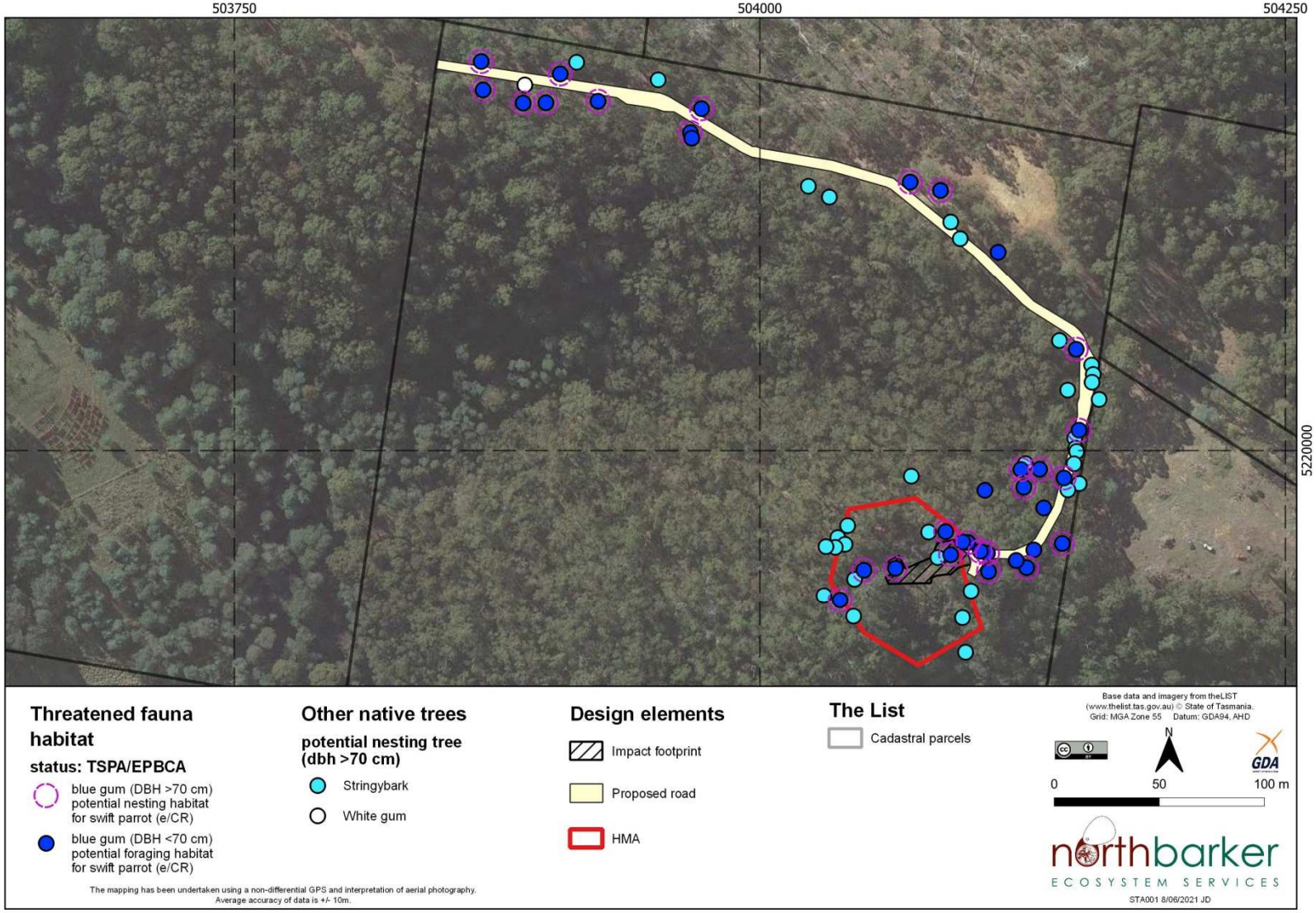


Figure 3 – Threatened Fauna Habitat

3. Impact Assessment and Scope for Mitigation

Vegetation Communities

Upgrade of the existing access road and establishment of the house site will directly impact upon 250m^2 of DOB (*Eucalyptus obliqua* dry forest) and 7m^2 of DGL (*Eucalyptus globulus* dry forest and woodland)(mapping precision error may account for this small area). Establishment of the HMA will require approximately 0.28ha of DOB to be modified to meet bushfire standards. This includes removal of tree limbs below 2m, clearing of understorey vegetation and management of the groundlayer.

The extent of clearing, including trees to be removed, should be clearly identified and marked prior to the commencement of any construction works. Orange barrier mesh or similar should be used to delineate the edge of the clearing area and protect areas of retained native vegetation nearby. The loss of such a small area of forest does not warrant offsetting.

Threatened Flora Species

No threatened flora species will be impacted.

Threatened Fauna Habitat & Native Trees

Upgrade of the existing access track and establishment of the house and HMA will require the removal of trees which provide potential foraging and nesting habitat for the swift parrot. The Australian Standard AS4970-2009 Protection of Trees on Development Sites defines impacts based on Tree Protection Zones (TPZ) which are calculated from trunk diameter (12 x DBH for single stem tree with a modified formula for multi-stem trees). According to the standard any impact to >10% of the tree protection zone is a significant encroachment likely to impact on a tree requiring the an arborist to make formal assessment and determination. **Figure 4** identifies the Tree Protection Zones for significant trees along the access road and within the house site and HMA. Based on this figure a calculation of potential impact to these trees has been estimated and is outlined in Table 1. A total of 31 threatened fauna habitat trees will require removal and an additional 9 may require removal based upon >10% TPZ encroachment. It should be noted that due to inherent GPS inaccuracies and lack of detailed engineering drawings, this estimate represents a worst-case scenario and tree impacts may be reduced once the extent of the access track is defined onsite. Figure 5 illustrates trees proposed to be removed, retained and those requiring assessment by an arborist. Appendix B lists the statistics for each tree and its retention, removal or assessment status.

Table 1: Estimate of significant trees to be affected by the proposal

	blue gum 40-70cm dbh	blue gum 70-100cm dbh	blue gum >100cm dbh	stringybark >70cm dbh	white gum >70cm dbh	white peppermint >70cm dbh	TOTAL
Likely to be removed	5	7	6	10	2	1	**31**
May require removal*	1	3	1	4	0	0	**9**
TOTAL	**6**	**10**	**7**	**14**	**2**	**1**	**40**

*based upon >10% TPZ encroachment and carriage way of 4 m width.

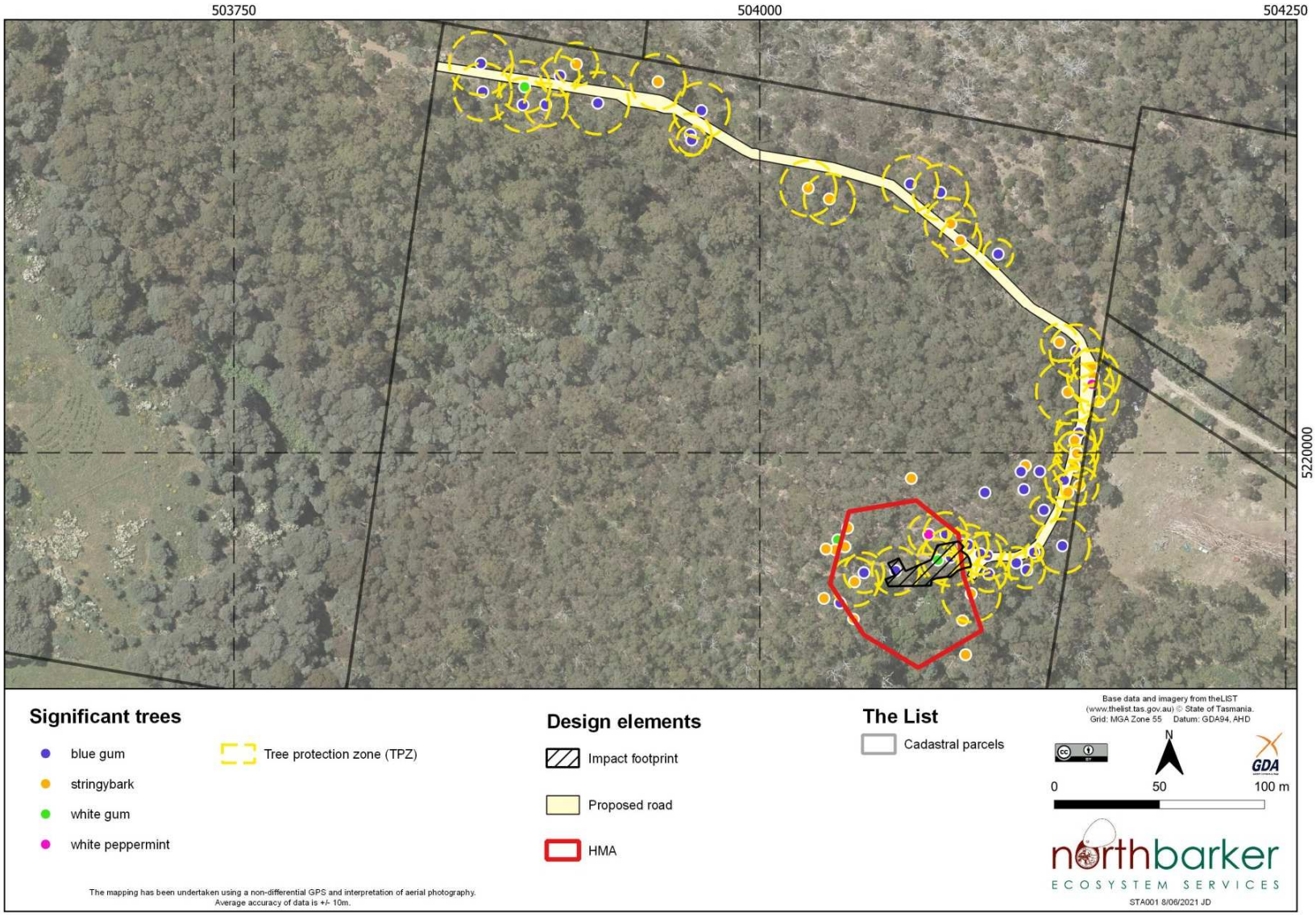


Figure 4: Significant trees and associated TPZs

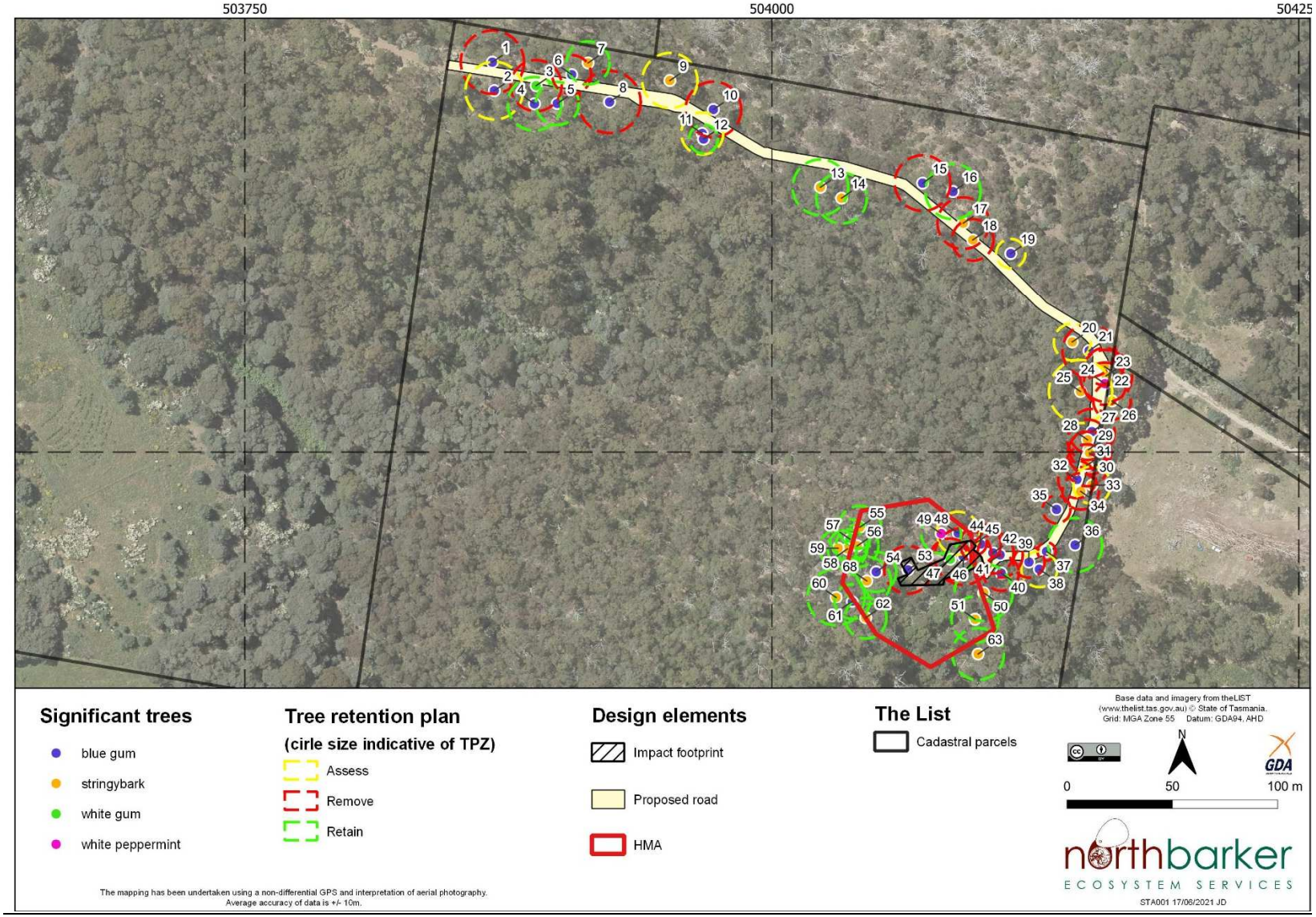


Figure 5. Tree retention and removal and trees that require assessment

Swift parrots

A total of 18 (and up to 23) foraging trees for the swift parrot are likely to require removal for the upgrade of the access track and establishment of the house and HMA. The density of trees is above mature carrying capacity and so some natural loss to competitive thinning would occur over time. Nevertheless, removal of these trees reduces the available foraging resource for the swift parrot, although in the context of the broader landscape this is proportionately small. In addition, a total of 26 (and up to 34) potential nesting trees for the swift parrot are likely to require removal. Potential nesting trees are considered to be any tree over 70cm dbh in dry forest types. While the proposal will require the removal of up to 34 larger trees (>70cm dbh) only two of these trees were observed to contain hollow bearing branches during the survey. One is located within the house footprint and will require removal. The other is a large blue gum (2m dbh) located on the left side of the access track, at the entrance to the property. Where possible, upgrade of the existing track should aim to minimise impacts to larger trees such as this which provide important nesting habitat. An arborist may be required to ascertain the degree of impact permissible within the structural root zone to ensure the longevity of the tree.

Removal of HBTs should be undertaken outside the swift parrot breeding season (October to January). A suitably qualified and experienced fauna spotter-catcher should be present on site to inspect larger trees and hollow bearing trees prior to removal.

It is important to note that the construction of buildings within areas supporting swift parrots brings with it a risk of creating bird strike hazards. Collision with fences, windows and vehicles is recognised as a key cause of mortality in swift parrots. The level of risk would be determined by the architectural details of the proposed development and other infrastructure such as fences. Large windows, reflective glass and chain link fences are particularly hazardous and should be avoided. Development design should be in accordance with recognised best practice. To minimise this risk standard practise for infrastructure development as outlined in the Tasmanian Bird Collision Code[4] should be applied.

Based on the Guidelines for the Use of Biodiversity Offsets in the Local Planning Approval Process, Southern Tasmanian Councils Authority 2013 Based and given that the habitat is within DGL (threatened vegetation) an offset may be required by Huon Valley Council. There is sufficient forest and habitat present to offset the loss of the habitat. An area of land forming a corridor along the track 20 m wide on each side (allowing for future access to an additional building area) would capture 5 trees for every tree lost. This is an accepted offset ratio. Security of an offset area could be provided by a Part 5 Agreement of

Weeds

Earthworks on site are likely to stimulate germination of weeds within the surrounding area. The use of machinery and vehicles during construction also brings an increased risk of spreading existing weeds. The declared weed, gorse, occurs onsite. It is recommended that weeds are removed as they germinate post construction works.

4. Legislative Implications

Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*

Referral under the EPBC Act is necessary if an action is likely to have a significant impact on listed threatened species and / or ecological communities.

Regarding listed threatened species, the Act states:

'An action has, will have, or is likely to have a significant impact on a critically endangered, endangered or vulnerable species if it does, will or is likely to (amongst other things):

[4] Pfennigwerth, S. (2008)

- modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline, or
- adversely affect habitat critical to the survival of a species.

Blue gums provide potential foraging habitat for the critically endangered swift parrot. In addition, trees greater than 70cm dbh provide potential nesting habitat for the swift parrot. The removal of up to 23 foraging trees in the context of the surrounding environment is not considered significant. The proposal will impact approximately 7m^2 of DGL. The property has a total area of 3.34ha of DGL which will be unaffected by the proposal and provide foraging habitat for the swift parrot. At least one hollow bearing tree (HBT) and possibly two HBTs may require removal as part of the proposal. A number of potential nesting trees will also require removal. Given the extent of mature forest within the property and surrounding area the removal of up to 2 HBTs is considered unlikely to significantly impact upon nesting resources for the swift parrot.

Overall the proposal is not likely to have a significant impact on a MNES and so not require approval through the EPBC Act.

Tasmanian *Threatened Species Protection Act 1995*

No flora species listed under this Act were recorded within the study area. The TSPA does not regulate impacts to habitat only direct impacts to individuals. Two hollow bearing trees were noted during the survey. One will require removal as it occurs within the house footprint and the other may be able to be retained depending upon the extent of encroachment within the TPZ. Implementation of the mitigation measures outlined in this report will no ensure no direct impact to threatened fauna which may utilise hollows.

Tasmanian *Weed Management Act 1999*

Best practice hygiene measures during construction are recommended to minimise spread of weeds onto the property. Removal of gorse within the property will aid compliance with the containment conditions for a zone B species.

Tasmanian *Land Use and Planning Approvals Act 1993*

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 1'.

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'.

Huon Valley Interim Planning Scheme 2015

The property is zoned Rural Resource with the Biodiversity, Waterway and Coastal Protection and Landslide Hazard overlays present over parts of the property. For this report the Biodiversity Code is considered given its presence near the road and proposed house site.

Biodiversity Code E10

Under Table E10.1, vegetation within the property is considered a moderate priority.

In order to meet the Code, E10.7.1 for Buildings and works needs to be met.

Objective: To ensure that development for buildings and works that involves clearance and conversion or disturbance within a Biodiversity Protection Area does not result in unnecessary or unacceptable loss of priority biodiversity values.	
Acceptable Solution A1 Clearance and conversion or disturbance must comply with **one** of the following: (a) be within a Building Area on a plan of subdivision approved under this planning scheme; (b) the development is for a single dwelling on an existing lot within the Low Density Residential Zone, Rural Living Zone or Environmental Living Zone and (i) the area of clearance and conversion is no more than 3,000 m2; (ii) the area of disturbance is no more than 6,000 m2; (c) the development is other than for a single dwelling on an existing lot within the Low Density Residential Zone, Rural Living Zone or Environmental Living Zone and (i) the area of clearance and conversion is no more than 1,500 m2; (ii) the area of disturbance is no more than 3,000 m2.	(a) there is no building area on a previous plan approved under this planning scheme (b and c) Development is for a single dwelling on an existing lot within the Rural Resource Zone and so b and c do not apply. Acceptable solution cannot be met.
Performance Requirement (If the Acceptable Solution was not met)	
Clearance and conversion or disturbance must satisfy the following: (b) if **moderate** priority biodiversity values: (i) development is designed and located to minimise impacts, having regard to constraints such as topography or land hazard and the particular requirements of the development; (ii) impacts resulting from bushfire hazard management measures are minimised as far as reasonably practicable through siting and fire-resistant design of habitable buildings; (iii) remaining moderate priority biodiversity values on the site are retained and improved through implementation of current best practice mitigation strategies and ongoing management measures designed to protect the integrity of these values; (iv) residual adverse impacts on moderate priority biodiversity values not able to be avoided or satisfactorily	(i) The proposed road has been designed to follow an existing track to minimise impacts and the house is located in a partly cleared area. (ii) The building is to be constructed to BAL 40 to reduce the HMA extent. Establishment of the HMA will only require the removal of understorey vegetation and smaller trees. Significant trees located within the HMA (Figure 4) can remain with only lower limbs up to 2m height removed so long as the HMA is maintained in a low fuel condition. (iii) remaining areas of vegetation outside the road and house/HMA footprint would remain. Weed maintenance works would

mitigated are offset in accordance with the Guidelines for the Use of Biodiversity Offsets in the Local Planning Approval Process, Southern Tasmanian Councils Authority 2013 and any relevant Council policy.	serve to enhance areas of existing vegetation. (iv) Avoidance of values has been achieved by utilising an existing track and thus also minimising impacts. The residual impact of the potential loss of two known hollow bearing trees and 18 forage trees and a very small area of threatened vegetation is in this context relatively minor. Principal 1 states that loss of a very small area of vegetation does not warrant offset. Principal 1 states that the regulation of threatened species habitat is outside of LUPAA and advice should be sought from the regulatory authority. Note that the regulatory authority in this case the TSPA does not however regulate impacts on habitat. Nevertheless, given that the habitat is within DGL (threatened vegetation) an offset may be considered prudent. There is sufficient forest and habitat present to offset the loss of the habitat. An area of land forming a corridor along the track 20 m wide on each side (allowing for future access to an additional building area) would capture 5 trees for every tree lost. This is an accepted offset ratio.. Security of an offset area could be provided by a Part 5 Agreement.

Appendix A – Species List

Status codes:

ORIGIN	NATIONAL SCHEDULE	STATE SCHEDULE
i - introduced	EPBC Act 1999	TSP Act 1995
d - declared weed WM Act	CR - critically endangered	e - endangered
en - endemic to Tasmania	EN - endangered	v - vulnerable
t - within Australia, occurs only in Tas.	VU - vulnerable	r - rare

Sites:

1	cleared areas (FUM) - E504115, N5220137	1/05/2020 Dave Sayers
2	stringybark forest (DOB) - E504062, N5219967	1/05/2020 Dave Sayers
3	blue gum forest (DGL) - E503952, N5220133	1/05/2020 Dave Sayers

Site	Name	Common name	Status
	DICOTYLEDONAE		
	DICOTYLEDONAE		
	ASTERACEAE		
1 2 3	*Cassinia aculeata subsp. aculeata*	dollybush	
1	*Cirsium vulgare*	spear thistle	i
2	*Ozothamnus ferrugineus*	tree everlastingbush	
1	*Senecio linearifolius var. linearifolius*	common fireweed groundsel	
	ERICACEAE		
2 3	*Astroloma humifusum*	native cranberry	
	FABACEAE		
2	*Acacia dealbata subsp. dealbata*	silver wattle	
1 2 3	*Acacia leprosa var. graveolens*	varnish wattle	
2	*Daviesia ulicifolia*	spiky bitterpea	
2	*Pultenaea daphnoides*	heartleaf bushpea	
1 2	*Pultenaea juniperina*	prickly beauty	
1 2 3	*Ulex europaeus*	gorse	d
	GENTIANACEAE		
1	*Centaurium erythraea*	common centaury	i
	GERANIACEAE		
3	*Geranium potentilloides var. potentilloides*	mountain cranesbill	
	GOODENIACEAE		
1	*Goodenia ovata*	hop native-primrose	
	HALORAGACEAE		
1 3	*Gonocarpus tetragynus*	common raspwort	
	HEMEROCALLIDACEAE		
2 3	*Dianella tasmanica*	forest flaxlily	
	MYRTACEAE		
2 3	*Eucalyptus globulus subsp. globulus*	tasmanian blue gum	
1 2 3	*Eucalyptus obliqua*	stringybark	
2 3	*Eucalyptus pulchella*	white peppermint	en
2 3	*Eucalyptus viminalis subsp. viminalis*	white gum	
	OXALIDACEAE		
2 3	*Oxalis perennans*	grassland woodsorrel	
	PITTOSPORACEAE		
2	*Bursaria spinosa subsp. spinosa*	prickly box	
	PLANTAGINACEAE		
1	*Plantago coronopus subsp. coronopus*	slender buckshorn plantain	i
1	*Plantago lanceolata*	ribwort plantain	i
	PRIMULACEAE		
1	*Lysimachia arvensis*	scarlet pimpernel	i
	RHAMNACEAE		

2	*Pomaderris apetala*	common dogwood	
3	*Pomaderris apetala subsp. apetala*	common dogwood	
	RUBIACEAE		
2 3	*Coprosma quadrifida*	native currant	
	RUTACEAE		
3	*Zieria arborescens*	stinkwood	
	SANTALACEAE		
2 3	*Exocarpos cupressiformis*	common native-cherry	
2	*Leptomeria drupacea*	erect currantbush	
	SOLANACEAE		
1	*Solanum nigrum*	blackberry nightshade	i
	GYMNOSPERMAE		
	CUPRESSACEAE		
1	*Cupressus macrocarpa*	monterey cypress	i
	MONOCOTYLEDONAE		
	CYPERACEAE		
3	*Lepidosperma elatius*	tall swordsedge	
	JUNCACEAE		
2	*Juncus subsecundus*	finger rush	
	POACEAE		
1	*Agrostis capillaris var. capillaris*	browntop bent	i
1	*Aira caryophyllea*	silvery hairgrass	i
1	*Anthosachne scabra*	rough wheatgrass	
1	*Anthoxanthum odoratum*	sweet vernalgrass	i
1 3	*Arrhenatherum elatius var. bulbosum*	bulbous oatgrass	i
1	*Bromus hordeaceus*	soft brome	i
1	*Dactylis glomerata*	cocksfoot	i
2 3	*Deyeuxia sp.*	bent grass	
1	*Lolium perenne*	perennial ryegrass	i
3	*Poa tenera*	scrambling tussockgrass	
1 3	*Rytidosperma sp.*	wallabygrass	
	PTERIDOPHYTA		
	DENNSTAEDTIACEAE		
2 3	*Pteridium esculentum subsp. esculentum*	bracken	

Appendix B – Tree statistics and retention status

Label	Common	GPS	East_GDA	North_GDA	DBH (m)	TPZ dia (m)	Retention
1	blue gum	3	503867.45	5220185.25	2	15	remove
2	blue gum	4	503868.37	5220171.75	1.14	13.68	assess
3	white gum	5	503888.22	5220174.13	1.01	12.12	remove
4	blue gum	105	503887.42	5220165.53	1.06	12.72	retain
5	blue gum	106	503898.26	5220165.66	0.85	10.2	retain
6	blue gum	107	503905.08	5220179.35	0.77	9.24	remove
7	stringybark	108	503912.87	5220184.89	0.85	10.2	retain
8	blue gum	6	503923.05	5220166.37	1.23	14.76	remove
9	stringybark	8	503951.67	5220176.55	1.09	13.08	assess
10	blue gum	11	503972.31	5220162.83	1.1	13.2	remove
11	blue gum	12	503967.02	5220151.47	0.83	9.96	assess
12	blue gum	13	503967.66	5220148.84	0.57	6.84	retain
13	stringybark	110	504023.12	5220125.98	1.1	13.2	retain
14	stringybark	111	504033.14	5220120.82	1	12	retain
15	blue gum	24	504071.59	5220127.96	1.1	13.2	remove
16	blue gum	25	504086.01	5220123.95	1.09	13.08	retain
17	stringybark	26	504090.89	5220108.97	1.02	12.24	remove
18	stringybark	27	504095.4	5220101.03	0.82	9.84	remove
19	blue gum	28	504113.44	5220094.59	0.58	6.96	assess
20	stringybark	31	504142.61	5220052.28	0.73	8.76	assess
21	blue gum	32	504150.58	5220048.1	1.05	12.6	remove
22	stringybark	33	504157.94	5220040.58	0.74	8.88	remove
23	stringybark	34	504158.68	5220036.13	1.03	12.36	remove
24	white peppermint	35	504158.11	5220032.43	0.84	10.08	remove
25	stringybark	38	504146.54	5220028.7	1.26	15	assess
26	stringybark	36	504161.48	5220024.26	0.74	8.88	remove
27	blue gum	39	504151.93	5220009.66	0.9	10.8	remove
28	stringybark	40	504149.83	5220005.84	0.8	9.6	remove
29	stringybark	41	504150.33	5220001.11	0.75	9	remove
30	stringybark	42	504150.79	5219999.55	0.85	10.2	remove
31	stringybark	43	504149.55	5219993.67	0.83	9.96	remove
32	blue gum	44	504144.82	5219986.94	0.74	8.88	remove
33	stringybark	45	504152.01	5219984.28	0.74	8.88	assess
34	stringybark	46	504146.61	5219981.28	0.72	8.64	remove
35	blue gum	112	504135.16	5219972.72	0.55	6.6	remove
36	blue gum	52	504143.97	5219955.8	1.07	12.84	retain
37	blue gum	53	504130.43	5219952.75	0.36	4.32	remove
38	blue gum	55	504126.99	5219944.32	0.71	8.52	assess
39	blue gum	56	504122.05	5219947.72	0.62	7.44	remove
40	blue gum	58	504108.88	5219942.48	0.7	8.4	remove

Label	Common	GPS	East_GDA	North_GDA	DBH (m)	TPZ dia (m)	Retention
41	blue gum	57	504108.35	5219951.14	0.9	10.8	remove
42	blue gum	63	504104.93	5219952.1	0.82	9.84	remove
44	blue gum	62	504099.11	5219956.25	0.8	9.6	remove
45	blue gum	60	504096.55	5219956.56	0.45	5.4	remove
46	blue gum	59	504090.86	5219950.44	1.13	13.56	remove
47	white gum	65	504084.73	5219949.09	0.82	9.84	remove
48	blue gum	61	504088.49	5219961.42	0.85	10.2	assess
49	white peppermint	64	504080.37	5219961.26	0.79	9.48	retain
50	stringybark	83	504100.55	5219933.14	1.15	13.8	retain
51	stringybark	80	504096.49	5219920.23	0.93	11.16	retain
53	blue gum	66	504064.63	5219944	0.94	11.28	remove
54	blue gum	67	504049.58	5219943.06	0.79	9.48	retain
55	stringybark	99	504041.82	5219964.28	0.84	10.08	retain
56	stringybark	101	504040.57	5219955.4	0.84	10.08	retain
57	white gum	100	504037.15	5219958.61	0.78	9.36	retain
58	stringybark	103	504035.93	5219953.98	0.78	9.36	retain
59	stringybark	104	504031.53	5219954.3	0.74	8.88	retain
60	stringybark	70	504030.57	5219930.91	1.13	13.56	retain
61	blue gum	69	504038.24	5219928.77	0.7	8.4	retain
62	stringybark	71	504044.65	5219920.94	0.82	9.84	retain
63	stringybark	79	504097.94	5219903.78	1.02	12.24	retain
68	stringybark	68	504045.14	5219938.76	0.95	11.4	retain

northbarker
ECOSYSTEM SERVICES

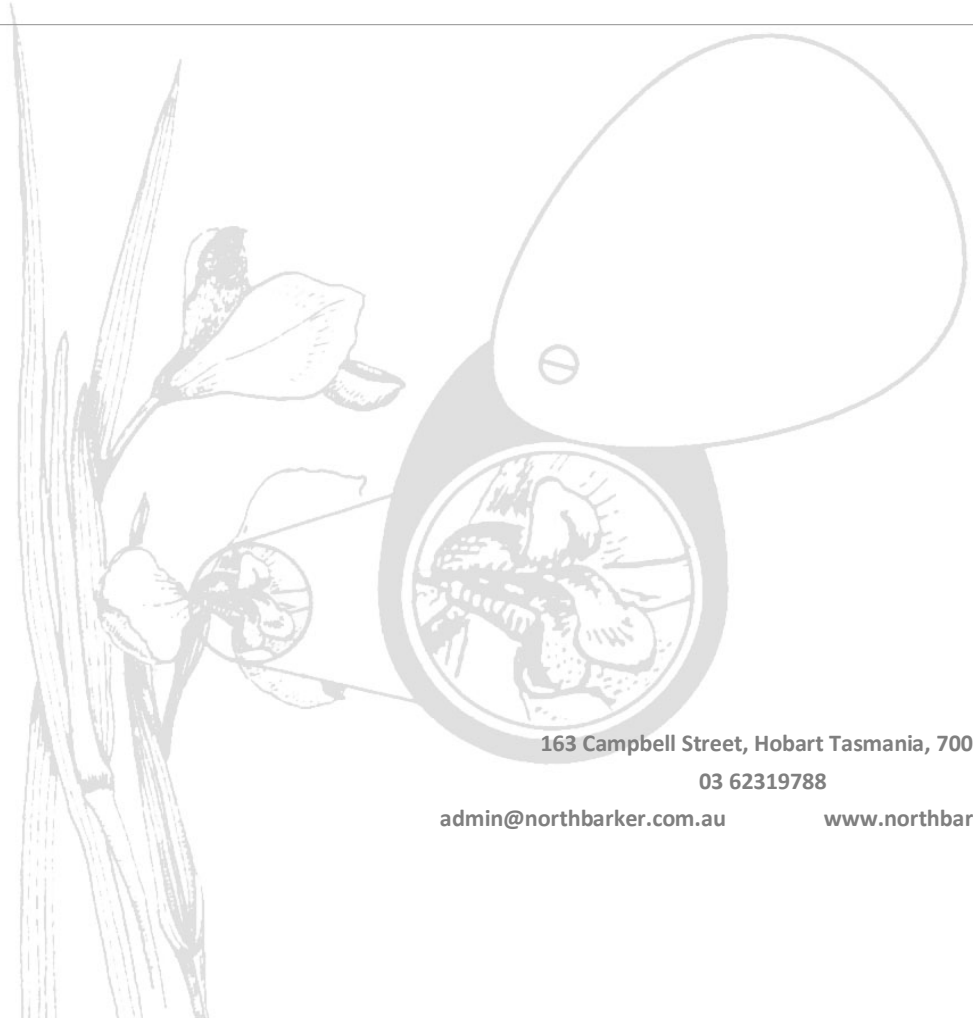
Hollands Road, Cygnet
Proposed dwelling

Natural Values Assessment

7th March 2022

For Stuart Tanner Architects obo Hayley and Greg Patten

STA004



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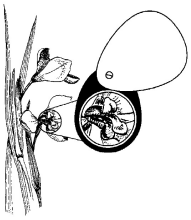
Report: Cameron Geeves and Philip Barker

Mapping: Linda Drummond

Photos: Cameron Geeves



Summary

Tasmanian Planning Scheme – Huon Valley	
Zones	Rural Living
Overlays	Biodiversity Code (E10) - Priority vegetation area
Vegetation	• *Eucalyptus obliqua* dry forest (DOB) This community is not a threatened community.
Impacts	No impact to threatened vegetation.
Threatened flora	None
Impacts	None
Threatened fauna and habitat	Potential foraging habitat for swift parrot, forty-spotted pardalote, Tasmanian devil, quolls, eastern barred bandicoot, Tasmanian masked owl, and Tasmanian wedge-tailed eagle. No dens, nests or tree hollows were recorded, none are expected.
Impacts	To reduce potential collision risk to swift parrot, measures to reduce this potential should be included in the house design. Impact to habitat for other threatened fauna is not significant.
EPBC Act	No implications
TSP Act	No implications
Weed Management Act	Gorse is a Zone B species in the Huon Valley Council where control and prevention of spread is the principal aim.
Biodiversity Offsets	None required

Recommendations

To reduce potential impact associated with the development we recommend the following:

- Maximise efforts to retain blue gums and white gums on the site to reduce potential impact to swift parrot and forty-spotted pardalote.
- To reduce potential collision risk to swift parrot, measures to reduce this potential should be included in the house design.
- The occurrences of declared weeds on the site should be managed and best practice construction hygiene should be practiced to prevent the spread of weed propagules in contaminated soil.

Table of Contents

1 Introduction

Background: A single house development is planned for PID 1552368 Hollands Road, Cygnet. The proposal area was surveyed as part of a larger survey of the entire property by North Barker Ecosystem Services (NBES) in 2020. Council has requested that the proponent demonstrate that the dwelling can be viably located on the site.

NBES have been requested to conduct a natural values assessment of the proposed building area and the associated bushfire hazard management area (BHMA). This report details the findings of our survey and includes the most up-to-date design.

The site is in the Huon Valley Council, is zoned as Rural Living and is subject to Natural Assets Code - Priority vegetation area.

Date of Field Survey: 24th February 2022

Field Survey, Report and Photos: Cameron Geeves

Methods: Plant species composition of the potential impact footprint was surveyed using an area search based on the Timed Meander Search Procedure[1]. Vegetation was classified according to TASVEG 4.0 units[2].

The Tasmanian Natural Values Atlas database was queried for records of threatened species and vegetation types within a 5 km radius[3]. Vascular plants were recorded in native and non-native units in accordance with the current census of Tasmanian plants[4]. The possibility of threatened values known from within this radius occurring within the impact area has been considered in the interpretation of results. The original NBES survey of the site were also referred to[5].

Limitations: The field survey was undertaken in summer. Values that are seasonal may have been overlooked or absent; the potential for this is considered where relevant in the discussion. The quality of fauna habitat, including the presence of tree hollows, was assessed from ground level only.

[1] Goff et al. 1982
[2] Kitchener and Harris 2013
[3] DNRE 2022, nvr_2_24-Feb-2022
[4] de Salas and Baker (2021)
[5] North Barker Ecosystem Services (2020). Holland Road, Proposed Dwelling, Natural Values Assessment, 18th May 2020, For Stuart Tanner Architects obo Hayley and Greg Patten, STA001

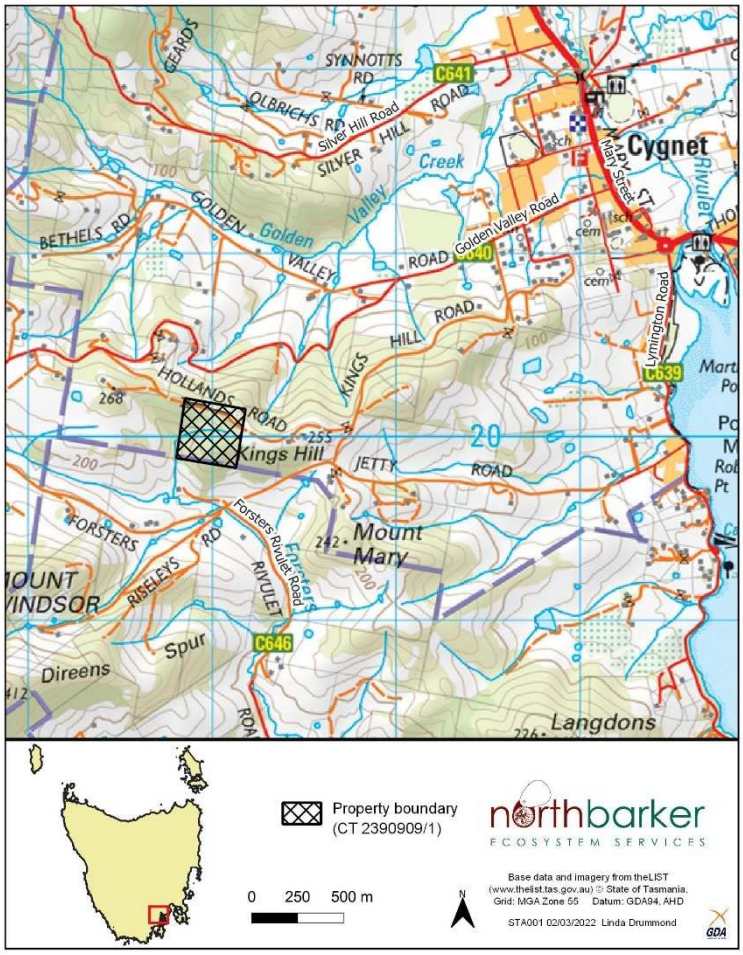


Figure 1: Location of the proposal

2 Results - Biological values

2.1 Vegetation

The following TASVEG community was recorded in the study area:

***Eucalyptus obliqua* dry forest (DOB) – 0.36 ha**

This native forest community surrounds the proposed house site on Kings Hill within the study area . It is dominated by *Eucalyptus obliqua* (stringybark) with occasional *E. globulus* (blue gum). The northern part of the woodland is in poor condition, with dieback most probably caused by the drier conditions of the northerly aspect. The trees are mostly small to medium in size (most trees are <50 cm DBH) and the canopy is at 10-15 m.

The proposed house site has been previously cleared.

The small tree layer varies in density with *Acacia dealbata, Bursaria spinosa* and *Dodonaea viscosa* the dominant species. The low shrub layer is dominated by *Goodenia ovata* which is abundant throughout this community. The most common low shrub is *Astroloma humifusum*. *Lomandra longifolia* and *Lepidosperma eliatus* are the most common graminoid species. Grasses dominate the ground layer with *Anthoxanthum odoratum* and *Rytidosperma spp.* being the most frequent. *Poa tenera* is also common. Herbs are moderately diverse with *Gonocarpus tetragona* and *Dichondra repens* being the most frequent.

Plate 1: DOB in the northeast of the survey area (previously cleared area FUM associated with proposed dwelling location in foreground)

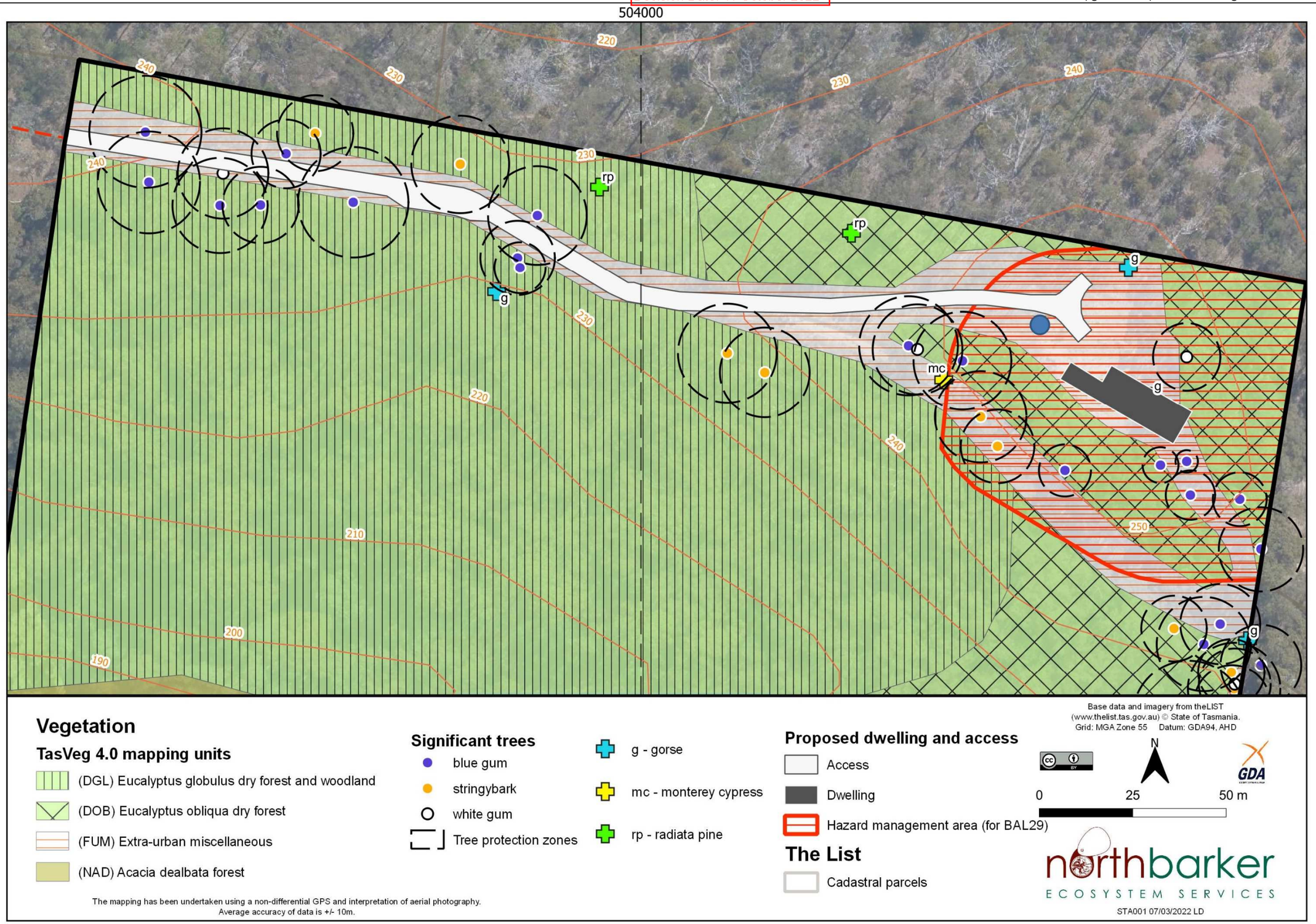


Figure 2: Road, house, HMA, vegetation, significant tree (tpz's) and weeds

2.2 Threatened Flora

In the original survey in 2020[6], 47 species were recorded in the DOB and DGL communities (DGL was not part of the present survey area) and a species list is presented in that report. This included 14 introduced species, one of which is a declared weed species (*Ulex europaeus*). No threatened species were recorded.

The present survey added and missed several species found in 2020 – the latter is not surprising as the 2020 survey area was much larger comprising the entire lot. These additions and omissions are of little ecological significance or consequence. No threatened flora were recorded during the present survey.

According to the Natural Values Atlas, no threatened flora have been recorded within 500 m of the property[7]

Additional species within 5 km

One species (*Lepidium hyssopifolium*) (TSP endangered, EPBC endangered) has been recorded within 5 km of the survey area. This species was not recorded during past surveys, nor was it recorded during the current survey. The likelihood of this species occurring within the impact area is very low due to a lack of habitat preferences such as flat, bare ground.

2.3 Threatened Fauna and Threatened Fauna Habitat

No sign or presence of threatened fauna was recorded during the survey. The survey area does however contain 19 *Eucalyptus globulus* (between 40 and 110 cm DBH) that are potential foraging habitat (and nesting habitat where trees are > 70 cm dbh) for swift parrot (*Lathamus discolor*, TSPA endangered, EPBCA critically endangered). The trees are all in the proposed bushfire hazard management area (Figure 2 above). No tree hollows viable for the nesting of the swift parrot or other vertebrate species were observed from ground observations but could conceivably occur No ground dens or burrows, were observed.

No TSP or EPBC listed threatened fauna have been recorded within 500 m of the study area.

Additional species within 5 km

A range of threatened fauna species have been recorded within 5 km of the site[8]. The likelihood of these species occurring within the survey area is considered in detail in (Appendix B). Some species have a low chance of occurring occasionally at the site or traversing the site (e.g., wedge-tailed eagle or swift parrot) but no impact is expected to those species. These species were also considered in detail for the entire property in the 2020 report[9].

2.4 Weeds

One introduced plant listed as 'declared' weed under the *Weed Management Act 1999* was recorded in the study area (Figure 1, Plate 4):

Ulex europaeus (gorse) – two plants within close proximity to the cleared area of the proposed dwelling location.

[6] North Barker Ecosystem Services (2020). Holland Road, Proposed Dwelling, Natural Values Assessment, 18th May 2020, For Stuart Tanner Architects obo Hayley and Greg Patten, STA001
[7] DNRE 2022, nvr_2_24-Feb-2022
[8] DNRE 2022, nvr_2_24-Feb-2022
[9] North Barker Ecosystem Services (2020). Holland Road, Proposed Dwelling, Natural Values Assessment, 18th May 2020, For Stuart Tanner Architects obo Hayley and Greg Patten, STA001

Plate 2: gorse in DOB east of the proposed dwelling location

3 Assessment of Impact and Mitigation

3.1 Vegetation

Impact to vegetation communities associated with the proposed location is as follows:

	DOB	FUM
Proposed design HMA	0.36 ha	-
Proposed design building footprint	-	0.43 ha
TOTAL	**0.79 ha**	

The proposed design footprint is situated entirely on previously cleared land (FUM).

An existing (~4 m) track has been utilised as the location for the access to the proposed dwelling, this mitigates the impact of clearing vegetation for access.

3.2 Threatened Flora

No threatened flora species listed either under the TSPA or the EPBCA were recorded during either the 2020 or the recent survey. No mitigation for threatened flora is required.

3.3 Threatened Fauna and Threatened Fauna Habitat

Although several threatened species may utilise the small survey area, the impact for the proposed design does not exceed a minor impact to foraging habitat for threatened species and any impact to threatened fauna is not expected to be significant.

The design does include swift parrot foraging trees (blue gums) and forty-spotted pardalote habitat trees (white gums). Accordingly, efforts to retain blue gums and white gums on the site should be maximised to reduce potential impact to these species. It is expected that all of these may be retained in the bushfire hazard management area.

Overall, potential impacts to threatened fauna are not significant under the proposals design and associated bushfire hazard management area.

Importantly, the construction of new dwellings within an area where blue gums are present or near potentially brings an increased risk of swift parrot mortality brought about by collision with new windows and other structures. Collision with fences, windows and vehicles is recognised as a key cause of mortality in parrots[10]. The level of risk would be determined by the architectural details of the proposed houses.

Collision Risk: In terms of collisions with windows, risks may be divided into two categories: a) reflections, and b) transparency[11].

a) When seen from the outside of a building, glass often has a reflective quality, mirroring the sky, trees, and other features. Some types are worse than others. The reflectivity increases when glass is seen at an oblique angle, regardless of whether the glass is transparent or tinted. Birds do not understand that a reflection is false. Instead, they perceive a continuation of their habitat and try to fly to it, resulting in collisions.

b) Birds cannot differentiate between clear glass and unobstructed airspace; it is invisible to them. Glass lobbies, balconies, windows, or glass walls that meet at a corner, or aligned windows (windows installed parallel to each other, on opposite sides of the building) provide an unobstructed view of habitat and sky on the other side of the building and are particularly dangerous: birds perceive a passageway and attempt to fly straight through. Also, transparent windowpanes mimic tinted reflective panes when little or no light is visible behind them.

The prevention of swift parrot collision has thus become a significant issue for local councils within the Greater Hobart area. To reduce the risk associated with this face, the proponent should consider measures to reduce the potential for collision impact and these should be included in the design of the house; some measures include the following:[12]

- Use acid-etched, opaque patterned, translucent, frosted, sandblasted, ribbed, corrugated, printed, stippled, or fritted glass, or translucent polycarbonate sheets;
- Use tinted/coloured glass, or leadlight ('stained') glass windows;
- Use glass with diachroic or plastic film coatings;
- Attach external screens to operable windows;
- Attach exterior decorative grilles, provided the sections are less than 28 cm wide (10 cm/handprint width being optimal);
- Install internal screens as close to the glass as possible so as to maximise the noise projected through the window (this technique works best on non-reflective glass); and/or
- Use smaller panes of glass, multiple-paned glass, or glass bricks. The horizontal and vertical glazing and bars will create a matrix visible to birds, provided the panes are no more than 28 cm wide (10 cm/handprint width being optimal).

Significant trees:

[10] Pfennigwerth, S. 2008. Minimising the swift parrot collision threat: guidelines and recommendations for parrot-safe building design. Report prepared for the World Wide Fund for Nature Australia and the Threatened Species Network (Australia).
[11] Pfennigwerth, S - as above
[12] Pfennigwerth, S. – as above.

Upgrade of the existing access track may require the removal of trees which provide potential foraging and nesting habitat for the swift parrot. The Australian Standard AS4970-2009 Protection of Trees on Development Sites defines impacts based on Tree Protection Zones (TPZ) which are calculated from trunk diameter (12 x DBH for single stem tree with a modified formula for multi-stem trees). According to the standard any impact to >10% of the tree protection zone is a significant encroachment likely to impact on a tree requiring an arborist to make formal assessment and determination as to whether to retain or remove the tree. Figure 2 identifies the Tree Protection Zones for significant trees along the access road and in the vicinity to the house site and HMA. Based on this 2 blue gums and 1 white gum within the area mapped as FUM along the access route should be assessed by an arborist to determine if they can be retained. It should be noted that due to inherent GPS inaccuracies and lack of detailed engineering drawings is an estimate and may differ once the location of the access track is defined onsite.

3.4 Weeds

Earthworks on site are likely to stimulate germination of weeds, especially the clearance of vegetation for bushfire hazard management.

The use of machinery and vehicles during construction also brings an increased risk of spreading existing weeds within the locality. Post construction works, if weed infestations still occur, they should be managed to prevent their spread.

One declared weed (gorse) is present within the proposed hazard management area. This is a serious weed species that produces large quantities of seed that can survive for years in the soil. Once established gorse is very difficult to eradicate.

We recommend that:

- All occurrences of declared weeds are treated prior to works.
- Best practice construction hygiene should be practiced to prevent the spread of weed propagules in contaminated soil. This should involve cleaning all machinery before leaving the works area, as well as not bringing dirty machinery into the site.
- Follow-up weed control implemented 6-12 months after works to treat any individuals that have colonised the disturbance area.

For more information the following may be consulted: *Weed and Disease Planning and Hygiene Guidelines - Preventing the spread of weeds and diseases in Tasmania* (DPIPWE, Stewart and Askey-Doran, 2015)

4 Legislative Requirements

4.1 Commonwealth Environment Protection and Biodiversity Conservation Act 1999

No species under this Act will be significantly impacted, no action required.

4.2 Tasmanian Threatened Species Protection Act 1995

No permit to impact species under this Act is required.

4.3 Tasmanian Weed Management Act 1999

Gorse is listed as a priority 4 Zone B species in the Huon Valley council area. According to the provisions of the *Weed Management Act* 1999, Zone B municipalities are those which host widespread infestations where control and prevention of spread is the principal aim. The containment principles of this Act should be sufficiently met with best practice construction hygiene that prevents the transport of contaminated material off site.

4.4 Huon Valley Interim Planning Scheme 2015

4.4.1 **Zones**

The entire property is zoned Rural Resource (26). There are no statements relevant to natural values under the objectives and standards for this zone.

4.4.2 **Codes**

The area is subject to the Biodiversity Code (E10).

Under Table E10.1, the vegetation community DOB is considered to be a moderate priority biodiversity value.

The purpose to the code is stated as follows:

a) Minimise the loss of identified threatened native vegetation communities and threatened flora species;

b) Conserve identified threatened fauna species by minimising clearance of important habitat and managing environmental impact;

c) Minimise loss of other biodiversity values that are recognised as locally significant by the planning authority

Where not otherwise regulated by the state or the commonwealth.

In order to meet the Code, E10.7.1 for Buildings and works needs to be met.

The objective of the Code is stated as follows:

To ensure that development for building and works that involves clearance and conversion or disturbance within a Biodiversity Protection Area does not result in unnecessary or unacceptable loss of priority biodiversity values.

Acceptable Solutions A1

Clearance and conversion or disturbance must comply with one of the following:

a) be within a building area on a plan of subdivision approved under this planning scheme

There is no building area on a previous plan approved under this scheme – does not comply

b) the development is for a single dwelling on an existing lot within the low density residential zone, rural living zone or environmental living zone
   i. the area of clearance and conversion is no more than 3000 m^2;
   ii. the area of disturbance is no more than 6000 m^2

The proposal is for a single dwelling on an existing lot within the Rural Resource zone – does not comply

c) the development is other than for a single dwelling on an existing lot within the low density residential zone, rural living zone or environmental living zone
   i. the area of clearance and conversion is no more than 1500 m^2
   ii. the area of disturbance is no more than 3000 m^2

The proposal is for a single dwelling on an existing lot within the Rural Resource zone – does not comply.

The proposal cannot meet acceptable solutions A1 and therefore must meet performance criteria P1.1 for moderate priority biodiversity values as follows:

Clearance and conversion or disturbance must satisfy the following:

a) if moderate priority biodiversity values:

i. development is designed and located to minimise impacts, having regard to constraints such as topography or land hazard and the particular requirements of the development

The design for the dwelling has been located on a patch of previously cleared land and previously levelled (FUM). Much of the land surrounding this area has been classified as part of a landslide hazard area with slopes over 11° and therefore the chosen site for the dwelling is the most logical. Using this location mitigates the need to unnecessarily clear more native vegetation.

ii. impacts resulting from bushfire hazard management measures are minimised as far as reasonably practicable through siting and fire-resistant design of habitable buildings;

This design location within FUM minimises impacts to the surrounding intact DOB vegetation. Trees with conservation values such as the blue gums and white gums within the impact area for bushfire hazard management will be retained and those along the access track with in FUM will be assessed for potential to retain.

iii. remaining moderate priority biodiversity values on the site are retained and improved through implementation of current best practice mitigation strategies and ongoing management measures designed to protect the integrity of these values;

This will be achieved through implementing the recommendations made in this report.

iv. residual adverse impacts on moderate priority biodiversity values not able to be avoided or satisfactorily mitigated are offset in accordance with the *Guidelines for the use of Biodiversity Offsets in the Local Planning Approval Process, Southern Tasmanian Councils Authority 2013 and any relevant Council policy*

Given there is scope to retain trees of conservation significance offsets are not considered necessary. Furthermore, impacts as a result of clearance for bushfire hazard management is to a common vegetation community (DOB) within the area.

5 Conclusion and recommendations

A single house development is proposed at Holland Road, Cygnet. The entire property has been surveyed previously by North Barker Ecosystem Services (NBES) in 2020. The proponent is considering an alternative building area (proposed location) rather than the previous location. NBES undertook a natural values assessment of the proposed location to assess the potential impacts of the building and associated bushfire hazard management area.

No threatened vegetation communities or threatened flora species were recorded. The site contains suitable foraging trees for swift parrot and forty-spotted pardalotes as well as foraging habitat for Tasmanian devil, quolls, eastern barred bandicoot, Tasmanian masked owl, and Tasmanian wedge-tailed eagle. No dens or nests or tree hollows were recorded, and none are expected. Potential impact to threatened fauna is minor. Swift parrots are however at risk of collision with new buildings and structures.

To reduce potential impact associated with the development we recommend the following:

- Retain all blue gums and white gums within the hazard management area.

- Have an arborist verify which trees can be retained along the access track.
- To reduce potential collision risk to swift parrot, measures to reduce this potential should be included in the house design.
- The occurrences of declared weeds on the site should be managed and best practice construction hygiene should be practiced to prevent the spread of weed propagules in contaminated soil.

References

de Salas, M.F. and Baker, M.L. (2021) A Census of the Vascular Plants of Tasmania, Including Macquarie Island. (Tasmanian Herbarium, Tasmanian Museum and Art Gallery. Hobart) www.tmag.tas.gov.au (PDF).

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Tasmanian State Government (1995). Threatened Species Protection Act 1995. No.83 of 1995. Government Printer, Hobart, Tasmania

Tasmanian State Government (1999). Weed Management Act 1999. No.105 of 1999. Government Printer, Hobart, Tasmania.

Appendix A: Vascular Plant Species List

Status codes:

ORIGIN	NATIONAL SCHEDULE	STATE SCHEDULE
i - introduced	EPBC Act 1999	TSP Act 1995
d - declared weed WM Act	CR - critically endangered	e - endangered
en - endemic to Tasmania	EN - endangered	v - vulnerable
t - within Australia, occurs only in Tas.	VU - vulnerable	r - rare

Sites:

4 DOB - E504145, N5220125 24/02/2022 Cameron Geeves

Site	Name	Common name	Status
	DICOTYLEDONAE		
	ASTERACEAE		
4	*Cassinia aculeata subsp. aculeata*	dollybush	
4	*Cirsium vulgare*	spear thistle	i
4	*Ozothamnus ferrugineus*	tree everlastingbush	
	ERICACEAE		
4	*Styphelia humifusa*	native cranberry	
	FABACEAE		
4	*Acacia dealbata subsp. dealbata*	silver wattle	
4	*Acacia leprosa var. graveolens*	varnish wattle	
4	*Daviesia ulicifolia*	spiky bitterpea	
4	*Pultenaea daphnoides*	heartleaf bushpea	
4	*Pultenaea juniperina*	prickly beauty	
4	*Ulex europaeus*	gorse	d
	GENTIANACEAE		
4	*Centaurium erythraea*	common centaury	i
	GERANIACEAE		
4	*Geranium potentilloides var.*	mountain cranesbill	
	GOODENIACEAE		
4	*Goodenia ovata*	hop native-primrose	
	HALORAGACEAE		
4	*Gonocarpus tetragynus*	common raspwort	
	HEMEROCALLIDACEAE		
4	*Dianella tasmanica*	forest flaxlily	
	LAURACEAE		
4	*Cassytha pubescens*	downy dodderlaurel	
	MYRTACEAE		
4	*Eucalyptus globulus subsp. globulus*	tasmanian blue gum	
4	*Eucalyptus obliqua*	stringybark	
4	*Eucalyptus viminalis subsp. viminalis*	white gum	
	OXALIDACEAE		
4	*Oxalis perennans*	grassland woodsorrel	

	PITTOSPORACEAE		
4	*Billardiera heterophylla*	bluebell creeper	i
4	*Pittosporum undulatum*	sweet pittosporum	i
	PLANTAGINACEAE		
4	*Plantago coronopus*	buckshorn plantain	i
	PRIMULACEAE		
4	*Lysimachia arvensis*	scarlet pimpernel	i
	RHAMNACEAE		
4	*Pomaderris apetala*	common dogwood	
	RUBIACEAE		
4	*Coprosma quadrifida*	native currant	
	RUTACEAE		
4	*Zieria arborescens*	stinkwood	
	MONOCOTYLEDONAE		
	POACEAE		
4	*Agrostis capillaris*	brown top bent grass	i
4	*Aira caryophyllea*	silvery hairgrass	i
4	*Anthoxanthum odoratum*	sweet vernalgrass	i
4	*Dactylis glomerata*	cocksfoot	i
4	*Poa tenera*	scrambling tussockgrass	
4	*Rytidosperma caespitosum*	common wallabygrass	
	PTERIDOPHYTA		
	DENNSTAEDTIACEAE		
4	*Pteridium esculentum subsp. esculentum*	bracken	

Appendix B: Threatened Fauna within 500 m, 5000 m and based on Range Boundaries[13]

Species	Status TSPA / EPBCA	Records within 500 m / 5 km	Potential to Occur	Observations and Preferred Habitat
MAMMALS				
Dasyurus maculatus subsp. *maculatus* spotted-tailed quoll	Rare / VULNERABLE	0 / 1	Denning: VERY LOW Foraging: LOW	This naturally rare forest-dweller most commonly inhabits wet forest but also occurs in dry forest. It forages and hunts on farmland and pasture, travelling up to 20 km at night, and shelters in logs, rocks, or thick vegetation. The broader area does provide denning potential for this species. Given the extent and the characteristics of the habitat available for this species in the survey area, the loss of native vegetation in the survey areas there are no anticipated impacts to this species.
Dasyurus viverrinus Eastern quoll	Endangered / ENDANGERED	0 / 49	Denning: LOW Foraging: MODERATE	Occurs in most parts of Tasmania but is recorded infrequently in the wetter western third of the state. This species' distribution is associated with areas of low rainfall and cold winter minimum temperatures. It is found in a range of vegetation types including open grassland (including farmland) where protective cover is available nearby, tussock grassland, grassy woodland, dry eucalypt forest, coastal scrub, and alpine heathland, but is typically absent from large tracts of wet eucalypt forest and rainforest. The broader area does provide denning potential for this species. Given the extent and the characteristics of the habitat available for this species in the survey area, the loss of native vegetation in the survey areas there are no anticipated impacts to this species.
Perameles gunnii Eastern barred bandicoot	- / VULNERABLE	0 / 28	MODERATE	Native vegetation within the survey is suitable for this species to breed and forage. There are no previous records known from site. Works of this scale and nature is unlikely to impact the potential for this species to persist in the area.

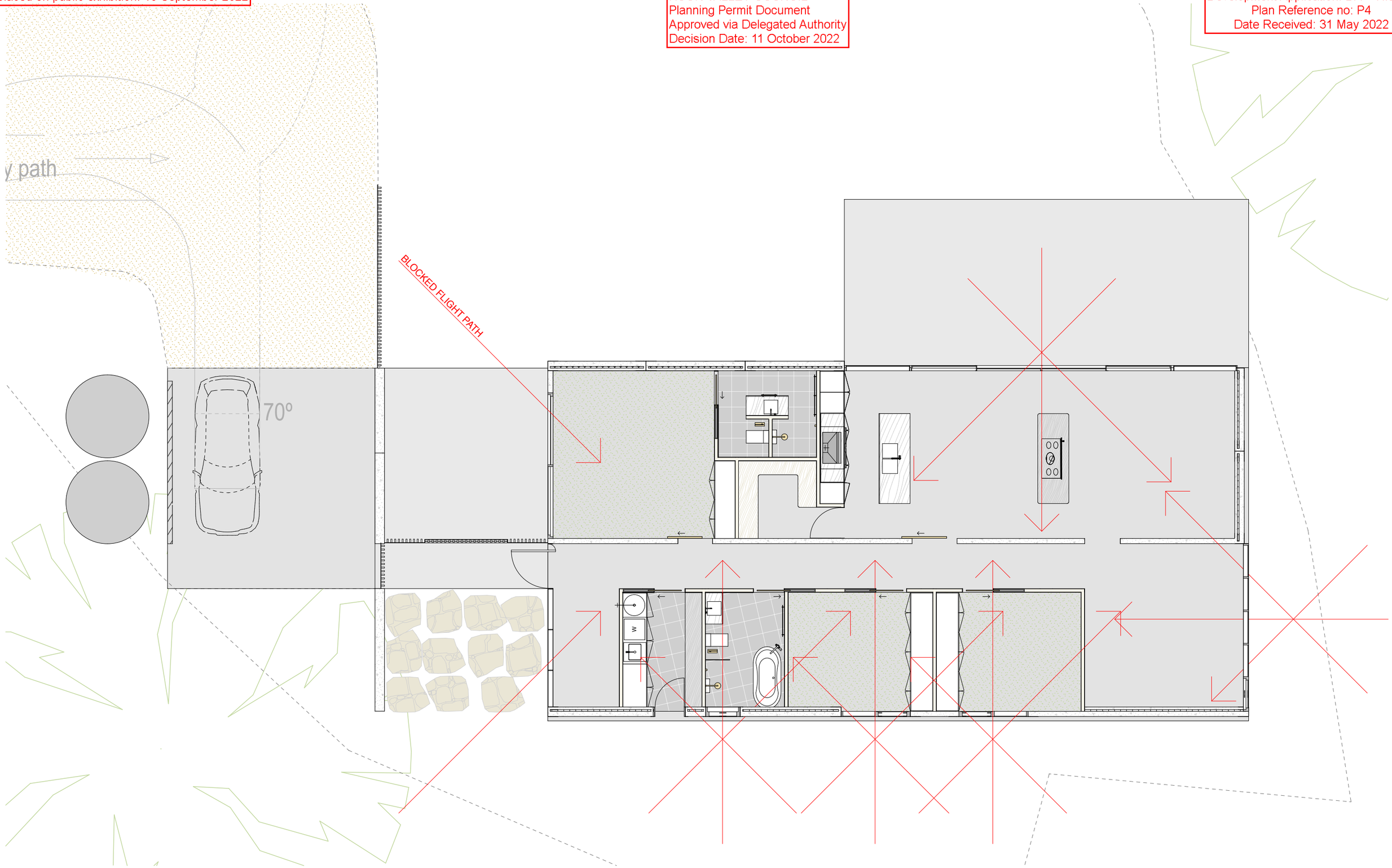
[13] DNRE 2022, nvr_2_24-Feb-2022

Species	Status TSPA / EPBCA	Records within 500 m / 5 km	Potential to Occur	Observations and Preferred Habitat
Sarcophilus harrisii Tasmanian devil	Endangered / ENDANGERED	0 / 134	Denning: VERY LOW Foraging: MODERATE	This species occupies a wide range of habitats across Tasmania and exploits landscapes with a mosaic of pasture and forest with elevated prey densities and is attracted to roadkill hotpots with concentrated scavenging resource. Populations have declined substantially since the first observations of the infectious cancer Devil Facial Tumour Disease (DFTD). DFTD has now spread across much of Tasmania. The reduced population is also likely to be more sensitive to additional threats such as death by roadkill, competition with cats and foxes, and loss or disturbance of areas surrounding traditional dens where young are raised. The protection of breeding opportunities is particularly important for the species due to the mortalities from demographic pressures. No dens, burrows, scats, or any other signs of devils were recorded during the survey. Although there are no records of this species within the immediate area, there are numerous records within the broader 5 km. The survey area falls in the core range for devils. This species may occur in the survey area to forage at times.
BIRDS				
Accipiter novaehollandiae grey goshawk	Endangered / -	0 / 8	Nesting: NONE Foraging: LOW	Inhabits large tracts of wet forest and swamp forest, particularly patches with closed canopies above an open understorey, but with dense stands of prey habitat nearby. Mature trees provide the best nesting sites. Most nests have been recorded from blackwoods and occasional myrtle beech. There is no habitat suitable for the nesting of grey goshawks on the site. It is possible that goshawks may forage in the area, however it is no impacts to this species are anticipated. The nearest nest is 1 km north of the survey area near Golden Valley Creek.
Aquila audax subsp. *fleayi* Tasmanian wedge-tailed eagle	Endangered / ENDANGERED	0 / 7	Nesting: NONE Foraging: LOW	This species nests in a range of old growth native forests and is dependent on forest for nesting. Territories can contain up to five alternate nests usually close to each other but may be up to 1 km apart where habitat is locally restricted. This eagle preys and scavenges on a wide variety of fauna including fish, reptiles, birds, and mammals. Two nests have been recorded 2.1 and 2.6 km

Species	Status TSPA / EPBCA	Records within 500 m / 5 km	Potential to Occur	Observations and Preferred Habitat
				southwest of the site. Given this, no impacts to this species are anticipated.
Haliaeetus leucogaster white-belled sea-eagle	Vulnerable / -	0 / 4	Nesting: NONE Foraging: LOW	In Tasmania, this species is restricted to nesting within 5 km of coastlines, major estuaries, and inland lakes. They typically build nests in large eucalypt trees, much like the Tasmanian wedge-tailed eagle (*Aquila audax fleayi*), although their specific nesting requirements aren't as strict, such that they often nest in relatively small and exposed coastal trees (including [in a minority of cases] non-native species [e.g., *Pinus radiata*]), and are also known to nest occasionally on sea cliffs or even piles of rocks at ground level on islands lacking ground predators (e.g., Ninth Island). May utilise the area for foraging on occasion.
Lathamus discolor swift parrot	Endangered/Critically endangered	0 / 18	Nesting: LOW Foraging: MODERATE	The Swift Parrot spends its winter in south-eastern mainland Australian before migrating to Tasmania in late winter/early spring to breed. During the breeding season, nectar from Tasmanian blue gum (Eucalyptus globulus) and black gum (Eucalyptus ovata) flowers is the primary food source for the species. These eucalypts are patchily distributed, and their flowering patterns are erratic and unpredictable, often leading to only a small proportion of Swift Parrot habitat being available for breeding in any one year. Swift Parrots breed in tree hollows in mature eucalypts within foraging range of a flower source. Six blue gums (*Eucalyptus globulus*) occur within the survey area (one tree < 70 cm dbh). No obvious hollows are present in the trees within the survey area. These trees may provide some potential foraging habitat for swift parrots.
Pardalotus quadragintus Forty-spotted pardalote	Endangered / ENDANGERED	0 / 0	Nesting: LOW Foraging: LOW	Endemic to Tasmania and occurs in only a few small areas within the State. It is relatively restricted to dry grassy forest and woodland along the east coast containing mature white gum (*Eucalyptus viminalis*). Although the chance of this species occurring at the site is considered low, the two mature white gums on the site do offer potential habitat for this species.

Species	Status TSPA / EPBCA	Records within 500 m / 5 km	Potential to Occur	Observations and Preferred Habitat
Tyto novaehollandiae castanops Tasmanian masked owl	Endangered / -	0 / 2	Nesting: VERY LOW Foraging: MODERATE	Found in a range of habitats which contain some mature hollow-bearing forest, usually below 600 m altitude. This includes native forests and woodlands as well as agricultural areas with a mosaic of native vegetation and pasture. Significant habitat is limited to large eucalypts within dry eucalypt forest in the core range. The project area is within core range for this species. No hollows were recorded during the site survey
REPTILES, AMPHIBIANS AND FISH				
Pseudemoia pagenstecheri tussock skink	Vulnerable / -	0 / 0	NONE	A ground-dwelling lizard, occurring in grassland and grassy woodland habitats at a range of elevations. Records in Tasmania a few disconnected patches of habitat from Midlands, inland Cradle Coast, and eastern Bass Strait islands. No suitable habitat for this species occurs within the site.
Litoria raniformis green and gold frog	Vulnerable / VULNERABLE	0 / 0	NONE	In Tasmania, this species is found in lowland areas, primarily coastal. They require permanent or temporary water bodies for survival and tend to inhabit ones containing emergent plants such as *Cycnogeton procera* or species of *Juncus* or sedge. They are rarely seen in open water and spend most of their time in vegetation at the water's edges. They depend upon permanent fresh water for breeding, which occurs in Spring and Summer. No permanent or temporary water bodies are present within the survey area.
Prototroctes maraena Australian grayling	Vulnerable / VULNERABLE	0 / 4	NONE	In Tasmania, the diadromous Australian Grayling has been found in northern, eastern, and western rivers. Little is known of the population size. The major threat to the species is the construction of barriers that prevent adult fish moving upstream and juveniles downstream. No stream, creeks, or permanent or temporary water bodies are present within the survey area.
INVERTEBRATES				

Species	Status TSPA / EPBCA	Records within 500 m / 5 km	Potential to Occur	Observations and Preferred Habitat
Antipodia chaostola chaostola skipper	Endangered / ENDANGERED	0 / 0	NONE	This species is restricted to dry forest and woodland supporting the sedge *Gahnia radula* and occurs in isolated populations in south-eastern and eastern Tasmania. No *Gahnia* was found within the survey area.
Lissotes menaclas Mount Mangana stag beetle	Vulnerable / -	0 / 0	VERY LOW	This occurs in southeast Tasmania including parts of the Wellington range, South Bruny and the Forester and Tasman Peninsulas. Confined to wet forest with large logs although much of potential habitat is unoccupied. The vast majority of the survey area is dry forest some wet forest elements are found south of the survey are in a small gully. No large logs present within the survey area.



1:100 4. HOUSE GROUND (BIRDSTRIKE)

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Issue ID	Issue Name	Issue Date
REV B	FOR DA (RFI DA-41/2021)	25/5/22

Drawing Title:
OPENING SERIES - HOUSE (BIRDSTRIKE)

Scale: AS SHOWN @ A3 **Date:** 26/5/22

Status: SCHEMATIC DESIGN **Checked By:** STA

0 2 4 8m

Drawing No.:
A6002
01