

NATURAL VALUES ASSESSMENT

CHANNEL HIGHWAY, GARDNERS BAY



For

R. KAY

NOVEMBER 2023

D. Summers (BAppSc)

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Citation

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1. Summary

The following report contains information attached to a development application to the Huon Valley Council (HVC) for construction of a class 10A dwelling and ancillary unit at Channel Highway, Gardners Bay (C.T. 46193/1, PID 7316251) on behalf of R. Kay. Under the Huon Valley Interim Planning Scheme 2015 (HVIPS2015) the property is currently zoned as Rural Resource. At the time of assessment an area had been cleared of vegetation to facilitate development. This report looks at the proposed development and assesses potential short and long term residual impacts on ecological functions within and surrounding the proposed site to assist local, State and Commonwealth agencies during the assessment and approval process. The study site was assessed by Doug Summers in June 2022.

Legislative Implications

Threatened Flora

- No threatened plant species listed under Tasmania's *Threatened Species Protection Act 1995* or the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999* had previously been recorded on site or at the time of assessment,
- At the time of assessment, a small amount of roadside vegetation within the Reserve Road required modification to upgrade the existing vehicular track. Approx. 5820m² of previously modified vegetation will require modification to establish the BAL-29 hazard management (HMA),
- Assessment indicates the proposed clearance and conversion and ongoing management of the HMA and recent clearance of veg on the southern boundary does not represent a loss of potential habitat for *Ozothamnus floribundus* or a significant loss of potential habitat for threatened flora species recorded within 5km. No further assessment or permit under Section 51 of Tasmania's *Threatened Species Protection Act 1995*. No formal referral to the Commonwealth's Department of Environment under *Significant Impact Guidelines*.

Vegetation communities

- Flora survey indicates vegetation adjacent to the access from Ch00-180 is consistent with a transitioning vegetation community between TASVEG 4.0 dry *Eucalyptus ovata* woodland/forest (DOV) and adjacent wet *Eucalyptus obliqua* forest over broadleaf shrubs (WOB),
- Assessment indicates vegetation disturbance associated with internal access upgrades is consistent with TASVEG 4.0 wet *Eucalyptus obliqua* forest over broadleaf shrubs (WOB),
- The proposed development site is with land consistent with the TASVEG 4.0 classification of modified land supporting modified vegetation *Pteridium esculentum* fernland (FPF). Where the fernland does not have uniform coverage, the remaining land is classified as Regenerating land (FRG),
- DOV vegetation community is listed as threatened vegetation communities under Schedule 3A of Tasmania's *Nature Conservation Act 1995*. Given impacts to DOV are restricted to vegetation within the Reserve Road, and less than 1ha, no further assessment or permit required under *Nature Conservation Act 2002* or *Land Use Planning and Approvals Act 1993*.

Threatened Fauna

- No fauna species listed under Tasmania's *Threatened Species Protection Act 1995* or the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999* have previously been recorded within the allotment, or were recorded during surveys,
- Site within Swift Parrot Important Breeding Areas (SPIBA's). Potential foraging habitat recorded (*Eucalyptus ovata*) recorded within and adjacent to the proposed access, with *Eucalyptus globulus* recorded throughout the allotment. Mature eucalypts with a diameter at breast height (DBH) exceeding 70-80cm represent potential nesting habitat. Construction of the proposed access within Reserve Road

to access the allotment is likely to result in a minor loss of potential foraging habitat for this species. Two potential nesting trees recorded to the north of the proposed development site may be impacted. Despite the minor impacts associated with the construction of the access, it is anticipated impacts are not significant with regards to extent of potential habitat surrounding the site. Not anticipated further assessment or referral is required under Tasmania's *Threatened Species Protection Act 1995* or the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999*,

- An assessment by a raptor ecologist found the south-facing wet forest supports one Tasmanian Wedge-tailed eagle nest located in the north-east corner approx. 200m from the proposed development site and not within line-of-sight. Comments from the ecologist indicate it is unlikely the site will impact potential nesting habitat or disrupt breeding activities. No further assessment or permit required under Tasmania's *Threatened Species Protection Act 1995* or the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999*.
- Raptor Ecologist's assessment found the south facing forest also supports Grey Goshawk nesting habitat but is confined to the areas at the base of the slopes adjacent to the watercourse with surveys recording 6 nests within neighbouring property in proximity to the Reserve Road and 3 nests recorded within wet sclerophyll forest in the southern half of the allotment clear of the proposed development site. Raptor Ecologist's assessment found the south facing slopes occupied by wet sclerophyll supports a resident pair of Grey Goshawks with the gully forming part of their core breeding territory and an important post-fledging area for juveniles. Site plans indicate the proposed development is clear of core potential nesting trees. Assessment indicates the proposed access will not impact potential habitat. Whilst the proposed development is in proximity to potential habitat identified by the Ecologist, these sites are not within line-of-sight,
- Raptor ecologist found large eucalypts with DBH exceeding 80cm represent potential nesting habitat for the Masked Owl but could not accurately determine status of hollows. Song meters detected Masked Owl vocalisations confirming presence in the immediate area.
- Raptor Ecologist recommendations indicate the proposed development and access upgrades are unlikely to impact potential nesting and foraging habitat for these species. However, the ecologist's recommendations regarding determining status of nests prior to commencement of works and avoid disturbance during the breeding season should be adopted. No further assessment or permit required under Tasmania's *Threatened Species Protection Act 1995* or the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999*.
- Proposed development site is within range boundaries Quolls, Bandicoots and Devils. Assessment indicates the location of the proposed development and scale of works will result in minor disturbance and do not anticipate works and future occupation will result in a significant loss of foraging or denning habitat for these species. Post construction pressure such as domestic pets can potentially cause further disturbance or displacement. No further assessment or permit required under Tasmania's *Threatened Species Protection Act 1995* or the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999*.

Weed Management

- Spanish heath and BlackBerry were recorded within the Reserve Road corridor. Both plant species are listed as Declared plants under Tasmania's *Weed Management Act 1999* (WMA). In accordance with the WMA landowners are obligated to manage infestations in line with recommendations in the Statutory Weed Management Plan for each species,
- In addition, it is recommended best hygiene practice is adopted to avoid the accidental introduction of additional declared weed species and plant pathogens and mitigate the spread of weeds within the property.

Planning implications

E10.0 Biodiversity Code

In accordance with Table 1, E10.1, the allotment zoned Environmental Living supports 'Moderate' biodiversity priority values. The proposed development and associated BAL-29 5820m² HMA is positioned within land that has been previously cleared in preparation for development. Site plans indicate no additional native vegetation or high biodiversity values trees require removal. The proposal does not satisfy A1 Acceptable Solutions E10.7.1 Building and Works. However, it appears the proposed works complies with alternative solution Performance Criteria P1 (b) 'Medium' biodiversity values. It is anticipated a suitable off set can be achieved in line with 'Guidelines for the use of Biodiversity Offsets in the local planning approval process' and HVC's Biodiversity Offset Policy V4.0 in the form of a 1ha, greater than a 5:1 ratio, same-for-same or 'trading up' principle formal Part 5 Agreement vegetation covenant encompassing an area identified a significant habitat for the Tasmanian Wedge-tailed eagle, Grey goshawk, Swift parrot and Masked Owl.

E23.0 On-site Wastewater Management Code

Providing the wastewater management systems are positioned within the bushfire hazard management area, appropriately designed, located to geotechnical specifications by approved manufactures and implemented by certified operators, it is not anticipated the output of tertiary treated wastewater will result in any long-term residual impacts on native vegetation or surface or groundwater quality down-slope from the facility. Site plans indicate the land application area is of sufficient size to comply with the requirements of AS/NZ1547.

E7.0 Stormwater Management Code

Stormwater quantity requirements must always comply with requirements of the local authority including catchment-specific standards. All stormwater flow management estimates should be prepared according to methodologies described in Australian Rainfall and Runoff (Engineering Australia 2004) or through catchment modelling completed by a suitably qualified person.

Recommendations

Assessment indicates the proposed development site is clear of the gully that supports significant potential threatened fauna habitat (Raptor ecologist assessment, D. Young 2023). Assessment indicates the proposed access, development and associated hazard management area will not impact existing nests or potential nesting habitat identified. The ecologist has commented the proposal may impact existing nests but states this is unlikely as the potential impacts identified can be mitigated. However, a raptor ecologist has made a number of preconstruction recommendations requiring assessment of nest status and breeding activity.

Site plans indicate the proposal will not result in the loss of threatened vegetation community or require the removal of high priority native vegetation or adjacent high biodiversity value eucalypts. Providing development is limited to the proposed development site identified and recommendations for future development are followed, it is not anticipated the proposal / removal of a 'very high' priority eucalypt will compromise the existing ecological systems and functions within the allotment or surrounding environs. Significant Impact Guidelines issued by the Commonwealth Dept of the Environment to determine if referral to the department is required indicates the proposal will not:

- impact native vegetation or a native vegetation community,
- directly impact potential threatened species habitat,
- lead to a long-term decrease in the size of populations, reduce area of occupancy of a significant population, fragment an existing population or destroy habitat critical to the survival of species,
- disrupt the breeding cycle of an important population,
- modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline,

- result in invasive species that are harmful to a threatened species becoming established in the threatened species habitat.

As such, it is unlikely the proposal will result in “significant impacts” as described in the EPBC Act. No further assessment or referral is required under Tasmania’s *Threatened Species Protection Act 1995* or Commonwealth’s *Environmental Protection Biodiversity Conservation Act 1999*.

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2. Introduction, Scope, and Methodology

Purpose

The owner and proponent engaged Lark and Creese Environmental to detail the ecological values supported within 505 Police Point Road, Police Point (C. T. 44038/4, C.T.200641/1) as part of a development application to the Huon Valley Council for a 3 Lot subdivision within the property. The property is currently zoned Rural Resource with the allotment boarded similar zoned allotments to the north, east, south and west. The property has a southerly aspect with a gradient that varies from 15°– 25°. An existing vehicular track access the property via the southern boundary. An internal access provides access to a previously cleared location in the elevated north-west corner of the allotment. Majority of the allotment is occupied by native wet sclerophyll vegetation.

Scope

The survey specifically focuses on:

- flora and fauna species with priority biodiversity significance within the subdivision footprint including a conversation of species and implications regarding the *Tasmanian Threatened Species Protection Act 1995* and the *Commonwealth Environmental Protection and Biodiversity Conservation Act 1999*,
- vegetation types within the study site including descriptions on the distribution, condition composition and conservation significance of vegetation types and conservation status under Local, State and Commonwealth policy and legislation,
- impact on surrounding vegetation communities and natural values to demonstrate the site has capacity to accommodate appropriate development and associated bushfire hazard management area (HMA).

Methodology

Survey methodology is based on ‘Site Examination for Threatened and Endangered Plant Species’ supported by methodology outlined in “Manual for Assessing Vegetation Condition in Tasmania”. The report also specifically addresses possible environmental issues that may arise under the Kingborough Interim Planning Scheme 2015 (KIPS2015) particularly in relation to the Biodiversity Code.

Vegetation classification is in accordance with TASVEG 4.0, as described in ‘From Forest to Fjaeldmark: Descriptions of Tasmania’s vegetation (Kitchener & Harris 2013).

Vascular plant species nomenclature is consistent with de Salas & Baker (2014) for scientific names. Fauna species scientific and common names is in accordance with fauna listed in the *Natural Values Atlas* report for the site (NRE).

All grid references in this report are in GDA94 MGA55.

Location

LISTmap indicates the substrate is Dolerite (tholeiitic) with locally developed granophyre. A survey found no geomorphic conservation features or geoconservation sites within the property. A desktop assessment of the Aboriginal or cultural heritage database found no documented findings within the study site. Research also indicted no documented cases of *Phytophthora cinnamomi* (Pc) were found within the property.

Soils are derived from Lower Permeener supergroup and described as consisting of Lower glaciomarine sequences of mudstone, pebbly mudstone, pebbly sandstone, minor limestone, and tasmanite oil shale. A survey found no geomorphic conservation features or geoconservation sites within the property. No Aboriginal or cultural heritage sites have been documented within the study site. Research indicted no documented cases of *Phytophthora cinnamomi* (Pc) were found within the property.



Figure 1 – Locality map, Channel Highway, Gardners Bay C.T. 46193/1 (Ref – LISTmap).

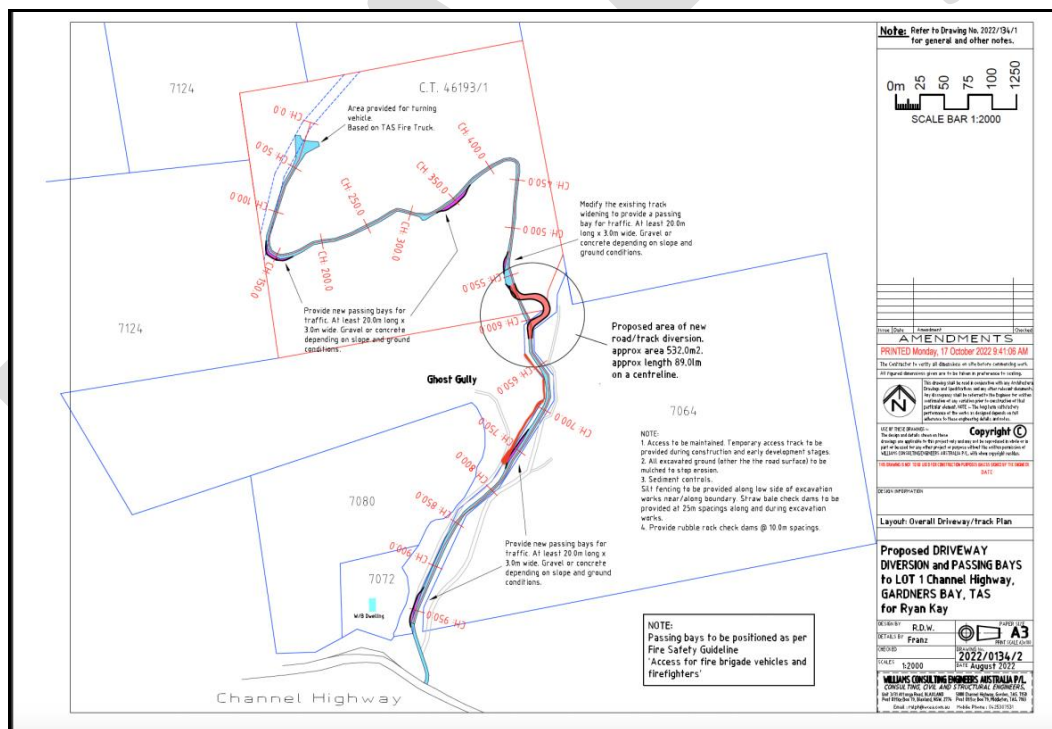


Figure 2 – Site plan of proposed access via Reserve Road, alteration to access alignment in the south-east corner (circled), internal access and passing bays and location of proposed development site in the north-west corner, Channel Highway, Gardners Bay (Ref – Williams Consulting Engineers Australia P/L Drawing # 2022/0134/2).

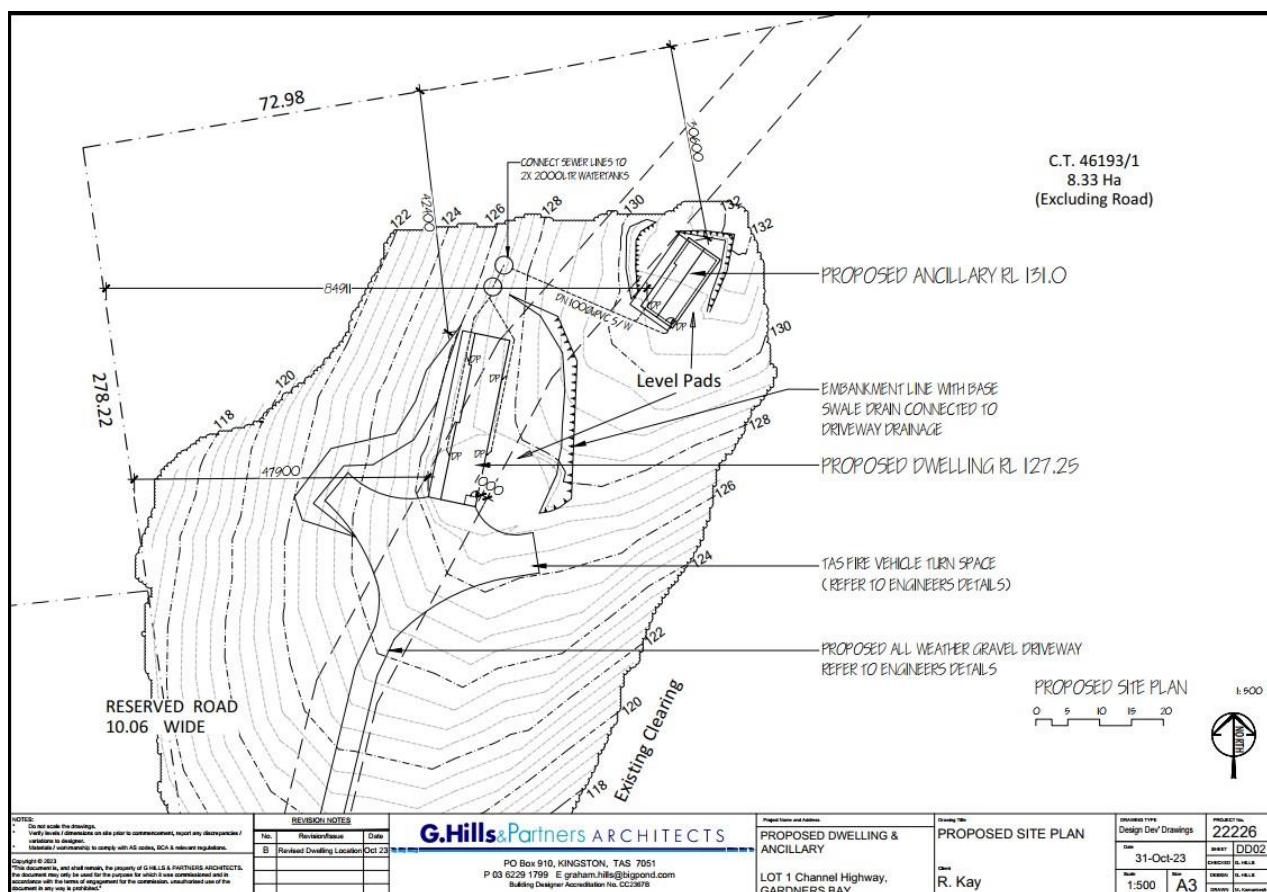


Figure 3 – Site plan of proposed dwelling and ancillary unit located within cleared site. REF: G. Hills #22226.

Limitations

The natural values assessment of the proposed access and subdivision footprint identified by designers/proponents was undertaken in May 2023. Every effort was made to sample the range of habitats within the study site. Many plant species have seasonal growth and flowering, patchy distribution. During the flora and fauna survey it is possible some species were missed, particularly grass species, and not recorded at time of survey. Whilst every effort was made to survey the range of habitat to overlap likelihood occurrence. Optimum survey times are usually spring to summer, however their potential for occurrence is discussed. The survey was also limited to vascular plant species and did not include mosses, lichens and fungi. Surveys for threatened fauna were limited to the likelihood of species the study site represented potential range habitat and the identification of tracks, scats and other signs.

3. Native Vegetation

No vascular plant species listed under Schedule 3, 4 or 5 of the *Threatened Species Protection Act 1995* were recorded on site. *Ozothamnus floribundus*, listed as Endangered under Schedule 3 of the *Threatened Species Protection Act 1995* was identified in 2018, and is only known from one critically small occurrence with number of mature individuals estimated between 25-30 within approx. 0.9ha. The site Merchants Hill occurrence is approx. 5.8km to the south within dry *Eucalyptus obliqua* shrubby/heathy woodland on substrate variously described as sandstone or mudstone with some dolerite influence. Note Sheet for this species notes the population was known to be more widespread prior to clearing for pasture (Miguel de Salas, pers comm). No vascular plant species of national conservation significance, listed in the *Commonwealth Environment Protection & Biodiversity Conservation Act 1999* was recorded on site.

Access

TASVEG 4.0 vegetation classification and mapping is undertaken mainly using a desktop analysis based on aerial photography and can differ from site assessment vegetation mapping, particularly at a small scale. The lower section of the existing access is within a Reserve Road that has been subject to various land uses and management practices, including agricultural. Assessment indicates the current distribution of vegetation is limited to regrowth in the margin of the formed road, within the Reserve Road. Typical vegetation structure and species composition are mostly absent. *Eucalyptus ovata* dominate the canopy species within the poorly drained soil with *E. obliqua* co-subdominant. Despite the significant disturbance and ongoing land use and maintenance that is considered Modified land, this area of *E. ovata* species trees could loosely be regarded as representing a significantly modified / altered dry *E. ovata* woodland (DOV) vegetation community when considering surrounding vegetation represents DOV. Flora assessment indicates vegetation occupying the gully is wet sclerophyll vegetation and appears consistent with wet *Eucalyptus obliqua* over broadleaf shrubs (WOB). *Eucalyptus obliqua* are dominant however *Eucalyptus regnans* are co to subdominant with the understorey supporting a typical dense understorey consisting of tall shrubs such as *Exocarpos cupressiformis*, *Banksia marginata*, *Acacia myrtifolia*, broadleaf facies including *Acacia riceana*, *Pomaderris patella*, *Nematolepis squamea*, *Coprosma quadrifida* *Olearia argophylla*, *Pittosporum bicolor* and *Bedfordia salicina*.

Proposed development site

Assessment indicates the proposed development site has previously been subject to a significant level of clearance and conversion of the vegetation however, natural recruitment of pioneer and benchmark species, including Bracken fern, have started to recolonise the site. Flora survey found the ridge line location supported a vegetation community transitioning from WOB to DOB. At the time of assessment, previous land use and management practices have resulted in the removal of small and tall shrubs. Bracken fern (*Pteridium esculentum*) has colonised disturbed sites within the allotment. TASVEG 4.0 recognise Bracken fern as a modified vegetation community (FPF) applicable when coverage exceeds 50%. TASVEG 4.0 Regenerating cleared land (FRG) classification is used to map abandoned farmland or other degraded sites. Previous and current land management within the site has resulted in the clearance and conversion of the previous shrub and ground cover layer. However, native rushes, grasses and shrubs re-colonising some areas provide a cover of more than 50% with Bracken fern dominating other sites with 100% coverage that has formed a mosaic of regenerating land and areas dominated by Bracken fern. Assessment found areas clear of the proposed development site and disturbance showed evidence of natural recruitment and providing the maintenance of vegetation is limited to the HMA, this area should regenerate to young DOB vegetation community. At the time of assessment, the vegetation remaining within the proposed development site was consistent with TASVEG 4.0 FRG but could also be considered PFP vegetation community (Kitchner & Harris 2013).

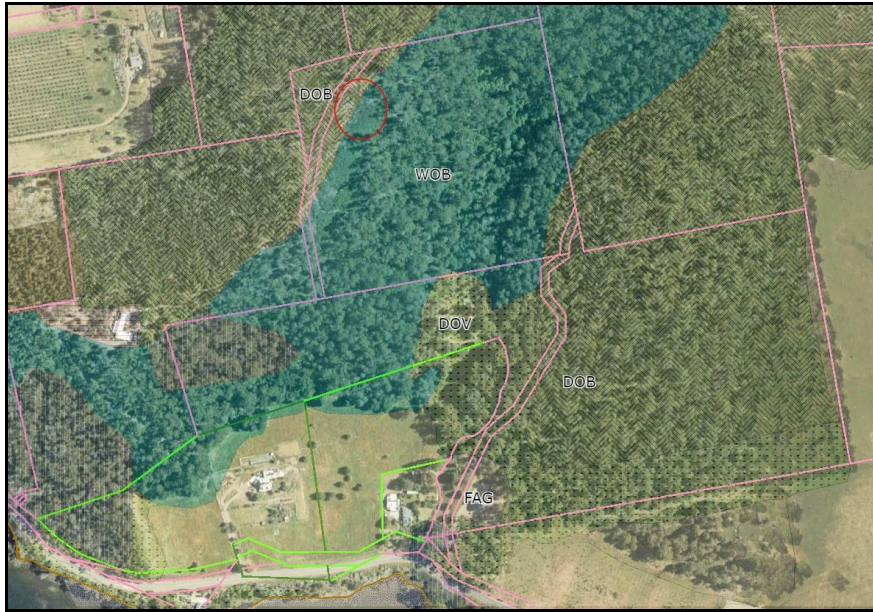


Figure 4 – TASVEG 4.0 classification of vegetation within the allotment: DOB - Dry *Eucalyptus obliqua* forest, FAG – Agricultural land, WOB - Wet *Eucalyptus obliqua* forest. (Ref – LISTmap).



Figure 5 – Image of existing access track within the Reserve Road located within significantly modified remnant DOV vegetation community (CH150).



Figure 6 – Image of existing vehicular track within Reserve Road located in vegetation transitioning between DOV and WOB veg communities (CH850).



Figure 7 – Image of existing vehicular track within the Reserve Road located within WOB veg community (CH800).



Figure 8 – Image showing the new section of access within the Reserve Road corridor (CH700) within DOB transitioning to WOB.



Figure 9 - Image of upgraded vehicular track within the Reserve Road located within DOB/WOB veg community (CH650).



Figure 10 - Image of upgraded internal access within the allotment located within WOB veg community (CH500).



Figure 11 - Image of upgraded internal access located within the Class 4 Waterways and Coastal Protection Area and WOB veg community (CH400).



Figure 12 - Image of upgraded internal access within the allotment located within WOB veg community (CH250).

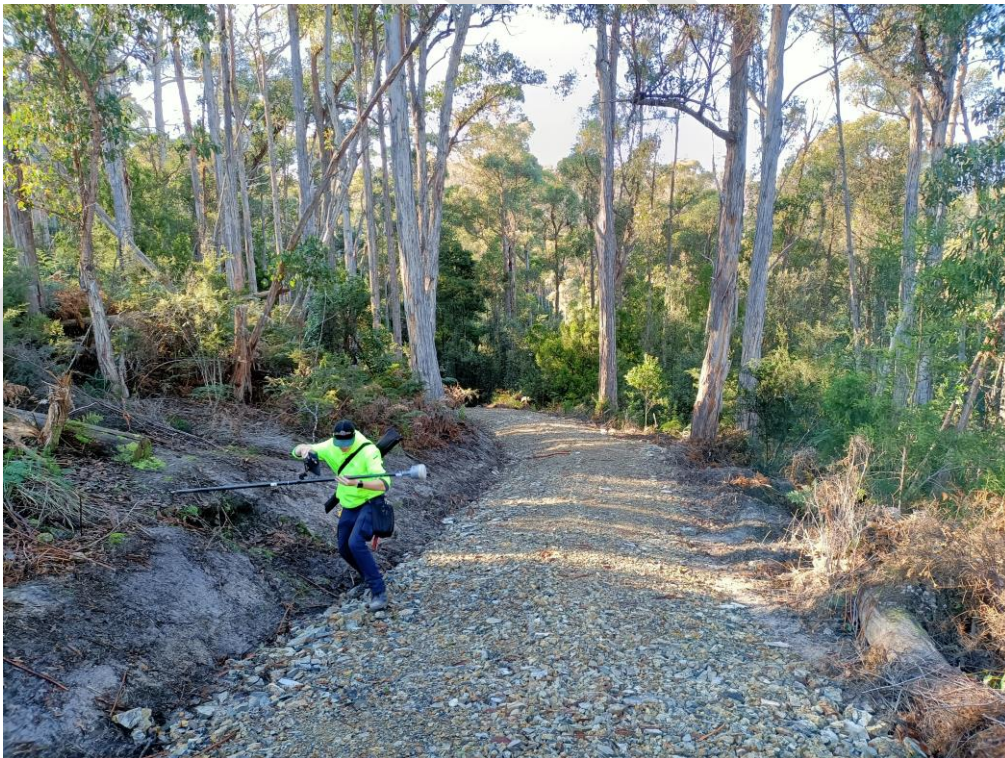


Figure 13 - Image of upgraded internal access within the allotment located within vegetation transitioning from WOB to DOB veg community (CH150).



Figure 14 - Image of upgraded internal access within the allotment located within DOB/WOB veg community.



Figure 15 – Image showing extent of clearance and conversion within the lower section of the previously cleared area located in the north-west corner of the allotment.



Figure 16 - Image showing extent of clearance and conversion in the central section of the previously cleared area located in the north-west corner of the allotment.



Figure 17 – Image showing extent of existing works and clearance and conversion of vegetation in the northern section of the previously cleared proposed development site.



Figure 18 – Image looking south-west showing extent of existing works and clearance and conversion of vegetation in the northern section of the previously cleared proposed development site.

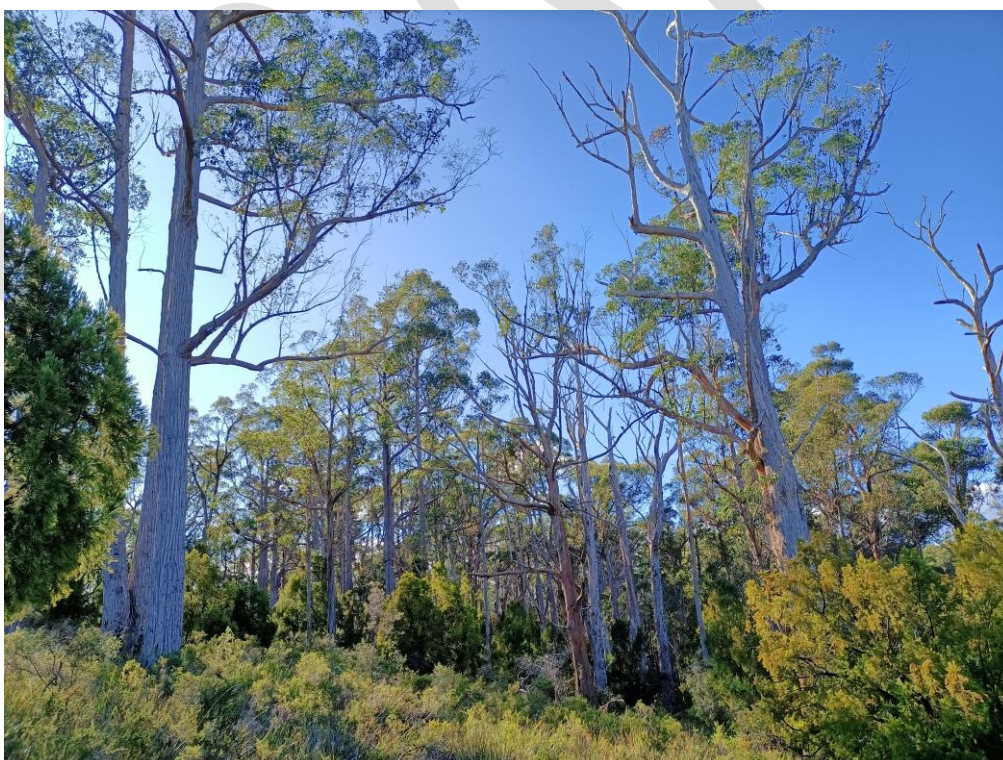


Figure 19 – Image of DOB vegetation community occupying land to the north of the proposed development site.



Figure 20 – Image of DOB/WOB vegetation community to the south-east of the proposed development site.

4. Introduced Plants

Previous land use and land management practices has resulted in the proliferation and establishment of Spanish heath and Blackberry within and surrounding the first 300m of the access in the Reserve Road. No Declared weed species were recorded within the proposed development site. Gorse and Blackberry are listed as a ‘Declared’ weed species under the Tasmanian *Weed Management Act 1995*. The Natural Values Atlas biosecurity database indicates no plant pathogens, such as *Phytophthora cinnamomi*, *Chytrid fungus* and fungal *Mucormycosis* have been recorded within 1km radius of the site.

Site hygiene

Given the presence of Declared weed species in the lower section of the proposed access, future development should implement best practice hygiene protocols prior to commencement of any works to prevent the accidental transportation of weed seeds within the allotment and the importation of additional weeds, including plant pathogens such as *Phytophthora cinnamomi* (Pc). Recommendations include that all vehicles, machinery and equipment must be washed down or shaken down offsite in accordance with ‘*Tasmanian Washdown Guidelines for Weed and Disease Control: Machinery, Vehicles and Equipment: Edition 1*’. Pc is an introduced mould that attacks the roots of susceptible plant species causing the roots to rot. Dieback, caused by Pc and other factors, is a listed “Key Threatening Process” under both the Federal *Environment Protection and Biodiversity Conservation Act 1999* and Tasmanian *Threatened Species Protection Act 1995*. Pc cannot be eradicated from an area once it has become infested. Forest Practices Authority Technical Note No. 8 indicates wet sclerophyll vegetation communities are not considered susceptible to *Phytophthora cinnamomi*. However, individual species present such as *Pultenaea spp.*, *Leucopogon spp* and *Epacris* species are susceptible to Pc. Recent survey of the Natural Values Database indicated no Pc infestation within the EMZ or within 1km of the property.

Table 1– Weed species present on site. (Excludes exotic grass, century plant and Plantago species).

Weed Species	Status	Distribution / Action
<i>Rubus fruticosus</i> Blackberry	- Declared weed species & Weed of National Significance under Tas <i>Weed Mgt Act 1999</i>, - Kingborough Council Weed Mgt Strategy and Action Plan 2017-2027 identifies as significant weed, - Zone B, Priority 4 - Containment	- Distribution appears limited to 300m of the access within and adjacent to the Reserve Road, - Range from mature infestations to seedlings, - Implement statutory weed management plan to reduce core infestation, - Focus should be removal of plants from Class 2 WCPA
<i>Erica lusitanica</i> Spanish heath	- Declared weed species & Weed of National Significance under Tas <i>Weed Mgt Act 1999</i>, - Kingborough Council Weed Mgt Strategy and Action Plan 2017-2027 identifies as significant weed, - Zone B, Priority 4 - Containment	- Distribution appears limited to 300m of the access within and adjacent to the Reserve Road, - Mature plants within fringing bushland supporting plants range from seedlings to mature flowering plants, - Containment management objective.

Phytophthora cinnamomi (Pc)

Pc is an introduced mould that attacks the roots of susceptible plant species causing the roots to rot. Dieback, caused by Pc and other factors, is a listed “Key Threatening Process” under both the Federal *Environment Protection and Biodiversity Conservation Act 1999* and Tasmanian *Threatened Species Protection Act 1995*. Pc cannot be eradicated from an area once it has become infested.

Forest Practices Authority Technical Note No. 8 indicates DPU vegetation community present within the study site is not considered susceptible to *Phytophthora cinnamomi*. However, individual species present such as *Pultenaea* spp., *Leucopogon* spp and *Epacris* species are susceptible to Pc. Recent survey of the Natural Values Database indicated no Pc infestation within the EMZ or within 1km of the property ⁶.



Figure 21 – Image of Spanish heath within Reserve Road in first 300m of access.



Figure 22 – Image of Blackberry infestation within Reserve Road in first 300m of access.



Figure 23 – Image looking north at existing access within Reserve Road with Spanish heath occupying margin of the corridor.

5. Threatened Flora and Fauna Conservation Values

Flora

Flora assessment for species listed under *Threatened Species Protection Act 1995* and *Commonwealth Environment Protection & Biodiversity Conservation Act 1999* was undertaken assessing potential habitat values. A survey of the site found the allotment supports significantly modified environs through previous and current land use and management practices. Despite the disturbance, environs within the allotment represents potential but marginal habitat for some threatened flora species recorded within 5km, such as orchid species, but unsuitable for other species such as *Ozothamnus floribundus*, listed as Endangered under Schedule 3 of the *Threatened Species Protection Act 1995* recorded to the south-east in 2018.

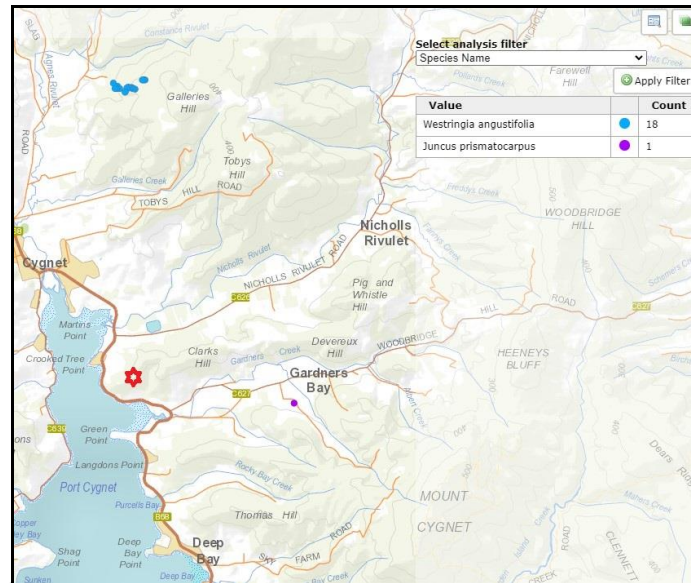


Figure 24 – Distribution of threatened flora species recorded within 5km of proposed development site REF – Natural Values Atlas, DPIPWE.

Fauna

Swift parrots

The proposed development envelope is with Swift Parrot Important Breed Areas (SPIBA). *Eucalyptus globulus* and *E. ovata* recorded within and adjacent to the access and allotment represents potential core foraging habitat for these species. Potential nesting habitat for Swift parrots generally are limited to large eucalypt species with diameter at breast height (dbh) exceeding 70cm.

Access – Internal Access

In accordance with Forestry Practice Authority Fauna Technical Note No. 3: Identifying swift parrot foraging and breeding habitat (Table 2 & 3 respectively) assessment indicates the wet sclerophyll vegetation surrounding the proposed access is:

- Classified as representing 'Medium' potential foraging-habitat density class as 20-49% of the stems over 40cm in any one hectare are foraging trees (*E. globulus* or *E. ovata*),
- Classified as representing 'Medium' potential nesting habitat as there are at least 15 tree/ha are greater than 100cm dbh and/or 8 trees /ha over 150cm dbh.

Proposed Development Envelope

In accordance with Forestry Practice Authority Fauna Technical Note No. 3: Identifying swift parrot foraging and breeding habitat (Table 2 & 3 respectively) assessment indicates the dry/wet transitioning vegetation surrounding the proposed development site is:

- Classified as representing 'nil' as no foraging trees (*E. globulus* or *E. ovata*) were recorded within the proposed HMA,
- Classified as representing 'Low' potential nesting habitat as there are greater than 100cm dbh but less than 8 tree/ha.

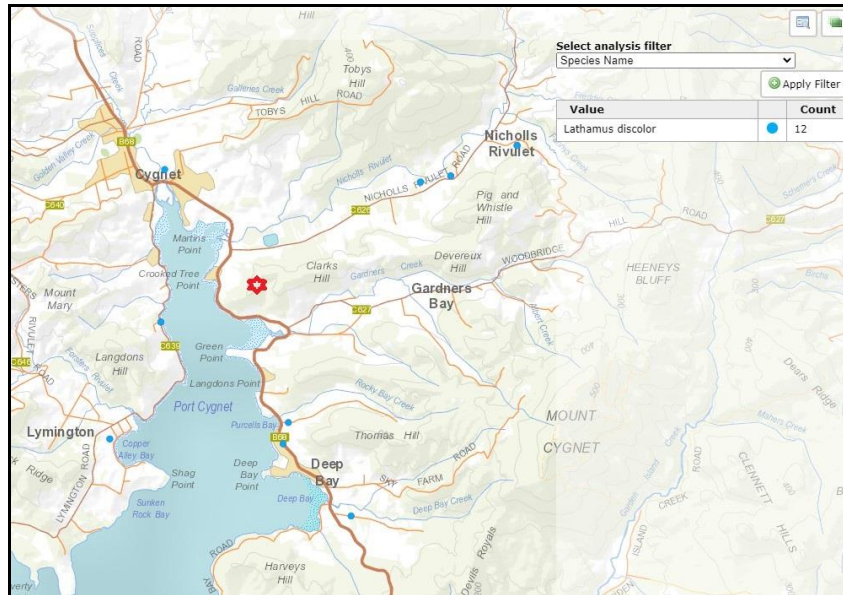


Figure 25 – Distribution of Swift parrots recorded within 5km of the site (Ref – Nat Values Atlas, NRE)

Tasmanian Wedge-tailed eagle (WTE) and White-bellied sea eagle (WBSE)

Ground-based assessment of the wet sclerophyll forest occupying the gully found the area supports nesting trees (25-27m in height) and located on sheltered (south-east) side of ridgelines. An assessment by raptor ecologist recorded one nest in the north-east corner of the allotment.

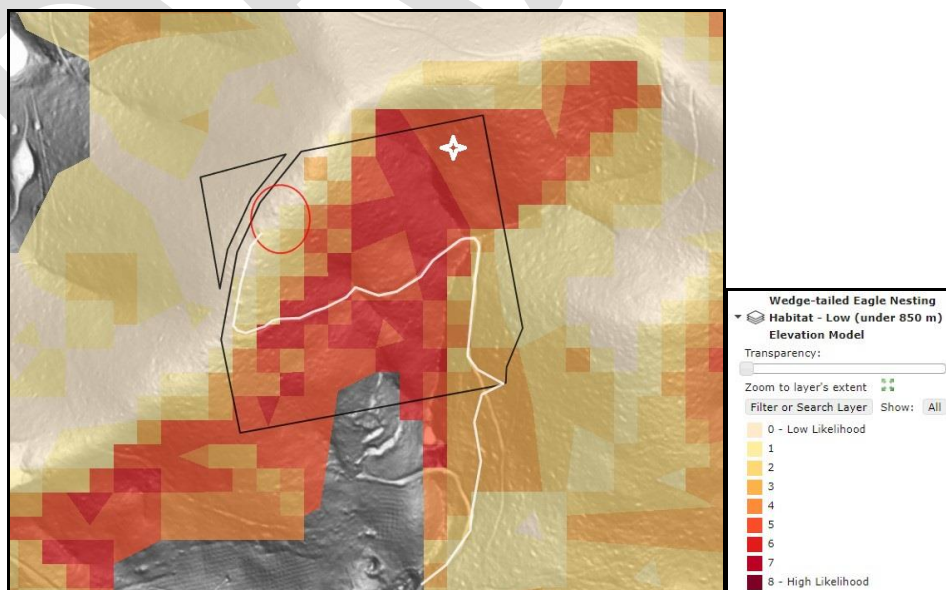


Figure 26 – Image showing location of WTE or WBSE nest with the allotment in relation to WTE nesting habitat modelling – Low (under 850m ASL).

Grey Goshawk

The site is within range boundaries of the Grey Goshawk, that is listed a vulnerable under the Tasmanian *Threatened Species Protection Act 1995*. An interim technical note prepared by David Young (2020) provides guidance for Goshawk nesting habitat categories. An assessment by D. Young found the wet sclerophyll in the gully represents potential nesting habitat with two Grey Goshawk nests recorded within the southern half of the allotment, and 6 nests recorded adjacent to the access in neighbouring property to the south. Ground assessment indicates the proposed development site located on the west facing slope and open canopy primarily represent potential foraging habitat, corresponding with suitability category 3.

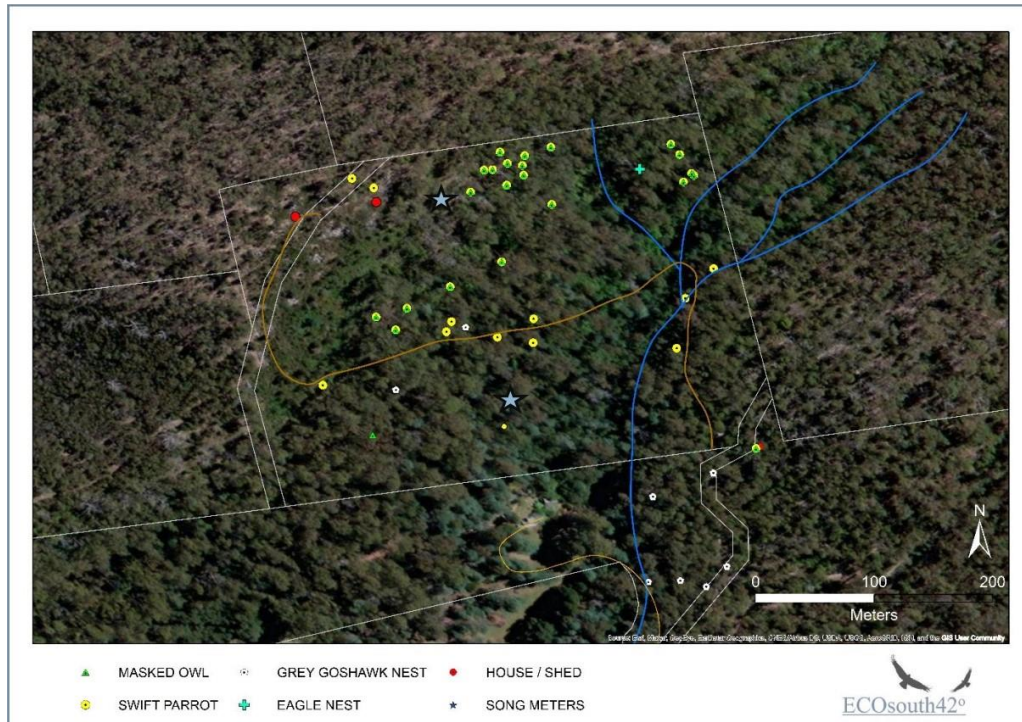


Figure 27 – Ecologists mapping showing distribution of potential Masked owl, Swift Parrot nesting habitat and location of Grey Goshawk and Wedge-tailed eagle nests. (REF – D. Young, *Raptor and Swift Parrot Assessment Report: Gardners Bay DA350/2022*).

Masked Owl

The Tasmanian Masked Owl is a subspecies that occurs only in Tasmania and listed under the Tasmanian *Threatened Species Protection Act 1995* and Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999* due to small population and ongoing habitat loss. Potential habitat is within undisturbed wet and dry sclerophyll forest, modified agricultural areas and urban environments below 600m ASL, and all areas that have mature trees capable of generating large hollows (15cm or greater). Assessment indicates trees onsite are large enough to represent potential nesting habitat, with the open canopy potentially represents foraging habitat.

Tasmanian Devils, Quolls and Eastern-barred bandicoots

The site is within range boundaries and represents potential habitat for Tasmanian Devils, Eastern, Spotted-tailed quolls as they inhabit a diverse range of habitats with both utilising hollow logs, caves, rock piles and disused rabbit or wombat burrows. Wet sclerophyll forest in the eastern section represents potential habitat for the Spotted-tailed quoll where it preys on small mammals. Eastern Quolls prefer dry grassland and forest mosaics which are bounded by agricultural land, particularly where pasture grubs are common. Eastern-barred bandicoots have been recorded within 500m but generally prefer dry grassland and forest mosaics bounded by agricultural land.

The site is within the range boundary of the Mt Mangana stag beetle. Habitat assessment failed to find suitable habitat within the proposed development site however, wet sclerophyll on the western margin supports potential habitat (FPA, Tech Note # 5). The site is within potential range boundary of the endangered *Antipodia chaostola*. However, no core habitat (*Gahnia radular* and *G. microstachya*) was recorded.

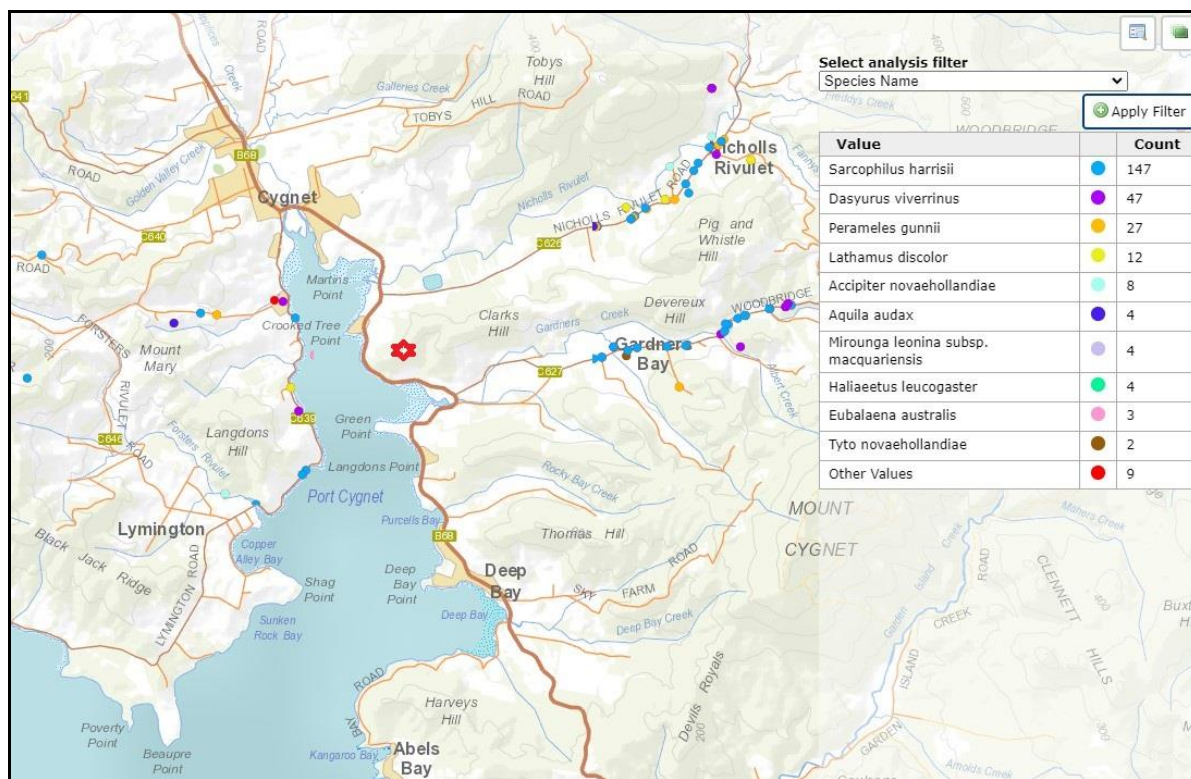


Figure 28 – Distribution of threatened fauna within 5km of proposed development site (Ref – Nat Values Atlas)

6. Discussion

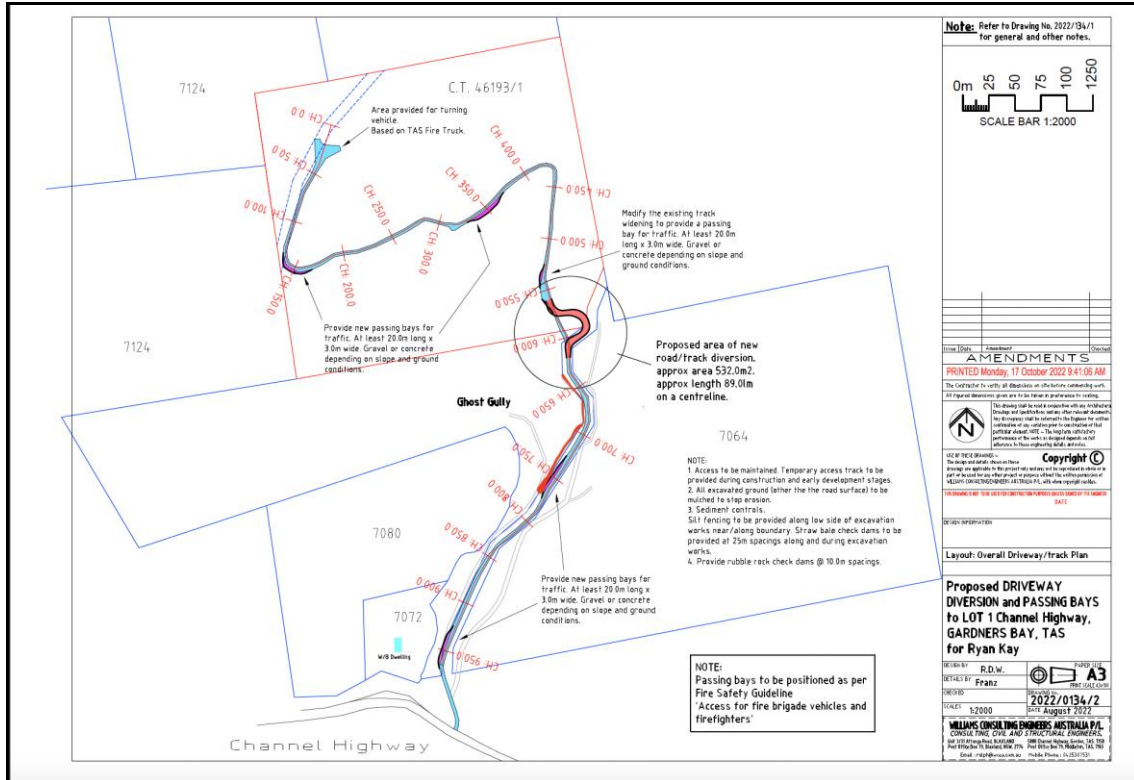


Figure 29 - Site plan of proposed access via Reserve Road, alteration to access alignment in the south-east corner (circled), internal access and passing bays and location of proposed development site in the north-west corner, Channel Highway, Gardners Bay (Ref – Williams Consulting Engineers Australia P/L Drawing # 2022/0134/2).

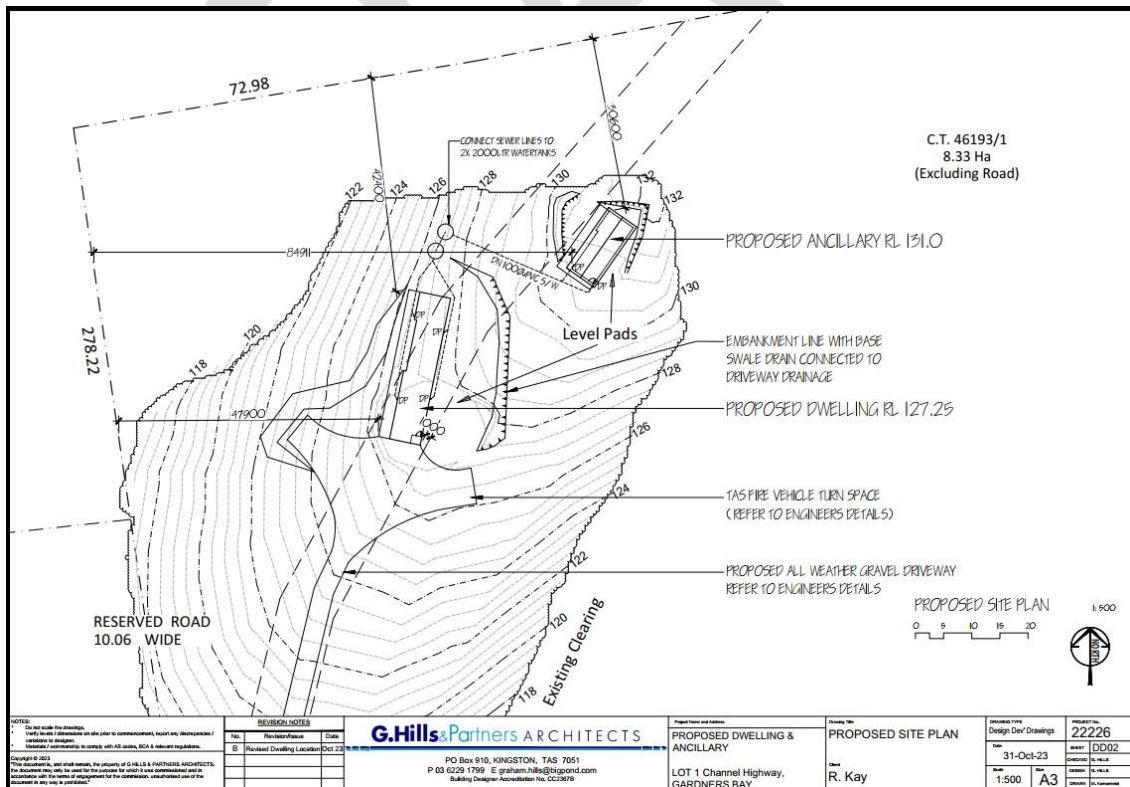


Figure 30 – Site plan of proposed development (REF: G. Hills & Partners Architects, Proposed dwelling, ancillary & shed, Lot 1 channel Highway, Gardners Bay, Project 22226).

Threatened flora species

Access

The upgrade of the existing access and works to construct the new section will result in the loss of a small amount of suitable habitat for species recorded within 5km however, works are unlikely to result in the loss of a significant amount of habitat for threatened flora.

Development site

Assessment of the site plan and ground truthing indicates the proposed development site has been positioned in an area that has undergone previous clearance and modification of vegetation including earthworks undertaken in preparation for development by the previous owner. Site plans indicate the proposed 5820m² BAL-29 construction standard will require the maintenance of nearly all existing vegetation within the HMA in a managed, low fuel condition.

Despite being located in an area where the vegetation has been previously modified, the proposal will result in the loss of land that is considered potential habitat for threatened flora species recorded within 5km of the site. However, it is unlikely that further, ongoing management of the HMA post construction will result in a significant disturbance or loss of potential habitat for threatened flora recorded within proximity of the site.

Vegetation community distribution and structure

Access

DOV vegetation community identified adjacent to the Reserve Road up to chainage 180 is represented by young *Eucalyptus ovata* trees that have been allowed to establish on the side of the existing access. Whilst trees have been retained where possible, new standards requiring an upgrade of the existing access will result in the minor loss of trees within the Reserve Road corridor. Assessment of the within the footprint of the proposed new section of access found vegetation was consistent with WOB forest. DOV is listed as Threatened under Schedule 3A of Tasmania's *Nature Conservation Act 2002*. Given impacts are minor and do not exceed 1ha, it is anticipated that no further assessment or referral is required under this Act.

Development site

TASVEG 4.0 vegetation classification and mapping is undertaken mainly using a desktop analysis based on aerial photography and can differ from site assessment vegetation mapping, particularly at a small scale. At the time of assessment, previous land use and management practices have resulted in the removal of small and tall shrubs. Bracken fern (*Pteridium esculentum*) has colonised disturbed sites within the allotment. TASVEG 4.0 recognise Bracken fern as a modified vegetation community (FPF) applicable when coverage exceeds 50%. TASVEG 4.0 Regenerating cleared land (FRG) classification is used to map abandoned farmland or other degraded sites. Previous and current land management within the site has resulted in the existing shrub and ground cover layer of less than 50%, where colonising native rushes or shrubs provide a cover of more than 50%. Assessment found areas clear of the proposed development site and disturbance showed evidence of natural recruitment and providing the maintenance of vegetation is limited to the HMA, good persistence levels. At the time of assessment, the vegetation remaining within the proposed development site was consistent with TASVEG 4.0 FRG but could also be considered PFP vegetation community (Kitchner & Harris 2013).

Table 2 – Threatened plant species previously recorded within 5 km radius of the study area with discussion on likelihood of potential habitat within the study site and listed under the Tasmanian *Threatened Species Protection Act 1995* (TSPA), and the Commonwealth's *Environmental Protection, Biodiversity Conservation Act 1999* (EPBCA). Flora surveys was not limited to threatened flora species listed under TSPA & EPBCA but also included species considered within potential range and suitable habitat.

CONSERVATION STATUS			
No Threatened Flora within 500 metres			
Threatened Flora within 5000 metres			
SPECEIES	TSPA	EPBC	COMMENTS
<i>Deyeuxia minor</i> Heath Bent grass	rare	-	Not previously recorded or at time of survey. Mature inflorescences required for identification. (Nov-Dec). Inhabits open eucalypt forests or the margins of wet sclerophyll forest in the south-west, south and north-east of the State. Not anticipated proposed access will result in a loss of potential habitat. Ride line location in north-west corner in transition between wet and dry sclerophyll vegetation potentially represents suitable habitat. Proposed development site will possibly result in a loss of potential habitat but not expected works will represent a significant loss of potential habitat. No further assessment or referral required under <i>TSPA1995</i> .
<i>Juncus prismatocarpus</i> Branching Juncus	rare	-	Not previously recorded within allotment or at time of survey. Previous observation in 1970 to the east. This species is occasionally found in swampy places in various places in the State (Curtis & Morris 1994). Not anticipated disturbance associated with access upgrade or proposed development site will result in a loss of potential habitat. No further assessment or referral required under <i>TSPA1995</i> .
<i>Ozothamnus floribundus</i> Flowering everlasting bush	endangered	-	Not previously recorded or at time of survey. Only know from single location in Tas, Randalls Bay, approx. 5.8 km to the south. This population found within dry <i>Eucalyptus obliqua</i> sclerophyll forest. Not anticipated proposal will result in a loss of potential habitat. No further assessment or referral required under <i>TSPA1995</i> .
<i>Pomaderris elachophylla</i> Small-leaf dogwood	vulnerable	-	Not previously recorded or at time of survey. This species generally confined to widely separated locations throughout the State occurring in wet sclerophyll forests to wet sclerophyll woodlands at elevations of 100-800m over granite or dolerite bedrock. Not anticipated proposal will result in a loss of potential habitat. No further assessment or referral required under <i>TSPA1995</i> .
<i>Prasophyllum apoxychilum</i> Tapered Leek Orchid	vulnerable	Endangered	Not previously recorded or at time of survey. This species is endemic to eastern Tas. Mature inflorescences required for identification. (Oct-Nov). Occurs in coastal heathland or grassy and scrubby open eucalypt forest on sandy and clay loams, often among rocks. It occurs at a range of elevations and seems to be strongly associated with dolerite in the east/southeast of its range. Not anticipated proposal will result in a loss of potential habitat. No further assessment or referral required under <i>TSPA1995</i> .
<i>Westringia angustifolia</i> Narrow-leaf westringia	rare	-	Not previously recorded or at time of survey. Occurs predominantly in dry, shrubby understorey, often on dolerite 300-900 metres above sea level. Proposed access constitutes potential habitat but not anticipated proposal will result in a significant loss of potential habitat. No further

(Endemic to Tas)			assessment or referral required under <i>TSPA1995</i> .
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Note: Information outlined above is derived from Department of Natural Resources and Environment (NRE) *Natural Values Atlas*, *Forestry Practices Authority (FPA) Biodiversity Values Database*, *Threatened Species Unit* for potential habitat values and descriptions and Author's experience.

Fauna

Assessment indicates impacts to potential core Swift parrot foraging habitat is limited to the removal of *Eucalyptus ovata* within the Reserve Road access corridor. Assessment found the internal access is largely within the footprint of existing road, with the new section of access clear of potential nesting habitat for the Swift parrot and Masked owl.

A raptor ecologist assessment found the proposed access upgrade and development is clear of significant biodiversity value eucalypts that represent potential nesting habitat for the Masked owl, Grey Goshawk and the Tasmanian Wedge-tailed eagle. The ecologist found the proposal will not impact the nest recorded in the north-east corner and unlikely to impact on breeding activities.

Assessment indicates the proposal will result in the loss of potential habitat for the Eastern Quoll and to a lesser extent, the Eastern-barred bandicoot. However, given surveys did not record evidence of obvious scats or denning activity, it is expected impacts for these species will be limited to disturbance only, and will not result in a significant loss of core habitat. The table below is a listing of threatened fauna recorded within 5km of the site providing comments on potential habitat availability and any evidence recorded.

Table 3 - Threatened fauna previously recorded within 5 km radius of the study area with discussion on likelihood of potential habitat within the study site and listed under the Tasmanian *Threatened Species Protection Act 1995* (TSPA), and the Commonwealth's *Environmental Protection, Biodiversity Conservation Act 1999* (EPBCA). Flora surveys was not limited to threatened flora species listed under TSPA & EPBCA but also included species considered within potential range and suitable habitat.

CONSERVATION STATUS			
SPECIES	TSPA	EPBC	COMMENTS
No Threatened Fauna within 500 metres			
<i>Accipiter novaehollandiae</i> Grey Goshawk	endangered	-	No previously recorded within or near proposed development site. The Proposed development ridge line location is clear of recorded nests to the south. Ecologist assessment also recorded number of nests in neighbouring land adjacent to the Reserve Road. Internal access upgrade within potential nesting habitat however a G goshawk ecologist assessment found upgrade will not directly impact habitat. Ecologist has provided recommendations pre-development assessment regarding status of nests and limitations regarding construction time frames. No further assessment or referral required under <i>TSPA1995</i> .
<i>Aquila audax fleayi</i> Tasmanian Wedge-tailed eagle	endangered	Endangered	Ecologist assessment recorded one nest in the north-east corner approx. 200m east of the proposed development site. Comments from the assessor indicate the proposed development site on the ridgeline will not impact vegetation that is considered potential nesting habitat. It is not anticipated further assessment or referral

			under the <i>TSPA 1995</i> or Commonwealth <i>EPBCA 1999</i> is required.
<i>Dasyurus viverrinus</i> Eastern Quoll	-	Endangered	No previously recorded within or near proposed development site. Proposed development site in wet sclerophyll is not preferred habitat. Given the scale of the proposal, including access, it is unlikely development will result in a significant loss of foraging or denning habitat for this species. No further assessment or referral required under <i>TSPA1995</i> or <i>EPBCA1999</i> .
<i>Haliaeetus leucogaster</i> White-bellied sea eagle	vulnerable	-	Not previously observed on site. Habitat modelling indicates WOB veg represents a moderate to high likelihood of suitable nesting habitat. Site plans indicate the access upgrade will not impact priority nesting habitat. In addition, it is not anticipated the proposal will disturb future nesting or breeding activities. No further assessment or referral required under <i>TSPA1995</i> .
<i>Sarcophilus harrisii</i> Tas Devil	endangered	Endangered	Not previously recorded on site or at the time of assessment. Proposed development site within range boundary with environs representing potential core habitat. Given the level of previous disturbance, it is not expected the additional clearance and conversion to facilitate development will result in significant loss of potential foraging and denning habitat for this species. No further assessment or referral required under <i>TSPA1995</i> or <i>EPBCA1999</i> .
Threatened Fauna within 5000 metres			
<i>Aquila audax fleayi</i> Tasmanian Wedge-tailed eagle	endangered	Endangered	Not previously observed on site. Ecologist assessment recorded one nest. Habitat modelling indicates south-east facing forest represents potential nesting habitat for the wedge-tailed eagle. Anticipate the internal access upgrade may impact potential nesting habitat. Generally, require trees exceeding 27m in height and up to 10ha of undisturbed forest. The proposed development site on the ridgeline will not impact vegetation that is considered potential nesting habitat. It is not anticipated further assessment or referral under the <i>TSPA 1995</i> or Commonwealth <i>EPBCA 1999</i> is required.
<i>Dasyurus maculatus</i> Spotted-tailed Quoll	rare	Vulnerable	No previously recorded within or near proposed development site. Proposed development site will encroach and impact potential habitat. Given the scale of the proposal, including access, it is unlikely development will result in a significant loss of foraging or denning habitat for this species with impacts limited to disturbance only. No further assessment or referral required under <i>TSPA1995</i> or <i>EPBCA1999</i> .
<i>Dasyurus viverrinus</i> Eastern Quoll	-	Endangered	No previously recorded within or near proposed development site. Proposed development site in wet sclerophyll is not preferred habitat. Given the scale of the proposal, including access, it is unlikely development will result in a significant loss of foraging or denning habitat for this species. No further assessment or referral required under <i>TSPA1995</i> or <i>EPBCA1999</i> .
<i>Haliaeetus leucogaster</i> White-bellied sea eagle	vulnerable	-	Not previously observed on site. One nest previously recorded within neighbouring allotment close to the northern boundary. Habitat modelling indicates WOB veg represents a moderate to high likelihood of suitable nesting habitat. Site plans indicate the access upgrade will not impact priority habitat, nesting or breeding activities. In addition, it is not anticipated the proposal will disturb nesting or breeding activities however, assessment of the nest

			occupancy should be determined prior to construction in the Spring No further assessment or referral required under TSPA1995.
<i>Lathamus discolor</i> Swift parrot	endangered	Critically Endangered	Not previously recorded. Site within Swift parrot Important Breeding Areas. Potential foraging habitat recorded (<i>Eucalyptus globulus</i>) but assessed as 'Low' potential foraging habitat. Eucalypts exceeding 700m dbh represents potential nesting habitat. It is anticipated no further assessment is required. No referral or permit under the Commonwealth EPBC Act is required.
<i>Lissotes menalcas</i> Mt Mangana Stag beetle	vulnerable	-	Not previously recorded. Requires large logs in semi to fully decayed condition. A number of logs that constitute potential habitat but cleared of proposed development site. Not anticipated the proposed development will result in a significant loss of potential habitat for this species. No further assessment or referral required under TSPA1995.
<i>Pardalotus quadragintus</i> Forty-spotted pardalote	endangered	Endangered	Not previously recorded. No <i>Eucalyptus viminalis</i> recorded. No further assessment or referral required under TSPA1995 or EPBCA1999.
<i>Perameles gunnii</i> Eastern-barred Bandicoot	-	Vulnerable	Not previously recorded on site. Occupies a variety of habitats from forest, woodland and urban environments. Requires bushland juxtaposed to open grassland. Wet sclerophyll bushland may constitute potential refuge habitat for open area to the east. Unlikely previous works and proposed development will result in a significant loss of potential habitat for this species. No further assessment or referral required under EPBCA1999
<i>Sarcophilus harrisii</i> Tas Devil	endangered	Endangered	Not previously recorded on site. Proposed development site within range boundary with environs representing potential habitat. the small scale of the proposal, it is not anticipated the clearance and conversion will result in significant loss of potential foraging and denning habitat for this species. No further assessment or referral required under TSPA1995 or EPBCA1999.
<i>Tyto novaehollandiae</i> Tas Masked Owl	endangered	Vulnerable	Not previously recorded within study site. This endangered species requires mature old growth forest that supports large nesting hollows. DOB potentially supports nesting habitat. Not anticipated removal of vegetation will significantly impact potential habitat this species. No further assessment or referral required under TSPA1995 or EPBCA1999.

Note: Information outlined above is derived from Department of Natural Resources and Environment (NRE) *Natural Values Atlas*, *Forestry Practices Authority (FPA) Biodiversity Values Database*, *Threatened Species Unit* for potential habitat values and descriptions and Author's experience.

Planning implications

E10.0 Biodiversity Code

The study site is within Huon Valley Council's Biodiversity Protection Area and in accordance with HVPS2015 E10. Table 1, the environs within the Reserve Road, internal access and proposed development site zoned Rural Resource supports 'Moderate' biodiversity priority values. Site plans and flora assessment indicates the upgrade of the existing access within the Reserve Road will result in a minor loss of small *Eucalyptus ovata* trees that have grown on the margin of the road but within the Reserve Road. The proposed upgrade of the access within Reserve Road will impact a very small amount of DOV. Assessment of works associated with the upgrade of the internal access has required the removal of a small amount of roadside vegetation with all significant eucalypts retained.

The proposed development site and associated BAL-29 hazard management area within previously cleared vegetation will require the conversion of existing regrowth / Bracken fern and ongoing management of 5820m² area to facilitate development. Given the proposed development site is within an area previously cleared it is not expected the proposal will result in any unnecessary or unacceptable loss of biodiversity values. Generally, any removal of vegetation requires offsetting in accordance with HVC's Biodiversity Offset policy V4.0 and 'Guidelines for the use of Biodiversity Offsets in the local planning approval process'.



Figure 31 – Image showing the extent of the BAL-29 HMA (Approx. 5820m²) within previously disturbed land classified as Regenerating land and / or the modified vegetation community *Pteridium esculentum* (PFP).

The proposal does not satisfy A1 Acceptable Solutions E10.7.1 Building and Works. However, it appears the proposed works complies with alternative solution Performance Criteria P1 (b) 'Moderate' biodiversity values, in that:

- (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 proposed development envelope and HMA is mostly contained within the previously modified area to minimise environmental impacts. The access to the allotment is limited to the Reserve Road with consideration to limit environmental impacts incorporated into the design. The internal access within moderate to steep gradients will utilise an existing vehicular track to minimise environmental impacts,
- (ii) *Impacts resulting from bushfire hazard management measures are minimised as far as reasonably practicable through siting and fire-resistant design of habitable buildings.* The proposed BAL-29 construction standard and associated HMA has been positioned with area classified as modified vegetation / Regenerating land to minimise the loss of native vegetation,
- (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.* Best practice includes adopting the raptor ecologist recommendations such as limiting times of construction. Implementation of tree protection measures

for high conservation eucalypts in accordance with AS4970-2009 during the construction phase, implementation of best practice hygiene protocols during the construction phase including management of the construction site and designing appropriate soil and water management plan, and managing post construction landscaping works,

- (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, April 2013 and Huon Valley Biodiversity Offset Policy V4.0*, Given the proposed development site is within a significantly modified site impacted by previous clearance and conversion of native vegetation, assessment indicates environmental impacts are limited to clearance and modification of native vegetation to the north of the dwelling within the HMA, and the minor disturbance of DOV vegetation community that has grown within the Reserve Road corridor. Assessment indicates no high or very high biodiversity priority value trees will be impacted by upgrades to the existing internal access or for the construction of the new section of access. Whilst the proposed development site will impact a small area of high biodiversity habitat values, it is anticipated any additional loss of values can be satisfactorily offset in accordance with the ‘*Guidelines for the use of Biodiversity Offsets in the Local Planning Approval Process, Southern Tasmanian Authority 2013*’ and *Huon Valley Biodiversity Offset Policy V4.0* as an in-situ, 5:1 offset, Part 5 Agreement under Tasmania’s *Land Use Planning and Approvals Act 1993* (see below).

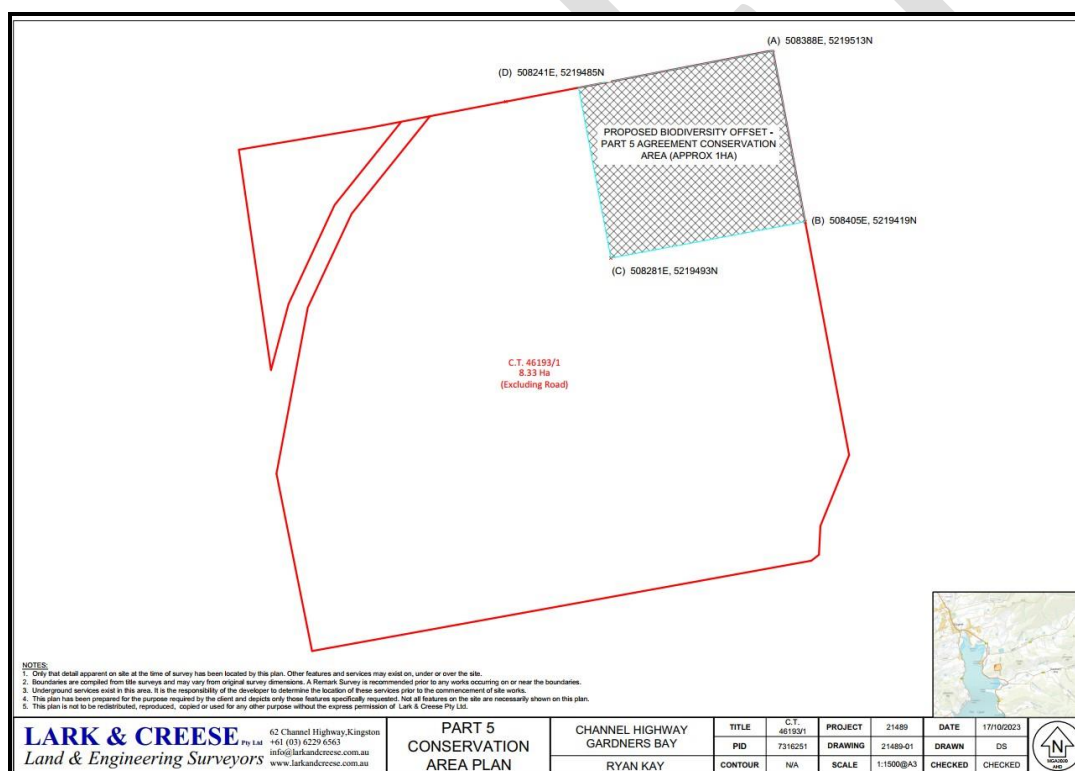


Figure 32 – Proposed 1ha biodiversity offset Part 5 Agreement encompassing a Wedge-tailed eagle nest (Surveyed D. REF – D. Young, *Raptor and Swift Parrot Assessment Report: Gardners Bay DA350/2022*) and potential Masked owl and Swift parrot foraging and nesting habitat values.

E7.0 Stormwater Management Code

Stormwater quantity requirements must always comply with requirements of the local authority including catchment-specific standards. All stormwater flow management estimates should be prepared according to methodologies described in Australian Rainfall and Runoff (Engineering Australia 2004) or through catchment modelling completed by a suitably qualified person. The proposal does not comply with Acceptable Solutions E7.7.1 A1 however, it appears the proposal satisfies alternative solution Performance Criteria P1 in that:

'Stormwater from new impervious surfaces must be managed by any of the following'

- b) Collected for re-use on the site. Site plans indicate the stormwater will be collected on-site for re-use in 225000L collection tanks. Overflow point will implement mechanisms to mitigate erosion and mobilisation of sediments.

E23.0 On-site Wastewater Management Code

Site plans indicate all wastewater infrastructure will be within the bushfire hazard management area. Providing the wastewater management system is appropriately designed and located to geotechnical specifications by approved manufactures and implemented by certified operators, it is not anticipated the output of tertiary treated wastewater will result in any long-term residual impacts on native vegetation down-slope from the facility or surface or groundwater quality. Site plans indicate the land application area is of sufficient size to comply with the requirements of AS/NZ1547.

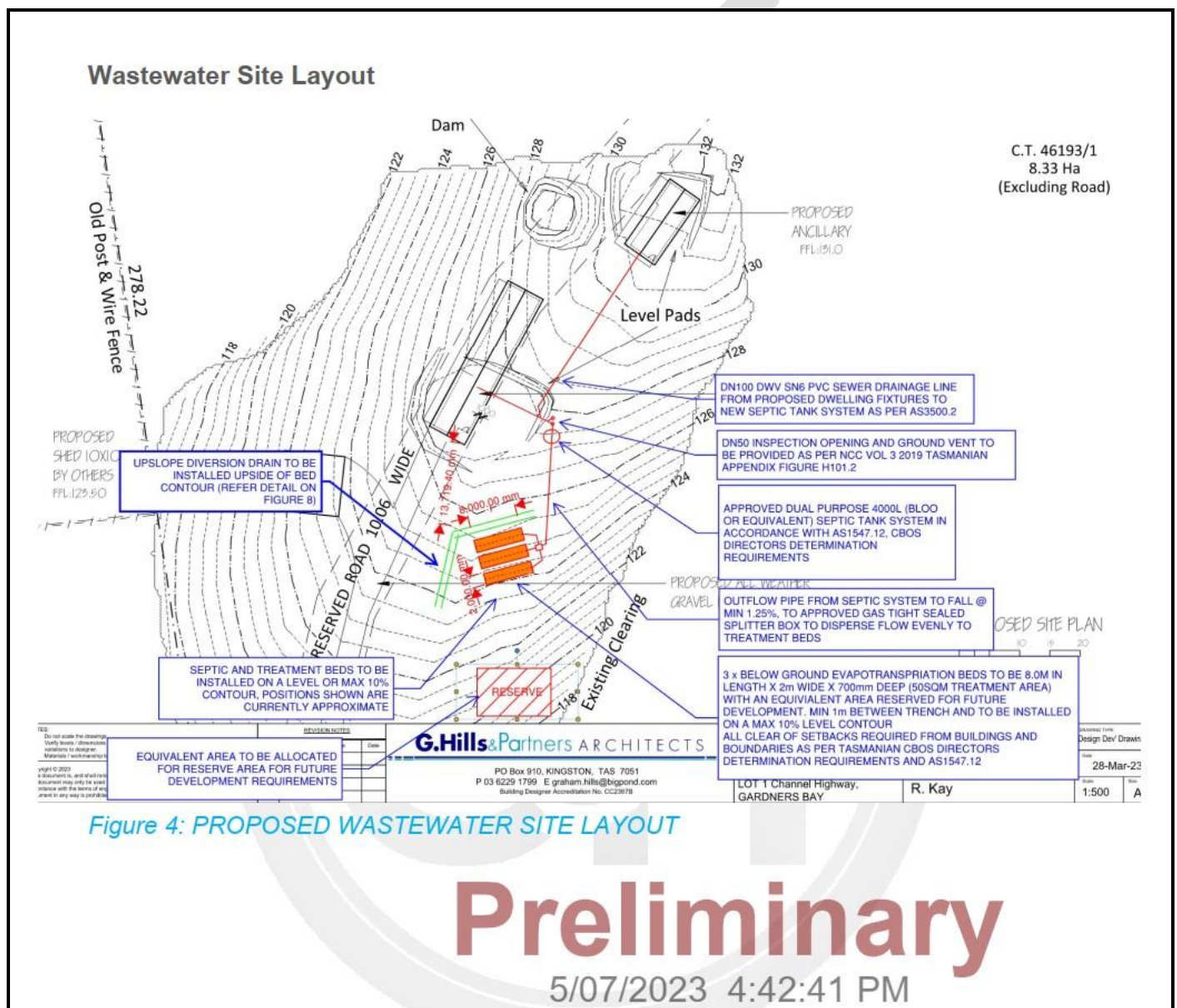


Figure 33 – Preliminary site plan of proposed wastewater system and below ground evapotranspiration beds Ref: On-site wastewater Report – Lot 1 Channel Highway, Gardners Bay, Ref CKD-HYD-101 05/07/2023 Preliminary.

7. Conclusions

Threatened Flora

- No threatened plant species listed under Tasmania's *Threatened Species Protection Act 1995* or the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999* had previously been recorded on site or at the time of assessment,
- At the time of assessment an area of vegetation (approx. 9800m²) had been previously cleared and/or converted,
- Given the extent of previous clearance and modification, it is unlikely the proposal will result in a significant loss of potential habitat for the endangered *Ozothamnus floribundus* or a significant loss of potential habitat for threatened flora species recorded within 5km.
- No further assessment or permit under Section 51 of Tasmania's *Threatened Species Protection Act 1995*. No formal referral to the Commonwealth's Department of Environment under Significant Impact Guidelines.

Vegetation communities

- Flora survey indicates that vegetation that has grown within the Reserve Road (Ch00-180) is a considerably modified with the sparse tree species dominated by *Eucalyptus ovata*. However, it is only the upper section CH100-180 is consistent with threatened vegetation community TASVEG 4.0 dry *Eucalyptus ovata* woodland/forest (DOV). Vegetation adjacent to the internal access is consistent with TASVEG 4.0 wet *Eucalyptus obliqua* forest over broadleaf shrubs (WOB),
- The proposed development site is within land consistent with the TASVEG 4.0 classification of modified land supporting modified vegetation *Pteridium esculentum* fernland (FPF). Given the fernland does not have uniform coverage across the cleared area, the remaining land is classified as TASVEG 4.0 Regenerating land (FRG),
- DOV vegetation community is listed as threatened vegetation communities under Schedule 3A of Tasmania's *Nature Conservation Act 1995*. Given impacts are restricted to vegetation within the Reserve Road and less than 1ha, no further assessment or permit required under *Nature Conservation Act 2002* or *Land Use Planning and Approvals Act 1993*.

Threatened Fauna

Swift Parrot

- Site is within Swift Parrot Important Breeding Areas (SPIBA's). Assessment recorded potential foraging habitat (*Eucalyptus ovata*) within the Reserve Road. Potential foraging (*Eucalyptus globulus*) and nesting habitat was recorded within the gully and adjacent to the internal access. Proposed development site previously cleared however, two potential nesting trees were recorded in proximity,
- Internal access upgrade has disturbed the tree protection zones of adjacent eucalypts however, comments from the ecologist indicate the proposed development and upgrades to the access are unlikely to impact potential nesting and foraging habitat for Swift parrots or Masked owls,
- Providing the proposed development is limited to the area identified, a raptor ecologist has indicated it is not anticipated the proposal will result in the loss of significant potential habitat for these species (see below). No further assessment or referral is required under Tasmania's *Threatened Species Protection Act 1995* or the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999*,

Grey Goshawk

- Recent assessment indicates the lower third of the gully in neighbouring land supports 6 Grey Goshawk nests with a further 3 potential nests within the southern half of the allotment,
- Surveys indicate the proposed access upgrades will not result in a loss of potential nesting habitat however, the ridge line location of the proposed development site does not represent suitable nesting habitat,
- Ecologist findings indicate the proposed access upgrade and proposed development site will not impact core nesting habitat,
- Ecologist indicates the proximity and anticipated activities associated with the access upgrade and construction is likely to disrupt breeding activities and potentially cause mortalities of the focal species via noise and visual disturbance, persecution, firewood collection collisions and use of rodenticides,
- Ecologist's recommendations provide mitigation strategies to minimise or reduce include;
 - Activity status of existing nests by suitably qualified raptor ecologist prior to breeding season (Sept – Feb),
 - No works near active nests unless specific management advice has been provided.

Wedge-tailed eagle & White-bellied sea eagle

- Site assessment recorded one nest likely to belonging to a WTE or WBSE in the north-east corner, approx. 200m from the proposed development site,
- Ecologist indicates proposed access upgrade or construction within the proposed development site will not impact potential nesting habitat,
- Ecologist indicates the proximity and anticipated activities associated with the access upgrade and construction is likely to disrupt breeding activities and potentially cause mortalities of the focal species via noise and visual disturbance, persecution, firewood collection collisions and use of rodenticides,
- Ecologist's recommendations provide mitigation strategies to minimise or reduce include
 - Determine the activity status of the nest by suitably qualified raptor ecologist prior to breeding season (Aug-Sept),
 - No works near active nests unless specific management advice has been provided.

Masked Owl

- Assessment found the gully area supports a moderate number of high biodiversity value eucalypts that have the capacity to generate large hollows suitable for Masked owl nesting habitat with whitewash recorded beneath some trees indicating habitation,
- Song meters recorded Masked Owl vocalisations confirming their presence in the vicinity,
- Ecologist findings indicate the proposed access upgrade and proposed development site will not impact core nesting habitat,
- Ecologist indicates the proximity and anticipated activities associated with the access upgrade and construction is likely to disrupt breeding activities and potentially cause mortalities of the focal species via noise and visual disturbance, persecution, firewood collection collisions and use of rodenticides,
- Ecologist's recommendations provide mitigation strategies to minimise or reduce including
 - Activity status of existing nests by suitably qualified raptor ecologist prior to breeding season (Sept – Feb),
 - No works near active nests unless specific management advice has been provided.
- Proposed development site is within range boundaries Quolls, Bandicoots and Devils. Assessment indicates scale of works has resulted is the loss of potential habitat but do not anticipate works and future occupation will result in a significant loss of foraging or denning habitat for these species,

- Post construction pressure such as domestic pets can potentially cause further disturbance or displacement. No further assessment or permit required under Tasmania's *Threatened Species Protection Act 1995* or the *Commonwealth's Environment Protection and Biodiversity Conservation Act 1999*.

Weed Management

- Spanish heath and Blackberry recorded within the Reserve Road Corridor area listed as Declared plant species under Tasmania's *Weed Management Act 1999*. No weed species were recorded within the proposed development site,
- Under the *Weed Management Act 1999* landowners are required to manage Declared weeds in accordance with Statutory Weed Management Plans developed by NRE,
- Given the proliferation of Spanish heath and Blackberry in the region, it is anticipated control and containment is possible,
- Recommendations also include implementing best practice hygiene management mechanisms prior to commencement of works to mitigate the accidental introduction of other weed species and plant pathogens.

Planning

The site is within Huon Valley Council's Biodiversity Protection Area overlay. Assessment indicates the proposed upgrade of the access within the Reserve Road is unavoidable and only result in minor impacts to *Eucalyptus ovata* trees less than 25cm DBH. Engineering plans indicate the upgrade of the internal access and construction of passing bays will impact a small amount of WOB vegetation community. The proposed development site is within significantly modified land supporting modified vegetation community *Pteridium esculentum*. Despite the modified nature of vegetation, the removal of native vegetation will trigger off set requirements in accordance with 'Guidelines for the use of Biodiversity Offsets in the local planning approval process'. It is proposed the offset is in the form of an in-situ, >5:1, 1ha Part 5 Agreement that encompasses an established Wedge-tailed eagle nest and high priority nesting habitat, in accordance with Tasmania's *Land Use Planning and Approvals Act 1993* (see Figure 33).

The raptor ecologist has indicated the proposal, including the upgrade of the access and development is likely to disrupt breeding activities. In addition, the ecologist indicates post construction disturbance (noise and visual), persecution, firewood collection, collisions with infrastructure (electricity lines and windows) and use of rodenticides could potentially cause mortalities of the focal species. Findings state disturbance and post construction activities may impact the use of existing nests and result in the abandonment of the breeding territory. However, the ecologist also provides a statement indicating these potential impacts can be mitigated through management prescriptions, including recommendations that provide mitigation strategies to minimise or reduce impacts including:

- Prior to breeding season determining the activity status of existing nests for Grey Goshawks by suitably qualified raptor ecologist (Sept – Feb) (D. Young, unpublished data),
- Prior to breeding season determine the activity status of the Wedge-tailed eagles and White-bellied sea eagles (late winter to summer), and
- There are no new works near active nests unless specific management advice has been provided.

Post construction occupation of the site and future potential introduction of cats and dogs will place additional pressure these species. It is a legislative requirement owners manage pets responsibly so not place extra pressure on both threatened and non-threatened species.

Significant Impact Guidelines issued by the Commonwealth Dept of the Environment to determine if referral to the department is required, indicates the proposal will not:

- impact native vegetation or a native vegetation community,
- directly impact potential threatened species habitat,

- lead to a long-term decrease in the size of populations, reduce area of occupancy of a significant population, fragment an existing population or destroy habitat critical to the survival of species,
- disrupt the breeding cycle of an important population,
- modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline,
- result in invasive species that are harmful to a threatened species becoming established in the threatened species habitat.

As indicated by the raptor ecologist, it is unlikely the proposal will result in “significant impacts” as described in the EPBC Act. No further assessment or referral is required under Tasmania’s *Threatened Species Protection Act 1995* or Commonwealth’s *Environmental Protection Biodiversity Conservation Act 1999*.

Recommendations

Management prescriptions to address the construction phase of the development and potential future works or land use should include:

- Prior to commencement of works implement a hygiene management plan including in accordance with Tasmanian Washdown Guidelines for Weed and Disease Control: Machinery, Vehicles and Equipment (Edition 1, 2004) ensuring contractors have washed down vehicles and machinery to prevent accidental importation of new weed species and *Phytophthora cinnamomi* during the construction phase,
- Prior to commencement of works implement a soil, water and erosion management plan following guidelines set out in Environmental Best Practice Guidelines for all development detailing location for soil, waste material storage and parking,
- Stage development to avoid blanket clearance and avoid any unnecessary traffic outside the development footprint,
- Implement Statutory Weed Mgt Plan for the control and containment of weed species. Where appropriate, control action should be undertaken prior to the commencement of works, in accordance with DPIPW’s Statutory weed management plans. Post construction medium to long term monitoring period should be attached to the approval conditions.

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9. Appendix A – Vascular plant species list.

VASCULAR PLANT SPECIES LIST

Channel Highway, Gardners Bay

I = Introduced; E = Endemic; D = Declared weed under Tas *Weed Management Act 1999*; e = Environmental weed

DICOTYLEDON

ASTERACEAE

	<i>Bedfordia salicina</i>		
	<i>Chrysocephalum apiculatum</i>		
I	<i>Cirsium vulgare</i>	Spear thistle	e
	<i>Helichrysum spp</i>		
	<i>Lagenophora stipitata</i>		
	<i>Olearia argophylla</i>		
	<i>Olearia viscosa</i>		
	<i>Senecio spp</i>	Groundsel	

CASUARINACEAE

Allocasuarina littoralis
Allocasuarina verticillata

CUNONIACEAE

Bauera rubioides

EPACRIDACEAE

Amperea xiphoclada
Astroloma humifusum
Epacris impressa

Native cranberry
Common heath

ERICACEAE

I	<i>Erica lusitanica</i>	Spanish heath	D
	<i>Monotoca glauca</i>		

FABACEAE

Acacia mearnsii
Acacia melanoxylon
Acacia verticillata
Aotus ericoides
Oxylobium ellipticum
Pultenaea juniperina

Silver wattle
Balckwood
Prickly moses
Golden pea

FUMARIACEAE

I	<i>Fumaria muralis</i>		
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GENTIANACEAE

I	<i>Centaurium erythraea</i>	Century plant	
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GOODENEACEAE

	<i>Goodenia ovata</i>	Hop-Native primrose	
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HEMEROCALLIDACEAE

Dianella tasmanica / revoluta

Dianella

HALORAGACEAE

Gonocarpus teucroides

Raspwort

LAURACEAE

Cassytha spp.

Dodderal

MYRTACEAE

Eucalyptus globulus

Eucalyptus obliqua

Eucalyptus ovata

Eucalyptus tenuiramis

Leptospermum scoparium

Melaleuca squarrosa

Common Teatree

OLEACEAE

Notelaea ligustrina

Native olive

PITTOSPORACEAE

Billardiera heterophylla

Bursaria spinosa

Native Box

PROTEACEAE

Banksia marginata

Banksia

POLYGALACEAE

Comesperma volubile

RANUNCULACEAE

Clematis aristata

Ranunculus sp

RHAMNACEAE

Pomaderris spp

ROSACEAE

Acaena novae-zelandiae

I *Rubus fruticosus* complex

Blackberry

D

RUBIACEAE

Coprosma quadrifida

RUTACEAE

Zieria arborescens

SANTALACEAE

Exocarpos cupressiformis

Leptomeria drupacea

Native cherry

STYLIDIACEAE

Stylidium graminifolium

THYUMELAEACEAE

Pimelea linifolia

MONOCOTYLEDONAE

CYPERACEAE

Lepidosperma elatius

Sword sedge

HEMEROCALLIDACEAE

Dianella revoluta

LOMANDRACEAE

Lomandra longifolia

Sagg

POACEAE

Agrostis spp

Austrodanthonia spp

Austrostipa spp

Dichelachne spp

Ehrharta spp

I *Holcus lanatus*

Poa labillarderei

Wallaby grass

Speargrass

Bentgrass

Ricegrass

Foggrass

PTERIDOPHYTA

BLECHNACEAE

Blechnum patersonii

Blechnum wattsii

CYPERACEAE

Gahnia grandis

Cutting grass

DEMMSTAEDTIACEAE

Pteridium esculentum

Bracken

DICKSONIACEAE

Dicksonia antarctica

Man fern

POLYPODIACEAE

Microsorium pustulatum

Kangaroo fern

10. Appendix B - Supporting documentation.

Author	Description / Summary
David Young	Raptor and Swift Parrot Habitat Assessment Report: Gardners Bay DA-350/2022.
Bruce	Bushfire Hazard Assessment 2023
Chris Fysh	On-site wastewater Report – Lot 1 Channel Highway, Gardners Bay, Ref CKD-HYD-101 05/07/2023 Preliminary.

Definitions of terms

Term / Acronym	Definition
BAL	Bushfire Attack Level
BHA	Bushfire Hazard Assessment
C.T.	Certificate of Title
DOB	Dry <i>Eucalyptus obliqua</i> vegetation community
DOV	Dry <i>Eucalyptus ovata</i> vegetation community
EPBC	Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i>
FAG	Agricultural / Modified land
FPA	Forestry Practices Authority
FPP	Forestry Practices Plan
FPF	<i>Pteridium esculentum</i> modified vegetation community
FRG	Regenerating land
FWU	Weed infestation
HMA	Hazard Management Area
HVIPS2015	Huon Valley Interim Planning Scheme 2015
LUPA	Tasmania <i>Land Use Planning and Approvals Act 1993</i>
NCA	Tasmanian <i>Nature Conservation Act 2002</i>
NRE	Department of Natural Resources and Environment
Pc	<i>Phytophthora cinnamomi</i>
TSPA	Tasmanian <i>Threatened Species Protection Act 1995</i>
WMA	Tasmanian <i>Weed Management Act 1995</i>
WCPA	Waterways & Coastal Protection Area
WOB	Wet <i>Eucalyptus obliqua</i> with broadleaf shrubs vegetation community

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