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**From:** Karen <[REDACTED]>  
**Sent:** Saturday, 11 April 2026 9:12 AM  
**To:** Kingborough LPS  
**Cc:** Esbjörn Torstensson  
**Subject:**

To Whom it May Concern,

We wish to make a formal submission in relation to the proposed rezoning of [REDACTED] Woodbridge to Landscape Conservation Zone (LCZ).

Having been subjected to a particularly lengthy, and somewhat gruelling DA (2023-228) for renovations currently taking place, we feel that rezoning our property to LCZ would place unnecessary restrictions should there ever be a need to rebuild due to bushfire or other unforeseen disaster.

Of particular concern to us are the following LCZ objectives:

#### **22.4.2**

##### **Building height, siting and exterior finishes:**

##### **a) protects the amenity of adjoining properties.**

*We have no visible neighbours, nor is the house visible from lower ground/public places. We are the second to last property on a dead end street, surrounded by dense forest.*

##### **b) minimises the impact on the landscape values of the area**

*as above*

##### **c) minimises the impact on adjoining agricultural uses**

*Not applicable.*

#### **22.4.3**

##### **Access to a road**

**That new dwellings have appropriate vehicular access to a road maintained by a road authority**

*Our DA required us to obtain a licence (DNRET Ref: 24/941) to cross a small section of Crown land to access our property. We are potentially at risk of being landlocked with current LCZ requirements. Prior to this section of Crown land, our house utilises a private (concreted) driveway before reaching the council maintained portion of Llantwit Rd. This driveway is shared with the occupants of [REDACTED] Woodbridge, who I believe are also objecting the rezoning of their property.*

We believe the above to be valid concerns and request that our property be reclassified as Rural Living Zone (RLZ). It is already compatible with the following Zone Purpose Statements:

13.1.1.1 To provide for residential use.. on large lots in a rural setting where services are limited

13.1.1.2 To provide for compatible use and development that does not adversely impact on residential amenity

13.1.1.6. To provide for use and development that respects the natural landscape.

The property is surrounded by dense forest unsuitable for pedestrian, cycling and horse trail linkage or agricultural purposes.(13.1.1.3, 13.1.1.4, 13.1.1.5).

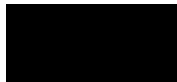
This potential usage may have been a factor for Council in the proposed rezoning to LCZ, however moving to RLZ would not impact the natural values of the area and aligns more with our current Environmental Living Zoning.

We would also be open to a dual classification of our property if this is open for consideration, with the northern, forested area subject to LCZ and the building zone with property access point classified RLZ.

We look forward to hearing from you and/or discussing this further.

Kind regards,

Karen & Esbjorn Torstensson



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**From:** Karen [REDACTED]  
**Sent:** Friday, 1 May 2026 2:14 PM  
**To:** Kingborough LPS  
**Subject:** Objection to proposed rezoning \*Further information  
**Attachments:** ECOtas\_[REDACTED]\_Report-1.pdf

Hello,

Please find attached our Natural Values Assessment report commissioned for our current DA. Please add this, along with below comments, to our formal submission (see below, sent 11/04/16) in relation to the proposed rezoning of [REDACTED], Woodbridge to Landscape Conservation Zone (LCZ).

- Our property exists within a Biodiversity Area Overlay, Waterway & Coastal Protection Overlay & Scenic Landscape Area overlay. See attached Natural Values Assessment.
- Chair Nick Heath mentioned on Day 1 of hearings (05:44:11) "The LCZ is to protect landscape values". Our overlays encompass this already, coupled with our property being hidden from neighbours and from lower ground the argument to move to LCZ to protect landscape values becomes obsolete.
- If Council disagrees, what definition is given by Council to Landscape values? What does LCZ add beyond our current overlays?
- There is no risk for subdivision, service stations or grazing on our property due to forest/remote setting subject to discretionary damaging development by above overlays.
- The panel accepted on Day 1 of hearings that a bush-nestled detached dwelling, such as ours, can support RLZ even without paddocks or sheds. (Probert [06:11:55]; Ford [05:30:16]).

Kind regards,  
Karen & Esbjörn Torstensson





**NATURAL VALUES ASSESSMENT OF [REDACTED]  
(PID [REDACTED]; C.T. [REDACTED]), WOODBRIDGE,  
TASMANIA**



**Environmental Consulting Options Tasmania (ECOtas) for  
Esbjorn & Karen Torstensson**

**2 October 2023**

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## **CITATION**

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## **AUTHORSHIP**

Field assessment: Mark Wapstra

Report production: Mark Wapstra

Habitat and vegetation mapping: Mark Wapstra

Base data for mapping: LISTmap

Digital and aerial photography: Mark Wapstra, GoogleEarth, ESRI World Imagery, LISTmap

## **DISCLAIMER**

Except where otherwise stated, the opinions and interpretations of legislation and policy expressed in this report are made by the author(s) and do not necessarily reflect those of the relevant agency. The client should confirm management prescriptions with the relevant agency before acting on the content of this report. This report and associated documents do not constitute legal advice.

Note that any reference to the Department of Primary Industries, Parks, Water & Environment (DPIPWE) now refers to the Department of Natural Resources and Environment Tasmania.

## **ACKNOWLEDGEMENTS**

Evan Davies & Richard Loney (Dock4 Architects) provided background information on the land use proposal. Bruce Haywood (Land Advice) provided input into the relationship between bushfire hazard management requirements and impacts to natural values.

## **COVER ILLUSTRATION**

Looking east across existing house towards D'Entrecasteaux Channel.

Please note: the blank pages in this document are deliberate to facilitate double-sided printing.

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## SUMMARY

### **General**

Esbjorn & Karen Torstensson (owners) engaged Environmental Consulting Options Tasmania (ECOtas) to undertake a natural values assessment of [REDACTED] [REDACTED] [REDACTED] (PID [REDACTED]; [REDACTED]), Woodbridge, Tasmania, primarily to ensure that the requirements of the identified natural values are appropriately considered during any further project planning under local, State and Commonwealth government approval protocols.

### **Site assessment**

The natural values assessment of the study area was undertaken by Mark Wapstra (ECOtas) on [REDACTED], Woodbridge.

### **Summary of key findings**

#### Threatened flora

- No plant species listed as threatened on the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA) and/or the Tasmanian *Threatened Species Protection Act 1995* (TSPA) were detected, or are known from database information, from the study area.

#### Threatened fauna

- No fauna species listed as threatened on the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA) and/or the Tasmanian *Threatened Species Protection Act 1995* (TSPA) were detected, or are known from database information, from the study area.
- The study area supports potential habitat (to varying degrees of marginality) for the following species:
  - *Sarcophilus harrisi* (Tasmanian devil);
  - *Dasyurus maculatus* subsp. *maculatus* (spotted-tailed quoll);
  - *Dasyurus viverrinus* (eastern quoll);
  - *Perameles gunnii* subsp. *gunnii* (eastern barred bandicoot);
  - *Lissotes menalcas* (Mt Mangana stag beetle);
  - *Accipiter novaehollandiae* (grey goshawk);
  - *Aquila audax* subsp. *fleayi* (wedge-tailed eagle); and
  - *Tyto novaehollandiae* subsp. *castanops* (Tasmanian masked owl).

#### Vegetation types

- The study area supports the following TASVEG mapping units:
  - *Eucalyptus regnans* forest (TASVEG code: WRE); and
  - urban areas (TASVEG code: FUR).

- Occurrences of WRE do not equate to a native vegetation community listed as threatened on Schedule 3A of the *Tasmanian Nature Conservation Act 2002*.
- Occurrences of WRE do not equate to a threatened ecological community under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA).
- As a vegetation type, occurrences of WRE are classified as low priority biodiversity values under Table E10.1 of the Biodiversity Code of the *Kingborough Interim Planning Scheme 2015*.

#### Weeds

- No plant species classified as declared weeds within the meaning of the *Tasmanian Weed Management Act 1999* (*Biosecurity Act 2019*) were detected from the study area.

#### Plant disease

- No evidence of *Phytophthora cinnamomi* (PC, rootrot) was recorded from the study area.
- No evidence of myrtle wilt was recorded from the study area.
- No evidence of myrtle rust was recorded from the study area.

#### Animal disease (chytrid)

- The study area does not support habitat types strongly associated with amphibian species (except marginally along the tributary of Schemers Creek, which will remain wholly undisturbed).

#### Individual trees

- The study area supports a limited number of trees with features that meet the criteria for very high conservation value trees within the intent of Table E10.1 of the Biodiversity Code of the *Kingborough Interim Planning Scheme 2015* (but noting none are proposed for removal or any form of disturbance).

### **Recommendations**

The recommendations provided below are a summary of those provided in relation to each of the natural values described in the main report. The main text of the report provides the relevant context for the recommendations.

#### Vegetation types

In general terms, minimising the extent of “clearance and conversion” and/or “disturbance” of native vegetation is recommended, acknowledging constraints imposed by the location of the existing dwelling and access, setbacks, the lot’s configuration, slopes, service and access requirements and contemporary bushfire hazard management requirements.

#### Threatened flora

Not applicable – no threatened flora present.

#### Threatened fauna

Apart from the generic recommendation to minimise the extent of “clearance and conversion” and/or “disturbance” to native vegetation, it is also recommended that the extent of loss of individual eucalypts is minimised with an emphasis on the following:

- individuals of any species with a DBH greater than 100 cm.

### Weed and disease management

Any works, especially access and service provision, will provide an opportunity for weed establishment by mobilising soil-stored seed and providing fresh bare ground ideal for seedling establishment. "Starting clean" is good practice (i.e. machinery, vehicle and equipment hygiene prior to entering the site).

Owner-occupation is the most likely practical means of achieving good long-term weed management outcomes through vigilance and control.

### Legislative and policy implications

A permit under Section 51 of the Tasmanian *Threatened Species Protection Act 1995* (TSPA) should not be required.

A formal referral to the relevant Commonwealth agency under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA) should not be required.

Initial review of the relevant provisions of the Biodiversity Code of the *Kingborough Interim Planning Scheme 2015* indicates satisfaction of E10.7.1 P1 with minor recommendations provided in relation to management of moderate priority biodiversity values (individual trees).





## INTRODUCTION

### **Purpose**

Esbjorn & Karen Torstensson (owners) engaged Environmental Consulting Options Tasmania (ECOtas) to undertake a natural values assessment of [REDACTED] [REDACTED] [REDACTED] (PID [REDACTED]; C.T. [REDACTED]), Woodbridge, Tasmania, primarily to ensure that the requirements of the identified natural values are appropriately considered during any further project planning under local, State and Commonwealth government approval protocols.

### **Scope**

This report relates to:

- flora and fauna species of conservation significance, including a discussion of listed threatened species (under the Tasmanian *Threatened Species Protection Act 1995* and/or the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*) potentially present, and other species of conservation significance/interest;
- vegetation types (forest and non-forest, native and exotic) present, including a discussion of the distribution, condition, extent, composition and conservation significance of each community;
- plant and animal disease management issues;
- weed management issues; and
- a discussion of some of the policy and legislative implications of the identified natural values.

This report follows the government-produced *Guidelines for Natural Values Surveys – Terrestrial Development Proposals* (DPIPWE 2015) in anticipation that the report (or extracts of it) may be required as part of various approval processes.

The report format should also be applicable to other assessment protocols as required by the relevant Commonwealth agency (for any referral/approval that may be required under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*), which is unlikely to be required in this case.

More specifically, this assessment and report have been prepared to address specific provisions of the *Kingborough Interim Planning Scheme 2015*, with particular reference to the natural values/biodiversity provisions of the Biodiversity Code.

### **Limitations**

The natural values assessment was undertaken on 29 Aug. 2023 & 20 Sep. 2023. Many plant species have ephemeral or seasonal growth or flowering habits, or patchy distributions (at varying scales), and it is possible that some species were not recorded for this reason. However, every effort was made to sample the range of habitats present in the survey area to maximise the opportunity of recording most species present (particularly those of conservation significance). Late spring and into summer is usually regarded as the most suitable period to undertake most botanical assessments. While some species have more restricted flowering periods, a discussion of the potential for the site to support these is presented. In this case, I believe that the survey was

appropriately timed to detect the species with a highest priority for conservation management in this part of the State, particularly with respect to the disturbance history of the site.

The survey was also limited to vascular species: species of mosses, lichens and liverworts were not recorded. However, a consideration is made of threatened species (vascular and non-vascular) likely to be present (based on habitat information and database records) and reasons presented for their apparent absence.

Surveys for threatened fauna were largely limited to an examination of “potential habitat” (i.e. comparison of on-site habitat features to habitat descriptions for threatened fauna), and detection of tracks, scats and other signs.

## **Permit**

Any plant material was collected under DNRET permit TFL 22382 (in the name of Mark Wapstra). Relevant data will be entered into DNRET’s *Natural Values Atlas* database by the author. Some plant material may be lodged at the Tasmanian Herbarium by the author.

No vertebrate or invertebrate material was collected. A permit is not required to undertake the type of habitat-level assessment described herein.

## **STUDY AREA**

### **Overview – cadastral and land use details**

The study area (Figures 1-3) comprises the private title of [REDACTED], Woodbridge, [REDACTED] cadastral details:

- PID: [REDACTED]
- C.T.: [REDACTED]; and
- LPI: [REDACTED]7.

LISTmap data indicates a computed area of 102,775.88 m<sup>2</sup> and a measured area of 106,989 m<sup>2</sup> (i.e. ca. 10 ha).

Land tenure and other categorisations of the study area are as follows:

- Kingborough municipality, with the subject title zoned as Environmental Living pursuant to the *Kingborough Interim Planning Scheme 2015* (Figure 4), wholly subject to the Biodiversity Protection Area overlay (Figure 5), partly subject to the Waterway and Coastal Protection Area overlay along the tributary of Schemers Creek (Figure 5) and wholly subject to the Scenic Landscape Area overlay (not shown on Figure 5); and
- South East Bioregion, according to the IBRA 7 bioregions used by most government agencies.

The title is bound to the west and east by private titles (undeveloped forested titles); to the immediate south by a road title, south of which is a residentially-occupied but otherwise forested private title (accessed by the existing shared driveway); to the north by an undeveloped private title (forested); to the northeast by a small road title; and to the north by the Woodbridge Hill Conservation Area (Figure 6) under the jurisdiction of the Parks and Wildlife Service.

The southeast corner of the subject title has been long-developed with a residential dwelling and associated domestic elements including a relatively large cleared area and ornamental plantings



(Plates 1-6), accessed by a well-formed internal gravel drive (Plates 7 & 8) in turn accessed from a sealed section of Llantwit Road (Plates 9 & 10).

The proposal is to make extensions to the existing dwelling requiring establishment of a hazard management area (BAL-19) including minor works to establish a hard stand and turning area. No works to Llantwit Road are required (B. Haywood pers. comm.) to satisfy bushfire hazard management requirements. Establishment and maintenance of a BAL-19 hazard management area will require minor modification to the structure of fringing native forest (very small area only) but no removal of any trees with a DBH of 25 cm or more (B. Haywood pers. comm.).



**Plates 1-6.** Existing residentially-occupied part of subject title





**Plate 7.** (LHS) Start of well-formed gravel drive into subject title to right with access to adjacent title to left  
**Plate 8.** Well-formed internal gravel drive to existing house



**Plates 9 & 10.** Existing sealed access along Llantwit Road

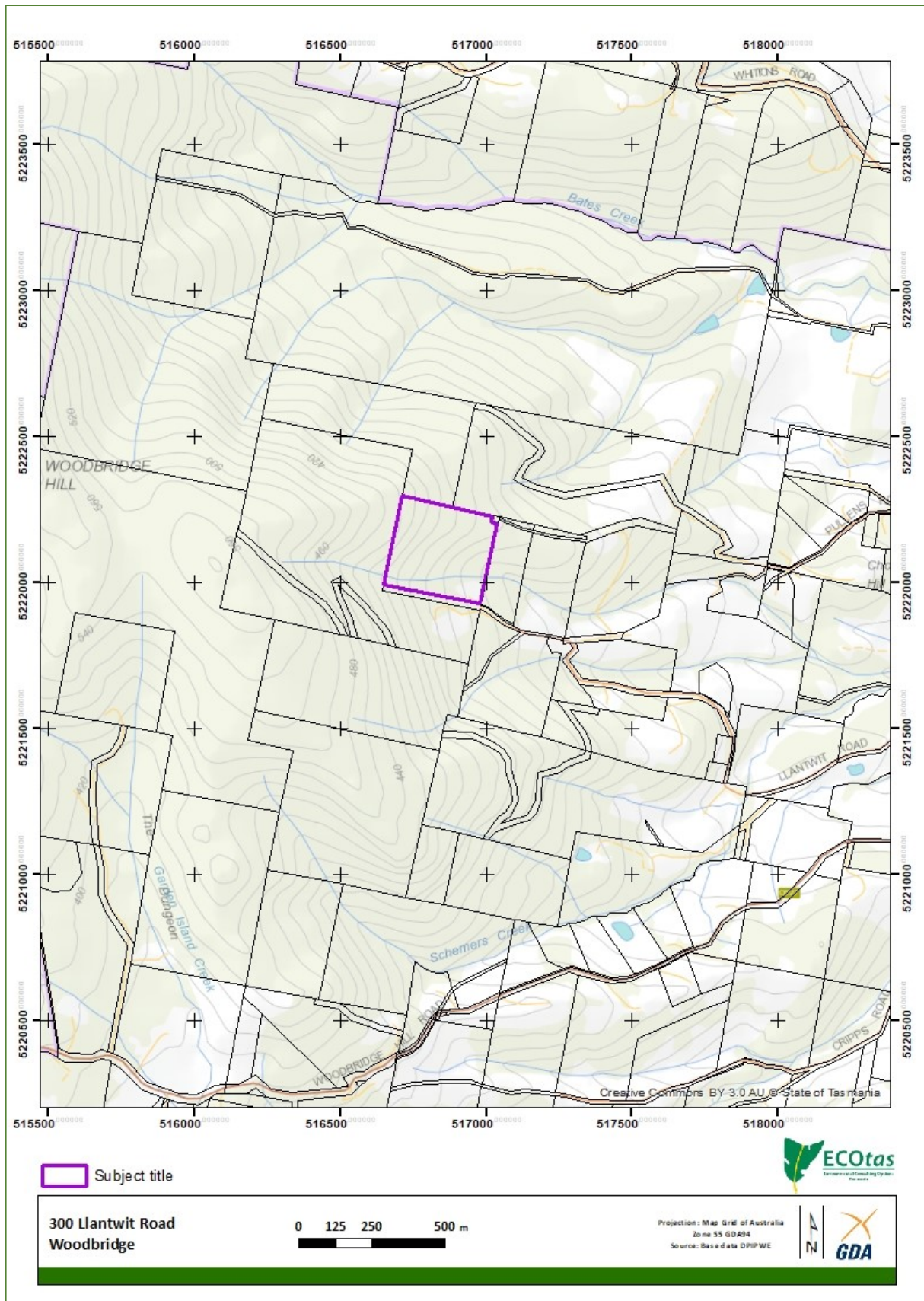
### ***Other site features***

The subject title is on a steep generally east/southeast-facing slope with elevation between ca. 235 m a.s.l. (exit point of tributary of Schemers Creek on eastern boundary) to ca. 405 m a.s.l. (western boundary). Apart from the established domestic area (see Plates 1-6) and internal driveway (see Plates 7 & 8), the title is wholly forested with wet sclerophyll forest (Plates 1-10).

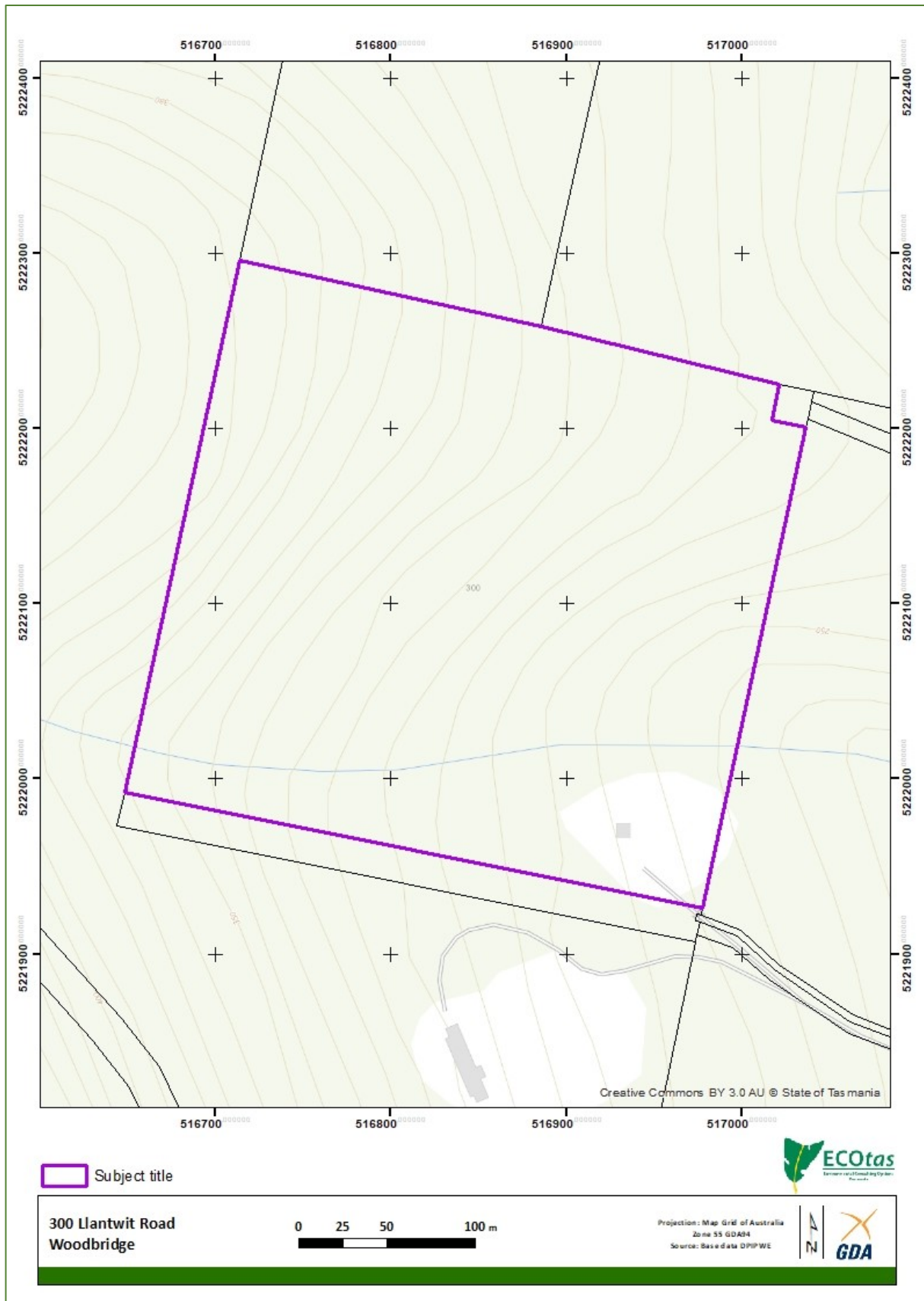
LISTmap's Fire History layer (Figure 7) indicates that the title and surrounds were all affected by the Feb. 1967 wildfire event, which is evidenced in the overall maturing regrowth structure of the native forest (Plates 1-10).

The geology of the title is important to consider because it can have a strong influence on the classification of vegetation and the potential occurrence of threatened flora (and to a lesser extent, threatened fauna). In this case, the 1:250,000 scale geological mapping (Figure 8) indicates the title to be wholly underlain by Jurassic-age "dolerite (tholeiitic) with locally developed granophyre" (geocode: Jd), which was confirmed informally by reference to soil profiles and exposed rock in roadside cuttings and along the tributary of Schemers Creek.



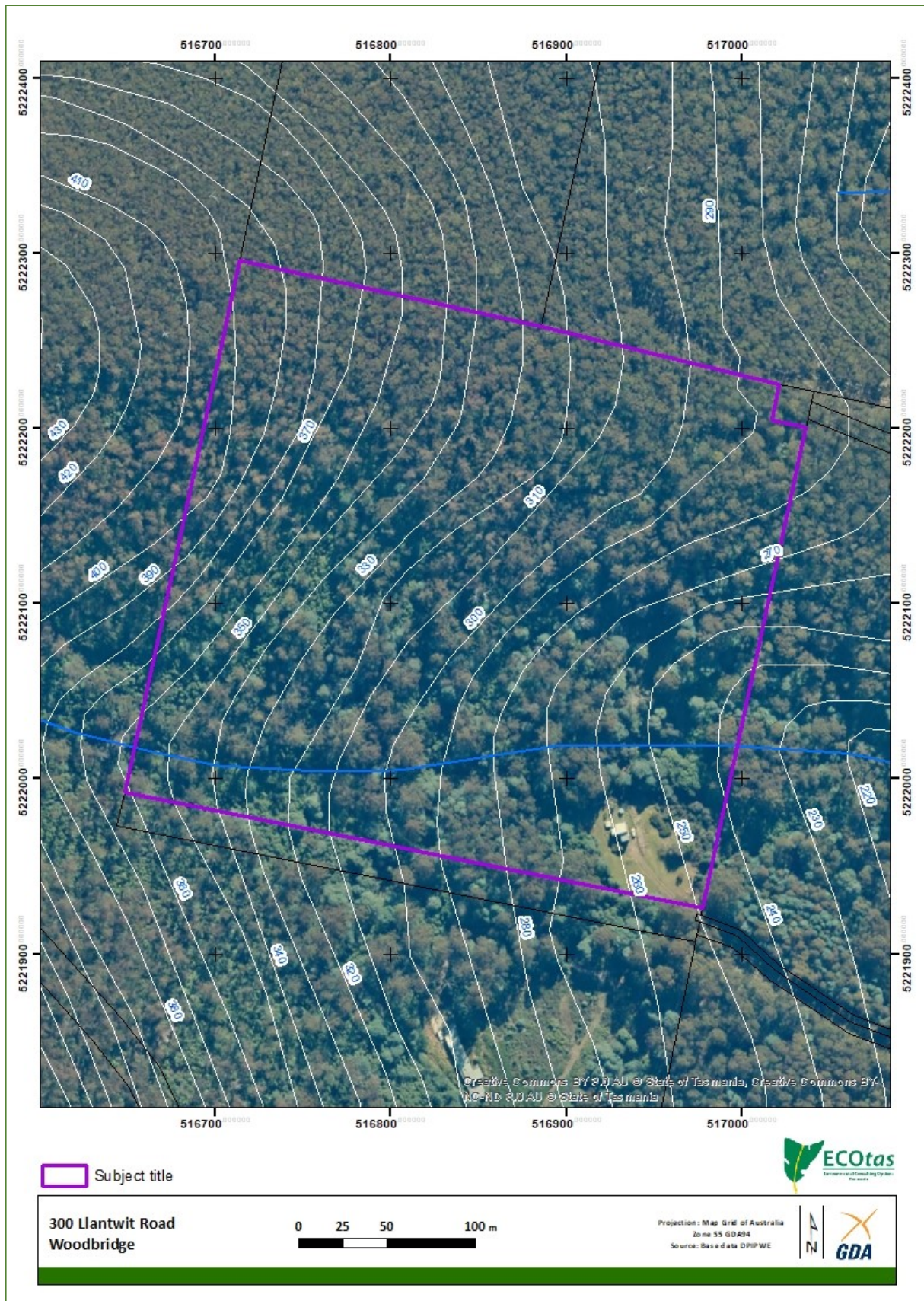


**Figure 1.** General location of study area



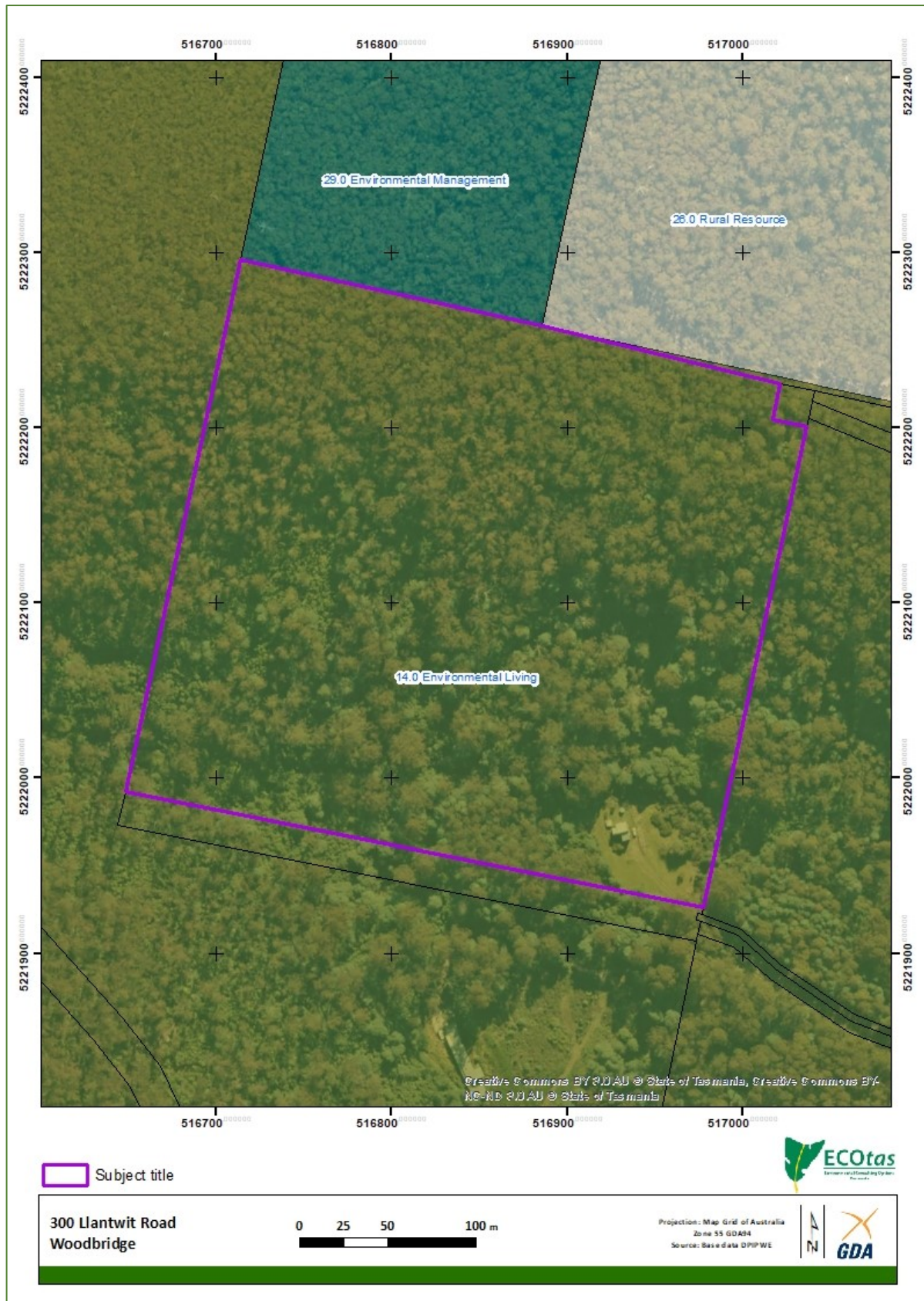
**Figure 2.** Detailed location of study area showing general topographic and cadastral features





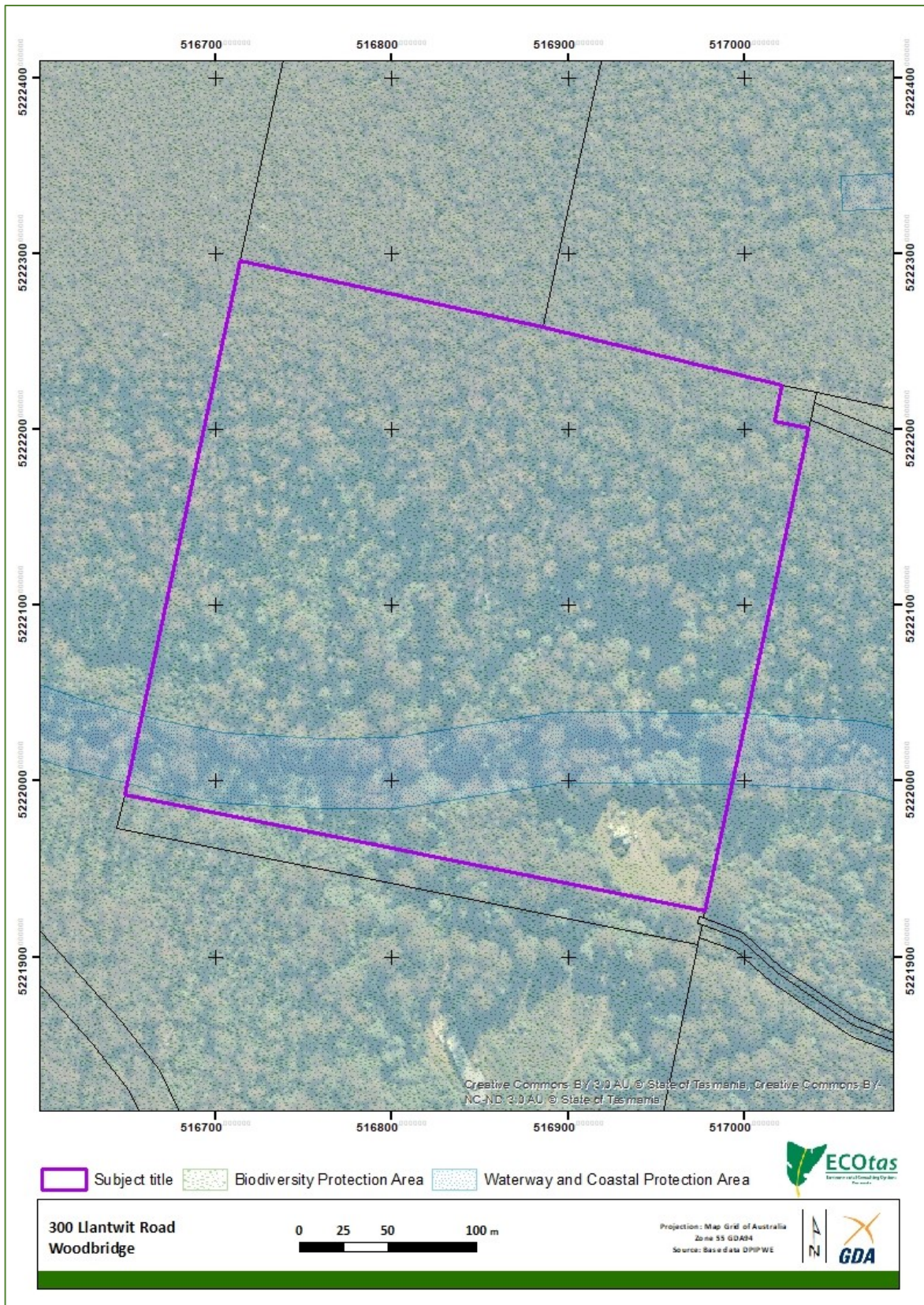
**Figure 3.** Detailed location of study area showing recent aerial imagery





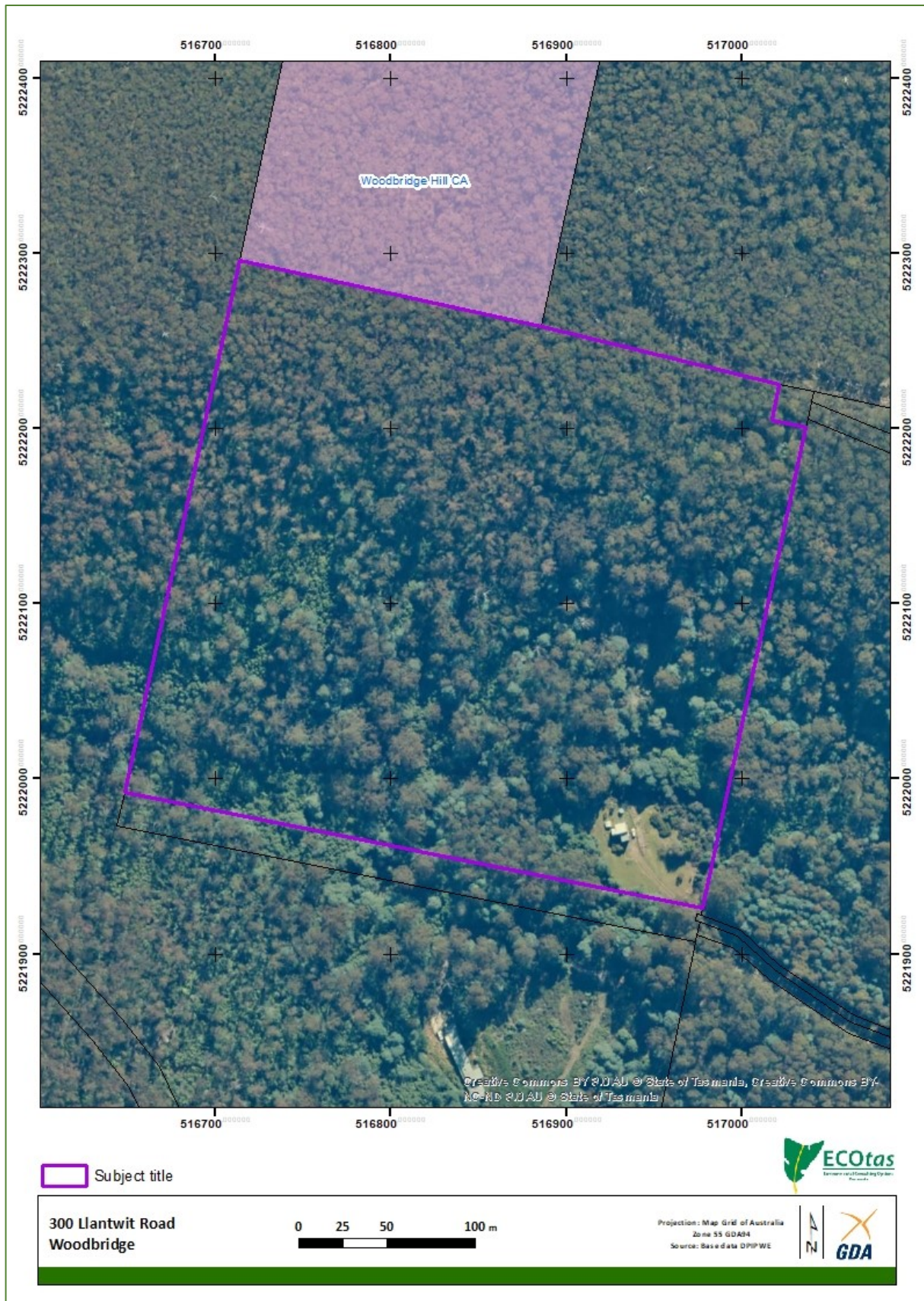
**Figure 4.** Current zoning of study area and surrounds pursuant to the *Kingborough Interim Planning Scheme 2015*





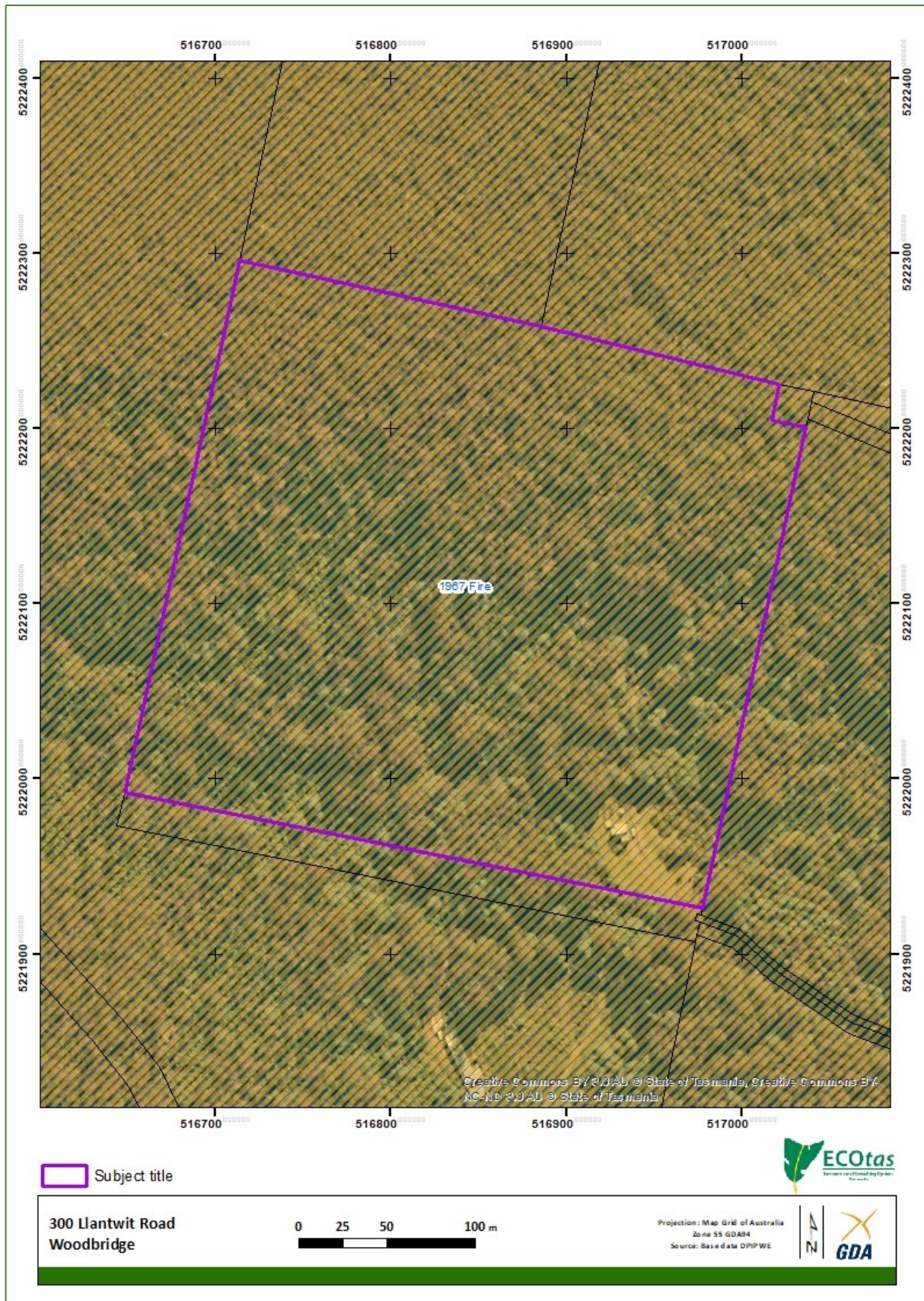
**Figure 5.** Current extent of Biodiversity Protection Area (green stippling – whole area) and Waterway and Coastal Protection Area (blue stippling) overlays within study area and surrounds pursuant to the *Kingborough Interim Planning Scheme 2015*





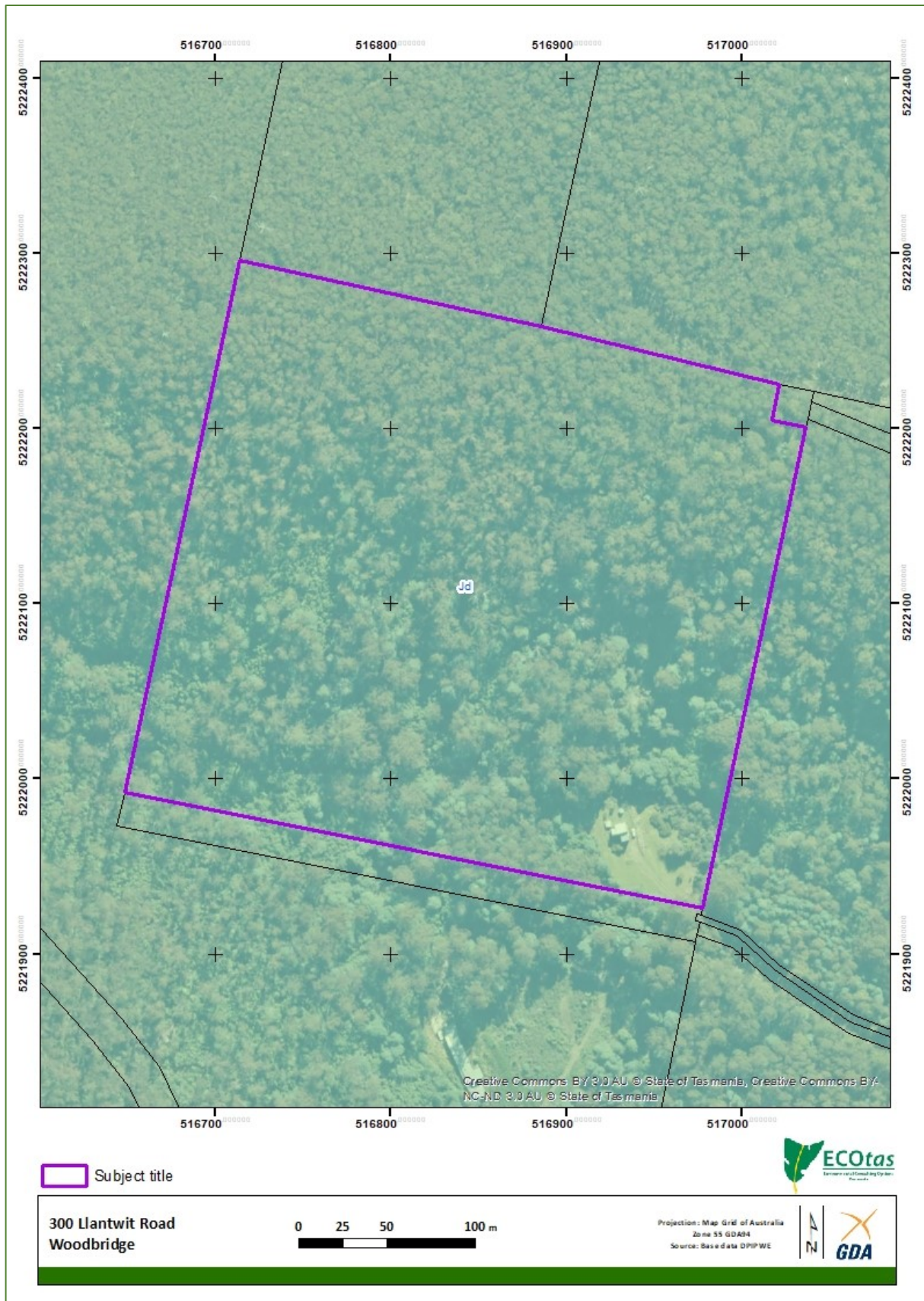
**Figure 6.** Adjacent formal reserve





**Figure 7.** Fire history of study area and surrounds





**Figure 8.** Geology (1:250,000 scale) of study area and surrounds (refer to text for code)

## METHODS

### ***Nomenclature***

All grid references in this report are in GDA94, except where otherwise stated.

Vascular species nomenclature follows de Salas & Baker (2023) for scientific names and Wapstra et al. (2005+) for common names. Fauna species scientific and common names follow the listings in the cited *Natural Values Atlas* report (DNRET 2023a).

Vegetation classification follows TASVEG 4.0, as described in *From Forest to Fjaeldmark: Descriptions of Tasmania's Vegetation* (Kitchener & Harris 2013+).

### ***Preliminary investigation***

Available sources of previous reports, threatened flora records, vegetation mapping and other potential environmental values were interrogated. These sources include:

- Tasmanian Department of Natural Resources and Environment Tasmania's *Natural Values Atlas* records for threatened flora and fauna (GIS coverage maintained by the author current as at date of report);
- Tasmanian Department Natural Resources and Environment Tasmania's *Natural Values Atlas* report ECOTas\_300Llantwit for a polygon defining the study area (centred on 516844mE 5222109mN), buffered by 5 km, dated 28 Aug. 2023 (DNRET 2023a) – Appendix E;
- Forest Practices Authority's *Biodiversity Values Database* report, specifically the species' information for grid reference centroid 516844mE 5222109mN (i.e. a point defining the centre of the NVA report), buffered by 5 km and 2 km for threatened fauna and flora records, respectively, hyperlinked species' profiles and predicted range boundary maps, dated 28 Aug. 2023 (FPA 2023) – Appendix F;
- Commonwealth *Protected Matters Report* for a polygon defining the study area, buffered by 5 km, dated 28 Aug. 2023 (CofA 2022) – Appendix G;
- TASVEG vegetation coverages (as available through GIS coverage and via LISTmap);
- GoogleEarth, ESRI World Imagery and LISTmap aerial orthoimagery; and
- other sources listed in tables and text as indicated.

### ***Field assessment***

The natural values were assessed on 29 Aug. 2023 (initial assessment by Mark Wapstra) and 20 Sep. 2023 (follow-up assessment by Mark Wapstra in company of Bruce Haywood to discuss management of fringing vegetation and individual trees).

Cadastral data uploaded to the iGIS application guided the in-field assessment (most boundaries not defined by fences or other obvious survey markers). Hand-held GPS (Garmin GPSMAP 66sr) was used to waypoint any natural values features. The assessment was focussed on the part of the title proposed for development with the balance of the steep forested slopes not examined.



### Vegetation classification

Vegetation was classified by waypointing vegetation transitions for later comparison to aerial imagery. The structure and composition of the vegetation type was described using a nominal 30 m radius plot at a representative site within the vegetation type.

### Threatened flora

With reference to the threatened flora, the survey included consideration of the most likely habitats for such species. Further methods are not provided as no such species were detected.

### Threatened fauna

Surveys for threatened fauna were largely limited to an examination of “potential habitat” (i.e. comparison of on-site habitat features to habitat descriptions for threatened fauna), and detection of tracks, scats and other signs.

See also notes on individual trees under **FINDINGS Other natural values** Individual trees.

### Weed and hygiene issues

The study area was assessed with respect to plant species classified as declared weeds under the Tasmanian *Weed Management Act 1999 (Biosecurity Act 2019)*, Weeds of National Significance (WoNS) or “environmental weeds” (author opinion and as included in *A Guide to Environmental and Agricultural Weeds of Southern Tasmania*, NRM South 2017).

The study area was assessed with respect to potential impacts of plant and animal pathogens, by reference to habitat types and field symptoms.

## **FINDINGS**

### ***Vegetation types***

#### Comments on TASVEG mapping

This section, which comments on the existing TASVEG mapping for the study area, is included to highlight the differences between existing mapping and the more recent mapping from the present study to ensure that any parties assessing land use proposals (via this report) do not rely on existing mapping. Note that TASVEG mapping, which was mainly a desktop mapping exercise based on aerial photography, is often substantially different to ground-truthed vegetation mapping, especially at a local scale. An examination of existing vegetation mapping is usually a useful pre-assessment exercise to gain an understanding of the range of habitat types likely to be present and the level of previous botanical surveys.

There are three relevant versions of TASVEG that can be considered as part of this review. TASVEG Live is the most up-to-date version, available online via LISTmap. It is generally very similar to TASVEG 4.0, especially at a local lot-level scale, but can include localised and/or project-based updates that can be informative. TASVEG 3.0, the immediately preceding version of the vegetation mapping layer, is in theory superseded by TASVEG 4.0. However, examination of this layer can be useful because it was the primary source of information that was included in the Regional Ecosystem Model that guided the priority vegetation area overlay of the *Tasmanian Planning Scheme* in several municipalities. It was also the base layer used by some councils (e.g. Kingborough Council) to develop their own vegetation mapping layer, and can explain the source of requests for assessments.

In this case, TASVEG 3.0 (Figure 9) is quite different to TASVEG 4.0/Live (Figure 10), these versions summarised as follows:

- extra-urban miscellaneous (TASVEG code: FUM)  
FUM is mapped to somewhat correspond with the existing residentially-developed part of the title, although it fails to capture some of the obviously cleared area and extends off-title into more intact forest. The use of the FUM code for a residential part of a title is also erroneous as such sites are usually best ascribed to urban areas (TASVEG code: FUR).
- broad-leaf scrub (TASVEG code: SBR)  
Three polygons of SBR are mapped within and across the title, all three based on old vegetation data (PRE\_TASVEG\_1\_2-DPIPWE-2005). Occurrences of SBR can technically equate to the native vegetation community called *Notelaea – Pomaderris – Beyeria* Forest that is listed as threatened under Schedule 3A of the *Tasmanian Nature Conservation Act 2002*, this restricted to natural occurrences of SBR (e.g. deeply-incised gully sites) rather than anthropogenically-induced occurrences (i.e. those sites where wet forest shrub species become dominant after clearing). In this case, neither scenario was ever particularly relevant with the areas assigned to SBR much better subsumed into the broader forest classification or recognised as *Acacia dealbata* forest (TASVEG code: NAD).
- *Leptospermum* scrub (TASVEG code: SLW)  
SLW is a deprecated mapping unit under TASVEG 4.0 and later versions but a polygon was mapped across the eastern boundary of the title and further to the southeast. Aerial imagery suggests this polygon was better subsumed into the broader forest classification or recognised as *Acacia dealbata* forest (TASVEG code: NAD), the former adopted under TASVEG 4.0/Live.
- *Eucalyptus obliqua* dry forest (TASVEG code: DOB)  
DOB is mapped across the northeast and northwest corners of the title, the polygon extending considerably to forested areas to the north. Aerial imagery and topographic maps suggest the areas assigned to DOB are more likely to be WOB or WRE but this part of the title was not examined.
- *Eucalyptus obliqua* wet forest (undifferentiated) (TASVEG code: WOU) & *Eucalyptus obliqua* with broad-leaf shrubs (TASVEG code: WOB)  
TASVEG 3.0 maps a broad band of WOU across the northern part of the title, this re-coded to WOB under TASVEG 4.0/Live, the latter polygon now mapped across most of the title because of the re-coding of NAD to WOB.
- *Acacia dealbata* forest (TASVEG code: NAD)  
TASVEG 3.0 maps much of the title as NAD, which somewhat reflects aerial imagery that shows the distinctive “signature” of *Acacia dealbata*, although there is obviously a high component of *Eucalyptus* throughout. NAD is re-coded to WOB under later versions of TASVEG.



Vegetation mapping maintained by Kingborough Council (Figure 11) is configurationally identical to TASVEG 3.0 with most polygons coded similarly, the most notable difference being that the polygon of NAD under TASVEG 3.0 was re-coded to *Eucalyptus obliqua* forest over *Leptospermum* (TASVEG code: WOL), the basis for which is not understood given the topography and part of the State.

### Vegetation types recorded as part of the present study

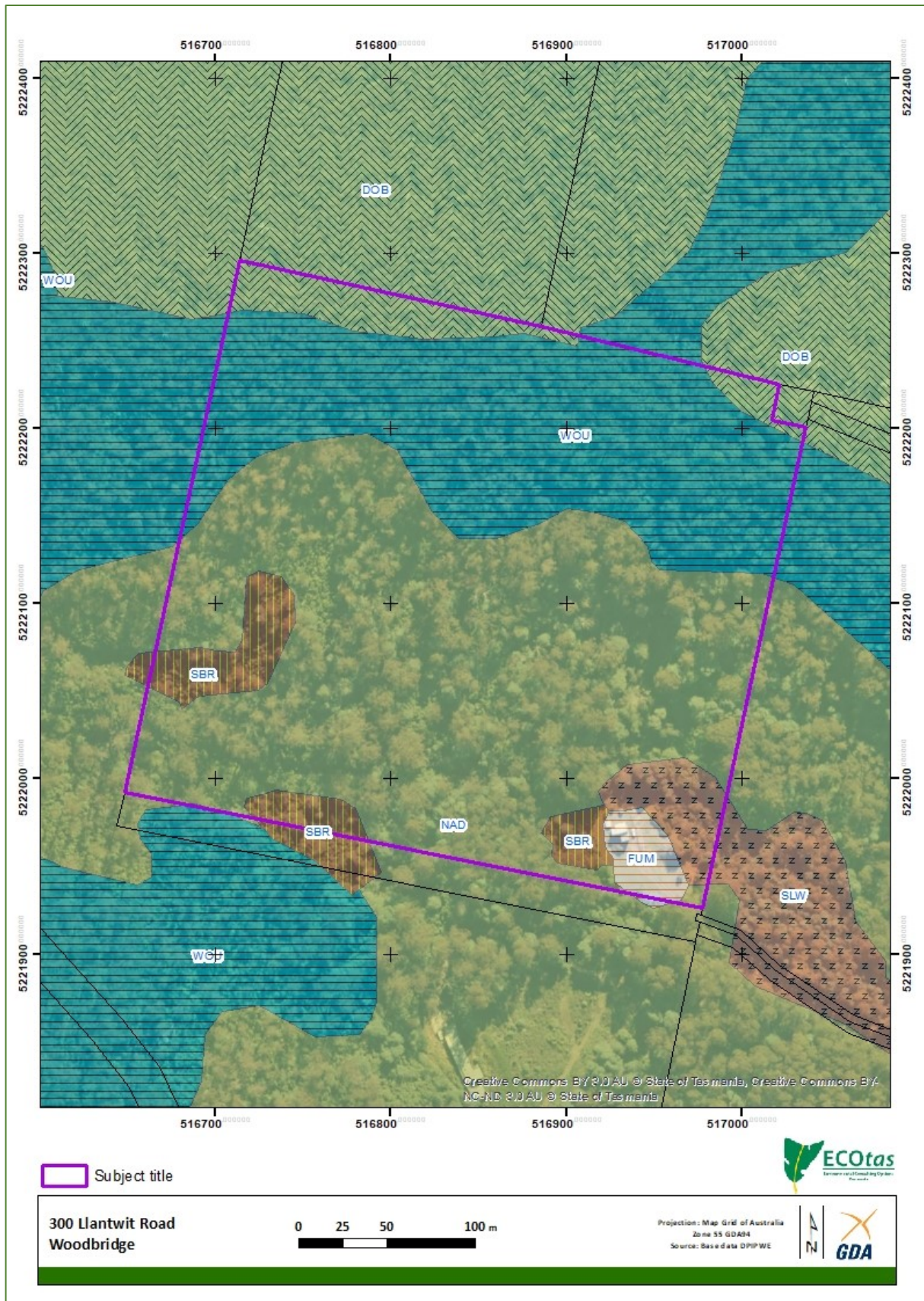
The vegetation types have been classified according to TASVEG mapping units, as described in *From Forest to Fjaeldmark: Descriptions of Tasmania's Vegetation* (Kitchener & Harris 2013+). Table 1 provides information on the mapping units identified from the study area (Figure 12). Refer to Appendix A for a more detailed description of the native vegetation mapping unit identified from the part of the title proposed for development.

**Table 1.** Vegetation mapping unit present in study area

[conservation status: NCA – as per Schedule 3A of the Tasmanian *Nature Conservation Act 2002*, using units described by Kitchener & Harris (2013+), relating to TASVEG mapping units (DNRET 2023b); EPBCA – as per the listing of ecological communities on the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*, relating to communities as described under that Act, but with equivalencies to TASVEG units]

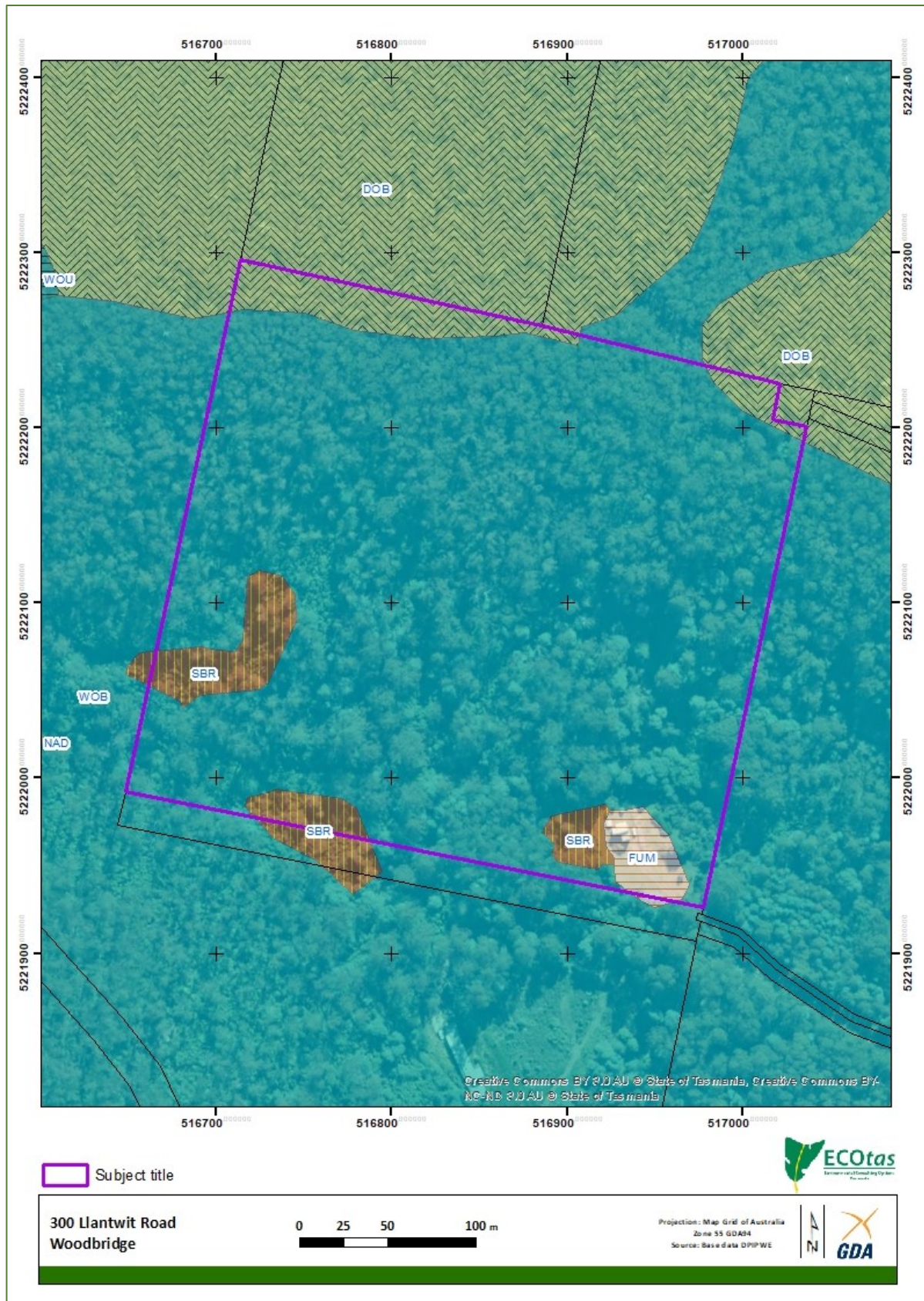
| TASVEG equivalent<br>(Kitchener & Harris 2013+) | Conservation priority<br>TASVEG<br>EPBCA | Comments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b><i>Wet eucalypt forest and woodland</i></b>  |                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <i>Eucalyptus regnans</i> forest<br>(WRE)       | not threatened<br><i>not threatened</i>  | The forest fringing the existing residentially-developed part of the title (now mapped as FUR) has a maturing regrowth structure (post-1967 bushfire) dominated by <i>Eucalyptus regnans</i> with some contribution from <i>Eucalyptus globulus</i> (with <i>Acacia dealbata</i> a minor secondary stratum) over a dense secondary canopy of typical wet sclerophyll shrubs including <i>Pomaderris apetala</i> , <i>Bedfordia salicina</i> , <i>Acacia verticillata</i> and <i>Pittosporum bicolor</i> , in turn over a generally open understorey with occasional graminoids and ground ferns in canopy gaps (with <i>Dicksonia antarctica</i> restricted to near the creekline). Grasses and herbs are sparse to absent. There is extensive leaf litter, typical of wet sclerophyll forest, but limited coarse woody debris, most logs small or suspended above the ground (i.e. recent falls). Rock outcrops are absent.<br><br>The fringe of WRE around the existing house site is highly modified, having once been largely cleared of at least the understorey, as evidenced by the now dense poles of <i>Pomaderris apetala</i> and sparse stems of <i>Eucalyptus</i> (mainly small apart from scattered larger stems) and very open understorey. That aside, WRE is in good ecological condition with no weeds or symptoms of plant disease observed. |
| <b><i>Modified land</i></b>                     |                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| urban areas<br>(FAG)                            | not threatened<br><i>not threatened</i>  | The part of the title that includes the existing gravel driveway, house and associated domestic elements including grassed areas, clothesline, water tanks, vegetable garden and ornamental plantings is mapped as FUR. It is acknowledged that this area includes some native elements but should not be construed as "native vegetation", consistent with the iterative approach of TASVEG Live to re-code parts of "bush blocks" developed as residential areas to FUR.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |





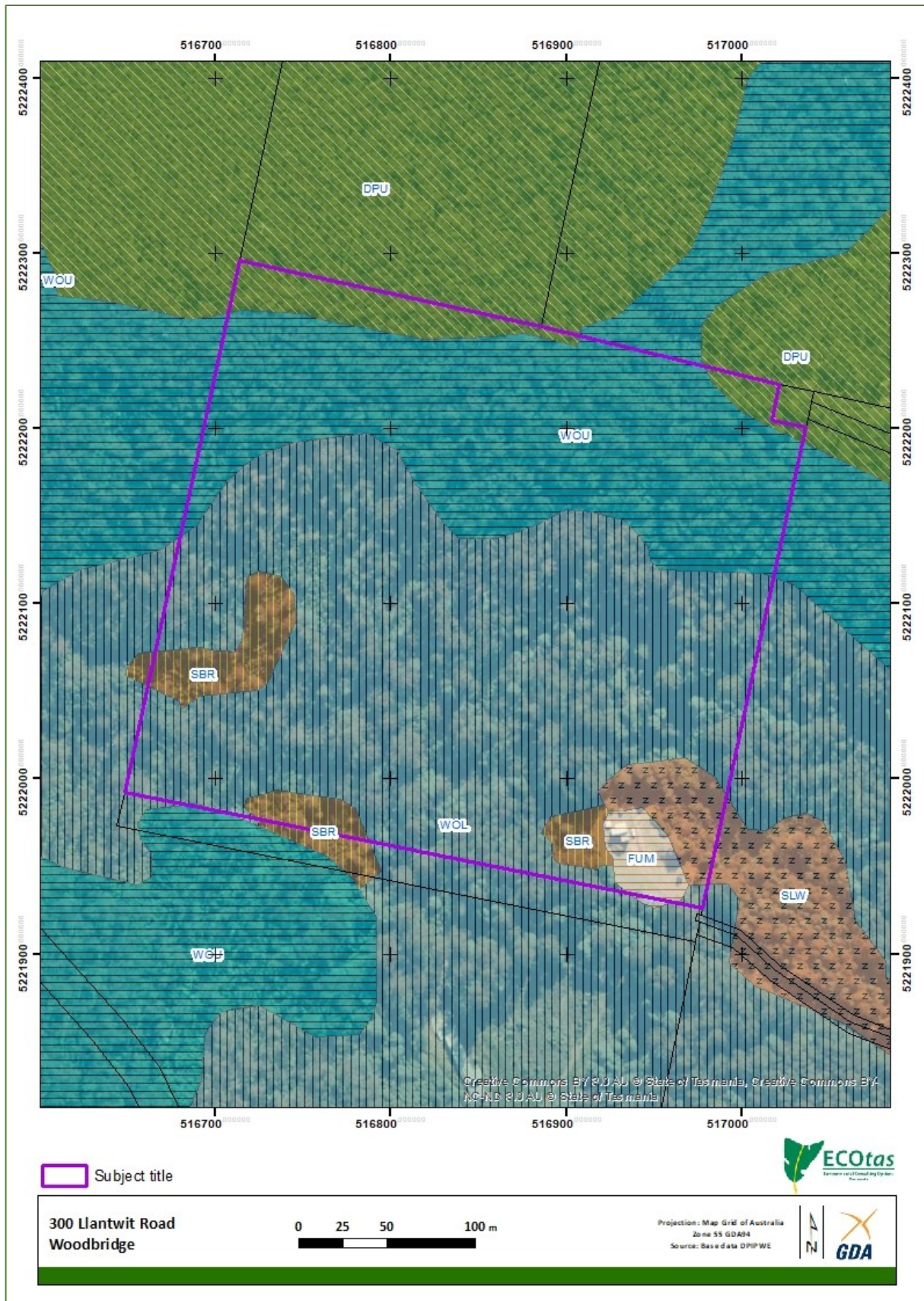
**Figure 9.** Study area and surrounds showing existing TASVEG 3 vegetation mapping (see text for codes)





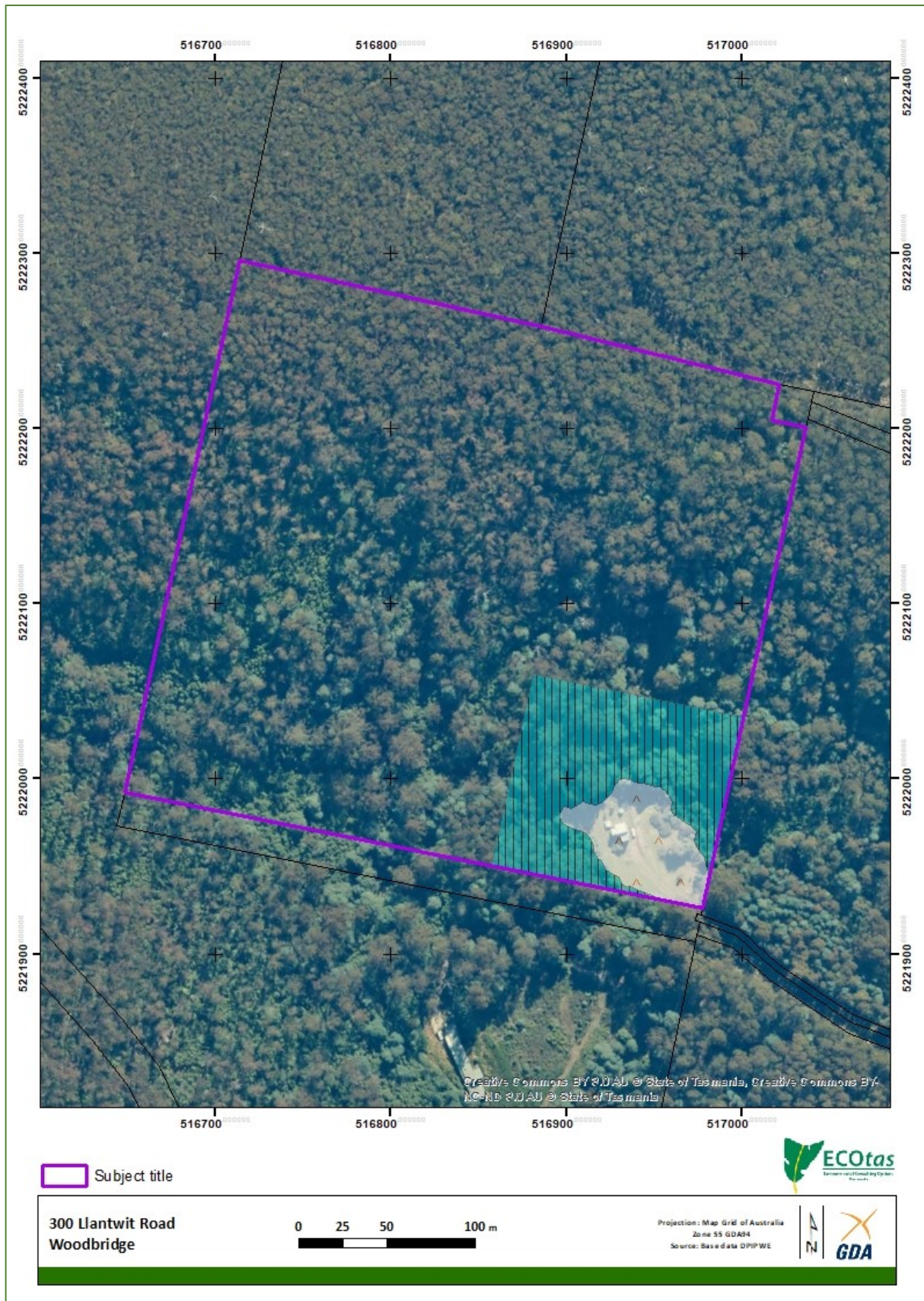
**Figure 10.** Study area and surrounds showing existing TASVEG 4.0 & Live vegetation mapping (see text for codes)





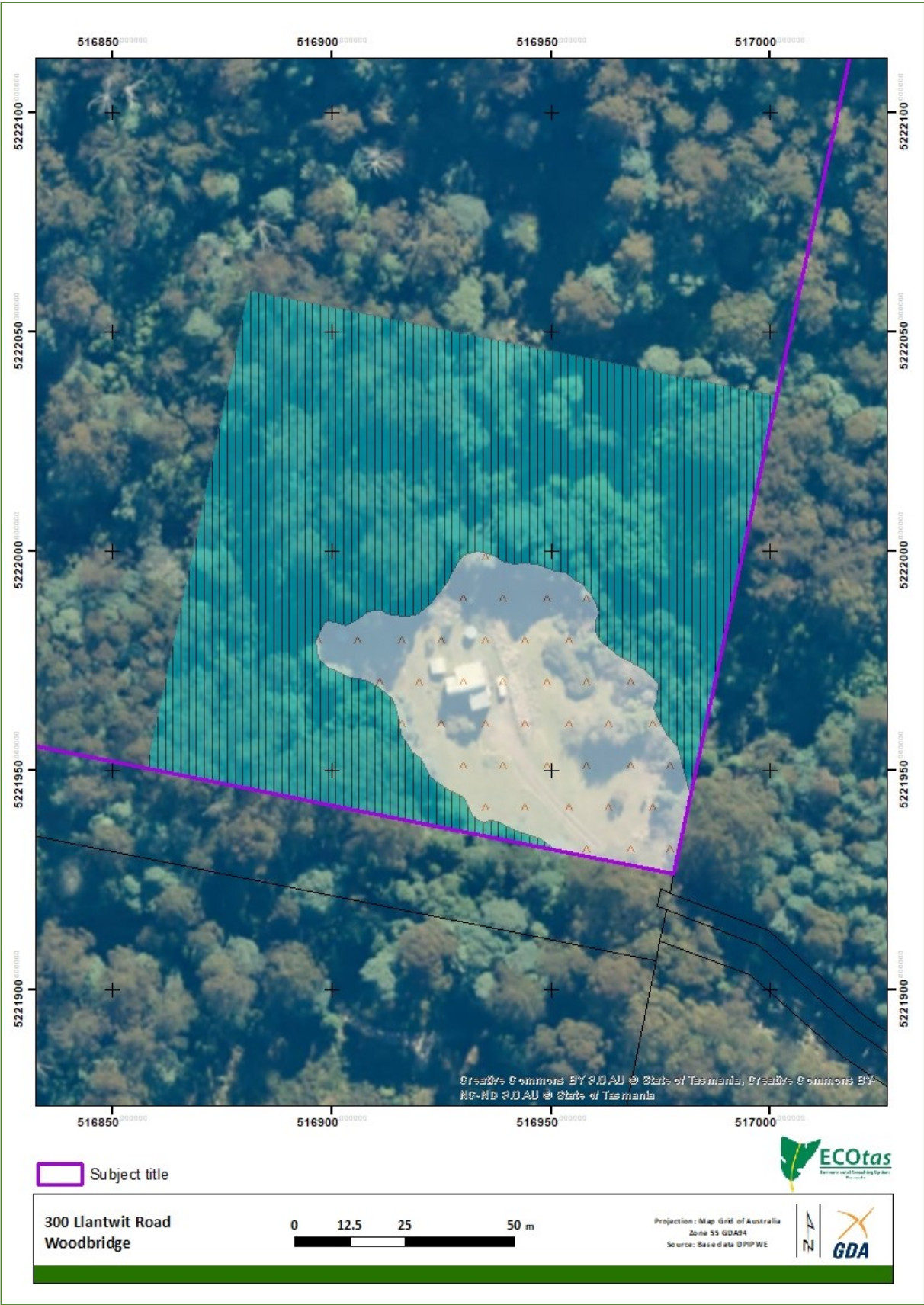
**Figure 11.** Study area and surrounds showing council-maintained vegetation mapping (see text for codes)





**Figure 12a.** Revised vegetation mapping for study area (see text for codes): overview





**Figure 12b.** Revised vegetation mapping for study area (see text for codes): detail

## **FINDINGS *Vegetation types*** continued...

### Conservation significance of identified vegetation types

Occurrences of WRE do not equate to a native vegetation community listed as threatened on Schedule 3A of the Tasmanian Nature Conservation Act 2002.

Occurrences of WRE do not equate to a threatened ecological community under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBCA).

As a vegetation type, occurrences of WRE are classified as low priority biodiversity values under Table E10.1 of the Biodiversity Code of the *Kingborough Interim Planning Scheme 2015* (WRE is widespread and well-reserved with more than 5,000 ha present within the South East bioregion).

The only native vegetation community that will be impacted by the proposal is WRE, which occurs as a fringe of forest surrounding the existing dwelling and associated old gardens. The precise boundary between what can be reasonably ascribed to FUR (i.e. parts of the title that are so modified that they cannot qualify as a TASVEG native vegetation mapping unit in any reasonable sense) and what is assignable to WRE was slow-walked with a hand-held GPS, which is reflected in Figure 12. This data file has been supplied in .shp and .dwg format to allow direct overlaying of the site plans and proposed hazard management area, which will allow a reasonably precise estimate to be made of the extent of WRE to be impacted.

## ***Plant species***

### General information

A total of 24 vascular plant species were recorded from the WRE vegetation type fringing the developed part of the study area (Appendix B), comprising 17 dicotyledons (including 1 endemic species), 3 monocotyledons (all native) and 4 pteridophytes (all native). The absence of naturalised species from the forested area is notable.

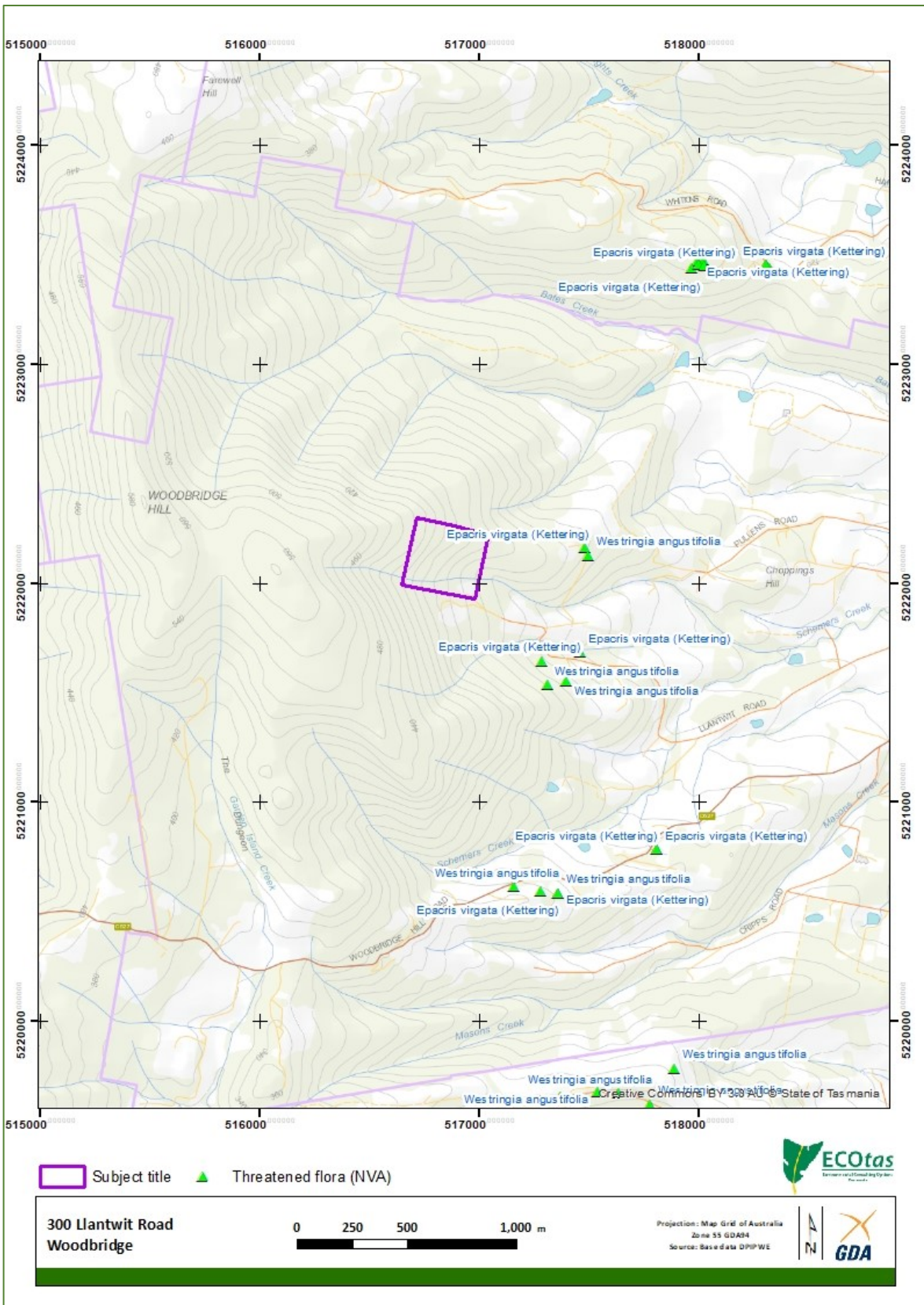
Additional surveys at different times of the year may detect additional short-lived herbs and grasses but a follow-up survey is not considered warranted because of the low likelihood of species with a high priority for conservation management being present.

### Threatened flora

No flora species listed as threatened on the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA) and/or the Tasmanian *Threatened Species Protection Act 1995* (TSPA) are known from database information (Figure 13), or were detected as a consequence of the field survey, from the study area.

Figure 13 indicates threatened flora species near to the study area and Table C1 (Appendix C) provides a listing of threatened flora from within 5,000 m of the study area (nominal buffer width usually used to discuss the potential of a particular study area to support various species listed in databases), with comments on whether potential habitat is present for the species, and possible reasons why a species was not recorded.





**Figure 13.** Distribution of threatened flora close to study area (overview): note that the database used to create this map still has “*Epacris virgata* Kettering” shown (now recognised as the non-threatened *Epacris tasmanica*)

## Threatened fauna

No fauna species listed as threatened on the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA) and/or the Tasmanian *Threatened Species Protection Act 1995* (TSPA) are known from database information (Figure 14), or were detected as a consequence of the field survey, from the study area.

Figure 14 indicates threatened fauna species near to the study area and Table D1 (Appendix D) provides a listing of threatened fauna from within 5,000 m of the study area (nominal buffer width usually used to discuss the potential of a particular study area to support various species listed in databases), with comments on whether potential habitat is present for the species, and possible reasons why a species was not recorded.

Site assessment indicated that the subject title supports ubiquitous potential habitat for a suite of threatened fauna species. This includes potential habitat of species such as *Sarcophilus harrisii* (Tasmanian devil), *Dasyurus maculatus* subsp. *maculatus* (spotted-tailed quoll), *Dasyurus viverrinus* (eastern quoll) and *Perameles gunnii* subsp. *gunnii* (eastern barred bandicoot). However, these species occur in a range of habitats from untouched wilderness to suburban yards, meaning it is very hard to place a patch of regrowth-structured even-aged regrowth forest (naturally recovered post-fires and/or post-clearing) at a specific position on this continuum and conclude that it is therefore “important” or “significant” at any particular scale. In this case, no part of the WRE fringing the existing clearing is considered suitable for denning for these species because of the lack of micro-habitat features suitable for such activities such as rock overhangs, wombat burrows/rabbit warrens or large coarse woody debris with rotten/hollow centres. At most, these species might “pass through” the area (and almost certainly take advantage of the existing grassy areas and domestic elements).

With respect to the Mount Mangana stag beetle (*Lissotes menalcas*), areas mapped as WRE are technically potential habitat as the species primarily occurs in wet sclerophyll forest (rather than rainforest, mixed forest or dry forest). However, the species is an obligate log dweller requiring a particular type/age of decay. This species is widespread, albeit somewhat difficult to assess because finding the species requires some level of habitat destruction (ripping apart logs and/or removing top layers) such that this is not usually undertaken. In this case, there are some larger suspended (i.e. recently fallen) “logs” but most of the understorey fringing the area mapped as FUR (i.e. within what will be required as part of a hazard management area) is open ground lacking coarse woody debris, with any larger logs well outside the extent of the proposed hazard management area.



**Plates 11 & 12.** Examples of very open understorey between the existing house and Schemers Creek: note the lack of *Eucalyptus* stems and total absence of coarse woody debris





**Plate 13.** (LHS) Example of very open understorey between the existing house and southern boundary: note the virtual lack of *Eucalyptus* stems and total absence of coarse woody debris

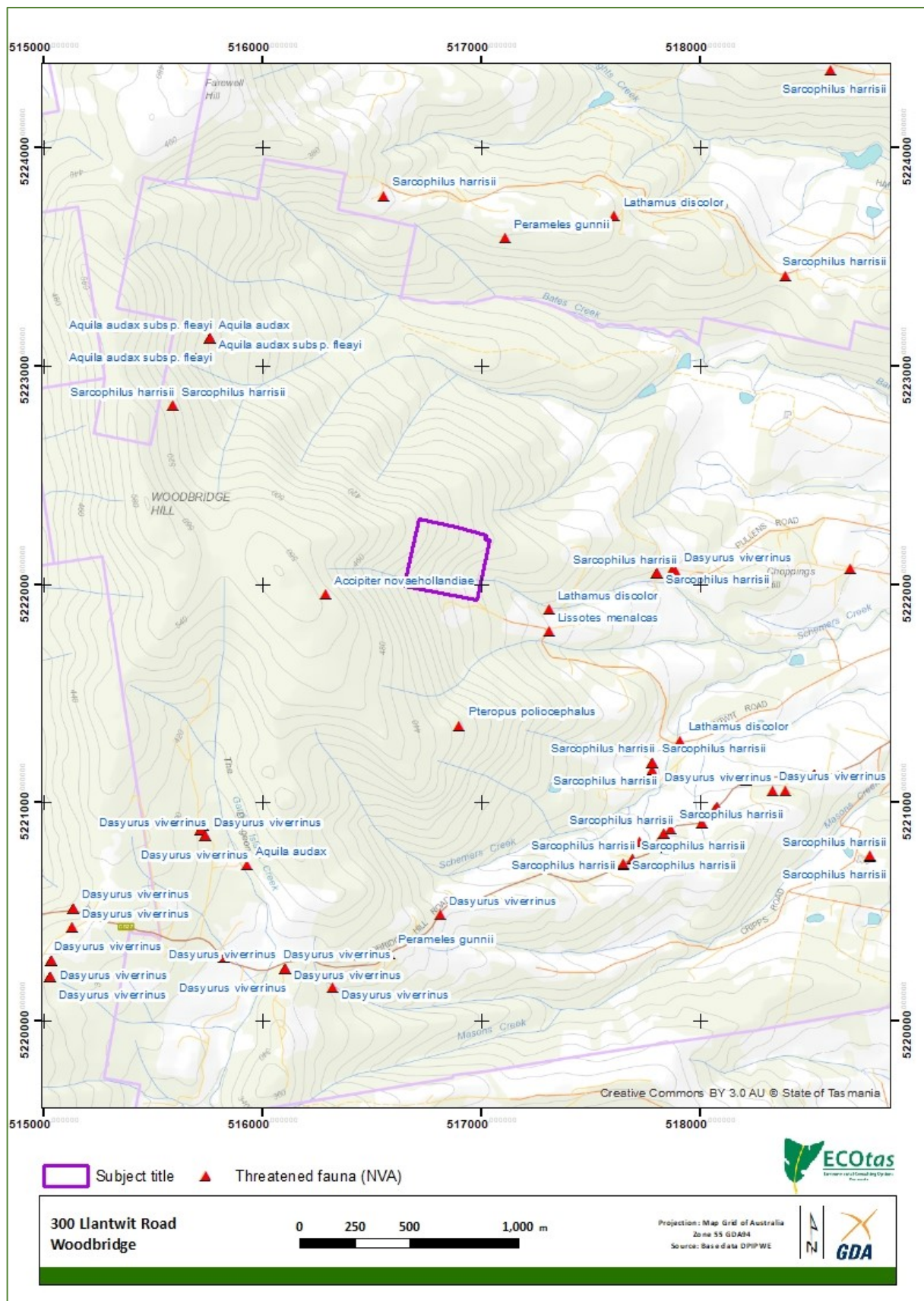
**Plate 14.** (RHS) Larger “downer” close to the southern boundary: this log was the only larger log with any hint of decay found but is well outside the proposed hazard management area

At present, the part of the title required for hazard management (i.e. the fringe of WRE) simply cannot provide habitat for the Mt Mangana stag beetle because of the lack of logs (obligate log-dweller). Over time (many decades), potential habitat may improve as logs are formed from fallen trees, although these will take many further decades to develop suitable rot and be colonised from surrounding areas. The species is managed in industrial forestry situations such as clearfell, burn and sow coupes of up to 100 ha at any one time such that any small-scale clearing of marginal potential habitat within the subject title could hardly be regarded as “significant” or “important” at any reasonable scale. It is also noted that maintaining a low fuel state within the proposed hazard management area should not preclude retention of logs.

While *Tyto novaehollandiae* (masked owl), *Accipiter novaehollandiae* (grey goshawk) and *Aquila audax* (wedge-tailed eagle) could all occur within the subject title, the vegetation structure within the part of the title proposed for development is atypical nesting habitat (lack of large trees with large hollows – masked owl; lack of over-mature trees with good nesting forks in even-aged regrowth forest – wedge-tailed eagle; generally open-structured forest canopy – grey goshawk). That is, the key elements are absent. This does not preclude these species using the site but certainly does not qualify it as “important” or “significant” at any particular scale.

The site does not support potential nesting or foraging habitat for *Pardalotus quadragintus* (forty-spotted pardalote) because both *Eucalyptus viminalis* (white gum) and hollow-bearing trees are absent.

The site does not support potential nesting habitat for *Lathamus discolor* (swift parrot) because hollow-bearing trees are absent: the forest structure is largely regrowth following fires many decades ago (1967) but all trees are probably many decades from forming proper nesting hollows because of the species present (*Eucalyptus obliqua* and *Eucalyptus regnans* with tall and straight boles due to rapid post-fire growth with as yet simple and non-senescent canopies). That said, it is acknowledged that diameter of trees has been used as a pseudo-surrogate for assigning patches of forest and/or individual trees as potential nesting habitat for the swift parrot (or other hollow-nesting species). In this case, the site is very clearly wet sclerophyll forest and the notional threshold for this type of surrogacy is 100 cm DBH. Such trees are present and have been mapped. All such trees are proposed for long-term retention including under the proposed bushfire hazard management plan (B. Haywood pers. comm.). The absence of both *Eucalyptus ovata* (black gum) and *Eucalyptus globulus* (blue gum) precludes the presence of typical potential foraging habitat for *Lathamus discolor* (swift parrot). Refer to **FINDINGS Other natural values** Individual trees for more details on individual trees.



**Figure 14.** Distribution of threatened fauna close to the study area (overview)



## Other natural values

### Weed species

No plant species classified as declared weeds within the meaning of the Tasmanian *Weed Management Act 1999 (Biosecurity Act 2019)* or considered as potential environmental weeds (author opinion) were detected from the study area.

Any works, especially access and service provision, will provide an opportunity for weed establishment by mobilising soil-stored seed and providing fresh bare ground ideal for seedling establishment. "Starting clean" is good practice (i.e. machinery, vehicle and equipment hygiene prior to entering the site) but noting that special management should not be required in relation to weeds because of the weed-free status and that access will be from the well-formed and sealed Llantwit Road and then the well-formed and maintained (weed-free) gravel surface of the internal driveway.

Owner-occupation is the most likely practical means of achieving good long-term weed management outcomes through vigilance and control, if any declared (or environmental) weeds are detected.

Several planning manuals provide guidance on appropriate management actions, which can be referred to develop site-specific prescriptions for any proposed works in the study area. These manuals include:

- Allan, K. & Gartenstein, S. (2010). *Keeping It Clean: A Tasmanian Field Hygiene Manual to Prevent the Spread of Freshwater Pests and Pathogens*. NRM South, Hobart;
- Rudman, T. (2005). *Interim Phytophthora cinnamomi Management Guidelines*. Nature Conservation Report 05/7, Biodiversity Conservation Branch, Department of Primary Industries, Water & Environment, Hobart;
- Rudman, T., Tucker, D. & French, D. (2004). *Washdown Procedures for Weed and Disease Control*. Edition 1. Department of Primary Industries, Water & Environment, Hobart; and
- DPIPWE (2015). *Weed and Disease Planning and Hygiene Guidelines – Preventing the Spread of Weeds and Diseases in Tasmania*. Department of Primary Industries, Parks, Water & Environment, Hobart.

### Rootrot pathogen, *Phytophthora cinnamomi*

*Phytophthora cinnamomi* (PC) is widespread in lowland areas of Tasmania, across all land tenures. However, disease will not develop when soils are too cold or too dry. For these reasons, PC is not a threat to susceptible plant species that grow at altitudes higher than about 700 m or where annual rainfall is less than about 600 mm (e.g. Midlands and Derwent Valley). Furthermore, disease is unlikely to develop beneath a dense canopy of vegetation because shading cools the soils to below the optimum temperature for the pathogen. A continuous canopy of vegetation taller than about 2 m is sufficient to suppress disease. Hence PC is not considered a threat to susceptible plant species growing in wet sclerophyll forests, rainforests (except disturbed rainforests on infertile soils) and scrub e.g. teatree scrub (Rudman 2005; FPA 2009).

The vegetation type identified from the study area is not usually regarded as susceptible to PC in most circumstances. Site assessment did not record any field symptoms (dead and/or dying susceptible plant species), such that special management should not be required in relation to PC, especially given that access will be from the well-formed and sealed Llantwit Road and then the well-formed and maintained (weed-free) gravel surface of the internal driveway.

### Myrtle wilt

Myrtle wilt, caused by a wind-borne fungus (*Chalara australis*), occurs naturally in rainforest where myrtle beech (*Nothofagus cunninghamii*) is present. The fungus enters wounds in the tree, usually caused by damage from wood-boring insects, wind damage and forest clearing. The incidence of myrtle wilt often increases forest clearing events such as windthrow and wildfire.

The study area does not support *Nothofagus cunninghamii*, such that special management is not required.

### Myrtle rust

Myrtle rust is a disease limited to plants in the Myrtaceae family. This plant disease is a member of the guava rust complex caused by *Austropuccinia psidii*, a known significant pathogen of Myrtaceae plants outside Australia. Infestations are currently limited to NSW, Victoria, Queensland and Tasmania (DPIPWE 2015).

No evidence of myrtle rust was noted (several possible indicator species present). The longer-term management issue for the site is to ensure that any ornamental plantings source plants from a reputable nursery free from the pathogen (such businesses are already subject to strict biosecurity conditions).

### Chytrid fungus and other freshwater pathogens

Native freshwater species and habitat are under threat from freshwater pests and pathogens including *Batrachochytrium dendrobatidis* (chytrid frog disease), *Mucor amphibiorum* (platypus mucor disease) and the freshwater algal pest *Didymosphenia geminata* (didymo) (Allan & Gartenstein 2010). Freshwater pests and pathogens are spread to new areas when contaminated water, mud, gravel, soil and plant material or infected animals are moved between sites. Contaminated materials and animals are commonly transported on boots, equipment, vehicles tyres and during road construction and maintenance activities. Once a pest pathogen is present in a water system it is usually impossible to eradicate. The manual *Keeping it Clean: A Tasmanian Field Hygiene Manual to Prevent the Spread of Freshwater Pests and Pathogens* (Allan & Gartenstein 2010) provides information on how to prevent the spread of freshwater pests and pathogens in Tasmanian waterways wetlands, swamps and boggy areas.

The part of the study area proposed for development does not support habitat of amphibian species, except in a very general sense (see previous commentary in **STUDY AREA Other site features** for details on tributary of Schemers Creek, which will not be materially impacted). Special management should not be warranted.

### Additional "Matters of National Environmental Significance" – Threatened Ecological Communities

CofA (2023) indicates that the following threatened ecological communities listed on the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA) are likely to, or may, occur within the area:

- Alpine Sphagnum Bogs and Associated Fens [Endangered];
- Giant Kelp Marine Forests of South East Australia [Endangered];
- Subtropical and Temperate Coastal Saltmarsh [Vulnerable];



- Tasmanian Forests and Woodlands dominated by Black Gum or Brookers Gum (*Eucalyptus ovata* / *E. brookeriana*) [Critically Endangered]; and
- Tasmanian White Gum (*Eucalyptus viminalis*) Wet Forest [Critically Endangered].

Existing vegetation mapping (Figures 9-11) and revised vegetation mapping (Figure 12) indicates that no EPBCA-listed threatened ecological communities are present within or adjacent to the study area.

### Individual trees

Under Table E10.1 of the Biodiversity Code of the *Kingborough Interim Planning Scheme 2015*, moderate priority biodiversity values include "high conservation value trees". It is most usual for the planning authority to require a detailed survey of every tree over ca. 25 cm DBHOB (diameter at breast height over bark, measured with a diameter tape to the nearest cm) within ca. 15 m of any possible development (i.e. on and either side of an access, within the construction zone and hazard management area, and within 15 m of the edge of the hazard management area, etc.)

On site attendance, I reviewed the site plans relative to the distribution of trees over 25 cm DBH and determined where works may occur near these. I determined that the only trees requiring characterisation were those within the fringe of native forest just outside the existing modified area (mapped as FUR). The only two tree species present are *Eucalyptus obliqua* (stringybark) and *Eucalyptus regnans* (giant ash) and the site is wet forest. This means that the only trees that could qualify as very high conservation value under the *Policy* are those of these two species with a DBH over 100 cm. All such trees (all *Eucalyptus regnans*) were geolocated using hand-held GPS (minimum of 10 points collected around the base of each tree and averaged). It is evident that Trees 1, 2 & 5 are notionally outside the subject title so will not be included in any form of hazard management. Tree 4 is well outside the proposed hazard management area. Tree 3 is also outside the proposed hazard management area, although it is quite close to the edge of this.

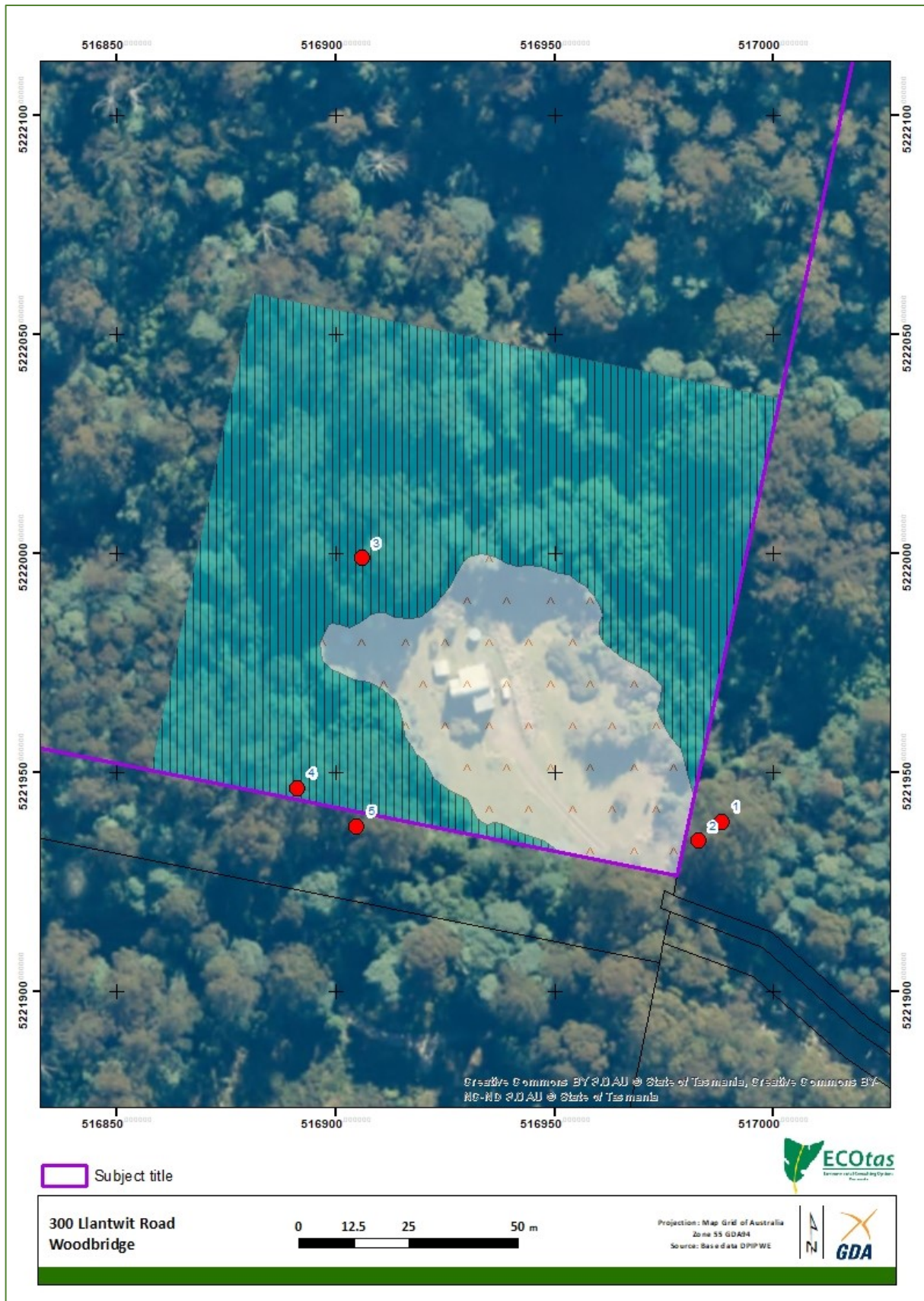
**Table 2.** Details of all characterised trees [cross-reference to Figure 15]

[status = conservation value as per *Kingborough Biodiversity Offset Policy 6.10, November 2016*]

| Tree | DBH  | status    | Easting   | northing   | Rationale                             |
|------|------|-----------|-----------|------------|---------------------------------------|
| 1    | >1 m | VERY HIGH | 516988.22 | 5221938.51 | any species in wet forest >100 cm DBH |
| 2    | >1 m | VERY HIGH | 516982.96 | 5221934.13 | any species in wet forest >100 cm DBH |
| 3    | >1 m | VERY HIGH | 516906.18 | 5221998.77 | any species in wet forest >100 cm DBH |
| 4    | >1 m | VERY HIGH | 516891.35 | 5221946.25 | any species in wet forest >100 cm DBH |
| 5    | >1 m | VERY HIGH | 516905.05 | 5221937.46 | any species in wet forest >100 cm DBH |

None of the identified trees require removal. In fact, no trees over 25 cm DBH require removal (B. Haywood pers. comm.) because they are well separated. It is assumed that the only management required to maintain the HMA in a low fuel state will be removal of some scattered poor health individuals of *Acacia dealbata* (silver wattle) and thinning out of patches of *Pomaderris apetala* (common dogwood). Management of the understorey will only require occasional trimming of dead fronds of some taller *Dicksonia antarctica* (soft treefern) and perhaps some slashing of ground ferns/graminoids in canopy gaps (B. Haywood pers. comm.). Anthropogenic "browsing" by a brushcutter, mower or similar is not considered to reasonably impact on the health of the trees within or adjacent to the hazard management area.





**Figure 15.** Distribution of all measured trees (cross-reference to Table 2)



## DISCUSSION

### **Summary of key findings**

#### Threatened flora

- No plant species listed as threatened on the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA) and/or the Tasmanian *Threatened Species Protection Act 1995* (TSPA) were detected, or are known from database information, from the study area.

#### Threatened fauna

- No fauna species listed as threatened on the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA) and/or the Tasmanian *Threatened Species Protection Act 1995* (TSPA) were detected, or are known from database information, from the study area.
- The study area supports potential habitat (to varying degrees of marginality) for the following species:
  - *Sarcophilus harrisi* (Tasmanian devil);
  - *Dasyurus maculatus* subsp. *maculatus* (spotted-tailed quoll);
  - *Dasyurus viverrinus* (eastern quoll);
  - *Perameles gunnii* subsp. *gunnii* (eastern barred bandicoot);
  - *Lissotes menalcas* (Mt Mangana stag beetle);
  - *Accipiter novaehollandiae* (grey goshawk);
  - *Aquila audax* subsp. *fleayi* (wedge-tailed eagle); and
  - *Tyto novaehollandiae* subsp. *castanops* (Tasmanian masked owl).

#### Vegetation types

- The study area supports the following TASVEG mapping units:
  - *Eucalyptus regnans* forest (TASVEG code: WRE); and
  - urban areas (TASVEG code: FUR).
- Occurrences of WRE do not equate to a native vegetation community listed as threatened on Schedule 3A of the Tasmanian *Nature Conservation Act 2002*.
- Occurrences of WRE do not equate to a threatened ecological community under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA).
- As a vegetation type, occurrences of WRE are classified as low priority biodiversity values under Table E10.1 of the Biodiversity Code of the *Kingborough Interim Planning Scheme 2015*.

#### Weeds

- No plant species classified as declared weeds within the meaning of the Tasmanian *Weed Management Act 1999* (*Biosecurity Act 2019*) were detected from the study area.

#### Plant disease

- No evidence of *Phytophthora cinnamomi* (PC, rootrot) was recorded from the study area.
- No evidence of myrtle wilt was recorded from the study area.

- No evidence of myrtle rust was recorded from the study area.

#### Animal disease (chytrid)

- The study area does not support habitat types strongly associated with amphibian species (except marginally along the tributary of Schemers Creek, which will remain wholly undisturbed).

#### Individual trees

- The study area supports a limited number of trees with features that meet the criteria for very high conservation value trees within the intent of Table E10.1 of the Biodiversity Code of the *Kingborough Interim Planning Scheme 2015* (but noting none are proposed for removal or any form of disturbance).

### ***Legislative and policy implications***

Some commentary is provided below with respect to the key threatened species, vegetation management and other relevant legislation. Note that there may be other relevant policy instruments in addition to those discussed. The following information does not constitute legal advice and it is recommended that independent advice is sought from the relevant agency/authority.

#### Tasmanian Threatened Species Protection Act 1995

Threatened flora and fauna on this Act are managed under Section 51, as follows:

##### 51. Offences relating to listed taxa

- (1) Subject to subsections (2) and (3), a person must not knowingly, without a permit –
  - (a) take, keep, trade in or process any specimen of a listed taxon of flora or fauna; or
  - (b) disturb any specimen of a listed taxon of flora or fauna found on land subject to an interim protection order; or
  - (c) disturb any specimen of a listed taxon of flora or fauna contrary to a land management agreement; or
  - (d) disturb any specimen of a listed taxon of flora or fauna that is subject to a conservation covenant entered into under Part 5 of the *Nature Conservation Act 2002*; or
  - (e) abandon or release any specimen of a listed taxon of flora or fauna into the wild.
- (2) A person may take, keep or process, without a permit, a specimen of a listed taxon of flora in a domestic garden.
- (3) A person acting in accordance with a certified forest practices plan or a public authority management agreement may take, without a permit, a specimen of a listed taxon of flora or fauna, unless the Secretary, by notice in writing, requires the person to obtain a permit.
- (4) A person undertaking dam works in accordance with a Division 3 permit issued under the *Water Management Act 1999* may take, without a permit, a specimen of a listed taxon of flora or fauna.

The simplest interpretation of this is that any activity that results in a specimen (i.e. individual) of listed flora or fauna being “knowingly taken” would require a permit to be issued through Conservation Assessments (Department of Natural Resources and Environment Tasmania), through a formal application process. Note that the Act does not make reference to “potential habitat” such



that activities that result in loss of/disturbance to potential habitat (but not known sites) – which mainly refers to threatened fauna – would not require a permit.

No known sites of threatened flora or fauna will be impacted by any proposed development so a permit should be not required under this Act.

#### Commonwealth Environment Protection and Biodiversity Conservation Act 1999

Under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* an action will require approval from the minister if the action has, will have, or is likely to have, a significant impact on a matter of national environmental significance.

Matters of national environmental significance considered under the EPBCA include:

- listed threatened species and communities
- listed migratory species;
- Ramsar wetlands of international importance;
- Commonwealth marine environment;
- world heritage properties;
- national heritage places;
- the Great Barrier Reef Marine Park;
- nuclear actions; and
- a water resource, in relation to coal seam gas development and large coal mining development.

The relevant Commonwealth agency provides a policy statement titled *Matters of National Environmental Significance: Significant Impact Guidelines 1.1* (CofA 2013, herein the *Guidelines*), which provides overarching guidance on determining whether an action is likely to have a significant impact on a matter protected under the EPBCA.

The *Guidelines* define a **significant impact** as:

*"...an impact which is important, notable, or of consequence, having regard to its context or intensity. Whether or not an action is likely to have a significant impact depends upon the sensitivity, value, and quality of the environment which is impacted, and upon the intensity, duration, magnitude and geographic extent of the impacts"*

and note that:

*"...all of these factors [need to be considered] when determining whether an action is likely to have a significant impact on matters of national environmental significance".*

The *Guidelines* provide advice on when a significant impact may be likely:

*"To be 'likely', it is not necessary for a significant impact to have a greater than 50% chance of happening; it is sufficient if a significant impact on the environment is a real or not remote chance or possibility.*

*If there is scientific uncertainty about the impacts of your action and potential impacts are serious or irreversible, the precautionary principle is applicable. Accordingly, a lack of scientific certainty about the potential impacts of an action will not itself justify a decision that the action is not likely to have a significant impact on the environment".*

The *Guidelines* provide a set of Significant Impact Criteria, which are "intended to assist...in determining whether the impacts of [the] proposed action on any matter of national environmental

significance are likely to be significant impacts". It is noted that the criteria are "intended to provide general guidance on the types of actions that will require approval and the types of actions that will not require approval...[and]...not intended to be exhaustive or definitive".

#### *Listed ecological communities*

The study area does not support any such communities.

#### *Threatened flora*

The study area does not support populations of EPBCA-listed flora, nor significant potential habitat of such species.

#### *Threatened fauna*

The study area may support populations of threatened fauna listed on the Act, most notably the Tasmanian devil, spotted-tailed quoll, eastern quoll and eastern barred bandicoot, although no specific habitat features were identified. Note that the study area is within the range of several other species listed on the Act but it is unlikely that any proposal will result in a significant impact on these species (this includes wide-ranging species such as the wedge-tailed eagle, swift parrot and masked owl – refer to Appendix D for more details).

The *Guidelines* consider a "significant impact" to comprise loss that is likely to lead to a long-term decrease in the size of an important population of a species; reduce the area of occupancy of an important population; fragment an existing important population into two or more populations (unlikely); adversely affect habitat critical to the survival of a 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; introduce disease that may cause the species to decline; or interfere substantially with the recovery of the species.

It is highly unusual for a development within a relatively small lot, even within the range of the aforementioned species where potential habitat has been identified, to trigger a formal referral to the relevant Commonwealth agency.

#### Tasmanian Forest Practices Act 1985 and associated Forest Practices Regulations 2017

The *Regulations* provide the following relevant circumstances in which a Forest Practices Plan (FPP) is not required.

##### 4. Circumstances in which forest practices plan, &c., not required

For the purpose of section 17(6) of the Act, the following circumstances are prescribed:

- (a) the harvesting of timber or the clearing of trees, with the consent of the owner of the land, if the land is not vulnerable land and –
  - (i) the volume of timber harvested or trees cleared is less than 100 tonnes for each area of applicable land per year; or
  - (ii) the total area of land on which the harvesting or clearing occurs is less than one hectare for each area of applicable land per year –

whichever is the lesser;



- (j) the harvesting of timber or the clearing of trees on any land, or the clearance and conversion of a threatened native vegetation community on any land, for the purpose of enabling –
  - (i) the construction of a building within the meaning of the *Land Use Planning and Approvals Act 1993* or of a group of such buildings; or
  - (ii) the carrying out of any associated development –
    - if the construction of the buildings or carrying out of the associated development is authorised by a permit issued under that Act.

On this basis, development subject to a planning permit issued under the relevant planning scheme should not require an FPP.

#### Tasmanian Nature Conservation Act 2002

Schedule 3A of the Act lists native vegetation communities classified as threatened within Tasmania. No such vegetation communities are present.

#### Tasmanian Weed Management Act 1999 (Biosecurity Act 2019)

No plant species classified as declared weeds within the meaning of the *Tasmanian Weed Management Act 1999 (Biosecurity Act 2019)* were detected from the part of the title proposed for development, such that the Act has limited direct application, except by reference to the *General Biosecurity Duty* under the *Tasmanian Biosecurity Act 2019* ([https://nre.tas.gov.au/biosecurity-tasmania/general-biosecurity-duty-\(gbd\)](https://nre.tas.gov.au/biosecurity-tasmania/general-biosecurity-duty-(gbd))).

#### Tasmanian Land Use Planning and Approvals Act 1993

The applicable planning scheme for the project area is the *Kingborough Interim Planning Scheme 2015*. Note that the following is my interpretation of the provisions of the *Scheme* and may not necessarily represent the views of Kingborough Council. The following does not constitute legal advice. It is recommended that formal advice be sought from the relevant agency prior to acting on any aspect of this statement.

The title is zoned as Environmental Living (Figure 4) and wholly subject to the Biodiversity Protection Area overlay (Figure 5). It is noted that the proposed bushfire hazard management will extend into the extent of the Waterway and Coastal Protection Area overlay (Figure 5) so the Waterway and Coastal Protection Code is also considered.

### **Environmental Living zone**

While several provisions of the zone may have application, below I examine the two that I believe have greatest relevance to the findings on natural values.

#### 14.4 Development Standards for Buildings and Works

##### 14.4.3 Design

Objective:

To ensure that the location and appearance of buildings and works minimises adverse impact on natural values and on the landscape.

Acceptable Solutions

A1

The location of buildings and works must comply with any of the following:

- (a) be located within a building area, if provided on the title;
- (b) be an addition or alteration to an existing building;
- (c) be located on a site that does not require the clearing of native vegetation and is not on a skyline or ridgeline.

Performance Criteria

P1

The location of buildings and works must satisfy all of the following:

- (a) be located in an area requiring the clearing of native vegetation only if:
  - (i) there are no sites clear of native vegetation and clear of other significant site constraints such as access difficulties or excessive slope;
  - (ii) the extent of clearing is the minimum necessary to provide for buildings, associated works and associated bushfire protection measures;
  - (iii) the location of clearing has the least environmental impact;
- (b) be located on a skyline or ridgeline only if:
  - (i) there are no other sites suitable for development due to access difficulties or excessive slope;
  - (ii) there is no significant impact on the rural landscape;
  - (iii) building height is minimised;
  - (iv) any screening vegetation is maintained.
- (c) be consistent with any Desired Future Character Statements provided for the area or, if no such statements are provided, have regard to the landscape.

To my interpretation, A1(b) is wholly satisfied because the proposal of for "an addition or alteration to an existing building", this provision not further qualified by the extent of impact to natural values per se.

14.4 Development Standards for Buildings and Works

14.4.5 Environmental Values

Objective:

To ensure development maintains and enhances environmental values.

Acceptable Solutions

A1

Development must be located within a building area on a plan of subdivision.

Performance Criteria

P1

The application is accompanied by an environmental management plan for the whole site, setting out measures to be put in place to protect flora and fauna habitats, riparian areas, any



environmental values identified as part of a site analysis, and identify measures to be used to mitigate and offset adverse environmental impacts.

I do not believe that A1 can be satisfied because there is not a "building area on a plan of subdivision" present, such that the Performance Criteria P1 need to be satisfied. This calls for an "environmental management plan". P1 does not specify the format of such a plan, nor who can produce the plan. The planning authority issues some guidelines for such plans for "simple" cases (e.g. where impact to native vegetation will be limited). In this case, in noting that the planning application cannot be valid unless it "is accompanied by an environmental management plan for the whole site", it is recommended that an environmental management plan be produced with the following minimal inclusions (the planning authority provides a template for these types of "simple" scenarios):

- site plan showing that the proposal is restricted to development within the existing cleared area within the title, as far as practical;
- site plan showing extent of hazard management area with a reasonable estimate of the extent of native vegetation (mapped as WRE) required for maintenance within the hazard management area;
- site plan showing location of wastewater area and any other project elements (ideally wholly contained within the hazard management area);
- site plan showing individual trees over 100 cm DBH with a note requiring their retention (where they occur within title); and
- weed and hygiene measures (suggest indicating high pressure washdown for any machinery entering the site during construction).

## **Biodiversity Code**

The purpose of the Biodiversity Code is stated below:

### E10.1 Purpose

#### E10.1.1

The purpose of this provision is to:

- (a) minimise 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.

No part of the proposed development area supports threatened native vegetation communities or threatened flora, such that E10.1.1(a) will not have direct application.

In my opinion, the proposed development area does not contain "important habitat...[for]...threatened fauna species" at any reasonable scale, such that E10.1.1(b) should not have direct application. This is also considered in more detail under the review of Table E10.1.

The proposed development area may contain "other biodiversity values that are recognised as locally significant by the Planning Authority" (most notably individual trees). Note that the detailed elements of high, moderate and low priority biodiversity values included in Table E10.1 are explored in detail below.

The application of the Biodiversity Code is stated below:

E10.2 Application

This code applies to development involving clearance and conversion or disturbance of native vegetation within a Biodiversity Protection Area.

"Native vegetation" is defined under the *Scheme* as:

"plants that are indigenous to Tasmania including trees, shrubs, herbs and grasses that have not been planted for domestic or commercial purposes".

The proposed development area is wholly covered by the Biodiversity Protection Area overlay, such that the Code has possible application. While I have now mapped most of the proposed development area as a modified land TASVEG mapping unit (FUR), I acknowledge that the fringing areas are mapped as native forest (WRE) and minor areas will be included in the proposed hazard management area.

"Clearance and conversion" means:

"the process of removing native vegetation from an area of land and: (a) leaving the area of land, on a permanent or extended basis, in a state predominantly unvegetated with native vegetation; or (b) replacing the native vegetation so removed, on a permanent or extended basis, with residential, commercial, mining, agriculture or other non-agricultural development".

In my opinion, it is not reasonable to consider the proposed hazard management area outside the modified part of the title within what is now mapped as WRE as "clearance and conversion" because the bushfire hazard management plan is very clear in that the structure of the forest will require only minor modification i.e. the area of WRE within the hazard management area will remain mappable as WRE, hence "clearance and conversion" is not indicated.

"Disturbance" means:

"the alteration of the structure and species composition of a native vegetation community through actions including cutting down, felling, thinning, logging, removing or destroying of a native vegetation community".

"Disturbance" is somewhat challenging to interpret in relation to the present development because the definition requires the "alteration of the structure **and** species composition of a native vegetation community..." [my emphasis]. I consider it highly unlikely that hazard management will materially alter the composition of the "native vegetation" in any measurable sense, which was confirmed by on-site discussions with an accredited bushfire practitioner (B. Haywood pers. comm.). However, for the purposes of this statement, I will assume that the planning authority will indicate the Code will have application in relation to "disturbance" of the fringe of WRE.

However, prior to considering the relevant development standards, I refer to E10.4.1, which is stated as follows:

E10.4 Development Exempt from this Code

E10.4.1

The following development is exempt from this code:

- (e) fire hazard management works for an existing dwelling in accordance with a bushfire hazard management plan endorsed by an accredited person as defined under the Bushfire Prone Areas Code, wherein the extent of clearance and conversion and disturbance is the minimum necessary for adequate protection from bushfire;

In my opinion, this is open to little interpretation. The dwelling is clearly "existing" and therefore it should not be relevant if the proposal is for a minor or major extension (in this case, clearly minor). Further, there will be a "bushfire hazard management plan endorsed by an accredited person as defined under the Bushfire Prone Areas Code" and this is recommending a BAL-19 standard be



applied, which I believe meet the intent of the “extent of clearance and conversion and disturbance is the minimum necessary for adequate protection from bushfire”. That is, I believe that the proposal is exempt under E10.4.1(e). I am well aware that this is not the interpretation of the planning authority such that I examine the balance of the Code provisions below.

#### E10.5 Application Requirements

##### E10.5.1

In addition to any other application requirements, the planning authority may require the applicant to provide a natural values determination if considered necessary to determine compliance with acceptable solutions.

##### E10.5.2

In addition to any other application requirements, the planning authority may require the applicant to provide any of the following information if considered necessary to determine compliance with performance criteria:

- (a) a natural values determination;
- (b) a natural values assessment;
- (c) a report detailing how impacts on priority biodiversity values will be avoided, minimised, and/or mitigated;
- (d) a special circumstances justification report;
- (e) a biodiversity offsets plan.

A “natural values assessment” (a higher level of assessment than a “natural values determination”) is defined as:

“an ecological assessment, generally consistent with the Guidelines for Natural Values Assessment (DPIPWE July 2009), by a suitably qualified person (biodiversity) to identify and convey:

- (a) the location of priority biodiversity values affecting the site;
- (b) the significance of priority biodiversity values, with particular reference to Table E10.1;
- (c) any likely impact on these priority biodiversity values including existing activities on the site, nearby land uses, weeds, pests, pathogens and the degree of connectivity with other land with natural values;
- (d) the likely impact of the proposed development or use on these priority biodiversity values;
- (e) recommendations for the design and siting of the proposed development or use to avoid or minimise the identified impacts;
- (f) recommendations for the mitigation or management of any residual impacts.

The preceding report on the natural values and this review of the provisions of the Biodiversity Code should meet the intent and specifics of a “natural values assessment” under the Biodiversity Code.

The Development Standards for Buildings and Works have the following objective:

#### E10.7 Development Standards

##### E10.7.1 Buildings and Works

###### 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.

This is a difficult objective to meet in literal terms because it is subjective and terms such as “unnecessary” and “unacceptable” are not defined, particularly in relation to a proposed use that

is acceptable under the zoning. This objective will be further tested by reference to the Acceptable Solutions and Performance Criteria. However, in my opinion I consider the objective statement to be satisfied in that there will not be “an unnecessary or unacceptable loss of priority biodiversity values” because works are limited to an existing dwelling, largely within a “garden” setting and with hazard management area requiring limited impact to native vegetation through application of a BAL-19 rating.

The Acceptable Solution is stated as:

A1

Clearance and conversion or disturbance must be within a Building Area on a plan of subdivision approved under this planning scheme.

To the best of my knowledge, there is no “Building Area on a plan of subdivision approved under this planning scheme” such that A1 cannot be met.

To address the Performance Criteria, it is necessary to categorise the significance of the “priority biodiversity values” present as “low”, “moderate” or “high”, as the category affects the manner in which the criteria are addressed.

“High priority biodiversity values” are defined as (taken from Table E10.1 with author commentary below each):

Native vegetation communities listed as threatened under the *Nature Conservation Act 2002*.

The proposed development site does not support a threatened native vegetation community.

Significant habitat for and/or areas known to contain threatened species listed under the *Threatened Species Protection Act 1995* or the *Environment Protection and Biodiversity Conservation Act 1999* that are:

- (a) recognised as endangered or vulnerable; or
- (b) largely confined in their total distribution to the municipal area; or
- (c) have most of their range within the municipal area.

“Significant habitat” is defined under the *Scheme* as:

“Native vegetation determined from published literature and/or agreed by the Threatened Species Section (DPIPWE) in consultation with species specialist, and/or endorsed by the Threatened Species Scientific Advisory Committee (TSSAC) as habitat within the range of a threatened or vulnerable flora or fauna species that: (i) is known to be of high priority for the maintenance of breeding populations throughout the species’ range; and/or (ii) if converted to non-native vegetation is considered to result in a long term negative impact on breeding populations of the species. It may include areas that do not currently support breeding populations of the species but that need to be maintained to ensure the long-term future of the species”.

In relation to threatened flora, the part of the title proposed for development does not support such species, nor significant potential habitat of such species.

In relation to threatened fauna, the proposed development area provides ubiquitous potential habitat for species such as the Tasmanian devil, spotted-tailed quoll, eastern quoll, eastern barred bandicoot, wedge-tailed eagle, masked owl and grey goshawk but the preceding report has demonstrated that it is not reasonable to consider this part of the title as “significant” for these species (else we would also need to start to classify massive parts of the municipality as such



because many of these species occupy undisturbed and disturbed habitats, such as pastures, plantations and various other anthropogenic habitats, equally, if not take advantage of such habitats preferentially). I do not regard the site as supporting "significant habitat" for the Mt Mangana stag beetle because of the absence of decaying coarse woody debris. I would usually restrict application of the concept of "significant habitat" to those types of vegetation and/or site features very strongly associated with threatened fauna.

Native vegetation communities with a distribution on a bioregional basis having contracted to less than 10% of its former area.

There is no notion that WRE has been so reduced on a bioregional basis.

Native vegetation communities with a total area on a bio-regional basis generally being less than 1,000 ha.

WRE remains widespread at a Statewide, bioregional and municipal level with more than 5,000 ha in the South East bioregion.

Remnants occurring on land systems components which have been more than 90% cleared of their native vegetation.

While the title is within a slightly modified landscape (classic "rural living" setting), I do not regard the site as meeting the concept of a "remnant" at any reasonable scale because of quite extensive retained native vegetation within the title and on adjacent titles and in the adjacent Woodbridge Hill Conservation Area.

"Moderate priority biodiversity values" are defined as (taken from Table E10.1 with author commentary below each):

Significant habitat for and/or areas known to contain threatened species listed under the *Threatened Species Protection Act 1995* or the *Environment Protection and Biodiversity Conservation Act 1999* that are:

- (a) recognised as rare; and
- (b) are not specific to the municipal area.

Of the threatened fauna species identified as potentially present, only the spotted-tailed quoll is listed as "rare" but has a landscape-scale distribution and the site did not support particular habitat elements strongly associated with the species. No species recognised as specific to the municipal area have been identified.

Potential habitat for threatened species listed under the *Threatened Species Protection Act 1995* or the *Environment Protection and Biodiversity Conservation Act 1999*.

"Potential habitat" is defined under the *Scheme* as:

"All vegetation types within the potential range of a threatened flora or fauna species that are likely to support that species in the short and/or long term. It may not include habitats known to be occupied intermittently. Potential habitat is determined from published and unpublished scientific literature and/or via expert opinion, is agreed by the Threatened Species Section (DPIPWE) in consultation with species specialist, and/or endorsed by the Threatened Species Scientific Advisory Committee (TSSAC) under the *Threatened Species Protection Act 1995*".

In relation to threatened flora, the proposed development area does support potential habitat (very marginally) but no populations were identified, so this is reasonably regarded as not being applicable.

See comments in preceding section under high priority biodiversity values in regard to threatened fauna species. Because this definition of "potential habitat" now includes the extremely nebulous concept of "...likely to support that species in the short and/or long term", it becomes almost impossible to discount any area of "native vegetation" (however modified), or even many patches of modified land such as pasture, regenerating cleared land, plantations, etc., within the municipality as not being "moderate priority biodiversity value", which is clearly not the intent. The definition does, however, include the concept of "may not include habitats known to be occupied intermittently", which means species such as the Tasmanian devil, spotted-tailed quoll, eastern quoll, eastern barred bandicoot, wedge-tailed eagle, masked owl, grey goshawk, forty-spotted pardalote and swift parrot that may "pass through" (but not permanently occupy) the site would not qualify the site as "moderate priority biodiversity value".

Native vegetation communities approaching a reduction in areal extent of 70% within a bioregional context.

There is no notion that WRE has been so reduced.

Other priority species that are not listed but are considered of conservation significance in the municipal area.

"Priority species" are defined under the *Scheme* as:

"...non-listed taxa identified in the Tasmanian RFA (Commonwealth of Australia and State of Tasmania 1997, as amended) as requiring some of form or protection or further research, non-listed species identified as poorly reserved in Tasmania, type locations and edge-of-range populations".

The site does not support such values. None of the RFA-listed non-listed taxa are present (note that the RFA has essentially been updated such that the list of priority species is now consistent with formally legislated lists). It is recognised that this municipal authority also now recognises *Eucalyptus rubida* (candlebark) as "priority species" due to its highly localised distribution in the municipality. This species is not present within or adjacent to the subject title. Poorly-reserved species have attempted to be defined and described at various times by DPIWRE (now NRE Tas) but the lists are of limited value because they lack rigour and rely on out-of-date data. This means that "poorly-reserved" taxa are best considered on a case-by-case basis by a suitably qualified person in relation to a specific development proposal and/or site. The site does not include any species that could reasonably be categorised as poorly-reserved. The subject title does not support any type locations of any taxa. The site does not include any edge-of range populations of any taxa.

High conservation value trees.

The *Scheme* defines a "high conservation value tree" as:

"a tree that is of a species that is listed in the *Threatened Species Protection Act 1995* or the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) and/or provide potential or significant habitat for a threatened species listed in either of those acts".

The *Scheme* defines a "high conservation value tree" to mean "a tree that is of a species that is listed in the *Threatened Species Protection Act 1995* or the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) and/or provide potential or significant habitat for a threatened species listed in either of those acts".

The tree species present within the fringe of WRE included in the proposed hazard management area are *Eucalyptus obliqua* (stringybark) and *Eucalyptus regnans* (giant ash), which are not listed as threatened on either of the mentioned acts. Neither provide "potential or significant habitat for

a threatened species”, except at a very general level (i.e. a species such as the swift parrot may forage in any tree species but is most strongly associated with *Eucalyptus globulus* and *Eucalyptus ovata*).

That is, I do not believe that “high conservation value trees” are present, if the phrasing in Table E10.1 is interpreted literally. However, the usual interpretation of the planning authority of “high conservation value trees” under Table E10.1 is by reference to *Kingborough Biodiversity Offset Policy 6.10, Nov. 2016*. By reference to this, in this context (wet forest), any tree over 100 cm diameter at breast height (DBH) will qualify as a very high conservation value tree because of its potential importance (existing or future) for hollow-dwelling species. In this case, this will refer to any *Eucalyptus obliqua* (stringybark) or *Eucalyptus regnans* (giant ash) that exceeds this threshold. The area proposed for development does not support *Eucalyptus globulus* (blue gum), *Eucalyptus ovata* (black gum), *Eucalyptus viminalis* (white gum) or *Eucalyptus rubida* (candlebark), the other key species referred to in the *Policy*.

The most usual course taken by the planning authority is to require a “tree plan” (as per their issued guidelines) that provide a map of all trees over 25 cm DBH, tagged by number, identified to species and DBH measured for comparison to the table in the *Kingborough Biodiversity Offset Policy 6.10, November 2016*. In this case, I have clearly identified those trees that are captured by the *Policy* (at Table 2 & Figure 15, with data supplied to the client in a format allowing transfer to site plans if necessary). No such trees are proposed for removal nor indeed any form of reasonable adverse impact such that I do not believe that moderate priority biodiversity values need to be considered further.

“Low priority biodiversity values” are defined as (taken from Table E10.1 with author commentary below each):

All other native vegetation communities.

Applicable to WRE.

On the basis of the above analysis, I believe that the proposed development area supports low priority biodiversity values (in the form of WRE) and possibly moderate priority biodiversity values (in the form of very high conservation value trees, although I do not believe these will require removal).

The Performance Criteria for moderate priority biodiversity values are stated as (low priority biodiversity values are considered under P1(a)(i) & (ii), which are the same as below):

P1

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 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 *Kingborough Biodiversity Offset Policy 6.10, November 2016*;

In relation to P1(b)(i), it will be necessary to demonstrate how development has been designed and located to minimise impacts to low priority biodiversity values (WRE) and moderate priority biodiversity values (individual trees). In my opinion, this is satisfied by reference to the site plans that indicate limited (perhaps no) practical alternatives.

A bushfire hazard management plan certified by an accredited practitioner should satisfy P1(b)(ii). I note that a BAL-19 rating is proposed and I accept this as a reasonable balance between site characteristics and identified natural values.

To satisfy P1(b)(iii), the remaining moderate priority biodiversity values would need to be “retained and improved” in some manner. In this case, I suggest that the fact that the title is already subject to the Biodiversity Protection Area overlay, more formal mechanisms to “retain and improve” the remaining moderate priority biodiversity values are not warranted. This meets the intent of the “retained” part of the provisions. Meeting the intent of the “and improved” part of the provision is more difficult, at least in literal terms. It is more usual for the term “retained and improved” to be phrased as “retained and/or improved”, which recognises that “improvement” is not always practical and that “retention [of status]” is perfectly appropriate and adequate. I would argue this is the case here because the moderate priority biodiversity value only refers to individual trees, which are difficult to “improve” except by simply leaving them to grow on. The site plan should be able to clearly indicate which of very high conservation value trees can be retained (and any mitigation needed to ensure their security during works) and/or provide “significant justification” (and an appropriate offset on a per tree basis) for any such trees that may need to be removed (understood to be none).

P1(b)(iv) refers to “residual impacts 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 *Kingborough Biodiversity Offset Policy 6.10, November 2016*”. In relation to moderate priority biodiversity values, the residual impact would be the loss of any very high conservation value trees. The *Biodiversity Offset Policy 6.10* allows a financial offset to be contributed on a per tree basis at a rate of up to \$500/tree for very high conservation value trees if “significant justification” has been provided (and accepted) for the loss of any such trees. In this case, there will be no impact to such trees such that there will not be a “residual impact” meaning offsets are not required. The offset policy does not make reference to low priority biodiversity values (i.e. the WRE vegetation type).

### ***Waterway and Coastal Protection Code***

Part of the title is subject to the Waterway and Coastal Protection Area overlay (Figure 5). The bushfire hazard management plan will require the BAL-19 hazard management area to extend to close to the edge of the bank of the tributary of Schemers Creek but it is noted that no construction works are within the overlay. As discussed on site, creating and maintaining a low fuel state is likely to require only minor modification of the structure of the forest between the cleared area and the creek with all trees over 25 cm DBH able to be retained and only some minor understorey management (e.g. thinning of denser dogwood patches) required. There will be no material impact to the structure of the watercourse’s bed or banks or indeed any ground works in the overlay itself.

I note that E11.4.1 of the Code provides this exemption:

- (g) fire hazard management works for an existing dwelling in accordance with a bushfire hazard management plan endorsed by an accredited person as defined under the Bushfire Prone Areas Code, wherein the extent of clearing and soil disturbance is the minimum necessary for adequate protection from bushfire

In my opinion, this is open to little interpretation. The dwelling is clearly “existing” and therefore it should not be relevant if the proposal is for a minor or major extension (in this case, clearly minor). Further, there will be a “bushfire hazard management plan endorsed by an accredited person as defined under the Bushfire Prone Areas Code” and this is recommending a BAL-19 standard be applied, which I believe meet the intent of the “extent of clearing [none proposed] and soil disturbance [none proposed] is the minimum necessary for adequate protection from bushfire”. That is, I believe that the proposal is exempt under E11.4.1(g). I am well aware that this is not the interpretation of the planning authority such that I examine the balance of the Code provisions below.

Below I examine the relevant Development Standard with respect to my findings.

E11.7 Development Standards

E11.7.1 Buildings and Works

Objective:

To ensure that buildings and works in proximity to a waterway, the coast, identified climate change refugia and potable water supply areas will not have an unnecessary or unacceptable impact on natural values.

I do not believe that the proposal will compromise the objective of E11.7.1 but below I review the Acceptable Solutions and Performance Criteria.

Acceptable Solutions

A1

Building and works within a Waterway and Coastal Protection Area must be within a building area on a plan of subdivision approved under this planning scheme.

I do not believe that this is satisfied because there is no “building area on a plan of subdivision approved under this planning scheme”.

Performance Criteria

P1

Building and works within a Waterway and Coastal Protection Area must satisfy all of the following:

- (a) avoid or mitigate impact on natural values

I do not anticipate that the “works” (i.e. minor fuel management) will materially impact on the natural values of the waterway as they will be restricted to the existing forested slope without any impact to the stream bed or banks and with no discharge/input of sediment, chemicals or water into the waterway.

- (b) mitigate and manage adverse erosion, sedimentation and runoff impacts on natural values;

I do not anticipate that the “works” (i.e. minor fuel management) will result in any, let alone any “adverse”, “erosion, sedimentation and runoff impacts on natural values” because there will be no disturbance to the soil profile.

- (c) avoid or mitigate impacts on riparian or littoral vegetation;

Impacts to riparian vegetation will be minor (see bushfire hazard management plan) but specific mitigation beyond restricting such activity to the southern side of the watercourse is not considered necessary.

- (d) maintain natural streambank and streambed condition, (where it exists);

I do not anticipate that the "works" (i.e. minor fuel management) will result in any alteration to the natural streambank or streambed.

- (e) maintain in-stream natural habitat, such as fallen logs, bank overhangs, rocks and trailing vegetation;

I do not anticipate that the "works" (i.e. minor fuel management) will result in any alteration to "in-stream natural habitat, such as fallen logs, bank overhangs, rocks and trailing vegetation".

- (f) avoid significantly impeding natural flow and drainage;

I do not anticipate that the "works" (i.e. minor fuel management) will result in any change to the natural flow or drainage of the Schemers Creek drainage system.

- (g) maintain fish passage (where applicable);

Not considered applicable to a very minor ephemeral headwater stream.

- (h) avoid landfilling of wetlands;

Not applicable – not a wetland.

- (i) works are undertaken generally in accordance with Waterways and Wetlands Works Manual (DPIPWE, 2003) and Tasmanian Coastal Works Manual (DPIPWE, December, 2010), and the unnecessary use of machinery within watercourses or wetlands is avoided.

Not considered relevant to the "works" (i.e. minor fuel management).

### ***Scenic Landscape Code***

While analysis of the impacts to landscape values is not my specific area of expertise, I note that correspondence from Kingborough Council dated 19 Jul. 2023 refers to "where clearing of more than 500 m<sup>2</sup> of bushland within a Scenic Protection Area under Code E14.0 of the Scheme is proposed, details are required on how the performance criteria will be met". As this refers to "bushland", I believe I can provide some relevant information.

First, I note that at E14.4.1(e), "fire hazard management works for an existing dwelling in accordance with a bushfire hazard management plan endorsed by an accredited person as defined under the Bushfire Prone Areas Code, wherein the extent of vegetation cleared is the minimum necessary" are exempt from the Code. See discussion under Biodiversity Code and Waterway and Coastal protection Code.

Acceptable Solution A1(b) refers to "removal or disturbance of bushland must comply with both of the following: (a)...; (b) be no more than 500 m<sup>2</sup> in extent". I have supplied my revised vegetation mapping of the extent of FUR vs WRE mapping units, the WRE reasonably interpreted as "bushland" under the Code ("land which is dominated by native vegetation"). While no such "bushland" will be subject to "removal" per se, management as a low fuel state may be construed as "disturbance" ("alteration of the appearance of bushland through actions including cutting down, felling, thinning, logging, removing, destroying, poisoning, ringbarking, uprooting, slashing or burning"). If overlaying the proposed BAL-19 hazard management area with the revised vegetation mapping indicates less than 500 m<sup>2</sup> of WRE (i.e. "bushland" will be impacted, A1(b) is satisfied. However, it is likely that this threshold will be exceeded, such that the relevant Performance Criteria will need to be considered. This is stated as "Removal or disturbance of bushland must be minimised and must satisfy both of the following: (a) result in only negligible change to the silhouette of skylines; (b) maintain scenic landscape value". I do not believe there is any manner in which there will be any "change to the silhouette of skylines". The works are very minor and should not result in any measurable change to the "scenic landscape value".



## **Recommendations**

The recommendations provided below are a summary of those provided in relation to each of the natural values described in the main report. The main text of the report provides the relevant context for the recommendations.

### Vegetation types

In general terms, minimising the extent of “clearance and conversion” and/or “disturbance” of native vegetation is recommended, acknowledging constraints imposed by the location of the existing dwelling and access, setbacks, the lot’s configuration, slopes, service and access requirements and contemporary bushfire hazard management requirements.

### Threatened flora

Not applicable – no threatened flora present.

### Threatened fauna

Apart from the generic recommendation to minimise the extent of “clearance and conversion” and/or “disturbance” to native vegetation, it is also recommended that the extent of loss of individual eucalypts is minimised with an emphasis on the following:

- individuals of any species with a DBH greater than 100 cm.

### Weed and disease management

Any works, especially access and service provision, will provide an opportunity for weed establishment by mobilising soil-stored seed and providing fresh bare ground ideal for seedling establishment. “Starting clean” is good practice (i.e. machinery, vehicle and equipment hygiene prior to entering the site).

Owner-occupation is the most likely practical means of achieving good long-term weed management outcomes through vigilance and control.

### Legislative and policy implications

A permit under Section 51 of the Tasmanian *Threatened Species Protection Act 1995* (TSPA) should not be required.

A formal referral to the relevant Commonwealth agency under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA) should not be required.

Initial review of the relevant provisions of the Biodiversity Code of the *Kingborough Interim Planning Scheme 2015* indicates satisfaction of E10.7.1 P1 with minor recommendations provided in relation to management of moderate priority biodiversity values (individual trees).

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## APPENDIX A. Vegetation community structure and composition

The table below provides information on the structure and composition of the native vegetation mapping unit identified from the part of the title proposed for development.

| <i>Eucalyptus regnans</i> forest (TASVEG code: WRE)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                         |                                                                                                                                                                                                            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The forest fringing the existing residentially-developed part of the title (now mapped as FUR) has a maturing regrowth structure (post-1967 bushfire) dominated by <i>Eucalyptus regnans</i> with some contribution from <i>Eucalyptus globulus</i> (with <i>Acacia dealbata</i> a minor secondary stratum) over a dense secondary canopy of typical wet sclerophyll shrubs including <i>Pomaderris apetala</i>, <i>Bedfordia salicina</i>, <i>Acacia verticillata</i> and <i>Pittosporum bicolor</i>, in turn over a generally open understorey with occasional graminoids and ground ferns in canopy gaps (with <i>Dicksonia antarctica</i> restricted to near the creekline). Grasses and herbs are sparse to absent. There is extensive leaf litter, typical of wet sclerophyll forest, but limited coarse woody debris, most logs small or suspended above the ground (i.e. recent falls). Rock outcrops are absent. The fringe of WRE around the existing house site is highly modified, having once been largely cleared of at least the understorey, as evidenced by the now dense poles of <i>Pomaderris apetala</i> and sparse stems of <i>Eucalyptus</i> (mainly small apart from scattered larger stems) and very open understorey. That aside, WRE is in good ecological condition with no weeds or symptoms of plant disease observed.</p> |                         |                                                                                                                                                                                                            |
|  <p>Examples of WRE</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                         |                                                                                                                                                                                                            |
| Stratum                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Height (m)<br>Cover (%) | Species<br>(underline = dominant, parentheses = sparse; + = present only)                                                                                                                                  |
| Trees                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 45 m<br>30%             | <u><i>Eucalyptus regnans</i></u> , ( <i>Eucalyptus obliqua</i> )                                                                                                                                           |
| Trees                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 25 m<br>5-20%           | <u><i>Eucalyptus regnans</i></u>                                                                                                                                                                           |
| Trees                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 15-22 m<br>10%          | <u><i>Eucalyptus regnans</i></u> , ( <i>Acacia dealbata</i> )                                                                                                                                              |
| Tall shrubs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 5-12 m<br>60%           | <u><i>Pomaderris apetala</i></u> , <i>Acacia dealbata</i> , <i>Cassinia aculeata</i> , <i>Olearia argophylla</i> , <i>Leptospermum lanigerum</i> , <i>Pittosporum bicolor</i> , <i>Acacia verticillata</i> |
| Low shrubs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <3 m<br><5%             | <i>Pimelea drupacea</i> , <i>Coprosma quadrifida</i> , <i>Beyeria viscosa</i>                                                                                                                              |
| Graminoids                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <5%                     | <u><i>Lepidosperma ensiforme</i></u> , <i>Gahnia grandis</i>                                                                                                                                               |
| Grasses                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | +                       | <i>Poa labillardierei</i>                                                                                                                                                                                  |
| Herbs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | +                       | <i>Hydrocotyle hirta</i> , <i>Pterostylis pedunculata</i> , <i>Acaena novae-zelandiae</i>                                                                                                                  |
| Ground ferns                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | +                       | <i>Pteridium esculentum</i> [edges], <i>Histiopteris incisa</i> , <i>Hypolepis rugosula</i> [gaps]                                                                                                         |
| Trunked ferns                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1 m<br>local            | <i>Dicksonia antarctica</i>                                                                                                                                                                                |

## APPENDIX B. Vascular plant species recorded from study area

Botanical nomenclature follows *A Census of the Vascular Plants of Tasmania* (de Salas & Baker 2023), with family placement updated to reflect the nomenclatural changes recognised in the *Flora of Tasmania Online* (de Salas 2023+) and APG (2016); common nomenclature follows *The Little Book of Common Names of Tasmanian Plants* (Wapstra et al. 2005+, updated online at [www.nre.tas.gov.au](http://www.nre.tas.gov.au)).

**Table B1.** Summary of vascular species recorded from study area (fringe of WRE only)

| STATUS | ORDER         |                 |              |              |
|--------|---------------|-----------------|--------------|--------------|
|        | DICOTYLEDONAE | MONOCOTYLEDONAE | GYMNOSPERMAE | PTERIDOPHYTA |
|        | 16            | 3               | -            | 4            |
| e      | 1             | -               | -            | -            |
| i      | -             | -               | -            | -            |
| Sum    | 17            | 3               | 0            | 4            |
| TOTAL  | 24            |                 |              |              |

### DICOTYLEDONAE

#### APIACEAE

*Hydrocotyle hirta*

hairy pennywort

#### ASTERACEAE

e *Bedfordia salicina*

tasmanian blanketleaf

*Cassinia aculeata* subsp. *aculeata*

common dollybush

*Olearia argophylla*

musk daisybush

#### EUPHORBIACEAE

*Beyeria viscosa*

pinkwood

#### FABACEAE

*Acacia dealbata* subsp. *dealbata*

silver wattle

*Acacia verticillata* subsp. *verticillata*

prickly moses

#### MYRTACEAE

*Eucalyptus obliqua*

stringybark

*Eucalyptus regnans*

giant ash

*Leptospermum lanigerum*

woolly teatree

#### OXALIDACEAE

*Oxalis perennans*

grassland woodsorrel

#### PITTOSPORACEAE

*Pittosporum bicolor*

cheesewood

#### RHAMNACEAE

*Pomaderris apetala* subsp. *apetala*

common dogwood

#### ROSACEAE

*Acaena novae-zelandiae*

common buzzy

#### RUBIACEAE

*Coprosma quadrifida*

native currant

#### THYMELAEACEAE

*Pimelea drupacea*

cherry riceflower

#### URTICACEAE

*Urtica incisa*

scrub nettle

### MONOCOTYLEDONAE

#### CYPERACEAE

*Lepidosperma ensiforme*

arching swordgrass

#### ORCHIDACEAE

*Pterostylis pedunculata*

maroonhood

#### POACEAE

*Poa labillardierei* var. *labillardierei*

silver tussockgrass

### PTERIDOPHYTA

#### DENNSTAEDTIACEAE

*Histiopteris incisa*

batswing fern

*Hypolepis rugosula*

*Pteridium esculentum* subsp. *esculentum*

**DICKSONIACEAE**

*Dicksonia antarctica*

ruddy groundfern

bracken

soft treefern



## APPENDIX C. Analysis of database records of threatened flora

Table C1 provides a listing of threatened flora from within 5,000 m of the study area (nominal buffer width usually used to discuss the potential of a particular study area to support various species listed in databases), with comments on whether potential habitat is present for the species, and possible reasons why a species was not recorded.

**Table C1.** Threatened flora records from within 5,000 m of boundary of study area

Species listed below are listed as rare (r), vulnerable (v), endangered (e), or extinct (x) on the Tasmanian *Threatened Species Protection Act 1995* (TSPA); vulnerable (VU), endangered (EN), critically endangered (CR) or extinct (EX) on the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA). Information below is sourced from DNRET's *Natural Values Atlas* (DNRET 2023a) and other sources where indicated. Habitat descriptions are taken from FPA (2016), FPA (2017) and TSS (2003+), except where otherwise indicated. Species marked with # are listed in CofA (2023).

| Scientific name<br>Common name                      | Status<br>TSPA<br>EPBCA | Tasmanian habitat description<br>(and distribution)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Comments on study area and<br>database records                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Caladenia caudata</i><br>tailed spider-orchid    | v<br>VU<br># only       | <i>Caladenia caudata</i> has highly variable habitat, which includes the central north: <i>Eucalyptus obliqua</i> heathy forest on low undulating hills; the northeast: <i>E. globulus</i> grassy/heathy coastal forest, <i>E. amygdalina</i> heathy woodland and forest, <i>Allocasuarina</i> woodland; and the southeast: <i>E. amygdalina</i> forest and woodland on sandstone, coastal <i>E. viminalis</i> forest on deep sands. Substrates vary from dolerite to sandstone to granite, with soils ranging from deep windblown sands, sands derived from sandstone and well-developed clay loams developed from dolerite. A high degree of insolation is typical of many sites. | Potential habitat absent (species has not been recorded from wet sclerophyll forest with a dense understorey).                                                                                                                                                                                                                                                                                                                                 |
| <i>Colobanthus curtisiae</i><br>grassland cupflower | r<br>VU<br># only       | <i>Colobanthus curtisiae</i> occurs in lowland grasslands and grassy woodlands but is also prevalent on rocky outcrops and margins of forest on dolerite on the Central Highlands (including disturbed sites such as log landings and snag tracks).                                                                                                                                                                                                                                                                                                                                                                                                                                 | Potential habitat absent (species has not been recorded from wet sclerophyll forest with a dense understorey).                                                                                                                                                                                                                                                                                                                                 |
| <i>Corunastylis nuda</i><br>tiny midge-orchid       | r<br>-                  | <i>Corunastylis nuda</i> occurs in a wide range of habitats from near sea level to 1,000 m a.s.l., on a range of different soil types and geologies. Vegetation types include scrub, subalpine grassland, open rock plates, heathy open forest, shrubby dry sclerophyll forest and wet sclerophyll forest.                                                                                                                                                                                                                                                                                                                                                                          | Potential habitat absent (species has not been recorded from wet sclerophyll forest with a dense understorey).                                                                                                                                                                                                                                                                                                                                 |
| <i>Epacris virgata</i><br>twiggy heath              | v<br>EN<br># only       | <i>Epacris virgata</i> is restricted to a small area of undulating terrain in the foothills of the Dazzler Range near Beaconsfield, where it occurs on serpentinite-derived soils in dry sclerophyll forest at an elevation of 40-80 m a.s.l.                                                                                                                                                                                                                                                                                                                                                                                                                                       | The taxon formally referred to by DNRET as <i>Epacris virgata</i> Kettering has recently been removed from the <i>Natural Values Atlas</i> because all specimens of what was previously referred to as <i>Epacris virgata</i> outside the Beaconsfield area have been re-determined as <i>Epacris tasmanica</i> , a widespread, well-reserved and non-threatened species (M. de Salas – Tasmanian Herbarium & J. Quarmby – DNRET pers. comm.). |

| Scientific name<br>Common name                                                 | Status<br>TSPA<br>EPBCA | Tasmanian habitat description<br>(and distribution)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Comments on study area and<br>database records                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------------------------------------------------------------|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | On this basis, the study area does not support potential habitat of <i>Epacris virgata</i> , which is restricted to soils derived from ultramafic substrates in the Beaconsfield area. Technically, the study area does support potential habitat of the taxon erroneously referred to as " <i>Epacris virgata</i> Kettering" (because the site is on dolerite). Site survey did not result in detection of <i>Epacris tasmanica</i> (the correct name for " <i>Epacris virgata</i> Kettering"). |
| <i>Lepidium hyssopifolium</i><br>soft peppergrass                              | e<br>EN<br># only       | The native habitat of <i>Lepidium hyssopifolium</i> is the growth suppression zone beneath large trees in grassy woodlands and grasslands (e.g. over-mature black wattles and isolated eucalypts in rough pasture). <i>Lepidium hyssopifolium</i> is now found primarily under large exotic trees on roadsides and home yards on farms. It occurs in the eastern part of Tasmania between sea-level to 500 m a.s.l. in dry, warm and fertile areas on flat ground on weakly acid to alkaline soils derived from a range of rock types. | Potential habitat absent (species has not been recorded from wet sclerophyll forest with a dense understorey).                                                                                                                                                                                                                                                                                                                                                                                   |
| <i>Lepidosperma tortuosum</i><br>twisting rapier-sedge                         | r<br>-                  | <i>Lepidosperma tortuosum</i> occurs in heathland and heathy woodland, in lowland sites, mainly in eastern parts of the State. It often occurs in the sedgier (peatier) parts of dry heathland. It can occur on a range of substrates.                                                                                                                                                                                                                                                                                                 | Potential habitat absent (species has not been recorded from wet sclerophyll forest with a dense understorey).                                                                                                                                                                                                                                                                                                                                                                                   |
| <i>Leucochrysum albicans</i><br>subsp. <i>tricolor</i><br>grassland paperdaisy | e<br>EN<br># only       | <i>Leucochrysum albicans</i> subsp. <i>tricolor</i> occurs in the west and on the Central Plateau and the Midlands, mostly on basalt soils in open grassland. This species would have originally occupied <i>Eucalyptus pauciflora</i> woodland and tussock grassland, though most of this habitat is now converted to improved pasture or cropland.                                                                                                                                                                                   | Potential habitat absent (species has not been recorded from wet sclerophyll forest with a dense understorey).                                                                                                                                                                                                                                                                                                                                                                                   |
| <i>Prasophyllum amoenum</i><br>dainty leek-orchid                              | v<br>EN<br>#            | <i>Prasophyllum amoenum</i> has been recorded from Snug Tiers and Mt Wellington. At Snug Tiers the species occurs in sedgy buttongrass moorland and heath, and also in openings in eucalypt woodland and scrub on damp stony loam. On Mt Wellington the species is found in and near cushion plants in alpine moorland.                                                                                                                                                                                                                | Potential habitat absent (species has not been recorded from wet sclerophyll forest with a dense understorey).                                                                                                                                                                                                                                                                                                                                                                                   |
| <i>Prasophyllum apoxychilum</i><br>tapered leek-orchid                         | v<br>EN<br># only       | <i>Prasophyllum apoxychilum</i> is restricted to eastern and northeastern Tasmania where it 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 and southeast of its range.                                                                                                                                                                                            | Potential habitat absent (species has not been recorded from wet sclerophyll forest with a dense understorey).                                                                                                                                                                                                                                                                                                                                                                                   |



| Scientific name<br>Common name                          | Status<br>TSPA<br>EPBCA | Tasmanian habitat description<br>(and distribution)                                                                                                                                                                                                                                                | Comments on study area and<br>database records                                                                                                                                                                             |
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| <i>Thelymitra jonesii</i><br>skyblue sun-orchid         | e<br>EN<br># only       | <i>Thelymitra jonesii</i> occurs in moist coastal heath on sandy to peaty soils and in <i>Eucalyptus obliqua</i> forest in deep loam soil over dolerite.                                                                                                                                           | Potential habitat absent (species has not been recorded from wet sclerophyll forest with a dense understorey).                                                                                                             |
| <i>Westringia angustifolia</i><br>narrowleaf westringia | r<br>-                  | <i>Westringia angustifolia</i> occurs mainly in mid elevations, always on dolerite (but can be close to dolerite-sediment contact zones), in dry to wet sclerophyll forest on broad ridges, slopes and dense riparian shrubberies.                                                                 | Potential habitat technically present because the site is on dolerite, although highly atypical of most sites supporting the species.<br>Species not detected (no seasonal constraint on detection and/or identification). |
| <i>Xerochrysum palustre</i><br>swamp everlasting        | v<br>VU<br># only       | <i>Xerochrysum palustre</i> has a scattered distribution with populations in the northeast, east coast, Central Highlands and Midlands, all below about 700 m elevation. It occurs in wetlands, grassy to sedgy wet heathlands and extends to associated heathy <i>Eucalyptus ovata</i> woodlands. | Potential habitat absent (species has not been recorded from wet sclerophyll forest with a dense understorey).                                                                                                             |



## APPENDIX D. Analysis of database records of threatened fauna

Table D1 provides a listing of threatened fauna from within 5,000 m of the study area (nominal buffer width usually used to discuss the potential of a particular study area to support various species listed in databases), with comments on whether potential habitat is present for the species, and possible reasons why a species was not recorded.

**Table D1.** Threatened fauna records from 5,000 m of boundary of study area

Species listed below are listed as rare (r), vulnerable (v), endangered (e), or extinct (x) on the Tasmanian *Threatened Species Protection Act 1995* (TSPA); vulnerable (VU), endangered (EN), critically endangered (CR) or extinct (EX) on the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA). Information below is sourced from the DNRET's *Natural Values Atlas* (DNRET 2023a), Bryant & Jackson (1999), McNab (2022) and FPA (2023); marine, wholly pelagic and littoral species such as marine mammals, fish and offshore seabirds are excluded. Species marked with # are listed in CofA (2023). Note that the use of the descriptions of "potential habitat" and "significant habitat" as provided in FPA (2023) does not imply a direct relationship between these concepts and the concept of "significant habitat" as per C7.3.1 of the *State Planning Provisions*.

| Scientific name<br>Common name                                            | Status<br>TSPA<br>EPBCA | Tasmanian habitat description<br>(and distribution)                                                                                                                                                                                                                                                                                                                                                               | Comments on project area and<br>database records                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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| <i>Accipiter novaehollandiae</i><br>grey goshawk                          | e<br>-                  | <b>Potential habitat</b> is native forest with mature elements below 600 m altitude, particularly along watercourses.<br><b>Significant habitat</b> for the grey goshawk may be summarised as areas of wet forest, rainforest and damp forest patches in dry forest, with a relatively closed mature canopy, low stem density, and open understorey in close proximity to foraging habitat and a freshwater body. | <b>Potential habitat</b> effectively absent from the part of the title proposed for development, except in a very general sense. Better potential habitat is present elsewhere in title, where there is well-developed WRE forest with a maturing canopy and variably open to dens understorey. While it is recognised that recent evidence indicates the species can nest in mature regrowth forest, these sites tend to have a suite of features such as being close to riparian areas and an understorey that includes mature forest elements such as <i>Dicksonia antarctica</i> and some rainforest elements. This combination of features occurs along Schemers Creek but will effectively be retained "as is". Searches of trees with binoculars failed to detect any nest sites (but acknowledging that these can be highly cryptic).<br><b>Significant habitat</b> absent.<br>The species may very occasionally utilise the greater title area as part of a home range and for foraging but small-scale development (house extension and establishment/maintenance of a hazard management area in the fringe of already disturbed forest) should not have a significant impact on this aspect of the life history of the species.<br>This species should not require further consideration. |
| <i>Antipodia chaostola</i><br>tax. <i>leucophaea</i><br>chaostola skipper | e<br>EN<br>#            | <b>Potential habitat</b> is dry forest and woodland supporting <i>Gahnia radula</i> (usually on sandstone and other sedimentary rock types) or <i>Gahnia microstachya</i> (usually on granite-based substrates).                                                                                                                                                                                                  | <b>Potential habitat</b> absent, as both species of <i>Gahnia</i> are not present.<br>This species should not require further consideration.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |



| Scientific name<br>Common name                                                                                                           | Status<br>TSPA<br>EPBCA | Tasmanian habitat description<br>(and distribution)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Comments on project area and<br>database records                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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| <i>Apus pacificus</i><br>fork-tailed swift                                                                                               | -<br>-<br># only        | Seasonal migrant (December through March) with habitat open skies over any habitat, more commonly associated with forested hills and mountains (McNab 2022).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>Potential habitat</b> widespread but this is a species that flies at high altitude, very fast and highly mobile, feeding on the wing and virtually never perches (McNab 2022).<br>This species should not require further consideration.                                                                                                                                                                                                                                                                                                                                                                                                 |
| <i>Aquila audax</i> subsp.<br><i>fleayi</i><br>wedge-tailed eagle                                                                        | e<br>EN<br>#            | <b>Potential habitat</b> comprises <b>potential nesting habitat</b> and <b>potential foraging habitat</b> .<br><b>Potential foraging habitat</b> is a wide variety of forest (including areas subject to native forest silviculture) and non-forest habitats.<br><b>Potential nesting habitat</b> is tall eucalypt trees in large tracts (usually more than 10 ha) of eucalypt or mixed forest. Nest trees are usually amongst the largest in a locality. They are generally in sheltered positions on leeward slopes, between the lower and mid sections of a slope and with the top of the tree usually lower than the ground level of the top of the ridge, although in some parts of the State topographic shelter is not always a significant factor (e.g. parts of the northwest and Central Highlands). Nests are usually not constructed close to sources of disturbance and nests close to disturbance are less productive.<br><b>Significant habitat</b> is all native forest and native non-forest vegetation within 500 m or 1 km line-of-sight of known nest sites (where the nest tree is still present). | <b>Potential foraging habitat</b> present.<br><b>Potential nesting habitat</b> present within title and surrounds but no nests reported from part of title proposed for development.<br><b>Significant habitat</b> absent.<br>The species may very occasionally utilise the greater title area as part of a home range and for foraging but small-scale development (house extension and establishment/maintenance of a hazard management area in the fringe of already disturbed forest) should not have a significant impact on this aspect of the life history of the species.<br>This species should not require further consideration. |
| <i>Botaurus poiciloptilus</i><br>Australasian bittern                                                                                    | -<br>EN<br># only       | <b>Potential habitat</b> is comprised of wetlands with tall dense vegetation, where it forages in still, shallow water up to 0.3 m deep, often at the edges of pools or waterways, or from platforms or mats of vegetation over deep water. It favours permanent and seasonal freshwater habitats, particularly those dominated by sedges, rushes and reeds or cutting grass growing over a muddy or peaty substrate (TSSC 2011).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Potential habitat</b> absent. Wetlands are absent.<br>This species should not require further consideration.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <i>Bubulcus coromandus</i><br>[syn. <i>B. ibis</i> , <i>Ardea ibis</i> ]<br>cattle egret                                                 | -<br>-<br># only        | Seasonal migrant (April through October) with habitat agricultural lands, crops, dams, pastures, particularly those with cattle, mudflats and wetlands (McNab 2018).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>Potential habitat</b> absent, except in a very general sense.<br>This species should not require further consideration.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <i>Ceyx azureus</i> subsp.<br><i>diemenensis</i><br>[syn. <i>Alcedo azurea</i> subsp. <i>diemenensis</i> ]<br>Tasmanian azure kingfisher | e<br>EN<br>#            | <b>Potential habitat</b> comprises <b>potential foraging habitat</b> and <b>potential breeding habitat</b> .<br><b>Potential foraging habitat</b> is primarily freshwater (occasionally estuarine) waterbodies such as large rivers and streams with well-developed overhanging vegetation suitable for                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>Potential foraging habitat</b> absent (tributary of Schemers Creek is very heavily forested and shallow with low banks only and only ephemeral flow).<br><b>Potential breeding habitat</b> absent (as above).<br>This species should not require further consideration.                                                                                                                                                                                                                                                                                                                                                                  |



| Scientific name<br>Common name                                               | Status<br>TSPA<br>EPBCA | Tasmanian habitat description<br>(and distribution)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Comments on project area and<br>database records                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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|                                                                              |                         | perching and water deep enough for<br>dive-feeding.<br><b>Potential breeding habitat</b> is usually<br>steep banks of large rivers (a breeding<br>site is a hole (burrow) drilled in the<br>bank).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <i>Dasyurus maculatus</i><br>subsp. <i>maculatus</i><br>spotted-tailed quoll | r<br>VU<br>#            | <b>Potential habitat</b> is coastal scrub,<br>riparian areas, rainforest, wet forest,<br>damp forest, dry forest and blackwood<br>swamp forest (mature and regrowth),<br>particularly where structurally complex<br>and steep rocky areas are present, and<br>includes remnant patches in cleared<br>agricultural land.<br><b>Significant habitat</b> is all potential<br>denning habitat within the core range of<br>the species. <b>Potential denning</b><br><b>habitat</b> for the spotted-tailed quoll<br>includes 1) any forest remnant<br>(>0.5 ha) in a cleared or plantation<br>landscape that is structurally complex<br>(high canopy, with dense understorey<br>and ground vegetation cover), free<br>from the risk of inundation, or 2) a rock<br>outcrop, rock crevice, rock pile, burrow<br>with a small entrance, hollow logs, large<br>piles of coarse woody debris and caves.<br><b>FPA's Fauna Technical Note 10</b> can<br>be used as a guide in the identification<br>of potential denning habitat. | <b>Potential habitat</b> present (in a general<br>sense).<br><b>Significant habitat</b> absent (within<br>core range but the described potential<br>denning habitat is not present).<br>The species may very occasionally<br>utilise the greater title area as part of a<br>home range and for foraging but small-<br>scale development (house extension<br>and establishment/maintenance of a<br>hazard management area in the fringe<br>of already disturbed forest) should not<br>have a significant impact on this aspect<br>of the life history of the species.<br>This species should not require further<br>consideration but see <b>FINDINGS</b><br><b>Threatened fauna</b> for more details. |
| <i>Dasyurus viverrinus</i><br>eastern quoll                                  | -<br>EN<br>#            | <b>Potential habitat</b> is a variety of<br>habitats including rainforest, heathland,<br>alpine areas and scrub. However, it<br>seems to prefer dry forest/native<br>grassland mosaics which are bounded<br>by agricultural land.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>Potential habitat</b> present.<br>The species may very occasionally<br>utilise the greater title area as part of a<br>home range and for foraging but small-<br>scale development (house extension<br>and establishment/maintenance of a<br>hazard management area in the fringe<br>of already disturbed forest) should not<br>have a significant impact on this aspect<br>of the life history of the species.<br>This species should not require further<br>consideration but see <b>FINDINGS</b><br><b>Threatened fauna</b> for more details.                                                                                                                                                    |
| <i>Gallinago hardwickii</i><br>Latham's snipe                                | -<br>-<br># only        | Seasonal migrant that prefers brackish,<br>fresh and saline habitats including<br>lagoons, lakes, marshes, swamps, wet<br>grasslands and paddocks and wetlands<br>with tussockgrasses (McNab 2022).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>Potential habitat</b> absent, except in<br>the most general of senses.<br>This species should not require further<br>consideration.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <i>Haliaeetus leucogaster</i><br>white-bellied sea-eagle                     | v<br>-                  | <b>Potential habitat</b> comprises<br><b>potential nesting habitat</b> and<br><b>potential foraging habitat</b> .<br><b>Potential foraging habitat</b> is any<br>large waterbody (including sea coasts,<br>estuaries, wide rivers, lakes,<br>impoundments and even large farm<br>dams) supporting prey items (fish).<br><b>Potential nesting habitat</b> is tall<br>eucalypt trees in large tracts (usually<br>more than 10 ha) of eucalypt or mixed<br>forest within 5 km of the coast (nearest                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Potential foraging habitat</b> present<br>(although it would be mainly over open<br>sea).<br><b>Potential nesting habitat</b> present<br>within title and surrounds but no nests<br>reported from part of title proposed for<br>development.<br><b>Significant habitat</b> absent.<br>The species may very occasionally<br>utilise the greater title area as part of a<br>home range and for foraging but small-<br>scale development should not have a                                                                                                                                                                                                                                            |



| Scientific name<br>Common name                               | Status<br>TSPA<br>EPBCA | Tasmanian habitat description<br>(and distribution)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Comments on project area and<br>database records                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
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|                                                              |                         | coast including shores, bays, inlets and peninsulas), large rivers (class 1), lakes or complexes of large farm dams. Scattered trees along river banks or pasture land may also be used.<br><b>Significant habitat</b> is all native forest and native non-forest vegetation within 500 m or 1 km line-of-sight of known nest sites (where nest tree still present).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | significant impact on this aspect of the life history of the species.<br>This species should not require further consideration.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <i>Hirundapus caudacutus</i><br>white-throated<br>needletail | -<br>VU<br>#            | Seasonal migrant (December through March) with habitat open skies over any habitat, more commonly associated with forested hills and mountains (McNab 2022).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>Potential habitat</b> widespread but this is a species that flies at high altitude, very fast and highly mobile, feeding on the wing and virtually never perches (McNab 2022).<br>This species should not require further consideration.                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <i>Lathamus discolor</i><br>swift parrot                     | e<br>CR<br>#            | <b>Potential breeding habitat</b> comprises <b>potential foraging habitat</b> and <b>potential nesting habitat</b> , and is based on definitions of foraging and nesting trees (see Table A in swift parrot habitat assessment Technical Note).<br><b>Potential foraging habitat</b> comprises <i>E. globulus</i> or <i>E. ovata</i> trees that are old enough to flower. In the Eastern Tiers, potential foraging habitat also includes <i>E. brookeriana</i> where it has the potential to contribute a substantial foraging resource. The occurrence of foraging-habitat can be remotely assessed, although only to a limited extent, by using mapping layers such as GlobMap (DPIPWE 2010). Due to the scale and inadequacies in current foraging-habitat mapping, potential foraging-habitat density within operational areas should be identified by ground-based surveys as per Table B in the swift parrot habitat assessment Technical Note.<br>For management purposes <b>potential nesting habitat</b> is considered to comprise eucalypt forests that contain hollow-bearing trees. The FPA mature habitat availability map (see Technical Note 2) predicts the availability of hollow-bearing trees using the relevant definitions of habitat provided in Table C of the swift parrot habitat assessment Technical Note. The mature habitat availability map is designed to be used to make landscape-scale assessments and may not be reliable for stand-level assessments required during the development of a Forest Practices Plan. At the stand-level the availability and distribution of hollow-bearing trees across a coupe or operation area is best determined from a ground-based assessment (see Table C in the swift | <b>Potential foraging habitat</b> absent (both <i>Eucalyptus globulus</i> and <i>Eucalyptus ovata</i> are absent from the part of the title proposed for development).<br><b>Potential nesting habitat</b> absent (no hollow-bearing trees at present and none expected to develop for many decades – forest is regrowth from post-1967). Site is atypical of most recorded breeding locations that tend to be on ridges and upper slopes in mature forest with a high abundance of hollow-bearing trees.<br><b>Significant habitat</b> absent.<br>This species should not require further consideration but see <b>FINDINGS Threatened fauna</b> for more details. |

| Scientific name<br>Common name                             | Status<br>TSPA<br>EPBCA   | Tasmanian habitat description<br>(and distribution)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Comments on project area and<br>database records                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
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|                                                            |                           | <p>parrot habitat assessment Technical Note).</p> <p><b>Significant habitat</b> is all potential breeding habitat within the SE potential breeding range and the NW breeding areas.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <p><i>Lissotes menalcas</i><br/>Mt Mangana stag beetle</p> | <p>v<br/>-</p>            | <p><b>Potential habitat</b> is any eucalypt forest that contains rotting logs (often numerous, and usually greater than about 40 cm diameter at mid-log length) below about 650 m a.s.l. (generally moist habitats that have not been subject to high intensity or frequent fires in about the last 20 years). The species has a patchy distribution within areas of potential habitat. Some rainforest will support the species, although in low densities as the species has an apparent preference for eucalypt logs.</p> <p><b>Significant habitat</b> is all potential habitat within the known range.</p>                               | <p><b>Potential habitat</b> effectively absent because while the fringing forest is eucalypt forest, coarse woody debris is scattered only and only just starting to form downers with suitable decay.</p> <p><b>Significant habitat</b> absent.</p> <p>This species should not require further consideration but see <b>FINDINGS Threatened fauna</b> for more details.</p>                                                                                                                                                                               |
| <p><i>Litoria raniformis</i><br/>green and golden frog</p> | <p>v<br/>VU<br/>#</p>     | <p><b>Potential habitat</b> is permanent and temporary waterbodies, usually with vegetation in or around them, including features such as natural lagoons, permanently or seasonally inundated swamps and wetlands, farm dams, irrigation channels, artificial water-holding sites such as old quarries, slow-flowing stretches of streams and rivers and drainage features.</p> <p><b>Significant habitat</b> is still or very slow flowing water bodies, with at least some vegetation, and a lack of obvious pollutants (oil, chemicals, etc.). See FPA Fauna Technical Note 18 for further guidance on assessing significant habitat.</p> | <p><b>Potential habitat</b> absent (tributary of Schemers Creek is ephemeral, heavily forested and lacks pools or slow-flowing sections).</p> <p><b>Significant habitat</b> absent.</p> <p>This species should not require further consideration.</p>                                                                                                                                                                                                                                                                                                      |
| <p><i>Myiagra cyanoleuca</i><br/>satin flycatcher</p>      | <p>-<br/>-<br/># only</p> | <p>Seasonal migrant (November through march) with habitat scrub, wet and dry sclerophyll forests, woodlands and creeklines (McNab 2022).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <p><b>Potential habitat</b> present (in the form of regrowth-form trees).</p> <p>The species may very occasionally utilise the greater title area as part of a home range and for foraging (nesting possible in main forested area of title) but small-scale development (house extension and establishment / maintenance of a hazard management area in the fringe of already disturbed forest) should not have a significant impact on this aspect of the life history of the species.</p> <p>This species should not require further consideration.</p> |
| <p><i>Neophema chrysostoma</i><br/>blue-winged parrot</p>  | <p>-<br/>VU<br/>#</p>     | <p>Seasonal migrant (October through April) with habitat agricultural lands, crops, dams, paddocks, coastal scrub, open grassy woodlands, heathland and saltmarshes (McNab 2022).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <p><b>Potential habitat</b> marginally present (somewhat atypical in that the site is in wet forest).</p> <p>The species may very occasionally utilise the greater title area as part of a home range and for foraging (nesting</p>                                                                                                                                                                                                                                                                                                                        |



| Scientific name<br>Common name                                           | Status<br>TSPA<br>EPBCA | Tasmanian habitat description<br>(and distribution)                                                                                                                                                                                                                                                                                                                                                                                                                                                | Comments on project area and<br>database records                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------------------------------------------------------|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                          |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | very unlikely as no hollow-bearing trees noted) but small-scale development (house extension and establishment/maintenance of a hazard management area in the fringe of already disturbed forest) should not have a significant impact on this aspect of the life history of the species.<br>This species should not require further consideration                                                                                                                                                                                                                                                                                            |
| <i>Pardalotus quadragintus</i><br>forty-spotted pardalote                | e<br>EN<br>#            | <b>Potential habitat</b> is any forest and woodland supporting <i>Eucalyptus viminalis</i> (white gum) where the canopy cover of <i>E. viminalis</i> is greater than or equal to 10% or where <i>E. viminalis</i> occurs as a localised canopy dominant or codominant in patches exceeding 0.25 ha.<br><b>Significant habitat</b> is all potential habitat associated with known colonies and such habitat.                                                                                        | <b>Potential habitat</b> absent ( <i>Eucalyptus viminalis</i> is absent).<br><b>Significant habitat</b> absent.<br>This species should not require further consideration.                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <i>Perameles gunnii</i> subsp. <i>gunnii</i><br>eastern barred bandicoot | -<br>VU<br>#            | <b>Potential habitat</b> is open vegetation types including woodlands and open forests with a grassy understorey, native and exotic grasslands, particularly in landscapes with a mosaic of agricultural land and remnant bushland.<br><b>Significant habitat</b> is dense tussock grass-sagg-sedge swards, piles of coarse woody debris and denser patches of low shrubs (especially those that are densely branched close to the ground providing shelter) within the core range of the species. | <b>Potential habitat</b> present because of existing house and grassed area (otherwise, steep sloped wet forest is rarely considered as potential habitat).<br><b>Significant habitat</b> absent (habitat not as described).<br>The species may very occasionally utilise the greater title area as part of a home range and for foraging but small-scale development (house extension and establishment/maintenance of a hazard management area in the fringe of already disturbed forest) should not have a significant impact on this aspect of the life history of the species.<br>This species should not require further consideration. |
| <i>Prototroctes maraena</i><br>Australian grayling                       | v<br>VU<br>#            | <b>Potential habitat</b> is all streams and rivers in their lower to middle reaches. Areas above permanent barriers (e.g. Prosser River dam, weirs) that prevent fish migration, are not potential habitat.                                                                                                                                                                                                                                                                                        | <b>Potential habitat</b> absent (tributary of Schemers Creek is ephemeral).<br>This species should not require further consideration.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <i>Pseudemoia pagenstecheri</i><br>tussock skink                         | v<br>-                  | <b>Potential habitat</b> comprises native grasslands dominated by tussock-forming grasses.                                                                                                                                                                                                                                                                                                                                                                                                         | <b>Potential habitat</b> absent (site is heavily not native grassland).<br>This species should not require further consideration.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <i>Pteropus poliocephalus</i><br>grey-headed flying-fox                  | -<br>VU                 | Species is a vagrant to Tasmania and listed because of a review of database records and other sightings (Driessen 2010) that reported an historical sighting from Woodbridge in 1946.                                                                                                                                                                                                                                                                                                              | Not applicable – vagrant species only.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <i>Sarcophilus harrisii</i><br>Tasmanian devil                           | e<br>EN<br>#            | <b>Potential habitat</b> all terrestrial native habitats, forestry plantations and pasture. Devils require shelter (e.g. dense vegetation, hollow logs, burrows or caves) and hunting habitat                                                                                                                                                                                                                                                                                                      | <b>Potential habitat</b> present.<br><b>Significant habitat</b> absent.<br>The species may very occasionally utilise the greater title area as part of a                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |



| Scientific name<br>Common name                                                | Status<br>TSPA<br>EPBCA | Tasmanian habitat description<br>(and distribution)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Comments on project area and<br>database records                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------------------------------------------------------------|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                               |                         | <p>(open understorey mixed with patches of dense vegetation) within their home range (427 km<sup>2</sup>).</p> <p><b>Significant habitat</b> is a patch of potential denning habitat where three or more entrances (large enough for a devil to pass through) may be found within 100 m of one another, and where no other potential denning habitat with three or more entrances may be found within a 1 km radius, being the approximate area of the smallest recorded devil home range. <b>Potential denning habitat</b> is areas of burrowable, well-drained soil, log piles or sheltered overhangs such as cliffs, rocky outcrops, knolls, caves and earth banks, free from risk of inundation and with at least one entrance through which a devil could pass.</p> | <p>home range and for foraging but small-scale development (house extension and establishment/maintenance of a hazard management area in the fringe of already disturbed forest) should not have a significant impact on this aspect of the life history of the species.</p> <p>This species should not require further consideration but see <b>FINDINGS Threatened fauna</b> for more details.</p>                                                                                                                                                                                                                                                          |
| <p><i>Tyto novaehollandiae</i><br/>subsp. <i>castanops</i><br/>masked owl</p> | <p>e<br/>VU<br/>#</p>   | <p><b>Potential habitat</b> is all areas with trees with large hollows (≥15 cm entrance diameter). Remnants and paddock trees (in any dry or wet forest type) in agricultural areas may constitute potential habitat.</p> <p><b>Significant habitat</b> is any areas within the core range of native dry forest with trees over 100 cm dbh with large hollows (≥15 cm entrance diameter).</p>                                                                                                                                                                                                                                                                                                                                                                            | <p><b>Potential habitat</b> absent (large trees with large hollows absent – in fact, no hollow-bearing trees were recorded).</p> <p><b>Significant habitat</b> absent.</p> <p>The species may very occasionally utilise the greater title area as part of a home range and for foraging but small-scale development (house extension and establishment/maintenance of a hazard management area in the fringe of already disturbed forest) should not have a significant impact on this aspect of the life history of the species.</p> <p>This species should not require further consideration but see <b>FINDINGS Threatened fauna</b> for more details.</p> |

**APPENDIX E. DNRET's *Natural Values Atlas* report for study area**

Appended as pdf file.

**APPENDIX F. Forest Practices Authority's *Biodiversity Values Atlas* report for study area**

Appended as pdf file.

**APPENDIX G. CofA's *Protected Matters* report for study area**

Appended as pdf file.

**ATTACHMENTS**

- .shp file of revised vegetation mapping
- .dwg file of tree data

**NATURAL VALUES ASSESSMENT OF 300 LLANTWIT ROAD  
(PID 7858210; C.T. 234363/1; LPI JZP37), WOODBRIDGE,  
TASMANIA**



**Environmental Consulting Options Tasmania (ECOtas) for  
Esbjorn & Karen Torstensson**

**2 October 2023**

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## **CITATION**

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## **AUTHORSHIP**

Field assessment: Mark Wapstra

Report production: Mark Wapstra

Habitat and vegetation mapping: Mark Wapstra

Base data for mapping: LISTmap

Digital and aerial photography: Mark Wapstra, GoogleEarth, ESRI World Imagery, LISTmap

## **DISCLAIMER**

Except where otherwise stated, the opinions and interpretations of legislation and policy expressed in this report are made by the author(s) and do not necessarily reflect those of the relevant agency. The client should confirm management prescriptions with the relevant agency before acting on the content of this report. This report and associated documents do not constitute legal advice.

Note that any reference to the Department of Primary Industries, Parks, Water & Environment (DPIPWE) now refers to the Department of Natural Resources and Environment Tasmania.

## **ACKNOWLEDGEMENTS**

Evan Davies & Richard Loney (Dock4 Architects) provided background information on the land use proposal. Bruce Haywood (Land Advice) provided input into the relationship between bushfire hazard management requirements and impacts to natural values.

## **COVER ILLUSTRATION**

Looking east across existing house towards D'Entrecasteaux Channel.

Please note: the blank pages in this document are deliberate to facilitate double-sided printing.





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## SUMMARY

### **General**

Esbjorn & Karen Torstensson (owners) engaged Environmental Consulting Options Tasmania (ECOtas) to undertake a natural values assessment of [REDACTED] [REDACTED] [REDACTED] (PID 7858210; C.T. 234363/1; LPI JZP37), Woodbridge, Tasmania, primarily to ensure that the requirements of the identified natural values are appropriately considered during any further project planning under local, State and Commonwealth government approval protocols.

### **Site assessment**

The natural values assessment of the study area was undertaken by Mark Wapstra (ECOtas) on [REDACTED] (PID 7858210; C.T. 234363/1; LPI JZP37), Woodbridge.

### **Summary of key findings**

#### Threatened flora

- No plant species listed as threatened on the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA) and/or the Tasmanian *Threatened Species Protection Act 1995* (TSPA) were detected, or are known from database information, from the study area.

#### Threatened fauna

- No fauna species listed as threatened on the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA) and/or the Tasmanian *Threatened Species Protection Act 1995* (TSPA) were detected, or are known from database information, from the study area.
- The study area supports potential habitat (to varying degrees of marginality) for the following species:
  - *Sarcophilus harrisi* (Tasmanian devil);
  - *Dasyurus maculatus* subsp. *maculatus* (spotted-tailed quoll);
  - *Dasyurus viverrinus* (eastern quoll);
  - *Perameles gunnii* subsp. *gunnii* (eastern barred bandicoot);
  - *Lissotes menalcas* (Mt Mangana stag beetle);
  - *Accipiter novaehollandiae* (grey goshawk);
  - *Aquila audax* subsp. *fleayi* (wedge-tailed eagle); and
  - *Tyto novaehollandiae* subsp. *castanops* (Tasmanian masked owl).

#### Vegetation types

- The study area supports the following TASVEG mapping units:
  - *Eucalyptus regnans* forest (TASVEG code: WRE); and
  - urban areas (TASVEG code: FUR).



- Occurrences of WRE do not equate to a native vegetation community listed as threatened on Schedule 3A of the *Tasmanian Nature Conservation Act 2002*.
- Occurrences of WRE do not equate to a threatened ecological community under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA).
- As a vegetation type, occurrences of WRE are classified as low priority biodiversity values under Table E10.1 of the Biodiversity Code of the *Kingborough Interim Planning Scheme 2015*.

#### Weeds

- No plant species classified as declared weeds within the meaning of the *Tasmanian Weed Management Act 1999* (*Biosecurity Act 2019*) were detected from the study area.

#### Plant disease

- No evidence of *Phytophthora cinnamomi* (PC, rootrot) was recorded from the study area.
- No evidence of myrtle wilt was recorded from the study area.
- No evidence of myrtle rust was recorded from the study area.

#### Animal disease (chytrid)

- The study area does not support habitat types strongly associated with amphibian species (except marginally along the tributary of Schemers Creek, which will remain wholly undisturbed).

#### Individual trees

- The study area supports a limited number of trees with features that meet the criteria for very high conservation value trees within the intent of Table E10.1 of the Biodiversity Code of the *Kingborough Interim Planning Scheme 2015* (but noting none are proposed for removal or any form of disturbance).

### **Recommendations**

The recommendations provided below are a summary of those provided in relation to each of the natural values described in the main report. The main text of the report provides the relevant context for the recommendations.

#### Vegetation types

In general terms, minimising the extent of “clearance and conversion” and/or “disturbance” of native vegetation is recommended, acknowledging constraints imposed by the location of the existing dwelling and access, setbacks, the lot’s configuration, slopes, service and access requirements and contemporary bushfire hazard management requirements.

#### Threatened flora

Not applicable – no threatened flora present.

#### Threatened fauna

Apart from the generic recommendation to minimise the extent of “clearance and conversion” and/or “disturbance” to native vegetation, it is also recommended that the extent of loss of individual eucalypts is minimised with an emphasis on the following:

- individuals of any species with a DBH greater than 100 cm.

### Weed and disease management

Any works, especially access and service provision, will provide an opportunity for weed establishment by mobilising soil-stored seed and providing fresh bare ground ideal for seedling establishment. "Starting clean" is good practice (i.e. machinery, vehicle and equipment hygiene prior to entering the site).

Owner-occupation is the most likely practical means of achieving good long-term weed management outcomes through vigilance and control.

### Legislative and policy implications

A permit under Section 51 of the Tasmanian *Threatened Species Protection Act 1995* (TSPA) should not be required.

A formal referral to the relevant Commonwealth agency under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA) should not be required.

Initial review of the relevant provisions of the Biodiversity Code of the *Kingborough Interim Planning Scheme 2015* indicates satisfaction of E10.7.1 P1 with minor recommendations provided in relation to management of moderate priority biodiversity values (individual trees).





## **INTRODUCTION**

### ***Purpose***

Esbjorn & Karen Torstensson (owners) engaged Environmental Consulting Options Tasmania (ECOtas) to undertake a natural values assessment of [REDACTED] [REDACTED] [REDACTED] (PID 7858210; C.T. 234363/1; LPI JZP37), Woodbridge, Tasmania, primarily to ensure that the requirements of the identified natural values are appropriately considered during any further project planning under local, State and Commonwealth government approval protocols.

### ***Scope***

This report relates to:

- flora and fauna species of conservation significance, including a discussion of listed threatened species (under the Tasmanian *Threatened Species Protection Act 1995* and/or the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*) potentially present, and other species of conservation significance/interest;
- vegetation types (forest and non-forest, native and exotic) present, including a discussion of the distribution, condition, extent, composition and conservation significance of each community;
- plant and animal disease management issues;
- weed management issues; and
- a discussion of some of the policy and legislative implications of the identified natural values.

This report follows the government-produced *Guidelines for Natural Values Surveys – Terrestrial Development Proposals* (DPIPWE 2015) in anticipation that the report (or extracts of it) may be required as part of various approval processes.

The report format should also be applicable to other assessment protocols as required by the relevant Commonwealth agency (for any referral/approval that may be required under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*), which is unlikely to be required in this case.

More specifically, this assessment and report have been prepared to address specific provisions of the *Kingborough Interim Planning Scheme 2015*, with particular reference to the natural values/biodiversity provisions of the Biodiversity Code.

### ***Limitations***

The natural values assessment was undertaken on 29 Aug. 2023 & 20 Sep. 2023. Many plant species have ephemeral or seasonal growth or flowering habits, or patchy distributions (at varying scales), and it is possible that some species were not recorded for this reason. However, every effort was made to sample the range of habitats present in the survey area to maximise the opportunity of recording most species present (particularly those of conservation significance). Late spring and into summer is usually regarded as the most suitable period to undertake most botanical assessments. While some species have more restricted flowering periods, a discussion of the potential for the site to support these is presented. In this case, I believe that the survey was

appropriately timed to detect the species with a highest priority for conservation management in this part of the State, particularly with respect to the disturbance history of the site.

The survey was also limited to vascular species: species of mosses, lichens and liverworts were not recorded. However, a consideration is made of threatened species (vascular and non-vascular) likely to be present (based on habitat information and database records) and reasons presented for their apparent absence.

Surveys for threatened fauna were largely limited to an examination of “potential habitat” (i.e. comparison of on-site habitat features to habitat descriptions for threatened fauna), and detection of tracks, scats and other signs.

## **Permit**

Any plant material was collected under DNRET permit TFL 22382 (in the name of Mark Wapstra). Relevant data will be entered into DNRET’s *Natural Values Atlas* database by the author. Some plant material may be lodged at the Tasmanian Herbarium by the author.

No vertebrate or invertebrate material was collected. A permit is not required to undertake the type of habitat-level assessment described herein.

## **STUDY AREA**

### **Overview – cadastral and land use details**

The study area (Figures 1-3) comprises the private title of [REDACTED] Woodbridge, Tasmania, with the following cadastral details:

- PID: 7858210;
- C.T.: 234363/1; and
- LPI: JZP37.

LISTmap data indicates a computed area of 102,775.88 m<sup>2</sup> and a measured area of 106,989 m<sup>2</sup> (i.e. ca. 10 ha).

Land tenure and other categorisations of the study area are as follows:

- Kingborough municipality, with the subject title zoned as Environmental Living pursuant to the *Kingborough Interim Planning Scheme 2015* (Figure 4), wholly subject to the Biodiversity Protection Area overlay (Figure 5), partly subject to the Waterway and Coastal Protection Area overlay along the tributary of Schemers Creek (Figure 5) and wholly subject to the Scenic Landscape Area overlay (not shown on Figure 5); and
- South East Bioregion, according to the IBRA 7 bioregions used by most government agencies.

The title is bound to the west and east by private titles (undeveloped forested titles); to the immediate south by a road title, south of which is a residentially-occupied but otherwise forested private title (accessed by the existing shared driveway); to the north by an undeveloped private title (forested); to the northeast by a small road title; and to the north by the Woodbridge Hill Conservation Area (Figure 6) under the jurisdiction of the Parks and Wildlife Service.

The southeast corner of the subject title has been long-developed with a residential dwelling and associated domestic elements including a relatively large cleared area and ornamental plantings



(Plates 1-6), accessed by a well-formed internal gravel drive (Plates 7 & 8) in turn accessed from a sealed section of Llantwit Road (Plates 9 & 10).

The proposal is to make extensions to the existing dwelling requiring establishment of a hazard management area (BAL-19) including minor works to establish a hard stand and turning area. No works to Llantwit Road are required (B. Haywood pers. comm.) to satisfy bushfire hazard management requirements. Establishment and maintenance of a BAL-19 hazard management area will require minor modification to the structure of fringing native forest (very small area only) but no removal of any trees with a DBH of 25 cm or more (B. Haywood pers. comm.).



**Plates 1-6.** Existing residentially-occupied part of subject title





**Plate 7.** (LHS) Start of well-formed gravel drive into subject title to right with access to adjacent title to left  
**Plate 8.** Well-formed internal gravel drive to existing house



**Plates 9 & 10.** Existing sealed access along Llantwit Road

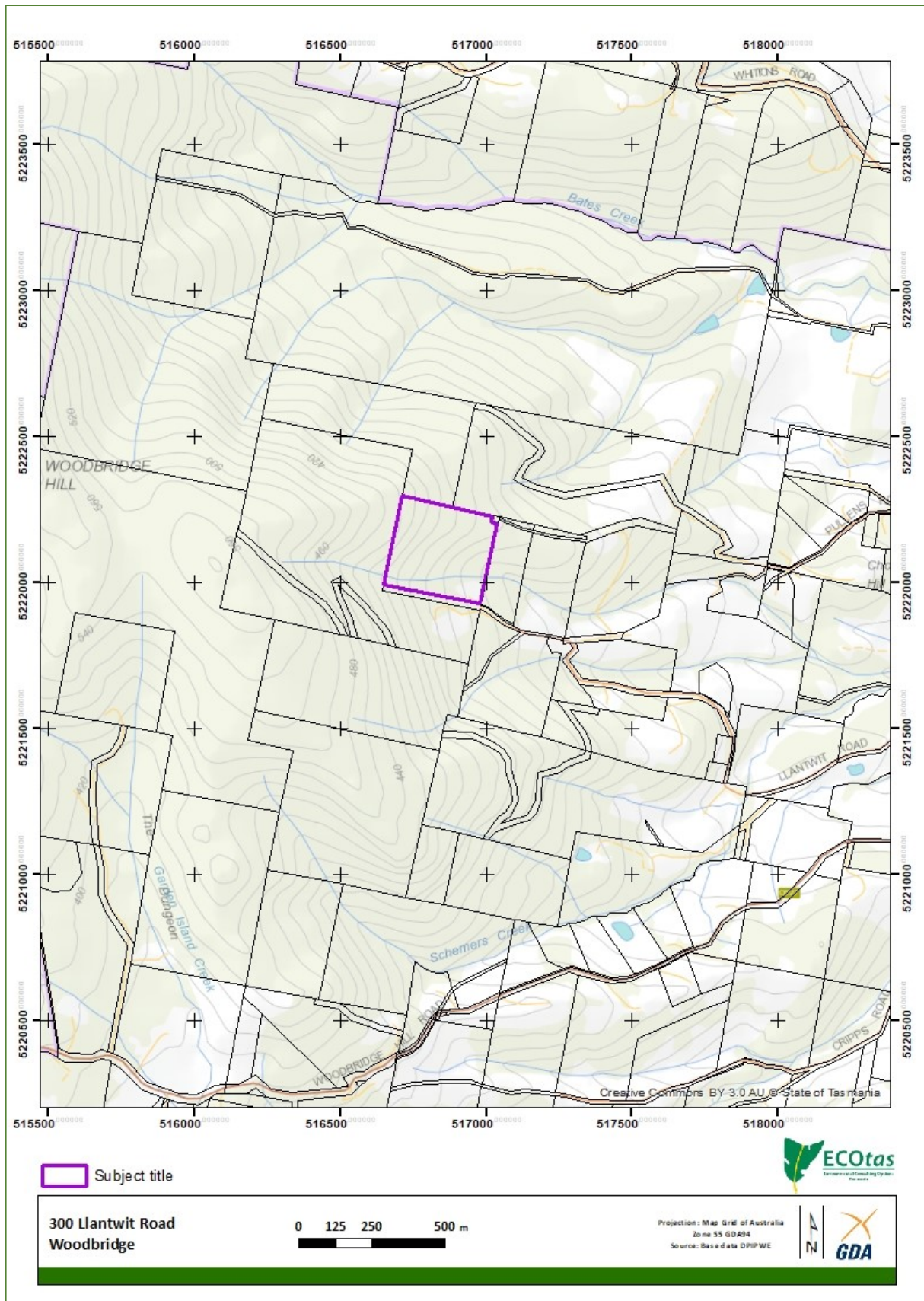
### **Other site features**

The subject title is on a steep generally east/southeast-facing slope with elevation between ca. 235 m a.s.l. (exit point of tributary of Schemers Creek on eastern boundary) to ca. 405 m a.s.l. (western boundary). Apart from the established domestic area (see Plates 1-6) and internal driveway (see Plates 7 & 8), the title is wholly forested with wet sclerophyll forest (Plates 1-10).

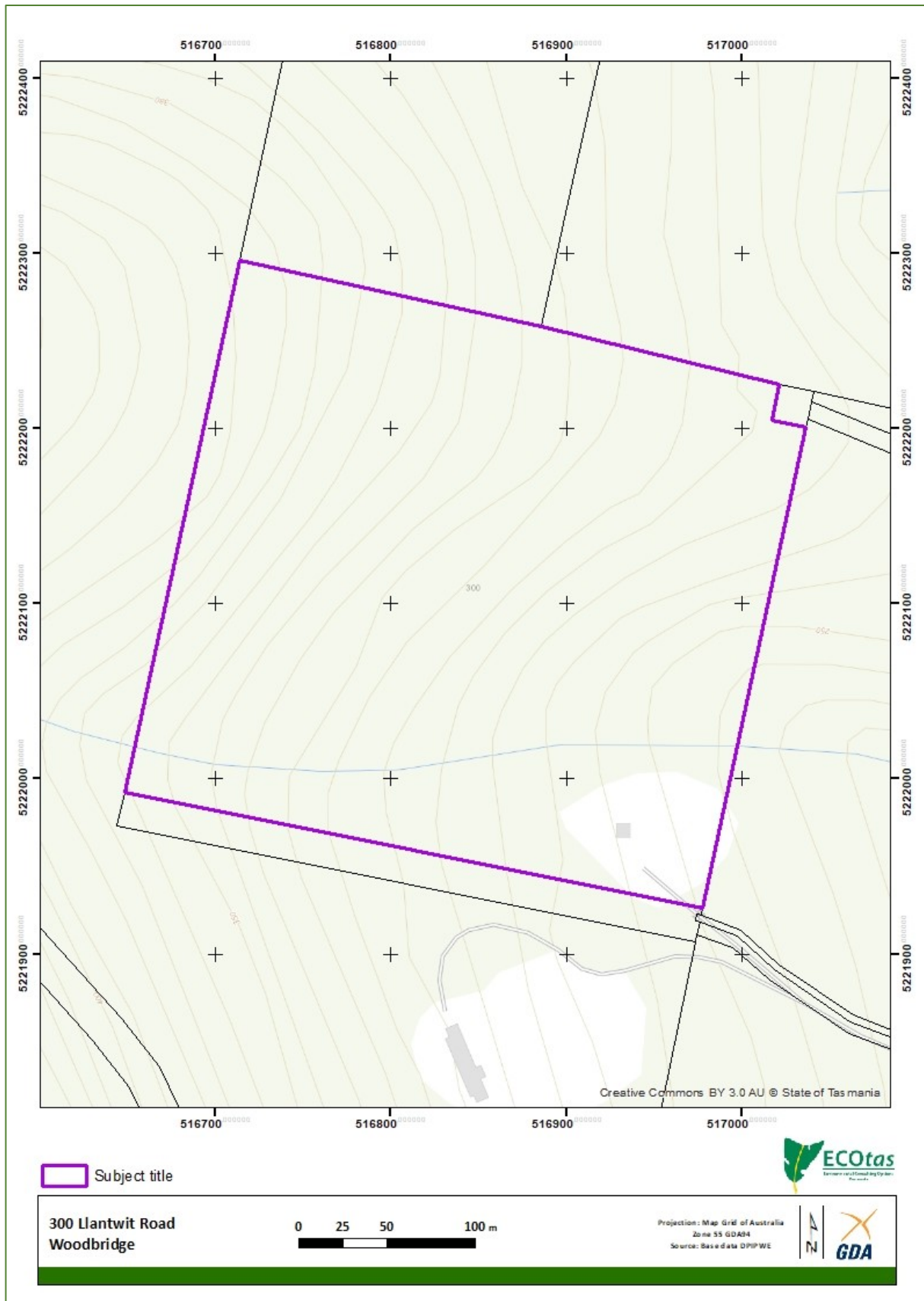
LISTmap's Fire History layer (Figure 7) indicates that the title and surrounds were all affected by the Feb. 1967 wildfire event, which is evidenced in the overall maturing regrowth structure of the native forest (Plates 1-10).

The geology of the title is important to consider because it can have a strong influence on the classification of vegetation and the potential occurrence of threatened flora (and to a lesser extent, threatened fauna). In this case, the 1:250,000 scale geological mapping (Figure 8) indicates the title to be wholly underlain by Jurassic-age "dolerite (tholeiitic) with locally developed granophyre" (geocode: Jd), which was confirmed informally by reference to soil profiles and exposed rock in roadside cuttings and along the tributary of Schemers Creek.



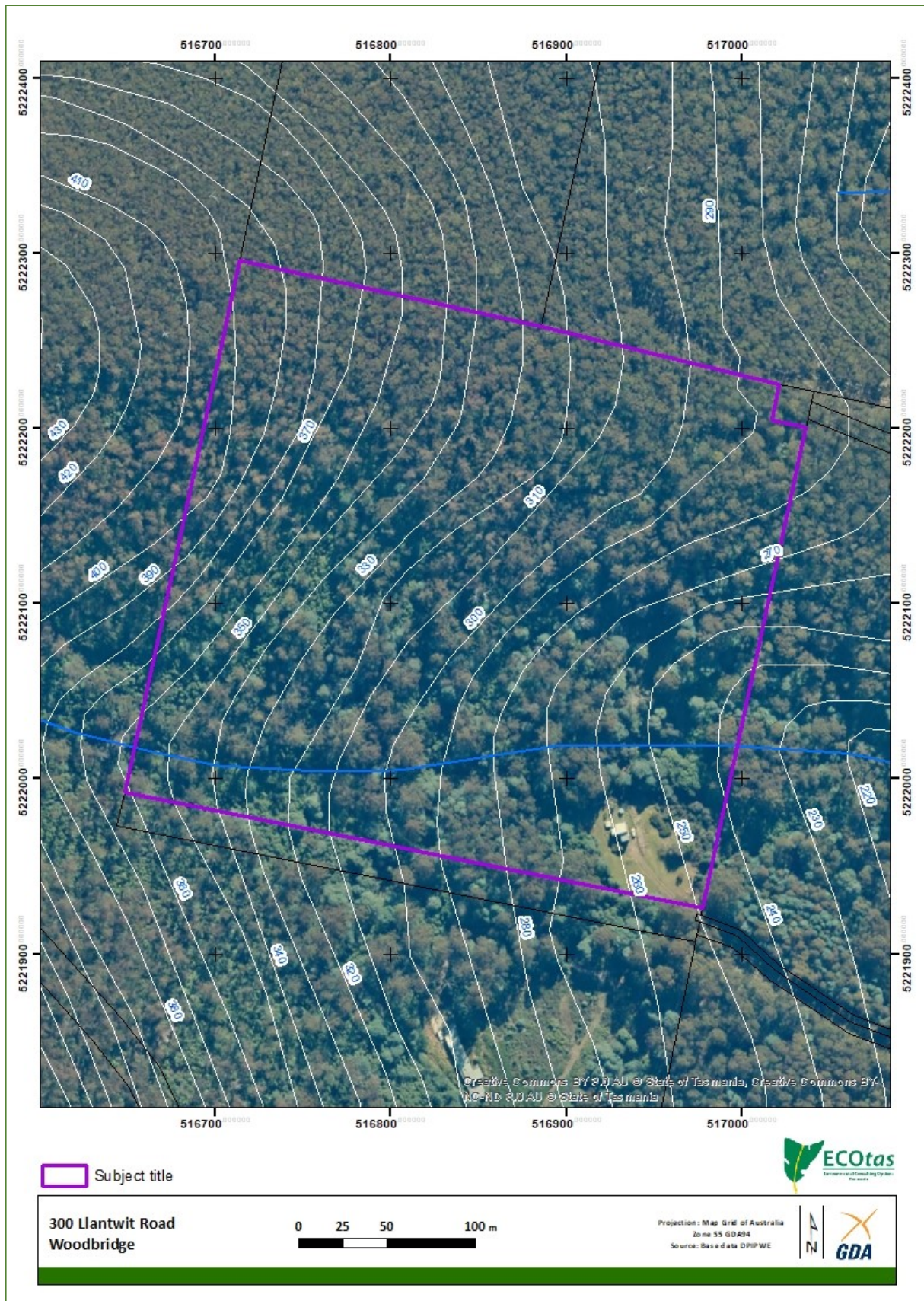


**Figure 1.** General location of study area



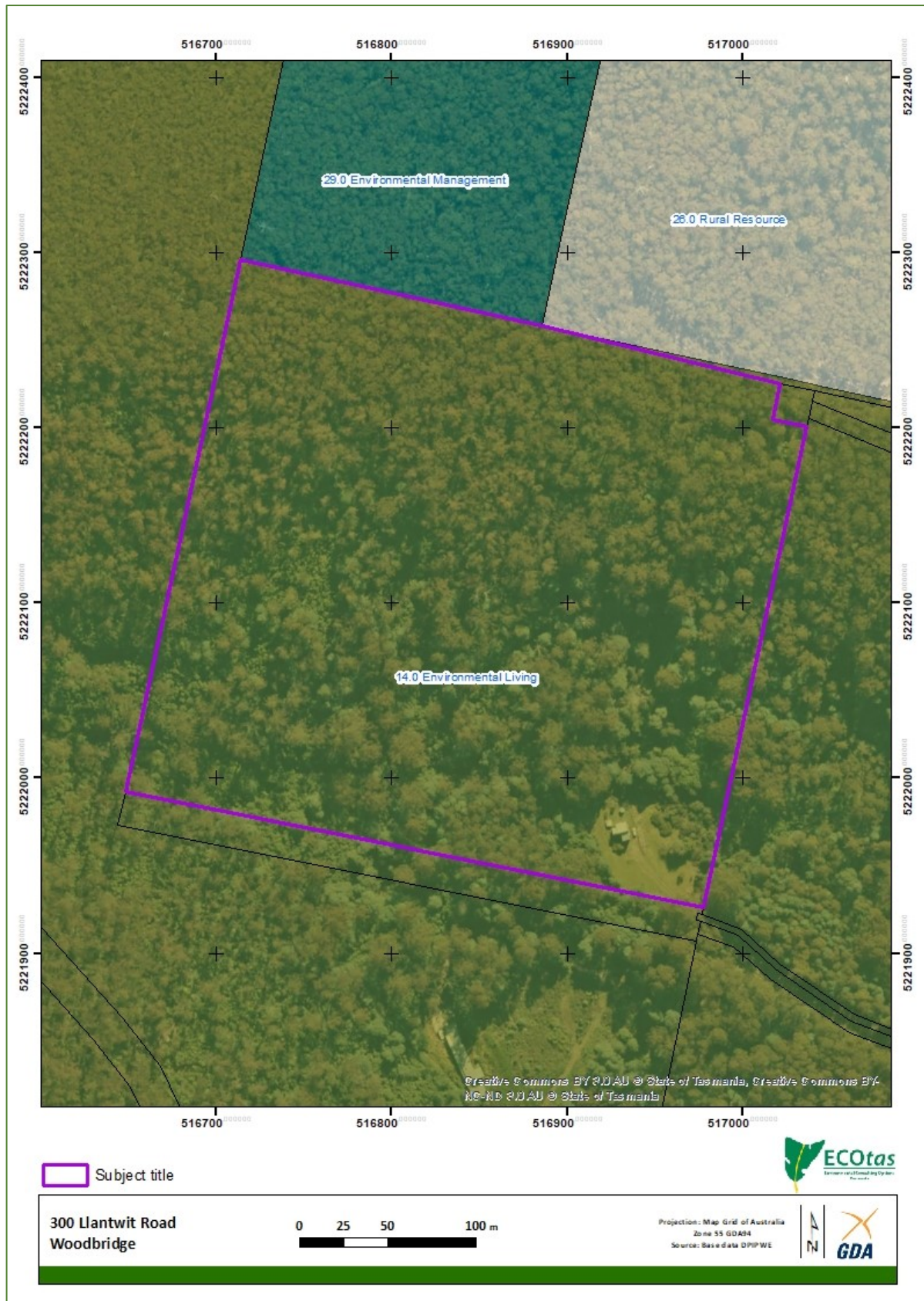
**Figure 2.** Detailed location of study area showing general topographic and cadastral features





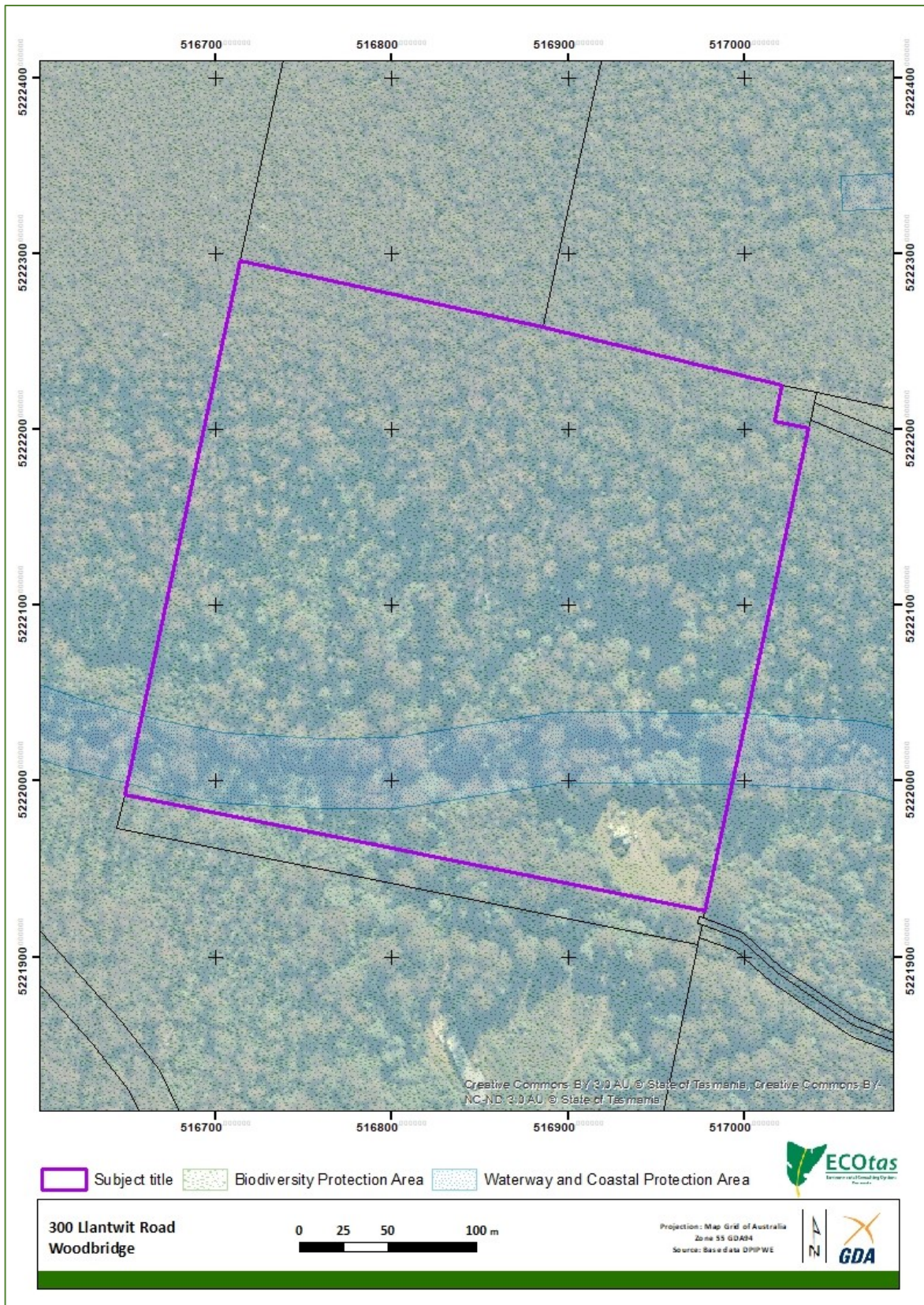
**Figure 3.** Detailed location of study area showing recent aerial imagery





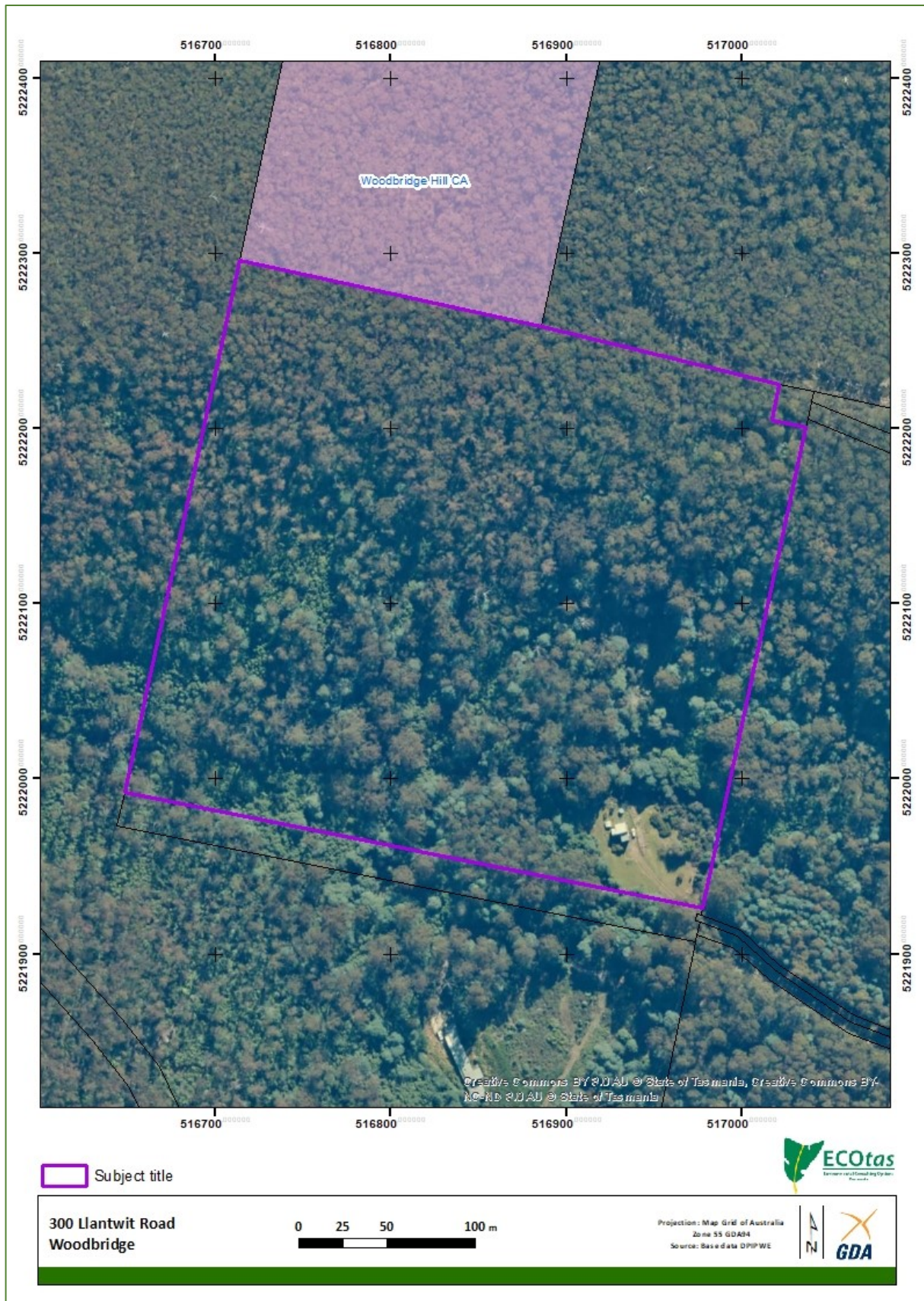
**Figure 4.** Current zoning of study area and surrounds pursuant to the *Kingborough Interim Planning Scheme 2015*





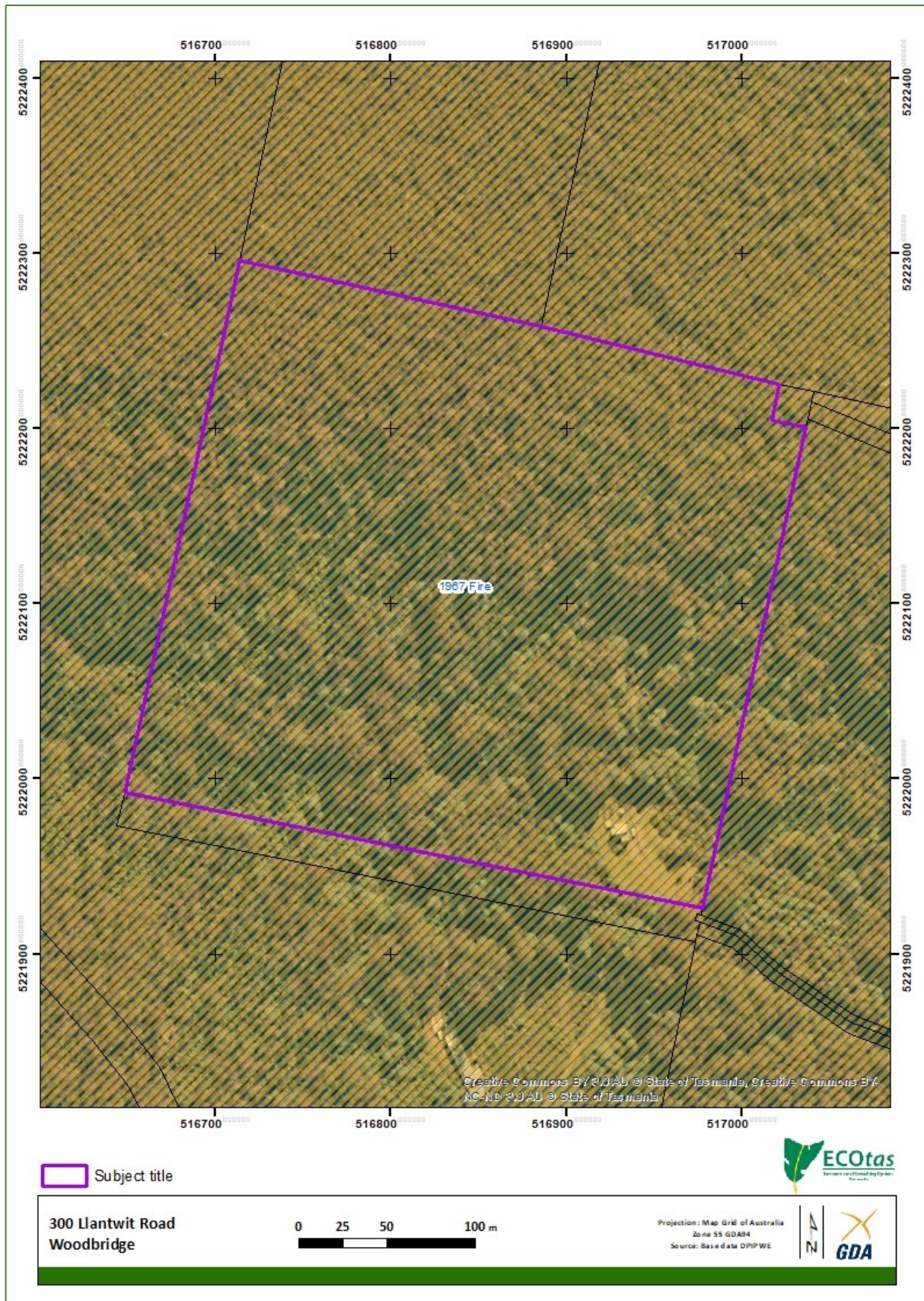
**Figure 5.** Current extent of Biodiversity Protection Area (green stippling – whole area) and Waterway and Coastal Protection Area (blue stippling) overlays within study area and surrounds pursuant to the *Kingborough Interim Planning Scheme 2015*





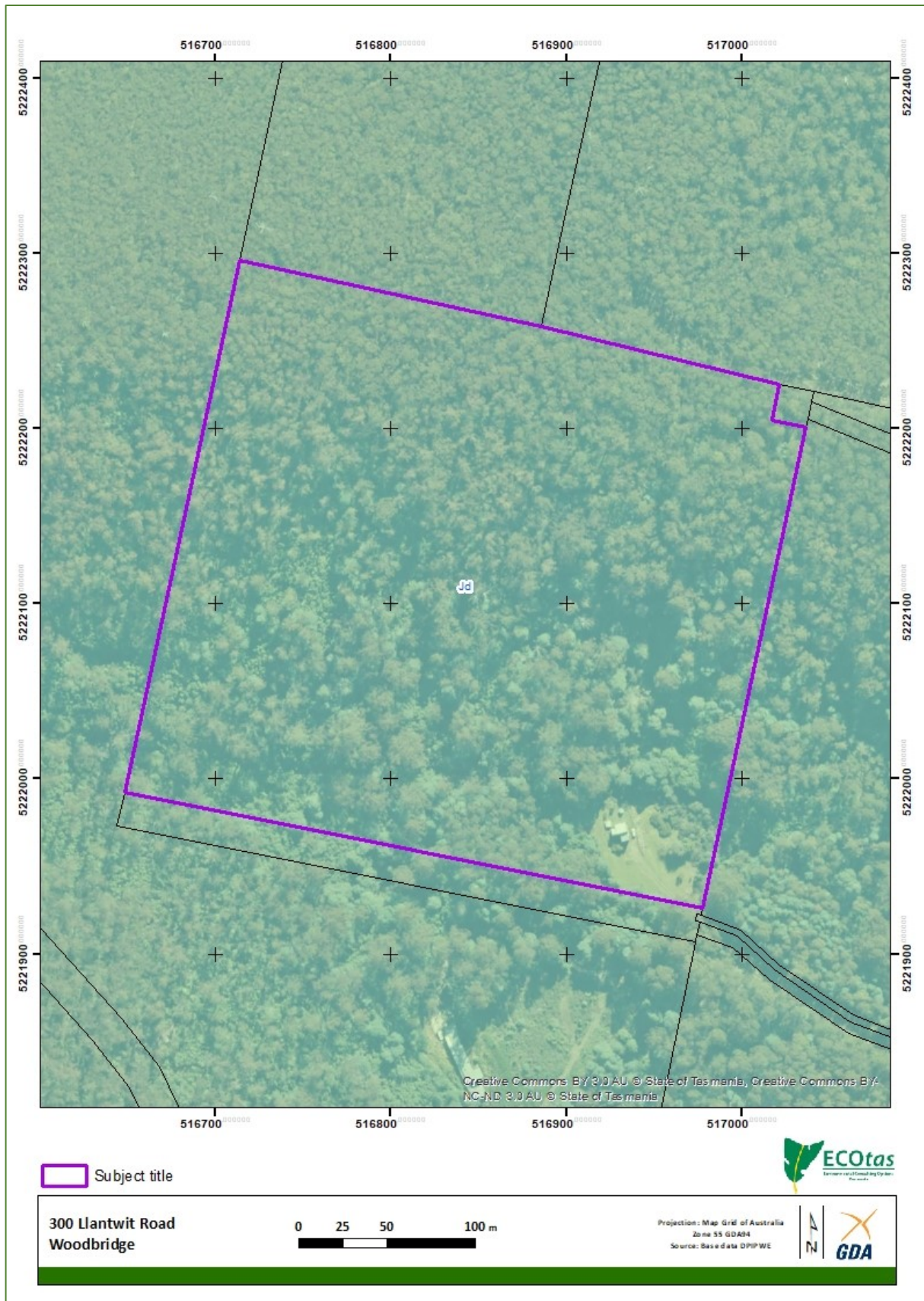
**Figure 6.** Adjacent formal reserve





**Figure 7.** Fire history of study area and surrounds





**Figure 8.** Geology (1:250,000 scale) of study area and surrounds (refer to text for code)



## METHODS

### ***Nomenclature***

All grid references in this report are in GDA94, except where otherwise stated.

Vascular species nomenclature follows de Salas & Baker (2023) for scientific names and Wapstra et al. (2005+) for common names. Fauna species scientific and common names follow the listings in the cited *Natural Values Atlas* report (DNRET 2023a).

Vegetation classification follows TASVEG 4.0, as described in *From Forest to Fjaeldmark: Descriptions of Tasmania's Vegetation* (Kitchener & Harris 2013+).

### ***Preliminary investigation***

Available sources of previous reports, threatened flora records, vegetation mapping and other potential environmental values were interrogated. These sources include:

- Tasmanian Department of Natural Resources and Environment Tasmania's *Natural Values Atlas* records for threatened flora and fauna (GIS coverage maintained by the author current as at date of report);
- Tasmanian Department Natural Resources and Environment Tasmania's *Natural Values Atlas* report ECOTas\_300Llantwit for a polygon defining the study area (centred on 516844mE 5222109mN), buffered by 5 km, dated 28 Aug. 2023 (DNRET 2023a) – Appendix E;
- Forest Practices Authority's *Biodiversity Values Database* report, specifically the species' information for grid reference centroid 516844mE 5222109mN (i.e. a point defining the centre of the NVA report), buffered by 5 km and 2 km for threatened fauna and flora records, respectively, hyperlinked species' profiles and predicted range boundary maps, dated 28 Aug. 2023 (FPA 2023) – Appendix F;
- Commonwealth *Protected Matters Report* for a polygon defining the study area, buffered by 5 km, dated 28 Aug. 2023 (CofA 2022) – Appendix G;
- TASVEG vegetation coverages (as available through GIS coverage and via LISTmap);
- GoogleEarth, ESRI World Imagery and LISTmap aerial orthoimagery; and
- other sources listed in tables and text as indicated.

### ***Field assessment***

The natural values were assessed on 29 Aug. 2023 (initial assessment by Mark Wapstra) and 20 Sep. 2023 (follow-up assessment by Mark Wapstra in company of Bruce Haywood to discuss management of fringing vegetation and individual trees).

Cadastral data uploaded to the iGIS application guided the in-field assessment (most boundaries not defined by fences or other obvious survey markers). Hand-held GPS (Garmin GPSMAP 66sr) was used to waypoint any natural values features. The assessment was focussed on the part of the title proposed for development with the balance of the steep forested slopes not examined.

### Vegetation classification

Vegetation was classified by waypointing vegetation transitions for later comparison to aerial imagery. The structure and composition of the vegetation type was described using a nominal 30 m radius plot at a representative site within the vegetation type.

### Threatened flora

With reference to the threatened flora, the survey included consideration of the most likely habitats for such species. Further methods are not provided as no such species were detected.

### Threatened fauna

Surveys for threatened fauna were largely limited to an examination of “potential habitat” (i.e. comparison of on-site habitat features to habitat descriptions for threatened fauna), and detection of tracks, scats and other signs.

See also notes on individual trees under **FINDINGS Other natural values** Individual trees.

### Weed and hygiene issues

The study area was assessed with respect to plant species classified as declared weeds under the Tasmanian *Weed Management Act 1999 (Biosecurity Act 2019)*, Weeds of National Significance (WoNS) or “environmental weeds” (author opinion and as included in *A Guide to Environmental and Agricultural Weeds of Southern Tasmania*, NRM South 2017).

The study area was assessed with respect to potential impacts of plant and animal pathogens, by reference to habitat types and field symptoms.

## **FINDINGS**

### ***Vegetation types***

#### Comments on TASVEG mapping

This section, which comments on the existing TASVEG mapping for the study area, is included to highlight the differences between existing mapping and the more recent mapping from the present study to ensure that any parties assessing land use proposals (via this report) do not rely on existing mapping. Note that TASVEG mapping, which was mainly a desktop mapping exercise based on aerial photography, is often substantially different to ground-truthed vegetation mapping, especially at a local scale. An examination of existing vegetation mapping is usually a useful pre-assessment exercise to gain an understanding of the range of habitat types likely to be present and the level of previous botanical surveys.

There are three relevant versions of TASVEG that can be considered as part of this review. TASVEG Live is the most up-to-date version, available online via LISTmap. It is generally very similar to TASVEG 4.0, especially at a local lot-level scale, but can include localised and/or project-based updates that can be informative. TASVEG 3.0, the immediately preceding version of the vegetation mapping layer, is in theory superseded by TASVEG 4.0. However, examination of this layer can be useful because it was the primary source of information that was included in the Regional Ecosystem Model that guided the priority vegetation area overlay of the *Tasmanian Planning Scheme* in several municipalities. It was also the base layer used by some councils (e.g. Kingborough Council) to develop their own vegetation mapping layer, and can explain the source of requests for assessments.

In this case, TASVEG 3.0 (Figure 9) is quite different to TASVEG 4.0/Live (Figure 10), these versions summarised as follows:

- extra-urban miscellaneous (TASVEG code: FUM)  
FUM is mapped to somewhat correspond with the existing residentially-developed part of the title, although it fails to capture some of the obviously cleared area and extends off-title into more intact forest. The use of the FUM code for a residential part of a title is also erroneous as such sites are usually best ascribed to urban areas (TASVEG code: FUR).
- broad-leaf scrub (TASVEG code: SBR)  
Three polygons of SBR are mapped within and across the title, all three based on old vegetation data (PRE\_TASVEG\_1\_2-DPIPWE-2005). Occurrences of SBR can technically equate to the native vegetation community called *Notelaea – Pomaderris – Beyeria* Forest that is listed as threatened under Schedule 3A of the *Tasmanian Nature Conservation Act 2002*, this restricted to natural occurrences of SBR (e.g. deeply-incised gully sites) rather than anthropogenically-induced occurrences (i.e. those sites where wet forest shrub species become dominant after clearing). In this case, neither scenario was ever particularly relevant with the areas assigned to SBR much better subsumed into the broader forest classification or recognised as *Acacia dealbata* forest (TASVEG code: NAD).
- *Leptospermum* scrub (TASVEG code: SLW)  
SLW is a deprecated mapping unit under TASVEG 4.0 and later versions but a polygon was mapped across the eastern boundary of the title and further to the southeast. Aerial imagery suggests this polygon was better subsumed into the broader forest classification or recognised as *Acacia dealbata* forest (TASVEG code: NAD), the former adopted under TASVEG 4.0/Live.
- *Eucalyptus obliqua* dry forest (TASVEG code: DOB)  
DOB is mapped across the northeast and northwest corners of the title, the polygon extending considerably to forested areas to the north. Aerial imagery and topographic maps suggest the areas assigned to DOB are more likely to be WOB or WRE but this part of the title was not examined.
- *Eucalyptus obliqua* wet forest (undifferentiated) (TASVEG code: WOU) & *Eucalyptus obliqua* with broad-leaf shrubs (TASVEG code: WOB)  
TASVEG 3.0 maps a broad band of WOU across the northern part of the title, this re-coded to WOB under TASVEG 4.0/Live, the latter polygon now mapped across most of the title because of the re-coding of NAD to WOB.
- *Acacia dealbata* forest (TASVEG code: NAD)  
TASVEG 3.0 maps much of the title as NAD, which somewhat reflects aerial imagery that shows the distinctive “signature” of *Acacia dealbata*, although there is obviously a high component of *Eucalyptus* throughout. NAD is re-coded to WOB under later versions of TASVEG.



Vegetation mapping maintained by Kingborough Council (Figure 11) is configurationally identical to TASVEG 3.0 with most polygons coded similarly, the most notable difference being that the polygon of NAD under TASVEG 3.0 was re-coded to *Eucalyptus obliqua* forest over *Leptospermum* (TASVEG code: WOL), the basis for which is not understood given the topography and part of the State.

### Vegetation types recorded as part of the present study

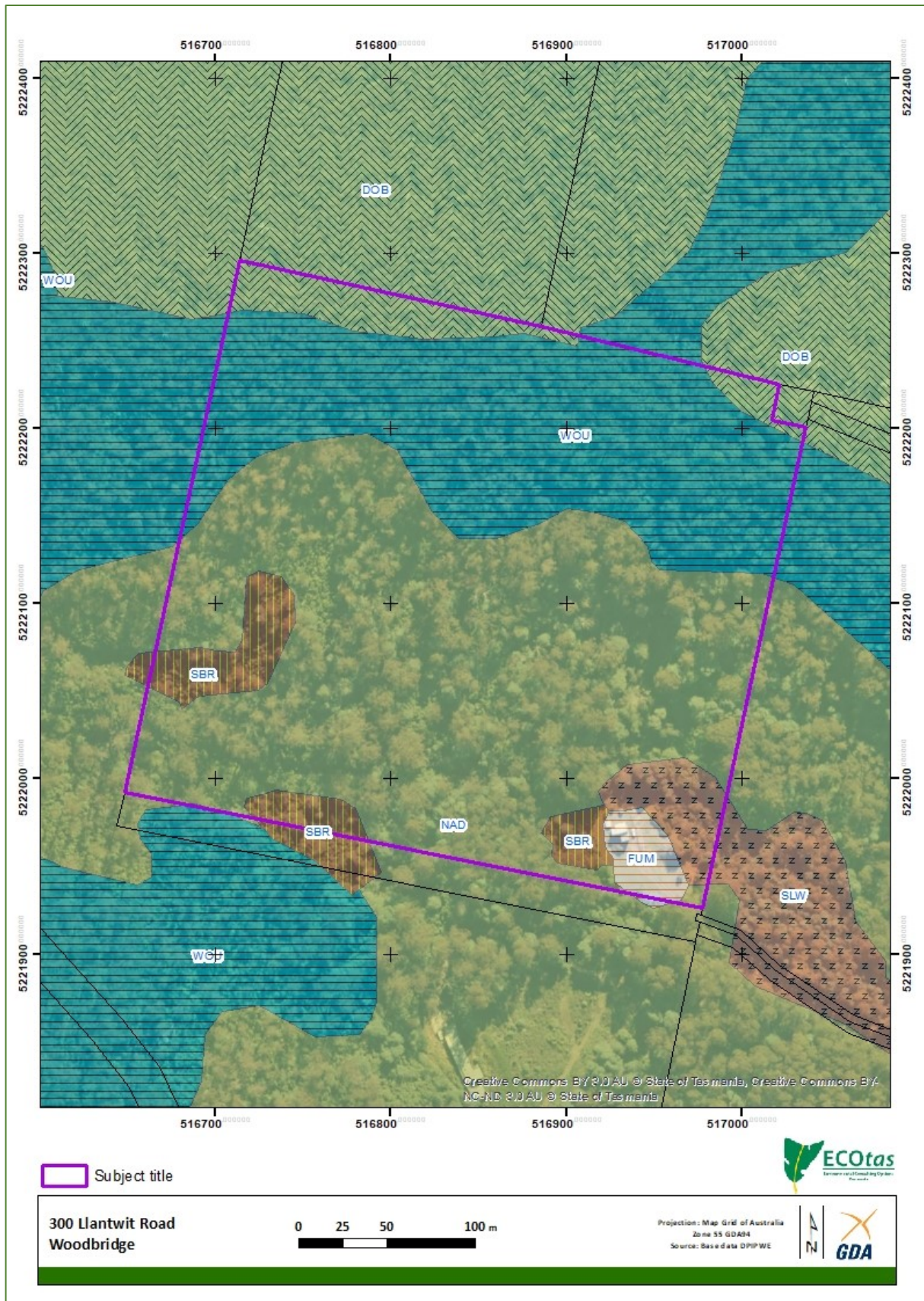
The vegetation types have been classified according to TASVEG mapping units, as described in *From Forest to Fjaeldmark: Descriptions of Tasmania's Vegetation* (Kitchener & Harris 2013+). Table 1 provides information on the mapping units identified from the study area (Figure 12). Refer to Appendix A for a more detailed description of the native vegetation mapping unit identified from the part of the title proposed for development.

**Table 1.** Vegetation mapping unit present in study area

[conservation status: NCA – as per Schedule 3A of the Tasmanian *Nature Conservation Act 2002*, using units described by Kitchener & Harris (2013+), relating to TASVEG mapping units (DNRET 2023b); EPBCA – as per the listing of ecological communities on the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*, relating to communities as described under that Act, but with equivalencies to TASVEG units]

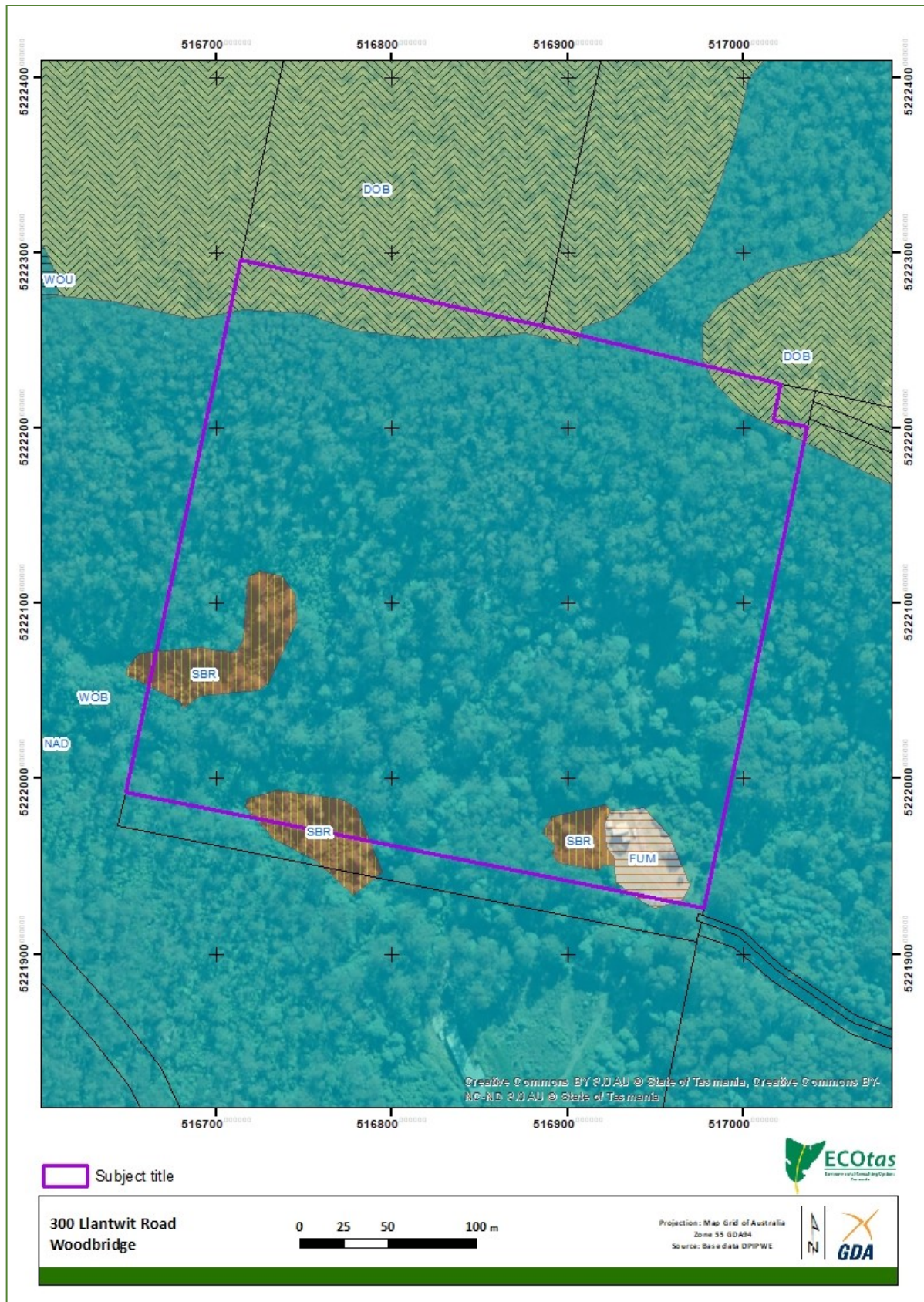
| TASVEG equivalent<br>(Kitchener & Harris 2013+) | Conservation priority<br>TASVEG<br>EPBCA | Comments                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------------------------------------|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b><i>Wet eucalypt forest and woodland</i></b>  |                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <i>Eucalyptus regnans</i> forest<br>(WRE)       | not threatened<br><i>not threatened</i>  | The forest fringing the existing residentially-developed part of the title (now mapped as FUR) has a maturing regrowth structure (post-1967 bushfire) dominated by <i>Eucalyptus regnans</i> with some contribution from <i>Eucalyptus globulus</i> (with <i>Acacia dealbata</i> a minor secondary stratum) over a dense secondary canopy of typical wet sclerophyll shrubs including <i>Pomaderris apetala</i> , <i>Bedfordia salicina</i> , <i>Acacia verticillata</i> and <i>Pittosporum bicolor</i> , in turn over a generally open understorey with occasional graminoids and ground ferns in canopy gaps (with <i>Dicksonia antarctica</i> restricted to near the creekline). Grasses and herbs are sparse to absent. There is extensive leaf litter, typical of wet sclerophyll forest, but limited coarse woody debris, most logs small or suspended above the ground (i.e. recent falls). Rock outcrops are absent.<br><br>The fringe of WRE around the existing house site is highly modified, having once been largely cleared of at least the understorey, as evidenced by the now dense poles of <i>Pomaderris apetala</i> and sparse stems of <i>Eucalyptus</i> (mainly small apart from scattered larger stems) and very open understorey. That aside, WRE is in good ecological condition with no weeds or symptoms of plant disease observed. |
| <b><i>Modified land</i></b>                     |                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| urban areas<br>(FAG)                            | not threatened<br><i>not threatened</i>  | The part of the title that includes the existing gravel driveway, house and associated domestic elements including grassed areas, clothesline, water tanks, vegetable garden and ornamental plantings is mapped as FUR. It is acknowledged that this area includes some native elements but should not be construed as "native vegetation", consistent with the iterative approach of TASVEG Live to re-code parts of "bush blocks" developed as residential areas to FUR.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |





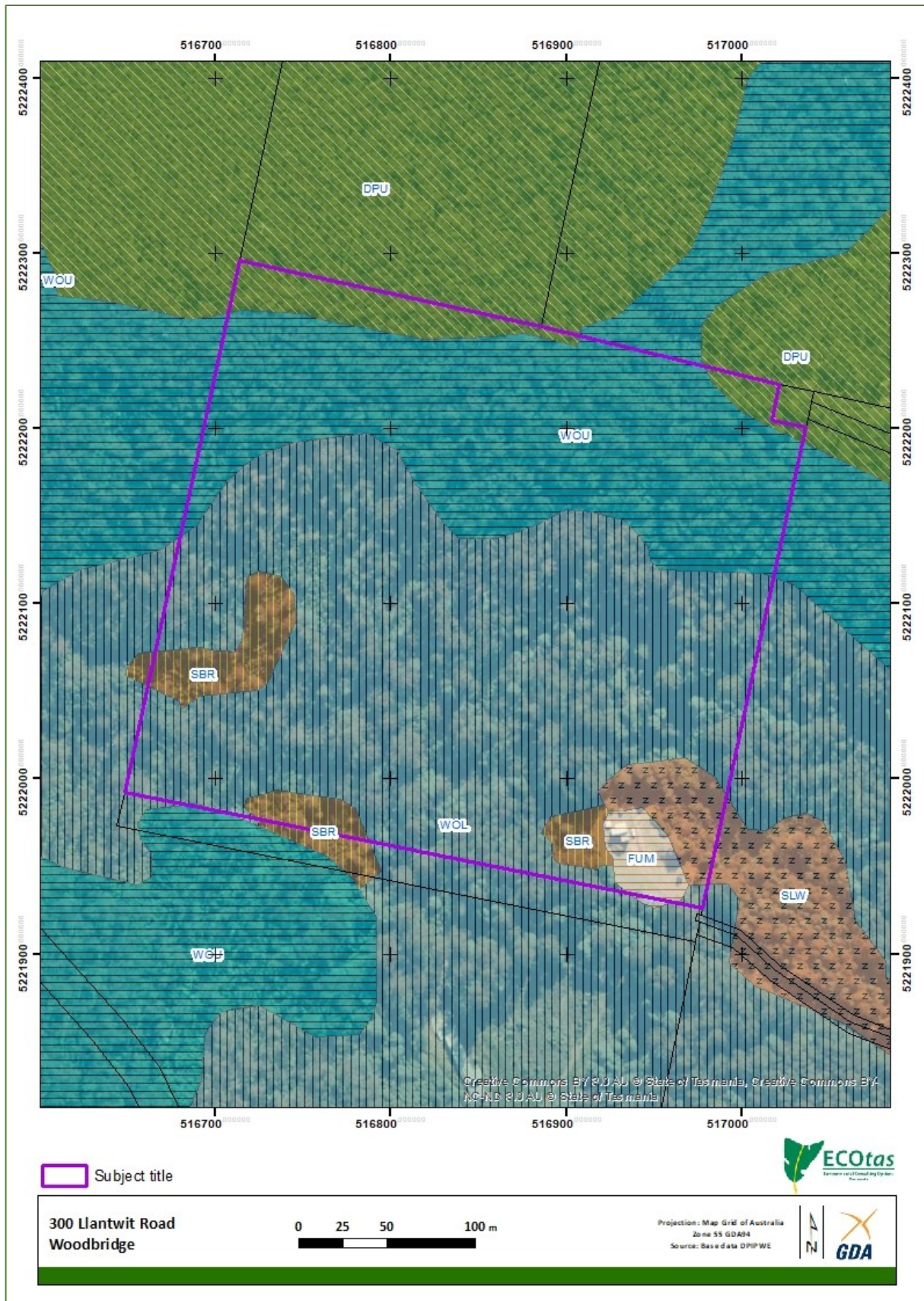
**Figure 9.** Study area and surrounds showing existing TASVEG 3 vegetation mapping (see text for codes)





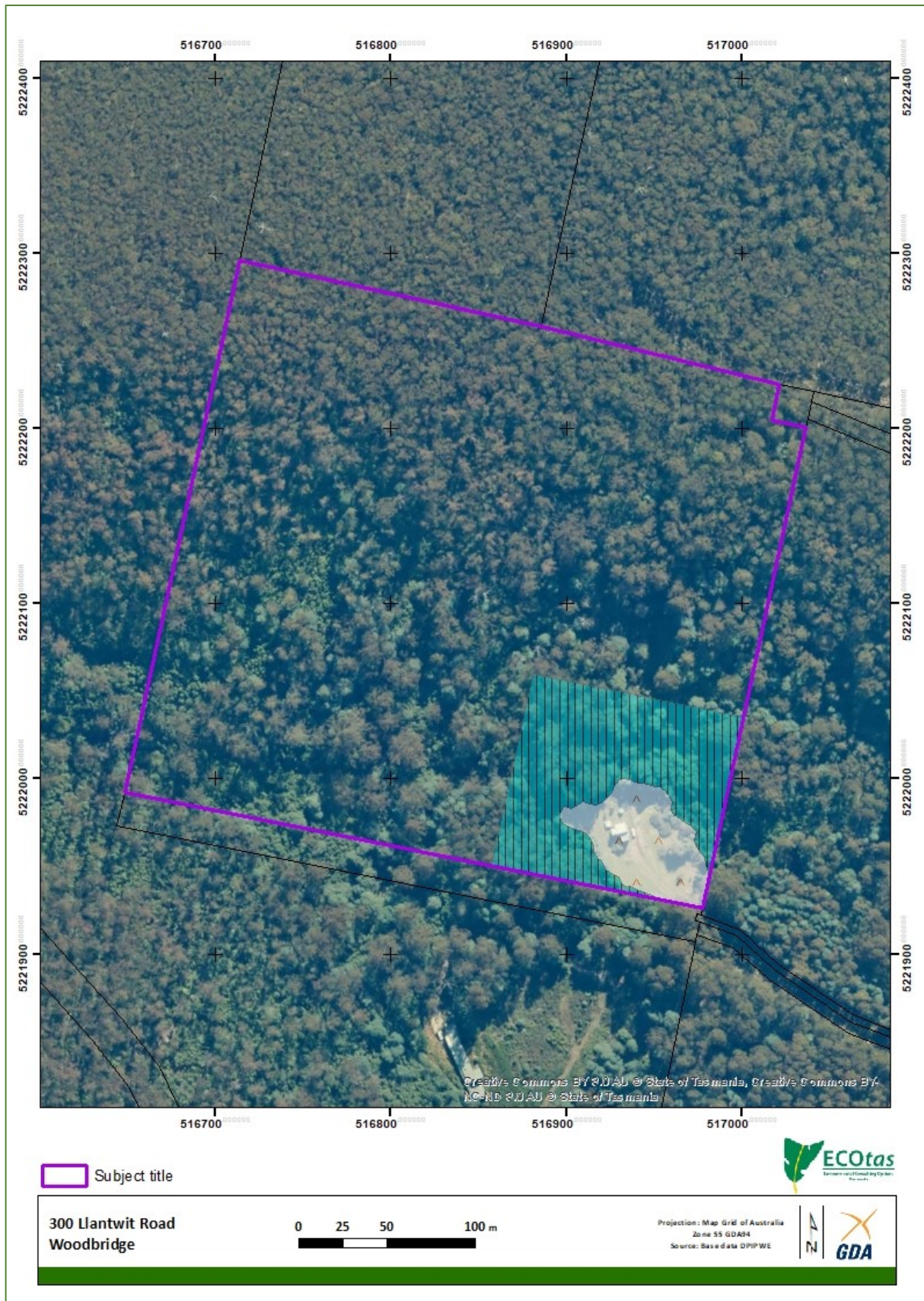
**Figure 10.** Study area and surrounds showing existing TASVEG 4.0 & Live vegetation mapping (see text for codes)





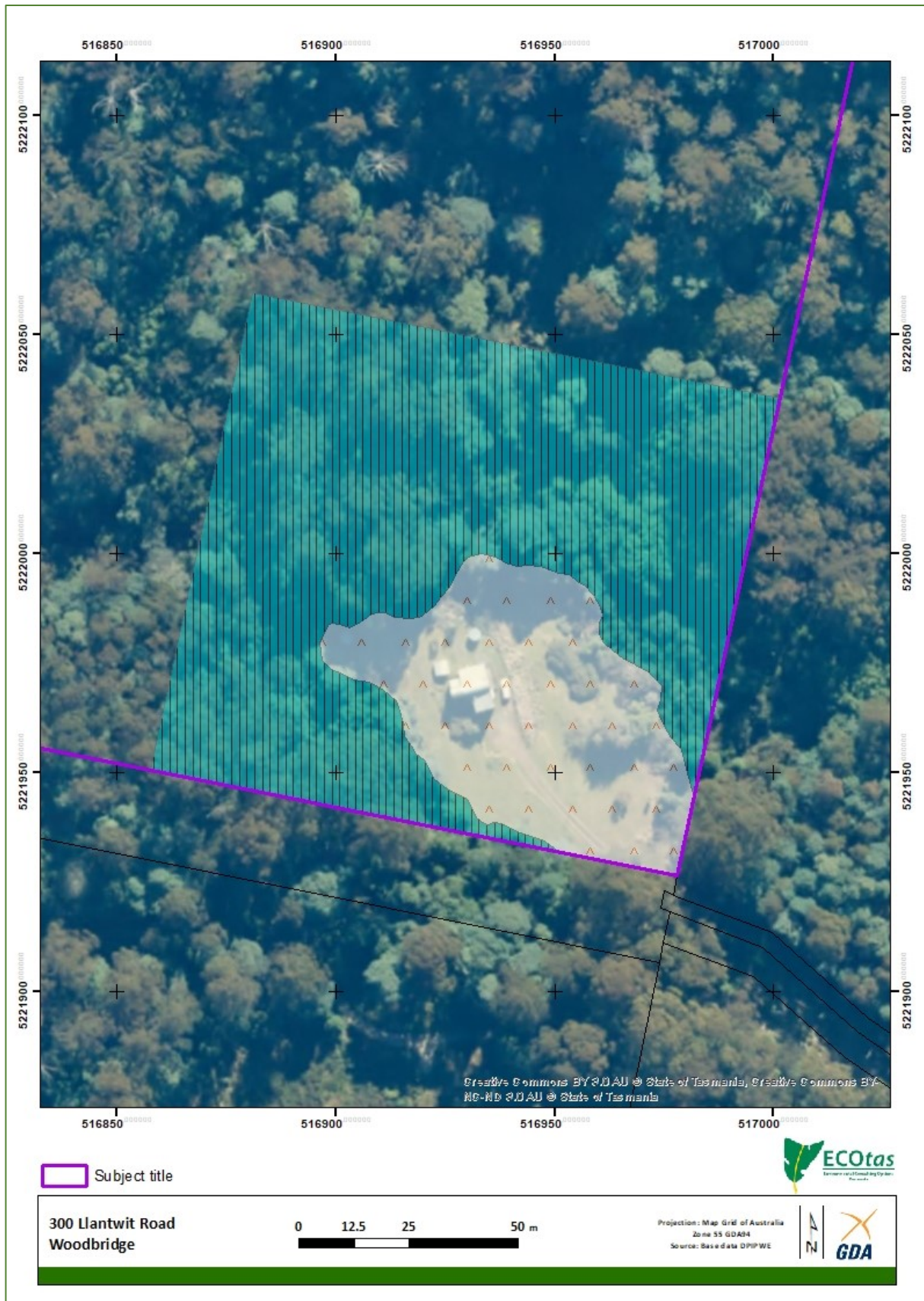
**Figure 11.** Study area and surrounds showing council-maintained vegetation mapping (see text for codes)





**Figure 12a.** Revised vegetation mapping for study area (see text for codes): overview





**Figure 12b.** Revised vegetation mapping for study area (see text for codes): detail



## **FINDINGS *Vegetation types*** continued...

### Conservation significance of identified vegetation types

Occurrences of WRE do not equate to a native vegetation community listed as threatened on Schedule 3A of the Tasmanian Nature Conservation Act 2002.

Occurrences of WRE do not equate to a threatened ecological community under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBCA).

As a vegetation type, occurrences of WRE are classified as low priority biodiversity values under Table E10.1 of the Biodiversity Code of the *Kingborough Interim Planning Scheme 2015* (WRE is widespread and well-reserved with more than 5,000 ha present within the South East bioregion).

The only native vegetation community that will be impacted by the proposal is WRE, which occurs as a fringe of forest surrounding the existing dwelling and associated old gardens. The precise boundary between what can be reasonably ascribed to FUR (i.e. parts of the title that are so modified that they cannot qualify as a TASVEG native vegetation mapping unit in any reasonable sense) and what is assignable to WRE was slow-walked with a hand-held GPS, which is reflected in Figure 12. This data file has been supplied in .shp and .dwg format to allow direct overlaying of the site plans and proposed hazard management area, which will allow a reasonably precise estimate to be made of the extent of WRE to be impacted.

## ***Plant species***

### General information

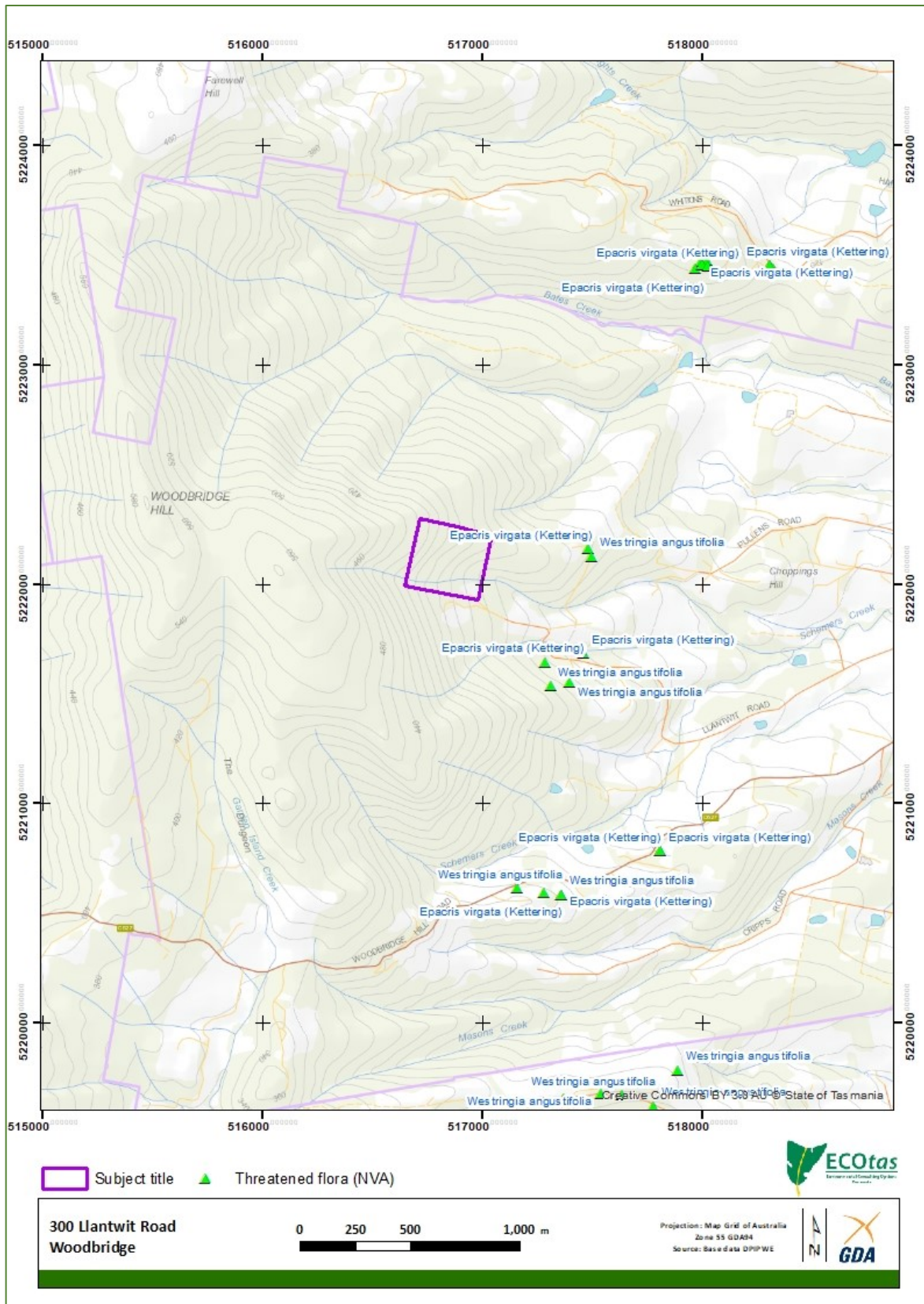
A total of 24 vascular plant species were recorded from the WRE vegetation type fringing the developed part of the study area (Appendix B), comprising 17 dicotyledons (including 1 endemic species), 3 monocotyledons (all native) and 4 pteridophytes (all native). The absence of naturalised species from the forested area is notable.

Additional surveys at different times of the year may detect additional short-lived herbs and grasses but a follow-up survey is not considered warranted because of the low likelihood of species with a high priority for conservation management being present.

### Threatened flora

No flora species listed as threatened on the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA) and/or the Tasmanian *Threatened Species Protection Act 1995* (TSPA) are known from database information (Figure 13), or were detected as a consequence of the field survey, from the study area.

Figure 13 indicates threatened flora species near to the study area and Table C1 (Appendix C) provides a listing of threatened flora from within 5,000 m of the study area (nominal buffer width usually used to discuss the potential of a particular study area to support various species listed in databases), with comments on whether potential habitat is present for the species, and possible reasons why a species was not recorded.



**Figure 13.** Distribution of threatened flora close to study area (overview): note that the database used to create this map still has "*Epacris virgata* Kettering" shown (now recognised as the non-threatened *Epacris tasmanica*)



## Threatened fauna

No fauna species listed as threatened on the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA) and/or the Tasmanian *Threatened Species Protection Act 1995* (TSPA) are known from database information (Figure 14), or were detected as a consequence of the field survey, from the study area.

Figure 14 indicates threatened fauna species near to the study area and Table D1 (Appendix D) provides a listing of threatened fauna from within 5,000 m of the study area (nominal buffer width usually used to discuss the potential of a particular study area to support various species listed in databases), with comments on whether potential habitat is present for the species, and possible reasons why a species was not recorded.

Site assessment indicated that the subject title supports ubiquitous potential habitat for a suite of threatened fauna species. This includes potential habitat of species such as *Sarcophilus harrisii* (Tasmanian devil), *Dasyurus maculatus* subsp. *maculatus* (spotted-tailed quoll), *Dasyurus viverrinus* (eastern quoll) and *Perameles gunnii* subsp. *gunnii* (eastern barred bandicoot). However, these species occur in a range of habitats from untouched wilderness to suburban yards, meaning it is very hard to place a patch of regrowth-structured even-aged regrowth forest (naturally recovered post-fires and/or post-clearing) at a specific position on this continuum and conclude that it is therefore “important” or “significant” at any particular scale. In this case, no part of the WRE fringing the existing clearing is considered suitable for denning for these species because of the lack of micro-habitat features suitable for such activities such as rock overhangs, wombat burrows/rabbit warrens or large coarse woody debris with rotten/hollow centres. At most, these species might “pass through” the area (and almost certainly take advantage of the existing grassy areas and domestic elements).

With respect to the Mount Mangana stag beetle (*Lissotes menalcas*), areas mapped as WRE are technically potential habitat as the species primarily occurs in wet sclerophyll forest (rather than rainforest, mixed forest or dry forest). However, the species is an obligate log dweller requiring a particular type/age of decay. This species is widespread, albeit somewhat difficult to assess because finding the species requires some level of habitat destruction (ripping apart logs and/or removing top layers) such that this is not usually undertaken. In this case, there are some larger suspended (i.e. recently fallen) “logs” but most of the understorey fringing the area mapped as FUR (i.e. within what will be required as part of a hazard management area) is open ground lacking coarse woody debris, with any larger logs well outside the extent of the proposed hazard management area.



**Plates 11 & 12.** Examples of very open understorey between the existing house and Schemers Creek: note the lack of *Eucalyptus* stems and total absence of coarse woody debris



**Plate 13.** (LHS) Example of very open understorey between the existing house and southern boundary: note the virtual lack of *Eucalyptus* stems and total absence of coarse woody debris

**Plate 14.** (RHS) Larger “downer” close to the southern boundary: this log was the only larger log with any hint of decay found but is well outside the proposed hazard management area

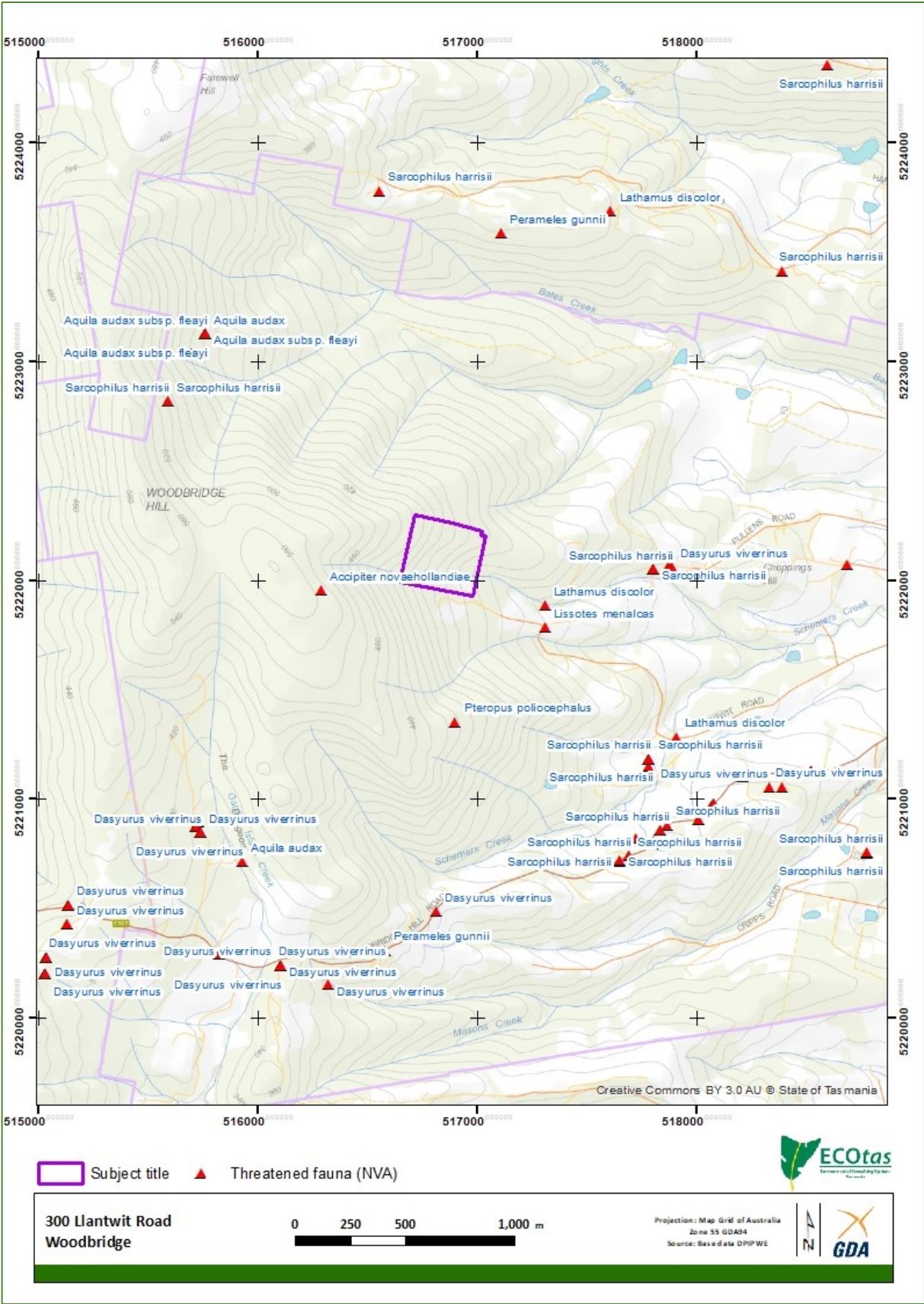
At present, the part of the title required for hazard management (i.e. the fringe of WRE) simply cannot provide habitat for the Mt Mangana stag beetle because of the lack of logs (obligate log-dweller). Over time (many decades), potential habitat may improve as logs are formed from fallen trees, although these will take many further decades to develop suitable rot and be colonised from surrounding areas. The species is managed in industrial forestry situations such as clearfell, burn and sow coupes of up to 100 ha at any one time such that any small-scale clearing of marginal potential habitat within the subject title could hardly be regarded as “significant” or “important” at any reasonable scale. It is also noted that maintaining a low fuel state within the proposed hazard management area should not preclude retention of logs.

While *Tyto novaehollandiae* (masked owl), *Accipiter novaehollandiae* (grey goshawk) and *Aquila audax* (wedge-tailed eagle) could all occur within the subject title, the vegetation structure within the part of the title proposed for development is atypical nesting habitat (lack of large trees with large hollows – masked owl; lack of over-mature trees with good nesting forks in even-aged regrowth forest – wedge-tailed eagle; generally open-structured forest canopy – grey goshawk). That is, the key elements are absent. This does not preclude these species using the site but certainly does not qualify it as “important” or “significant” at any particular scale.

The site does not support potential nesting or foraging habitat for *Pardalotus quadragintus* (forty-spotted pardalote) because both *Eucalyptus viminalis* (white gum) and hollow-bearing trees are absent.

The site does not support potential nesting habitat for *Lathamus discolor* (swift parrot) because hollow-bearing trees are absent: the forest structure is largely regrowth following fires many decades ago (1967) but all trees are probably many decades from forming proper nesting hollows because of the species present (*Eucalyptus obliqua* and *Eucalyptus regnans* with tall and straight boles due to rapid post-fire growth with as yet simple and non-senescent canopies). That said, it is acknowledged that diameter of trees has been used as a pseudo-surrogate for assigning patches of forest and/or individual trees as potential nesting habitat for the swift parrot (or other hollow-nesting species). In this case, the site is very clearly wet sclerophyll forest and the notional threshold for this type of surrogacy is 100 cm DBH. Such trees are present and have been mapped. All such trees are proposed for long-term retention including under the proposed bushfire hazard management plan (B. Haywood pers. comm.). The absence of both *Eucalyptus ovata* (black gum) and *Eucalyptus globulus* (blue gum) precludes the presence of typical potential foraging habitat for *Lathamus discolor* (swift parrot). Refer to **FINDINGS Other natural values** Individual trees for more details on individual trees.





**Figure 14.** Distribution of threatened fauna close to the study area (overview)

## Other natural values

### Weed species

No plant species classified as declared weeds within the meaning of the Tasmanian *Weed Management Act 1999 (Biosecurity Act 2019)* or considered as potential environmental weeds (author opinion) were detected from the study area.

Any works, especially access and service provision, will provide an opportunity for weed establishment by mobilising soil-stored seed and providing fresh bare ground ideal for seedling establishment. "Starting clean" is good practice (i.e. machinery, vehicle and equipment hygiene prior to entering the site) but noting that special management should not be required in relation to weeds because of the weed-free status and that access will be from the well-formed and sealed Llantwit Road and then the well-formed and maintained (weed-free) gravel surface of the internal driveway.

Owner-occupation is the most likely practical means of achieving good long-term weed management outcomes through vigilance and control, if any declared (or environmental) weeds are detected.

Several planning manuals provide guidance on appropriate management actions, which can be referred to develop site-specific prescriptions for any proposed works in the study area. These manuals include:

- Allan, K. & Gartenstein, S. (2010). *Keeping It Clean: A Tasmanian Field Hygiene Manual to Prevent the Spread of Freshwater Pests and Pathogens*. NRM South, Hobart;
- Rudman, T. (2005). *Interim Phytophthora cinnamomi Management Guidelines*. Nature Conservation Report 05/7, Biodiversity Conservation Branch, Department of Primary Industries, Water & Environment, Hobart;
- Rudman, T., Tucker, D. & French, D. (2004). *Washdown Procedures for Weed and Disease Control*. Edition 1. Department of Primary Industries, Water & Environment, Hobart; and
- DPIPWE (2015). *Weed and Disease Planning and Hygiene Guidelines – Preventing the Spread of Weeds and Diseases in Tasmania*. Department of Primary Industries, Parks, Water & Environment, Hobart.

### Rootrot pathogen, *Phytophthora cinnamomi*

*Phytophthora cinnamomi* (PC) is widespread in lowland areas of Tasmania, across all land tenures. However, disease will not develop when soils are too cold or too dry. For these reasons, PC is not a threat to susceptible plant species that grow at altitudes higher than about 700 m or where annual rainfall is less than about 600 mm (e.g. Midlands and Derwent Valley). Furthermore, disease is unlikely to develop beneath a dense canopy of vegetation because shading cools the soils to below the optimum temperature for the pathogen. A continuous canopy of vegetation taller than about 2 m is sufficient to suppress disease. Hence PC is not considered a threat to susceptible plant species growing in wet sclerophyll forests, rainforests (except disturbed rainforests on infertile soils) and scrub e.g. teatree scrub (Rudman 2005; FPA 2009).

The vegetation type identified from the study area is not usually regarded as susceptible to PC in most circumstances. Site assessment did not record any field symptoms (dead and/or dying susceptible plant species), such that special management should not be required in relation to PC, especially given that access will be from the well-formed and sealed Llantwit Road and then the well-formed and maintained (weed-free) gravel surface of the internal driveway.



### Myrtle wilt

Myrtle wilt, caused by a wind-borne fungus (*Chalara australis*), occurs naturally in rainforest where myrtle beech (*Nothofagus cunninghamii*) is present. The fungus enters wounds in the tree, usually caused by damage from wood-boring insects, wind damage and forest clearing. The incidence of myrtle wilt often increases forest clearing events such as windthrow and wildfire.

The study area does not support *Nothofagus cunninghamii*, such that special management is not required.

### Myrtle rust

Myrtle rust is a disease limited to plants in the Myrtaceae family. This plant disease is a member of the guava rust complex caused by *Austropuccinia psidii*, a known significant pathogen of Myrtaceae plants outside Australia. Infestations are currently limited to NSW, Victoria, Queensland and Tasmania (DPIPWE 2015).

No evidence of myrtle rust was noted (several possible indicator species present). The longer-term management issue for the site is to ensure that any ornamental plantings source plants from a reputable nursery free from the pathogen (such businesses are already subject to strict biosecurity conditions).

### Chytrid fungus and other freshwater pathogens

Native freshwater species and habitat are under threat from freshwater pests and pathogens including *Batrachochytrium dendrobatidis* (chytrid frog disease), *Mucor amphibiorum* (platypus mucor disease) and the freshwater algal pest *Didymosphenia geminata* (didymo) (Allan & Gartenstein 2010). Freshwater pests and pathogens are spread to new areas when contaminated water, mud, gravel, soil and plant material or infected animals are moved between sites. Contaminated materials and animals are commonly transported on boots, equipment, vehicles tyres and during road construction and maintenance activities. Once a pest pathogen is present in a water system it is usually impossible to eradicate. The manual *Keeping it Clean: A Tasmanian Field Hygiene Manual to Prevent the Spread of Freshwater Pests and Pathogens* (Allan & Gartenstein 2010) provides information on how to prevent the spread of freshwater pests and pathogens in Tasmanian waterways wetlands, swamps and boggy areas.

The part of the study area proposed for development does not support habitat of amphibian species, except in a very general sense (see previous commentary in **STUDY AREA Other site features** for details on tributary of Schemers Creek, which will not be materially impacted). Special management should not be warranted.

### Additional "Matters of National Environmental Significance" – Threatened Ecological Communities

CofA (2023) indicates that the following threatened ecological communities listed on the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA) are likely to, or may, occur within the area:

- Alpine Sphagnum Bogs and Associated Fens [Endangered];
- Giant Kelp Marine Forests of South East Australia [Endangered];
- Subtropical and Temperate Coastal Saltmarsh [Vulnerable];

- Tasmanian Forests and Woodlands dominated by Black Gum or Brookers Gum (*Eucalyptus ovata* / *E. brookeriana*) [Critically Endangered]; and
- Tasmanian White Gum (*Eucalyptus viminalis*) Wet Forest [Critically Endangered].

Existing vegetation mapping (Figures 9-11) and revised vegetation mapping (Figure 12) indicates that no EPBCA-listed threatened ecological communities are present within or adjacent to the study area.

### Individual trees

Under Table E10.1 of the Biodiversity Code of the *Kingborough Interim Planning Scheme 2015*, moderate priority biodiversity values include "high conservation value trees". It is most usual for the planning authority to require a detailed survey of every tree over ca. 25 cm DBHOB (diameter at breast height over bark, measured with a diameter tape to the nearest cm) within ca. 15 m of any possible development (i.e. on and either side of an access, within the construction zone and hazard management area, and within 15 m of the edge of the hazard management area, etc.)

On site attendance, I reviewed the site plans relative to the distribution of trees over 25 cm DBH and determined where works may occur near these. I determined that the only trees requiring characterisation were those within the fringe of native forest just outside the existing modified area (mapped as FUR). The only two tree species present are *Eucalyptus obliqua* (stringybark) and *Eucalyptus regnans* (giant ash) and the site is wet forest. This means that the only trees that could qualify as very high conservation value under the *Policy* are those of these two species with a DBH over 100 cm. All such trees (all *Eucalyptus regnans*) were geolocated using hand-held GPS (minimum of 10 points collected around the base of each tree and averaged). It is evident that Trees 1, 2 & 5 are notionally outside the subject title so will not be included in any form of hazard management. Tree 4 is well outside the proposed hazard management area. Tree 3 is also outside the proposed hazard management area, although it is quite close to the edge of this.

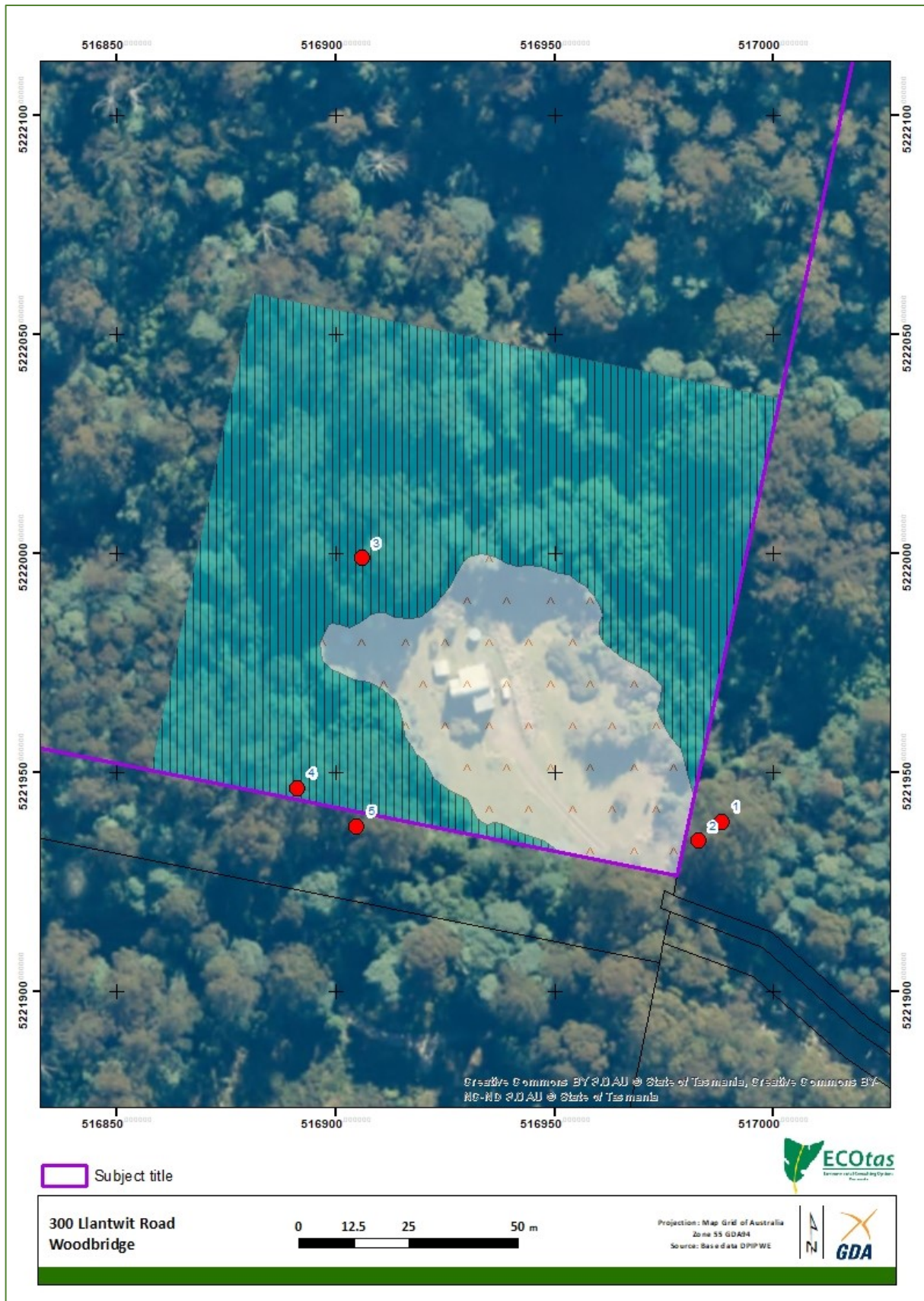
**Table 2.** Details of all characterised trees [cross-reference to Figure 15]

[status = conservation value as per *Kingborough Biodiversity Offset Policy 6.10, November 2016*]

| Tree | DBH  | status    | Easting   | northing   | Rationale                             |
|------|------|-----------|-----------|------------|---------------------------------------|
| 1    | >1 m | VERY HIGH | 516988.22 | 5221938.51 | any species in wet forest >100 cm DBH |
| 2    | >1 m | VERY HIGH | 516982.96 | 5221934.13 | any species in wet forest >100 cm DBH |
| 3    | >1 m | VERY HIGH | 516906.18 | 5221998.77 | any species in wet forest >100 cm DBH |
| 4    | >1 m | VERY HIGH | 516891.35 | 5221946.25 | any species in wet forest >100 cm DBH |
| 5    | >1 m | VERY HIGH | 516905.05 | 5221937.46 | any species in wet forest >100 cm DBH |

None of the identified trees require removal. In fact, no trees over 25 cm DBH require removal (B. Haywood pers. comm.) because they are well separated. It is assumed that the only management required to maintain the HMA in a low fuel state will be removal of some scattered poor health individuals of *Acacia dealbata* (silver wattle) and thinning out of patches of *Pomaderris apetala* (common dogwood). Management of the understorey will only require occasional trimming of dead fronds of some taller *Dicksonia antarctica* (soft treefern) and perhaps some slashing of ground ferns/graminoids in canopy gaps (B. Haywood pers. comm.). Anthropogenic "browsing" by a brushcutter, mower or similar is not considered to reasonably impact on the health of the trees within or adjacent to the hazard management area.





**Figure 15.** Distribution of all measured trees (cross-reference to Table 2)

## DISCUSSION

### **Summary of key findings**

#### Threatened flora

- No plant species listed as threatened on the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA) and/or the Tasmanian *Threatened Species Protection Act 1995* (TSPA) were detected, or are known from database information, from the study area.

#### Threatened fauna

- No fauna species listed as threatened on the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA) and/or the Tasmanian *Threatened Species Protection Act 1995* (TSPA) were detected, or are known from database information, from the study area.
- The study area supports potential habitat (to varying degrees of marginality) for the following species:
  - *Sarcophilus harrisi* (Tasmanian devil);
  - *Dasyurus maculatus* subsp. *maculatus* (spotted-tailed quoll);
  - *Dasyurus viverrinus* (eastern quoll);
  - *Perameles gunnii* subsp. *gunnii* (eastern barred bandicoot);
  - *Lissotes menalcas* (Mt Mangana stag beetle);
  - *Accipiter novaehollandiae* (grey goshawk);
  - *Aquila audax* subsp. *fleayi* (wedge-tailed eagle); and
  - *Tyto novaehollandiae* subsp. *castanops* (Tasmanian masked owl).

#### Vegetation types

- The study area supports the following TASVEG mapping units:
  - *Eucalyptus regnans* forest (TASVEG code: WRE); and
  - urban areas (TASVEG code: FUR).
- Occurrences of WRE do not equate to a native vegetation community listed as threatened on Schedule 3A of the Tasmanian *Nature Conservation Act 2002*.
- Occurrences of WRE do not equate to a threatened ecological community under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA).
- As a vegetation type, occurrences of WRE are classified as low priority biodiversity values under Table E10.1 of the Biodiversity Code of the *Kingborough Interim Planning Scheme 2015*.

#### Weeds

- No plant species classified as declared weeds within the meaning of the Tasmanian *Weed Management Act 1999* (*Biosecurity Act 2019*) were detected from the study area.

#### Plant disease

- No evidence of *Phytophthora cinnamomi* (PC, rootrot) was recorded from the study area.
- No evidence of myrtle wilt was recorded from the study area.



- No evidence of myrtle rust was recorded from the study area.

#### Animal disease (chytrid)

- The study area does not support habitat types strongly associated with amphibian species (except marginally along the tributary of Schemers Creek, which will remain wholly undisturbed).

#### Individual trees

- The study area supports a limited number of trees with features that meet the criteria for very high conservation value trees within the intent of Table E10.1 of the Biodiversity Code of the *Kingborough Interim Planning Scheme 2015* (but noting none are proposed for removal or any form of disturbance).

### ***Legislative and policy implications***

Some commentary is provided below with respect to the key threatened species, vegetation management and other relevant legislation. Note that there may be other relevant policy instruments in addition to those discussed. The following information does not constitute legal advice and it is recommended that independent advice is sought from the relevant agency/authority.

#### Tasmanian Threatened Species Protection Act 1995

Threatened flora and fauna on this Act are managed under Section 51, as follows:

##### 51. Offences relating to listed taxa

- (1) Subject to subsections (2) and (3), a person must not knowingly, without a permit –
  - (a) take, keep, trade in or process any specimen of a listed taxon of flora or fauna; or
  - (b) disturb any specimen of a listed taxon of flora or fauna found on land subject to an interim protection order; or
  - (c) disturb any specimen of a listed taxon of flora or fauna contrary to a land management agreement; or
  - (d) disturb any specimen of a listed taxon of flora or fauna that is subject to a conservation covenant entered into under Part 5 of the *Nature Conservation Act 2002*; or
  - (e) abandon or release any specimen of a listed taxon of flora or fauna into the wild.
- (2) A person may take, keep or process, without a permit, a specimen of a listed taxon of flora in a domestic garden.
- (3) A person acting in accordance with a certified forest practices plan or a public authority management agreement may take, without a permit, a specimen of a listed taxon of flora or fauna, unless the Secretary, by notice in writing, requires the person to obtain a permit.
- (4) A person undertaking dam works in accordance with a Division 3 permit issued under the *Water Management Act 1999* may take, without a permit, a specimen of a listed taxon of flora or fauna.

The simplest interpretation of this is that any activity that results in a specimen (i.e. individual) of listed flora or fauna being “knowingly taken” would require a permit to be issued through Conservation Assessments (Department of Natural Resources and Environment Tasmania), through a formal application process. Note that the Act does not make reference to “potential habitat” such

that activities that result in loss of/disturbance to potential habitat (but not known sites) – which mainly refers to threatened fauna – would not require a permit.

No known sites of threatened flora or fauna will be impacted by any proposed development so a permit should be not required under this Act.

#### Commonwealth Environment Protection and Biodiversity Conservation Act 1999

Under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* an action will require approval from the minister if the action has, will have, or is likely to have, a significant impact on a matter of national environmental significance.

Matters of national environmental significance considered under the EPBCA include:

- listed threatened species and communities
- listed migratory species;
- Ramsar wetlands of international importance;
- Commonwealth marine environment;
- world heritage properties;
- national heritage places;
- the Great Barrier Reef Marine Park;
- nuclear actions; and
- a water resource, in relation to coal seam gas development and large coal mining development.

The relevant Commonwealth agency provides a policy statement titled *Matters of National Environmental Significance: Significant Impact Guidelines 1.1* (CofA 2013, herein the *Guidelines*), which provides overarching guidance on determining whether an action is likely to have a significant impact on a matter protected under the EPBCA.

The *Guidelines* define a **significant impact** as:

*"...an impact which is important, notable, or of consequence, having regard to its context or intensity. Whether or not an action is likely to have a significant impact depends upon the sensitivity, value, and quality of the environment which is impacted, and upon the intensity, duration, magnitude and geographic extent of the impacts"*

and note that:

*"...all of these factors [need to be considered] when determining whether an action is likely to have a significant impact on matters of national environmental significance".*

The *Guidelines* provide advice on when a significant impact may be likely:

*"To be 'likely', it is not necessary for a significant impact to have a greater than 50% chance of happening; it is sufficient if a significant impact on the environment is a real or not remote chance or possibility.*

*If there is scientific uncertainty about the impacts of your action and potential impacts are serious or irreversible, the precautionary principle is applicable. Accordingly, a lack of scientific certainty about the potential impacts of an action will not itself justify a decision that the action is not likely to have a significant impact on the environment".*

The *Guidelines* provide a set of Significant Impact Criteria, which are "intended to assist...in determining whether the impacts of [the] proposed action on any matter of national environmental



significance are likely to be significant impacts". It is noted that the criteria are "intended to provide general guidance on the types of actions that will require approval and the types of actions that will not require approval...[and]...not intended to be exhaustive or definitive".

#### *Listed ecological communities*

The study area does not support any such communities.

#### *Threatened flora*

The study area does not support populations of EPBCA-listed flora, nor significant potential habitat of such species.

#### *Threatened fauna*

The study area may support populations of threatened fauna listed on the Act, most notably the Tasmanian devil, spotted-tailed quoll, eastern quoll and eastern barred bandicoot, although no specific habitat features were identified. Note that the study area is within the range of several other species listed on the Act but it is unlikely that any proposal will result in a significant impact on these species (this includes wide-ranging species such as the wedge-tailed eagle, swift parrot and masked owl – refer to Appendix D for more details).

The *Guidelines* consider a "significant impact" to comprise loss that is likely to lead to a long-term decrease in the size of an important population of a species; reduce the area of occupancy of an important population; fragment an existing important population into two or more populations (unlikely); adversely affect habitat critical to the survival of a 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; introduce disease that may cause the species to decline; or interfere substantially with the recovery of the species.

It is highly unusual for a development within a relatively small lot, even within the range of the aforementioned species where potential habitat has been identified, to trigger a formal referral to the relevant Commonwealth agency.

#### Tasmanian Forest Practices Act 1985 and associated Forest Practices Regulations 2017

The *Regulations* provide the following relevant circumstances in which a Forest Practices Plan (FPP) is not required.

##### 4. Circumstances in which forest practices plan, &c., not required

For the purpose of section 17(6) of the Act, the following circumstances are prescribed:

- (a) the harvesting of timber or the clearing of trees, with the consent of the owner of the land, if the land is not vulnerable land and –
  - (i) the volume of timber harvested or trees cleared is less than 100 tonnes for each area of applicable land per year; or
  - (ii) the total area of land on which the harvesting or clearing occurs is less than one hectare for each area of applicable land per year –

whichever is the lesser;

- (j) the harvesting of timber or the clearing of trees on any land, or the clearance and conversion of a threatened native vegetation community on any land, for the purpose of enabling –
  - (i) the construction of a building within the meaning of the *Land Use Planning and Approvals Act 1993* or of a group of such buildings; or
  - (ii) the carrying out of any associated development –
    - if the construction of the buildings or carrying out of the associated development is authorised by a permit issued under that Act.

On this basis, development subject to a planning permit issued under the relevant planning scheme should not require an FPP.

#### Tasmanian Nature Conservation Act 2002

Schedule 3A of the Act lists native vegetation communities classified as threatened within Tasmania. No such vegetation communities are present.

#### Tasmanian Weed Management Act 1999 (Biosecurity Act 2019)

No plant species classified as declared weeds within the meaning of the *Tasmanian Weed Management Act 1999 (Biosecurity Act 2019)* were detected from the part of the title proposed for development, such that the Act has limited direct application, except by reference to the *General Biosecurity Duty* under the *Tasmanian Biosecurity Act 2019* ([https://nre.tas.gov.au/biosecurity-tasmania/general-biosecurity-duty-\(gbd\)](https://nre.tas.gov.au/biosecurity-tasmania/general-biosecurity-duty-(gbd))).

#### Tasmanian Land Use Planning and Approvals Act 1993

The applicable planning scheme for the project area is the *Kingborough Interim Planning Scheme 2015*. Note that the following is my interpretation of the provisions of the *Scheme* and may not necessarily represent the views of Kingborough Council. The following does not constitute legal advice. It is recommended that formal advice be sought from the relevant agency prior to acting on any aspect of this statement.

The title is zoned as Environmental Living (Figure 4) and wholly subject to the Biodiversity Protection Area overlay (Figure 5). It is noted that the proposed bushfire hazard management will extend into the extent of the Waterway and Coastal Protection Area overlay (Figure 5) so the Waterway and Coastal Protection Code is also considered.

### **Environmental Living zone**

While several provisions of the zone may have application, below I examine the two that I believe have greatest relevance to the findings on natural values.

#### 14.4 Development Standards for Buildings and Works

##### 14.4.3 Design



Objective:

To ensure that the location and appearance of buildings and works minimises adverse impact on natural values and on the landscape.

Acceptable Solutions

A1

The location of buildings and works must comply with any of the following:

- (a) be located within a building area, if provided on the title;
- (b) be an addition or alteration to an existing building;
- (c) be located on a site that does not require the clearing of native vegetation and is not on a skyline or ridgeline.

Performance Criteria

P1

The location of buildings and works must satisfy all of the following:

- (a) be located in an area requiring the clearing of native vegetation only if:
  - (i) there are no sites clear of native vegetation and clear of other significant site constraints such as access difficulties or excessive slope;
  - (ii) the extent of clearing is the minimum necessary to provide for buildings, associated works and associated bushfire protection measures;
  - (iii) the location of clearing has the least environmental impact;
- (b) be located on a skyline or ridgeline only if:
  - (i) there are no other sites suitable for development due to access difficulties or excessive slope;
  - (ii) there is no significant impact on the rural landscape;
  - (iii) building height is minimised;
  - (iv) any screening vegetation is maintained.
- (c) be consistent with any Desired Future Character Statements provided for the area or, if no such statements are provided, have regard to the landscape.

To my interpretation, A1(b) is wholly satisfied because the proposal of for "an addition or alteration to an existing building", this provision not further qualified by the extent of impact to natural values per se.

14.4 Development Standards for Buildings and Works

14.4.5 Environmental Values

Objective:

To ensure development maintains and enhances environmental values.

Acceptable Solutions

A1

Development must be located within a building area on a plan of subdivision.

Performance Criteria

P1

The application is accompanied by an environmental management plan for the whole site, setting out measures to be put in place to protect flora and fauna habitats, riparian areas, any

environmental values identified as part of a site analysis, and identify measures to be used to mitigate and offset adverse environmental impacts.

I do not believe that A1 can be satisfied because there is not a "building area on a plan of subdivision" present, such that the Performance Criteria P1 need to be satisfied. This calls for an "environmental management plan". P1 does not specify the format of such a plan, nor who can produce the plan. The planning authority issues some guidelines for such plans for "simple" cases (e.g. where impact to native vegetation will be limited). In this case, in noting that the planning application cannot be valid unless it "is accompanied by an environmental management plan for the whole site", it is recommended that an environmental management plan be produced with the following minimal inclusions (the planning authority provides a template for these types of "simple" scenarios):

- site plan showing that the proposal is restricted to development within the existing cleared area within the title, as far as practical;
- site plan showing extent of hazard management area with a reasonable estimate of the extent of native vegetation (mapped as WRE) required for maintenance within the hazard management area;
- site plan showing location of wastewater area and any other project elements (ideally wholly contained within the hazard management area);
- site plan showing individual trees over 100 cm DBH with a note requiring their retention (where they occur within title); and
- weed and hygiene measures (suggest indicating high pressure washdown for any machinery entering the site during construction).

## **Biodiversity Code**

The purpose of the Biodiversity Code is stated below:

### E10.1 Purpose

#### E10.1.1

The purpose of this provision is to:

- (a) minimise 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.

No part of the proposed development area supports threatened native vegetation communities or threatened flora, such that E10.1.1(a) will not have direct application.

In my opinion, the proposed development area does not contain "important habitat...[for]...threatened fauna species" at any reasonable scale, such that E10.1.1(b) should not have direct application. This is also considered in more detail under the review of Table E10.1.

The proposed development area may contain "other biodiversity values that are recognised as locally significant by the Planning Authority" (most notably individual trees). Note that the detailed elements of high, moderate and low priority biodiversity values included in Table E10.1 are explored in detail below.

The application of the Biodiversity Code is stated below:

E10.2 Application

This code applies to development involving clearance and conversion or disturbance of native vegetation within a Biodiversity Protection Area.

"Native vegetation" is defined under the *Scheme* as:

"plants that are indigenous to Tasmania including trees, shrubs, herbs and grasses that have not been planted for domestic or commercial purposes".

The proposed development area is wholly covered by the Biodiversity Protection Area overlay, such that the Code has possible application. While I have now mapped most of the proposed development area as a modified land TASVEG mapping unit (FUR), I acknowledge that the fringing areas are mapped as native forest (WRE) and minor areas will be included in the proposed hazard management area.

"Clearance and conversion" means:

"the process of removing native vegetation from an area of land and: (a) leaving the area of land, on a permanent or extended basis, in a state predominantly unvegetated with native vegetation; or (b) replacing the native vegetation so removed, on a permanent or extended basis, with residential, commercial, mining, agriculture or other non-agricultural development".

In my opinion, it is not reasonable to consider the proposed hazard management area outside the modified part of the title within what is now mapped as WRE as "clearance and conversion" because the bushfire hazard management plan is very clear in that the structure of the forest will require only minor modification i.e. the area of WRE within the hazard management area will remain mappable as WRE, hence "clearance and conversion" is not indicated.

"Disturbance" means:

"the alteration of the structure and species composition of a native vegetation community through actions including cutting down, felling, thinning, logging, removing or destroying of a native vegetation community".

"Disturbance" is somewhat challenging to interpret in relation to the present development because the definition requires the "alteration of the structure **and** species composition of a native vegetation community..." [my emphasis]. I consider it highly unlikely that hazard management will materially alter the composition of the "native vegetation" in any measurable sense, which was confirmed by on-site discussions with an accredited bushfire practitioner (B. Haywood pers. comm.). However, for the purposes of this statement, I will assume that the planning authority will indicate the Code will have application in relation to "disturbance" of the fringe of WRE.

However, prior to considering the relevant development standards, I refer to E10.4.1, which is stated as follows:

E10.4 Development Exempt from this Code

E10.4.1

The following development is exempt from this code:

- (e) fire hazard management works for an existing dwelling in accordance with a bushfire hazard management plan endorsed by an accredited person as defined under the Bushfire Prone Areas Code, wherein the extent of clearance and conversion and disturbance is the minimum necessary for adequate protection from bushfire;

In my opinion, this is open to little interpretation. The dwelling is clearly "existing" and therefore it should not be relevant if the proposal is for a minor or major extension (in this case, clearly minor). Further, there will be a "bushfire hazard management plan endorsed by an accredited person as defined under the Bushfire Prone Areas Code" and this is recommending a BAL-19 standard be



applied, which I believe meet the intent of the “extent of clearance and conversion and disturbance is the minimum necessary for adequate protection from bushfire”. That is, I believe that the proposal is exempt under E10.4.1(e). I am well aware that this is not the interpretation of the planning authority such that I examine the balance of the Code provisions below.

#### E10.5 Application Requirements

##### E10.5.1

In addition to any other application requirements, the planning authority may require the applicant to provide a natural values determination if considered necessary to determine compliance with acceptable solutions.

##### E10.5.2

In addition to any other application requirements, the planning authority may require the applicant to provide any of the following information if considered necessary to determine compliance with performance criteria:

- (a) a natural values determination;
- (b) a natural values assessment;
- (c) a report detailing how impacts on priority biodiversity values will be avoided, minimised, and/or mitigated;
- (d) a special circumstances justification report;
- (e) a biodiversity offsets plan.

A “natural values assessment” (a higher level of assessment than a “natural values determination”) is defined as:

“an ecological assessment, generally consistent with the Guidelines for Natural Values Assessment (DPIPWE July 2009), by a suitably qualified person (biodiversity) to identify and convey:

- (a) the location of priority biodiversity values affecting the site;
- (b) the significance of priority biodiversity values, with particular reference to Table E10.1;
- (c) any likely impact on these priority biodiversity values including existing activities on the site, nearby land uses, weeds, pests, pathogens and the degree of connectivity with other land with natural values;
- (d) the likely impact of the proposed development or use on these priority biodiversity values;
- (e) recommendations for the design and siting of the proposed development or use to avoid or minimise the identified impacts;
- (f) recommendations for the mitigation or management of any residual impacts.

The preceding report on the natural values and this review of the provisions of the Biodiversity Code should meet the intent and specifics of a “natural values assessment” under the Biodiversity Code.

The Development Standards for Buildings and Works have the following objective:

#### E10.7 Development Standards

##### E10.7.1 Buildings and Works

###### 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.

This is a difficult objective to meet in literal terms because it is subjective and terms such as “unnecessary” and “unacceptable” are not defined, particularly in relation to a proposed use that

is acceptable under the zoning. This objective will be further tested by reference to the Acceptable Solutions and Performance Criteria. However, in my opinion I consider the objective statement to be satisfied in that there will not be "an unnecessary or unacceptable loss of priority biodiversity values" because works are limited to an existing dwelling, largely within a "garden" setting and with hazard management area requiring limited impact to native vegetation through application of a BAL-19 rating.

The Acceptable Solution is stated as:

A1

Clearance and conversion or disturbance must be within a Building Area on a plan of subdivision approved under this planning scheme.

To the best of my knowledge, there is no "Building Area on a plan of subdivision approved under this planning scheme" such that A1 cannot be met.

To address the Performance Criteria, it is necessary to categorise the significance of the "priority biodiversity values" present as "low", "moderate" or "high", as the category affects the manner in which the criteria are addressed.

"High priority biodiversity values" are defined as (taken from Table E10.1 with author commentary below each):

Native vegetation communities listed as threatened under the *Nature Conservation Act 2002*.

The proposed development site does not support a threatened native vegetation community.

Significant habitat for and/or areas known to contain threatened species listed under the *Threatened Species Protection Act 1995* or the *Environment Protection and Biodiversity Conservation Act 1999* that are:

- (a) recognised as endangered or vulnerable; or
- (b) largely confined in their total distribution to the municipal area; or
- (c) have most of their range within the municipal area.

"Significant habitat" is defined under the *Scheme* as:

"Native vegetation determined from published literature and/or agreed by the Threatened Species Section (DPIPWE) in consultation with species specialist, and/or endorsed by the Threatened Species Scientific Advisory Committee (TSSAC) as habitat within the range of a threatened or vulnerable flora or fauna species that: (i) is known to be of high priority for the maintenance of breeding populations throughout the species' range; and/or (ii) if converted to non-native vegetation is considered to result in a long term negative impact on breeding populations of the species. It may include areas that do not currently support breeding populations of the species but that need to be maintained to ensure the long-term future of the species".

In relation to threatened flora, the part of the title proposed for development does not support such species, nor significant potential habitat of such species.

In relation to threatened fauna, the proposed development area provides ubiquitous potential habitat for species such as the Tasmanian devil, spotted-tailed quoll, eastern quoll, eastern barred bandicoot, wedge-tailed eagle, masked owl and grey goshawk but the preceding report has demonstrated that it is not reasonable to consider this part of the title as "significant" for these species (else we would also need to start to classify massive parts of the municipality as such

because many of these species occupy undisturbed and disturbed habitats, such as pastures, plantations and various other anthropogenic habitats, equally, if not take advantage of such habitats preferentially). I do not regard the site as supporting "significant habitat" for the Mt Mangana stag beetle because of the absence of decaying coarse woody debris. I would usually restrict application of the concept of "significant habitat" to those types of vegetation and/or site features very strongly associated with threatened fauna.

Native vegetation communities with a distribution on a bioregional basis having contracted to less than 10% of its former area.

There is no notion that WRE has been so reduced on a bioregional basis.

Native vegetation communities with a total area on a bio-regional basis generally being less than 1,000 ha.

WRE remains widespread at a Statewide, bioregional and municipal level with more than 5,000 ha in the South East bioregion.

Remnants occurring on land systems components which have been more than 90% cleared of their native vegetation.

While the title is within a slightly modified landscape (classic "rural living" setting), I do not regard the site as meeting the concept of a "remnant" at any reasonable scale because of quite extensive retained native vegetation within the title and on adjacent titles and in the adjacent Woodbridge Hill Conservation Area.

"Moderate priority biodiversity values" are defined as (taken from Table E10.1 with author commentary below each):

Significant habitat for and/or areas known to contain threatened species listed under the *Threatened Species Protection Act 1995* or the *Environment Protection and Biodiversity Conservation Act 1999* that are:

- (a) recognised as rare; and
- (b) are not specific to the municipal area.

Of the threatened fauna species identified as potentially present, only the spotted-tailed quoll is listed as "rare" but has a landscape-scale distribution and the site did not support particular habitat elements strongly associated with the species. No species recognised as specific to the municipal area have been identified.

Potential habitat for threatened species listed under the *Threatened Species Protection Act 1995* or the *Environment Protection and Biodiversity Conservation Act 1999*.

"Potential habitat" is defined under the *Scheme* as:

"All vegetation types within the potential range of a threatened flora or fauna species that are likely to support that species in the short and/or long term. It may not include habitats known to be occupied intermittently. Potential habitat is determined from published and unpublished scientific literature and/or via expert opinion, is agreed by the Threatened Species Section (DPIPWE) in consultation with species specialist, and/or endorsed by the Threatened Species Scientific Advisory Committee (TSSAC) under the *Threatened Species Protection Act 1995*".

In relation to threatened flora, the proposed development area does support potential habitat (very marginally) but no populations were identified, so this is reasonably regarded as not being applicable.



See comments in preceding section under high priority biodiversity values in regard to threatened fauna species. Because this definition of "potential habitat" now includes the extremely nebulous concept of "...likely to support that species in the short and/or long term", it becomes almost impossible to discount any area of "native vegetation" (however modified), or even many patches of modified land such as pasture, regenerating cleared land, plantations, etc., within the municipality as not being "moderate priority biodiversity value", which is clearly not the intent. The definition does, however, include the concept of "may not include habitats known to be occupied intermittently", which means species such as the Tasmanian devil, spotted-tailed quoll, eastern quoll, eastern barred bandicoot, wedge-tailed eagle, masked owl, grey goshawk, forty-spotted pardalote and swift parrot that may "pass through" (but not permanently occupy) the site would not qualify the site as "moderate priority biodiversity value".

Native vegetation communities approaching a reduction in areal extent of 70% within a bioregional context.

There is no notion that WRE has been so reduced.

Other priority species that are not listed but are considered of conservation significance in the municipal area.

"Priority species" are defined under the *Scheme* as:

"...non-listed taxa identified in the Tasmanian RFA (Commonwealth of Australia and State of Tasmania 1997, as amended) as requiring some of form or protection or further research, non-listed species identified as poorly reserved in Tasmania, type locations and edge-of-range populations".

The site does not support such values. None of the RFA-listed non-listed taxa are present (note that the RFA has essentially been updated such that the list of priority species is now consistent with formally legislated lists). It is recognised that this municipal authority also now recognises *Eucalyptus rubida* (candlebark) as "priority species" due to its highly localised distribution in the municipality. This species is not present within or adjacent to the subject title. Poorly-reserved species have attempted to be defined and described at various times by DPIWRE (now NRE Tas) but the lists are of limited value because they lack rigour and rely on out-of-date data. This means that "poorly-reserved" taxa are best considered on a case-by-case basis by a suitably qualified person in relation to a specific development proposal and/or site. The site does not include any species that could reasonably be categorised as poorly-reserved. The subject title does not support any type locations of any taxa. The site does not include any edge-of range populations of any taxa.

High conservation value trees.

The *Scheme* defines a "high conservation value tree" as:

"a tree that is of a species that is listed in the *Threatened Species Protection Act 1995* or the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) and/or provide potential or significant habitat for a threatened species listed in either of those acts".

The *Scheme* defines a "high conservation value tree" to mean "a tree that is of a species that is listed in the *Threatened Species Protection Act 1995* or the *Environment Protection and Biodiversity Conservation Act 1999* (Cth) and/or provide potential or significant habitat for a threatened species listed in either of those acts".

The tree species present within the fringe of WRE included in the proposed hazard management area are *Eucalyptus obliqua* (stringybark) and *Eucalyptus regnans* (giant ash), which are not listed as threatened on either of the mentioned acts. Neither provide "potential or significant habitat for

a threatened species”, except at a very general level (i.e. a species such as the swift parrot may forage in any tree species but is most strongly associated with *Eucalyptus globulus* and *Eucalyptus ovata*).

That is, I do not believe that “high conservation value trees” are present, if the phrasing in Table E10.1 is interpreted literally. However, the usual interpretation of the planning authority of “high conservation value trees” under Table E10.1 is by reference to *Kingborough Biodiversity Offset Policy 6.10, Nov. 2016*. By reference to this, in this context (wet forest), any tree over 100 cm diameter at breast height (DBH) will qualify as a very high conservation value tree because of its potential importance (existing or future) for hollow-dwelling species. In this case, this will refer to any *Eucalyptus obliqua* (stringybark) or *Eucalyptus regnans* (giant ash) that exceeds this threshold. The area proposed for development does not support *Eucalyptus globulus* (blue gum), *Eucalyptus ovata* (black gum), *Eucalyptus viminalis* (white gum) or *Eucalyptus rubida* (candlebark), the other key species referred to in the *Policy*.

The most usual course taken by the planning authority is to require a “tree plan” (as per their issued guidelines) that provide a map of all trees over 25 cm DBH, tagged by number, identified to species and DBH measured for comparison to the table in the *Kingborough Biodiversity Offset Policy 6.10, November 2016*. In this case, I have clearly identified those trees that are captured by the *Policy* (at Table 2 & Figure 15, with data supplied to the client in a format allowing transfer to site plans if necessary). No such trees are proposed for removal nor indeed any form of reasonable adverse impact such that I do not believe that moderate priority biodiversity values need to be considered further.

“Low priority biodiversity values” are defined as (taken from Table E10.1 with author commentary below each):

All other native vegetation communities.

Applicable to WRE.

On the basis of the above analysis, I believe that the proposed development area supports low priority biodiversity values (in the form of WRE) and possibly moderate priority biodiversity values (in the form of very high conservation value trees, although I do not believe these will require removal).

The Performance Criteria for moderate priority biodiversity values are stated as (low priority biodiversity values are considered under P1(a)(i) & (ii), which are the same as below):

P1

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 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 *Kingborough Biodiversity Offset Policy 6.10, November 2016*;

In relation to P1(b)(i), it will be necessary to demonstrate how development has been designed and located to minimise impacts to low priority biodiversity values (WRE) and moderate priority biodiversity values (individual trees). In my opinion, this is satisfied by reference to the site plans that indicate limited (perhaps no) practical alternatives.

A bushfire hazard management plan certified by an accredited practitioner should satisfy P1(b)(ii). I note that a BAL-19 rating is proposed and I accept this as a reasonable balance between site characteristics and identified natural values.

To satisfy P1(b)(iii), the remaining moderate priority biodiversity values would need to be “retained and improved” in some manner. In this case, I suggest that the fact that the title is already subject to the Biodiversity Protection Area overlay, more formal mechanisms to “retain and improve” the remaining moderate priority biodiversity values are not warranted. This meets the intent of the “retained” part of the provisions. Meeting the intent of the “and improved” part of the provision is more difficult, at least in literal terms. It is more usual for the term “retained and improved” to be phrased as “retained and/or improved”, which recognises that “improvement” is not always practical and that “retention [of status]” is perfectly appropriate and adequate. I would argue this is the case here because the moderate priority biodiversity value only refers to individual trees, which are difficult to “improve” except by simply leaving them to grow on. The site plan should be able to clearly indicate which of very high conservation value trees can be retained (and any mitigation needed to ensure their security during works) and/or provide “significant justification” (and an appropriate offset on a per tree basis) for any such trees that may need to be removed (understood to be none).

P1(b)(iv) refers to “residual impacts 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 *Kingborough Biodiversity Offset Policy 6.10, November 2016*”. In relation to moderate priority biodiversity values, the residual impact would be the loss of any very high conservation value trees. The *Biodiversity Offset Policy 6.10* allows a financial offset to be contributed on a per tree basis at a rate of up to \$500/tree for very high conservation value trees if “significant justification” has been provided (and accepted) for the loss of any such trees. In this case, there will be no impact to such trees such that there will not be a “residual impact” meaning offsets are not required. The offset policy does not make reference to low priority biodiversity values (i.e. the WRE vegetation type).

### ***Waterway and Coastal Protection Code***

Part of the title is subject to the Waterway and Coastal Protection Area overlay (Figure 5). The bushfire hazard management plan will require the BAL-19 hazard management area to extend to close to the edge of the bank of the tributary of Schemers Creek but it is noted that no construction works are within the overlay. As discussed on site, creating and maintaining a low fuel state is likely to require only minor modification of the structure of the forest between the cleared area and the creek with all trees over 25 cm DBH able to be retained and only some minor understorey management (e.g. thinning of denser dogwood patches) required. There will be no material impact to the structure of the watercourse’s bed or banks or indeed any ground works in the overlay itself.

I note that E11.4.1 of the Code provides this exemption:

- (g) fire hazard management works for an existing dwelling in accordance with a bushfire hazard management plan endorsed by an accredited person as defined under the Bushfire Prone Areas Code, wherein the extent of clearing and soil disturbance is the minimum necessary for adequate protection from bushfire



In my opinion, this is open to little interpretation. The dwelling is clearly “existing” and therefore it should not be relevant if the proposal is for a minor or major extension (in this case, clearly minor). Further, there will be a “bushfire hazard management plan endorsed by an accredited person as defined under the Bushfire Prone Areas Code” and this is recommending a BAL-19 standard be applied, which I believe meet the intent of the “extent of clearing [none proposed] and soil disturbance [none proposed] is the minimum necessary for adequate protection from bushfire”. That is, I believe that the proposal is exempt under E11.4.1(g). I am well aware that this is not the interpretation of the planning authority such that I examine the balance of the Code provisions below.

Below I examine the relevant Development Standard with respect to my findings.

E11.7 Development Standards

E11.7.1 Buildings and Works

Objective:

To ensure that buildings and works in proximity to a waterway, the coast, identified climate change refugia and potable water supply areas will not have an unnecessary or unacceptable impact on natural values.

I do not believe that the proposal will compromise the objective of E11.7.1 but below I review the Acceptable Solutions and Performance Criteria.

Acceptable Solutions

A1

Building and works within a Waterway and Coastal Protection Area must be within a building area on a plan of subdivision approved under this planning scheme.

I do not believe that this is satisfied because there is no “building area on a plan of subdivision approved under this planning scheme”.

Performance Criteria

P1

Building and works within a Waterway and Coastal Protection Area must satisfy all of the following:

- (a) avoid or mitigate impact on natural values

I do not anticipate that the “works” (i.e. minor fuel management) will materially impact on the natural values of the waterway as they will be restricted to the existing forested slope without any impact to the stream bed or banks and with no discharge/input of sediment, chemicals or water into the waterway.

- (b) mitigate and manage adverse erosion, sedimentation and runoff impacts on natural values;

I do not anticipate that the “works” (i.e. minor fuel management) will result in any, let alone any “adverse”, “erosion, sedimentation and runoff impacts on natural values” because there will be no disturbance to the soil profile.

- (c) avoid or mitigate impacts on riparian or littoral vegetation;

Impacts to riparian vegetation will be minor (see bushfire hazard management plan) but specific mitigation beyond restricting such activity to the southern side of the watercourse is not considered necessary.

- (d) maintain natural streambank and streambed condition, (where it exists);

I do not anticipate that the "works" (i.e. minor fuel management) will result in any alteration to the natural streambank or streambed.

- (e) maintain in-stream natural habitat, such as fallen logs, bank overhangs, rocks and trailing vegetation;

I do not anticipate that the "works" (i.e. minor fuel management) will result in any alteration to "in-stream natural habitat, such as fallen logs, bank overhangs, rocks and trailing vegetation".

- (f) avoid significantly impeding natural flow and drainage;

I do not anticipate that the "works" (i.e. minor fuel management) will result in any change to the natural flow or drainage of the Schemers Creek drainage system.

- (g) maintain fish passage (where applicable);

Not considered applicable to a very minor ephemeral headwater stream.

- (h) avoid landfilling of wetlands;

Not applicable – not a wetland.

- (i) works are undertaken generally in accordance with Waterways and Wetlands Works Manual (DPIPWE, 2003) and Tasmanian Coastal Works Manual (DPIPWE, December, 2010), and the unnecessary use of machinery within watercourses or wetlands is avoided.

Not considered relevant to the "works" (i.e. minor fuel management).

### ***Scenic Landscape Code***

While analysis of the impacts to landscape values is not my specific area of expertise, I note that correspondence from Kingborough Council dated 19 Jul. 2023 refers to "where clearing of more than 500 m<sup>2</sup> of bushland within a Scenic Protection Area under Code E14.0 of the Scheme is proposed, details are required on how the performance criteria will be met". As this refers to "bushland", I believe I can provide some relevant information.

First, I note that at E14.4.1(e), "fire hazard management works for an existing dwelling in accordance with a bushfire hazard management plan endorsed by an accredited person as defined under the Bushfire Prone Areas Code, wherein the extent of vegetation cleared is the minimum necessary" are exempt from the Code. See discussion under Biodiversity Code and Waterway and Coastal protection Code.

Acceptable Solution A1(b) refers to "removal or disturbance of bushland must comply with both of the following: (a)...; (b) be no more than 500 m<sup>2</sup> in extent". I have supplied my revised vegetation mapping of the extent of FUR vs WRE mapping units, the WRE reasonably interpreted as "bushland" under the Code ("land which is dominated by native vegetation"). While no such "bushland" will be subject to "removal" per se, management as a low fuel state may be construed as "disturbance" ("alteration of the appearance of bushland through actions including cutting down, felling, thinning, logging, removing, destroying, poisoning, ringbarking, uprooting, slashing or burning"). If overlaying the proposed BAL-19 hazard management area with the revised vegetation mapping indicates less than 500 m<sup>2</sup> of WRE (i.e. "bushland" will be impacted, A1(b) is satisfied. However, it is likely that this threshold will be exceeded, such that the relevant Performance Criteria will need to be considered. This is stated as "Removal or disturbance of bushland must be minimised and must satisfy both of the following: (a) result in only negligible change to the silhouette of skylines; (b) maintain scenic landscape value". I do not believe there is any manner in which there will be any "change to the silhouette of skylines". The works are very minor and should not result in any measurable change to the "scenic landscape value".

## Recommendations

The recommendations provided below are a summary of those provided in relation to each of the natural values described in the main report. The main text of the report provides the relevant context for the recommendations.

### Vegetation types

In general terms, minimising the extent of “clearance and conversion” and/or “disturbance” of native vegetation is recommended, acknowledging constraints imposed by the location of the existing dwelling and access, setbacks, the lot’s configuration, slopes, service and access requirements and contemporary bushfire hazard management requirements.

### Threatened flora

Not applicable – no threatened flora present.

### Threatened fauna

Apart from the generic recommendation to minimise the extent of “clearance and conversion” and/or “disturbance” to native vegetation, it is also recommended that the extent of loss of individual eucalypts is minimised with an emphasis on the following:

- individuals of any species with a DBH greater than 100 cm.

### Weed and disease management

Any works, especially access and service provision, will provide an opportunity for weed establishment by mobilising soil-stored seed and providing fresh bare ground ideal for seedling establishment. “Starting clean” is good practice (i.e. machinery, vehicle and equipment hygiene prior to entering the site).

Owner-occupation is the most likely practical means of achieving good long-term weed management outcomes through vigilance and control.

### Legislative and policy implications

A permit under Section 51 of the Tasmanian *Threatened Species Protection Act 1995* (TSPA) should not be required.

A formal referral to the relevant Commonwealth agency under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA) should not be required.

Initial review of the relevant provisions of the Biodiversity Code of the *Kingborough Interim Planning Scheme 2015* indicates satisfaction of E10.7.1 P1 with minor recommendations provided in relation to management of moderate priority biodiversity values (individual trees).

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## APPENDIX A. Vegetation community structure and composition

The table below provides information on the structure and composition of the native vegetation mapping unit identified from the part of the title proposed for development.

| <i>Eucalyptus regnans</i> forest (TASVEG code: WRE)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                         |                                                                                                                                                                                                            |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The forest fringing the existing residentially-developed part of the title (now mapped as FUR) has a maturing regrowth structure (post-1967 bushfire) dominated by <i>Eucalyptus regnans</i> with some contribution from <i>Eucalyptus globulus</i> (with <i>Acacia dealbata</i> a minor secondary stratum) over a dense secondary canopy of typical wet sclerophyll shrubs including <i>Pomaderris apetala</i>, <i>Bedfordia salicina</i>, <i>Acacia verticillata</i> and <i>Pittosporum bicolor</i>, in turn over a generally open understorey with occasional graminoids and ground ferns in canopy gaps (with <i>Dicksonia antarctica</i> restricted to near the creekline). Grasses and herbs are sparse to absent. There is extensive leaf litter, typical of wet sclerophyll forest, but limited coarse woody debris, most logs small or suspended above the ground (i.e. recent falls). Rock outcrops are absent. The fringe of WRE around the existing house site is highly modified, having once been largely cleared of at least the understorey, as evidenced by the now dense poles of <i>Pomaderris apetala</i> and sparse stems of <i>Eucalyptus</i> (mainly small apart from scattered larger stems) and very open understorey. That aside, WRE is in good ecological condition with no weeds or symptoms of plant disease observed.</p> |                         |                                                                                                                                                                                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                         |                                                                                                                                                                                                            |
| Examples of WRE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                         |                                                                                                                                                                                                            |
| Stratum                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Height (m)<br>Cover (%) | Species<br>(underline = dominant, parentheses = sparse; + = present only)                                                                                                                                  |
| Trees                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 45 m<br>30%             | <u><i>Eucalyptus regnans</i></u> , ( <i>Eucalyptus obliqua</i> )                                                                                                                                           |
| Trees                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 25 m<br>5-20%           | <u><i>Eucalyptus regnans</i></u>                                                                                                                                                                           |
| Trees                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 15-22 m<br>10%          | <u><i>Eucalyptus regnans</i></u> , ( <i>Acacia dealbata</i> )                                                                                                                                              |
| Tall shrubs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 5-12 m<br>60%           | <u><i>Pomaderris apetala</i></u> , <i>Acacia dealbata</i> , <i>Cassinia aculeata</i> , <i>Olearia argophylla</i> , <i>Leptospermum lanigerum</i> , <i>Pittosporum bicolor</i> , <i>Acacia verticillata</i> |
| Low shrubs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <3 m<br><5%             | <i>Pimelea drupacea</i> , <i>Coprosma quadrifida</i> , <i>Beyeria viscosa</i>                                                                                                                              |
| Graminoids                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <5%                     | <u><i>Lepidosperma ensiforme</i></u> , <i>Gahnia grandis</i>                                                                                                                                               |
| Grasses                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | +                       | <i>Poa labillardierei</i>                                                                                                                                                                                  |
| Herbs                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | +                       | <i>Hydrocotyle hirta</i> , <i>Pterostylis pedunculata</i> , <i>Acaena novae-zelandiae</i>                                                                                                                  |
| Ground ferns                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | +                       | <i>Pteridium esculentum</i> [edges], <i>Histiopteris incisa</i> , <i>Hypolepis rugosula</i> [gaps]                                                                                                         |
| Trunked ferns                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 1 m<br>local            | <i>Dicksonia antarctica</i>                                                                                                                                                                                |



## APPENDIX B. Vascular plant species recorded from study area

Botanical nomenclature follows *A Census of the Vascular Plants of Tasmania* (de Salas & Baker 2023), with family placement updated to reflect the nomenclatural changes recognised in the *Flora of Tasmania Online* (de Salas 2023+) and APG (2016); common nomenclature follows *The Little Book of Common Names of Tasmanian Plants* (Wapstra et al. 2005+, updated online at [www.nre.tas.gov.au](http://www.nre.tas.gov.au)).

**Table B1.** Summary of vascular species recorded from study area (fringe of WRE only)

| STATUS | ORDER         |                 |              |              |
|--------|---------------|-----------------|--------------|--------------|
|        | DICOTYLEDONAE | MONOCOTYLEDONAE | GYMNOSPERMAE | PTERIDOPHYTA |
|        | 16            | 3               | -            | 4            |
| e      | 1             | -               | -            | -            |
| i      | -             | -               | -            | -            |
| Sum    | 17            | 3               | 0            | 4            |
| TOTAL  | 24            |                 |              |              |

### DICOTYLEDONAE

#### APIACEAE

*Hydrocotyle hirta*

hairy pennywort

#### ASTERACEAE

e *Bedfordia salicina*

tasmanian blanketleaf

*Cassinia aculeata* subsp. *aculeata*

common dollybush

*Olearia argophylla*

musk daisybush

#### EUPHORBIACEAE

*Beyeria viscosa*

pinkwood

#### FABACEAE

*Acacia dealbata* subsp. *dealbata*

silver wattle

*Acacia verticillata* subsp. *verticillata*

prickly moses

#### MYRTACEAE

*Eucalyptus obliqua*

stringybark

*Eucalyptus regnans*

giant ash

*Leptospermum lanigerum*

woolly teatree

#### OXALIDACEAE

*Oxalis perennans*

grassland woodsorrel

#### PITTOSPORACEAE

*Pittosporum bicolor*

cheesewood

#### RHAMNACEAE

*Pomaderris apetala* subsp. *apetala*

common dogwood

#### ROSACEAE

*Acaena novae-zelandiae*

common buzzy

#### RUBIACEAE

*Coprosma quadrifida*

native currant

#### THYMELAEACEAE

*Pimelea drupacea*

cherry riceflower

#### URTICACEAE

*Urtica incisa*

scrub nettle

### MONOCOTYLEDONAE

#### CYPERACEAE

*Lepidosperma ensiforme*

arching swordgrass

#### ORCHIDACEAE

*Pterostylis pedunculata*

maroonhood

#### POACEAE

*Poa labillardierei* var. *labillardierei*

silver tussockgrass

### PTERIDOPHYTA

#### DENNSTAEDTIACEAE

*Histiopteris incisa*

batswing fern

*Hypolepis rugosula*

*Pteridium esculentum* subsp. *esculentum*

**DICKSONIACEAE**

*Dicksonia antarctica*

ruddy groundfern

bracken

soft treefern

## APPENDIX C. Analysis of database records of threatened flora

Table C1 provides a listing of threatened flora from within 5,000 m of the study area (nominal buffer width usually used to discuss the potential of a particular study area to support various species listed in databases), with comments on whether potential habitat is present for the species, and possible reasons why a species was not recorded.

**Table C1.** Threatened flora records from within 5,000 m of boundary of study area

Species listed below are listed as rare (r), vulnerable (v), endangered (e), or extinct (x) on the Tasmanian *Threatened Species Protection Act 1995* (TSPA); vulnerable (VU), endangered (EN), critically endangered (CR) or extinct (EX) on the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA). Information below is sourced from DNRET's *Natural Values Atlas* (DNRET 2023a) and other sources where indicated. Habitat descriptions are taken from FPA (2016), FPA (2017) and TSS (2003+), except where otherwise indicated. Species marked with # are listed in CofA (2023).

| Scientific name<br>Common name                      | Status<br>TSPA<br>EPBCA | Tasmanian habitat description<br>(and distribution)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Comments on study area and<br>database records                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------------------------------|-------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Caladenia caudata</i><br>tailed spider-orchid    | v<br>VU<br># only       | <i>Caladenia caudata</i> has highly variable habitat, which includes the central north: <i>Eucalyptus obliqua</i> heathy forest on low undulating hills; the northeast: <i>E. globulus</i> grassy/heathy coastal forest, <i>E. amygdalina</i> heathy woodland and forest, <i>Allocasuarina</i> woodland; and the southeast: <i>E. amygdalina</i> forest and woodland on sandstone, coastal <i>E. viminalis</i> forest on deep sands. Substrates vary from dolerite to sandstone to granite, with soils ranging from deep windblown sands, sands derived from sandstone and well-developed clay loams developed from dolerite. A high degree of insolation is typical of many sites. | Potential habitat absent (species has not been recorded from wet sclerophyll forest with a dense understorey).                                                                                                                                                                                                                                                                                                                                 |
| <i>Colobanthus curtisiae</i><br>grassland cupflower | r<br>VU<br># only       | <i>Colobanthus curtisiae</i> occurs in lowland grasslands and grassy woodlands but is also prevalent on rocky outcrops and margins of forest on dolerite on the Central Highlands (including disturbed sites such as log landings and snag tracks).                                                                                                                                                                                                                                                                                                                                                                                                                                 | Potential habitat absent (species has not been recorded from wet sclerophyll forest with a dense understorey).                                                                                                                                                                                                                                                                                                                                 |
| <i>Corunastylis nuda</i><br>tiny midge-orchid       | r<br>-                  | <i>Corunastylis nuda</i> occurs in a wide range of habitats from near sea level to 1,000 m a.s.l., on a range of different soil types and geologies. Vegetation types include scrub, subalpine grassland, open rock plates, heathy open forest, shrubby dry sclerophyll forest and wet sclerophyll forest.                                                                                                                                                                                                                                                                                                                                                                          | Potential habitat absent (species has not been recorded from wet sclerophyll forest with a dense understorey).                                                                                                                                                                                                                                                                                                                                 |
| <i>Epacris virgata</i><br>twiggy heath              | v<br>EN<br># only       | <i>Epacris virgata</i> is restricted to a small area of undulating terrain in the foothills of the Dazzler Range near Beaconsfield, where it occurs on serpentinite-derived soils in dry sclerophyll forest at an elevation of 40-80 m a.s.l.                                                                                                                                                                                                                                                                                                                                                                                                                                       | The taxon formally referred to by DNRET as <i>Epacris virgata</i> Kettering has recently been removed from the <i>Natural Values Atlas</i> because all specimens of what was previously referred to as <i>Epacris virgata</i> outside the Beaconsfield area have been re-determined as <i>Epacris tasmanica</i> , a widespread, well-reserved and non-threatened species (M. de Salas – Tasmanian Herbarium & J. Quarmby – DNRET pers. comm.). |



| Scientific name<br>Common name                                                 | Status<br>TSPA<br>EPBCA | Tasmanian habitat description<br>(and distribution)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Comments on study area and<br>database records                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------------------------------------------------------------|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | On this basis, the study area does not support potential habitat of <i>Epacris virgata</i> , which is restricted to soils derived from ultramafic substrates in the Beaconsfield area. Technically, the study area does support potential habitat of the taxon erroneously referred to as " <i>Epacris virgata</i> Kettering" (because the site is on dolerite). Site survey did not result in detection of <i>Epacris tasmanica</i> (the correct name for " <i>Epacris virgata</i> Kettering"). |
| <i>Lepidium hyssopifolium</i><br>soft peppergrass                              | e<br>EN<br># only       | The native habitat of <i>Lepidium hyssopifolium</i> is the growth suppression zone beneath large trees in grassy woodlands and grasslands (e.g. over-mature black wattles and isolated eucalypts in rough pasture). <i>Lepidium hyssopifolium</i> is now found primarily under large exotic trees on roadsides and home yards on farms. It occurs in the eastern part of Tasmania between sea-level to 500 m a.s.l. in dry, warm and fertile areas on flat ground on weakly acid to alkaline soils derived from a range of rock types. | Potential habitat absent (species has not been recorded from wet sclerophyll forest with a dense understorey).                                                                                                                                                                                                                                                                                                                                                                                   |
| <i>Lepidosperma tortuosum</i><br>twisting rapier sedge                         | r<br>-                  | <i>Lepidosperma tortuosum</i> occurs in heathland and heathy woodland, in lowland sites, mainly in eastern parts of the State. It often occurs in the sedgier (peatier) parts of dry heathland. It can occur on a range of substrates.                                                                                                                                                                                                                                                                                                 | Potential habitat absent (species has not been recorded from wet sclerophyll forest with a dense understorey).                                                                                                                                                                                                                                                                                                                                                                                   |
| <i>Leucochrysum albicans</i><br>subsp. <i>tricolor</i><br>grassland paperdaisy | e<br>EN<br># only       | <i>Leucochrysum albicans</i> subsp. <i>tricolor</i> occurs in the west and on the Central Plateau and the Midlands, mostly on basalt soils in open grassland. This species would have originally occupied <i>Eucalyptus pauciflora</i> woodland and tussock grassland, though most of this habitat is now converted to improved pasture or cropland.                                                                                                                                                                                   | Potential habitat absent (species has not been recorded from wet sclerophyll forest with a dense understorey).                                                                                                                                                                                                                                                                                                                                                                                   |
| <i>Prasophyllum amoenum</i><br>dainty leek-orchid                              | v<br>EN<br>#            | <i>Prasophyllum amoenum</i> has been recorded from Snug Tiers and Mt Wellington. At Snug Tiers the species occurs in sedgy buttongrass moorland and heath, and also in openings in eucalypt woodland and scrub on damp stony loam. On Mt Wellington the species is found in and near cushion plants in alpine moorland.                                                                                                                                                                                                                | Potential habitat absent (species has not been recorded from wet sclerophyll forest with a dense understorey).                                                                                                                                                                                                                                                                                                                                                                                   |
| <i>Prasophyllum apoxychilum</i><br>tapered leek-orchid                         | v<br>EN<br># only       | <i>Prasophyllum apoxychilum</i> is restricted to eastern and northeastern Tasmania where it 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 and southeast of its range.                                                                                                                                                                                            | Potential habitat absent (species has not been recorded from wet sclerophyll forest with a dense understorey).                                                                                                                                                                                                                                                                                                                                                                                   |

| Scientific name<br>Common name                          | Status<br>TSPA<br>EPBCA | Tasmanian habitat description<br>(and distribution)                                                                                                                                                                                                                                                | Comments on study area and<br>database records                                                                                                                                                                             |
|---------------------------------------------------------|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Thelymitra jonesii</i><br>skyblue sun-orchid         | e<br>EN<br># only       | <i>Thelymitra jonesii</i> occurs in moist coastal heath on sandy to peaty soils and in <i>Eucalyptus obliqua</i> forest in deep loam soil over dolerite.                                                                                                                                           | Potential habitat absent (species has not been recorded from wet sclerophyll forest with a dense understorey).                                                                                                             |
| <i>Westringia angustifolia</i><br>narrowleaf westringia | r<br>-                  | <i>Westringia angustifolia</i> occurs mainly in mid elevations, always on dolerite (but can be close to dolerite-sediment contact zones), in dry to wet sclerophyll forest on broad ridges, slopes and dense riparian shrubberies.                                                                 | Potential habitat technically present because the site is on dolerite, although highly atypical of most sites supporting the species.<br>Species not detected (no seasonal constraint on detection and/or identification). |
| <i>Xerochrysum palustre</i><br>swamp everlasting        | v<br>VU<br># only       | <i>Xerochrysum palustre</i> has a scattered distribution with populations in the northeast, east coast, Central Highlands and Midlands, all below about 700 m elevation. It occurs in wetlands, grassy to sedgy wet heathlands and extends to associated heathy <i>Eucalyptus ovata</i> woodlands. | Potential habitat absent (species has not been recorded from wet sclerophyll forest with a dense understorey).                                                                                                             |



## APPENDIX D. Analysis of database records of threatened fauna

Table D1 provides a listing of threatened fauna from within 5,000 m of the study area (nominal buffer width usually used to discuss the potential of a particular study area to support various species listed in databases), with comments on whether potential habitat is present for the species, and possible reasons why a species was not recorded.

**Table D1.** Threatened fauna records from 5,000 m of boundary of study area

Species listed below are listed as rare (r), vulnerable (v), endangered (e), or extinct (x) on the Tasmanian *Threatened Species Protection Act 1995* (TSPA); vulnerable (VU), endangered (EN), critically endangered (CR) or extinct (EX) on the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA). Information below is sourced from the DNRET's *Natural Values Atlas* (DNRET 2023a), Bryant & Jackson (1999), McNab (2022) and FPA (2023); marine, wholly pelagic and littoral species such as marine mammals, fish and offshore seabirds are excluded. Species marked with # are listed in CofA (2023). Note that the use of the descriptions of "potential habitat" and "significant habitat" as provided in FPA (2023) does not imply a direct relationship between these concepts and the concept of "significant habitat" as per C7.3.1 of the *State Planning Provisions*.

| Scientific name<br>Common name                                            | Status<br>TSPA<br>EPBCA | Tasmanian habitat description<br>(and distribution)                                                                                                                                                                                                                                                                                                                                                               | Comments on project area and<br>database records                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
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| <i>Accipiter novaehollandiae</i><br>grey goshawk                          | e<br>-                  | <b>Potential habitat</b> is native forest with mature elements below 600 m altitude, particularly along watercourses.<br><b>Significant habitat</b> for the grey goshawk may be summarised as areas of wet forest, rainforest and damp forest patches in dry forest, with a relatively closed mature canopy, low stem density, and open understorey in close proximity to foraging habitat and a freshwater body. | <b>Potential habitat</b> effectively absent from the part of the title proposed for development, except in a very general sense. Better potential habitat is present elsewhere in title, where there is well-developed WRE forest with a maturing canopy and variably open to dens understorey. While it is recognised that recent evidence indicates the species can nest in mature regrowth forest, these sites tend to have a suite of features such as being close to riparian areas and an understorey that includes mature forest elements such as <i>Dicksonia antarctica</i> and some rainforest elements. This combination of features occurs along Schemers Creek but will effectively be retained "as is". Searches of trees with binoculars failed to detect any nest sites (but acknowledging that these can be highly cryptic).<br><b>Significant habitat</b> absent.<br>The species may very occasionally utilise the greater title area as part of a home range and for foraging but small-scale development (house extension and establishment/maintenance of a hazard management area in the fringe of already disturbed forest) should not have a significant impact on this aspect of the life history of the species.<br>This species should not require further consideration. |
| <i>Antipodia chaostola</i><br>tax. <i>leucophaea</i><br>chaostola skipper | e<br>EN<br>#            | <b>Potential habitat</b> is dry forest and woodland supporting <i>Gahnia radula</i> (usually on sandstone and other sedimentary rock types) or <i>Gahnia microstachya</i> (usually on granite-based substrates).                                                                                                                                                                                                  | <b>Potential habitat</b> absent, as both species of <i>Gahnia</i> are not present.<br>This species should not require further consideration.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |



| Scientific name<br>Common name                                                                                                           | Status<br>TSPA<br>EPBCA | Tasmanian habitat description<br>(and distribution)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Comments on project area and<br>database records                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
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| <i>Apus pacificus</i><br>fork-tailed swift                                                                                               | -<br>-<br># only        | Seasonal migrant (December through March) with habitat open skies over any habitat, more commonly associated with forested hills and mountains (McNab 2022).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | <b>Potential habitat</b> widespread but this is a species that flies at high altitude, very fast and highly mobile, feeding on the wing and virtually never perches (McNab 2022).<br>This species should not require further consideration.                                                                                                                                                                                                                                                                                                                                                                                                 |
| <i>Aquila audax</i> subsp.<br><i>fleayi</i><br>wedge-tailed eagle                                                                        | e<br>EN<br>#            | <b>Potential habitat</b> comprises <b>potential nesting habitat</b> and <b>potential foraging habitat</b> .<br><b>Potential foraging habitat</b> is a wide variety of forest (including areas subject to native forest silviculture) and non-forest habitats.<br><b>Potential nesting habitat</b> is tall eucalypt trees in large tracts (usually more than 10 ha) of eucalypt or mixed forest. Nest trees are usually amongst the largest in a locality. They are generally in sheltered positions on leeward slopes, between the lower and mid sections of a slope and with the top of the tree usually lower than the ground level of the top of the ridge, although in some parts of the State topographic shelter is not always a significant factor (e.g. parts of the northwest and Central Highlands). Nests are usually not constructed close to sources of disturbance and nests close to disturbance are less productive.<br><b>Significant habitat</b> is all native forest and native non-forest vegetation within 500 m or 1 km line-of-sight of known nest sites (where the nest tree is still present). | <b>Potential foraging habitat</b> present.<br><b>Potential nesting habitat</b> present within title and surrounds but no nests reported from part of title proposed for development.<br><b>Significant habitat</b> absent.<br>The species may very occasionally utilise the greater title area as part of a home range and for foraging but small-scale development (house extension and establishment/maintenance of a hazard management area in the fringe of already disturbed forest) should not have a significant impact on this aspect of the life history of the species.<br>This species should not require further consideration. |
| <i>Botaurus poiciloptilus</i><br>Australasian bittern                                                                                    | -<br>EN<br># only       | <b>Potential habitat</b> is comprised of wetlands with tall dense vegetation, where it forages in still, shallow water up to 0.3 m deep, often at the edges of pools or waterways, or from platforms or mats of vegetation over deep water. It favours permanent and seasonal freshwater habitats, particularly those dominated by sedges, rushes and reeds or cutting grass growing over a muddy or peaty substrate (TSSC 2011).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Potential habitat</b> absent. Wetlands are absent.<br>This species should not require further consideration.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <i>Bubulcus coromandus</i><br>[syn. <i>B. ibis</i> , <i>Ardea ibis</i> ]<br>cattle egret                                                 | -<br>-<br># only        | Seasonal migrant (April through October) with habitat agricultural lands, crops, dams, pastures, particularly those with cattle, mudflats and wetlands (McNab 2018).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>Potential habitat</b> absent, except in a very general sense.<br>This species should not require further consideration.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <i>Ceyx azureus</i> subsp.<br><i>diemenensis</i><br>[syn. <i>Alcedo azurea</i> subsp. <i>diemenensis</i> ]<br>Tasmanian azure kingfisher | e<br>EN<br>#            | <b>Potential habitat</b> comprises <b>potential foraging habitat</b> and <b>potential breeding habitat</b> .<br><b>Potential foraging habitat</b> is primarily freshwater (occasionally estuarine) waterbodies such as large rivers and streams with well-developed overhanging vegetation suitable for                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <b>Potential foraging habitat</b> absent (tributary of Schemers Creek is very heavily forested and shallow with low banks only and only ephemeral flow).<br><b>Potential breeding habitat</b> absent (as above).<br>This species should not require further consideration.                                                                                                                                                                                                                                                                                                                                                                  |



| Scientific name<br>Common name                                               | Status<br>TSPA<br>EPBCA | Tasmanian habitat description<br>(and distribution)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Comments on project area and<br>database records                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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|                                                                              |                         | perching and water deep enough for<br>dive-feeding.<br><b>Potential breeding habitat</b> is usually<br>steep banks of large rivers (a breeding<br>site is a hole (burrow) drilled in the<br>bank).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <i>Dasyurus maculatus</i><br>subsp. <i>maculatus</i><br>spotted-tailed quoll | r<br>VU<br>#            | <b>Potential habitat</b> is coastal scrub,<br>riparian areas, rainforest, wet forest,<br>damp forest, dry forest and blackwood<br>swamp forest (mature and regrowth),<br>particularly where structurally complex<br>and steep rocky areas are present, and<br>includes remnant patches in cleared<br>agricultural land.<br><b>Significant habitat</b> is all potential<br>denning habitat within the core range of<br>the species. <b>Potential denning</b><br><b>habitat</b> for the spotted-tailed quoll<br>includes 1) any forest remnant<br>(>0.5 ha) in a cleared or plantation<br>landscape that is structurally complex<br>(high canopy, with dense understorey<br>and ground vegetation cover), free<br>from the risk of inundation, or 2) a rock<br>outcrop, rock crevice, rock pile, burrow<br>with a small entrance, hollow logs, large<br>piles of coarse woody debris and caves.<br><b>FPA's Fauna Technical Note 10</b> can<br>be used as a guide in the identification<br>of potential denning habitat. | <b>Potential habitat</b> present (in a general<br>sense).<br><b>Significant habitat</b> absent (within<br>core range but the described potential<br>denning habitat is not present).<br>The species may very occasionally<br>utilise the greater title area as part of a<br>home range and for foraging but small-<br>scale development (house extension<br>and establishment/maintenance of a<br>hazard management area in the fringe<br>of already disturbed forest) should not<br>have a significant impact on this aspect<br>of the life history of the species.<br>This species should not require further<br>consideration but see <b>FINDINGS</b><br><b>Threatened fauna</b> for more details. |
| <i>Dasyurus viverrinus</i><br>eastern quoll                                  | -<br>EN<br>#            | <b>Potential habitat</b> is a variety of<br>habitats including rainforest, heathland,<br>alpine areas and scrub. However, it<br>seems to prefer dry forest/native<br>grassland mosaics which are bounded<br>by agricultural land.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | <b>Potential habitat</b> present.<br>The species may very occasionally<br>utilise the greater title area as part of a<br>home range and for foraging but small-<br>scale development (house extension<br>and establishment/maintenance of a<br>hazard management area in the fringe<br>of already disturbed forest) should not<br>have a significant impact on this aspect<br>of the life history of the species.<br>This species should not require further<br>consideration but see <b>FINDINGS</b><br><b>Threatened fauna</b> for more details.                                                                                                                                                    |
| <i>Gallinago hardwickii</i><br>Latham's snipe                                | -<br>-<br># only        | Seasonal migrant that prefers brackish,<br>fresh and saline habitats including<br>lagoons, lakes, marshes, swamps, wet<br>grasslands and paddocks and wetlands<br>with tussockgrasses (McNab 2022).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <b>Potential habitat</b> absent, except in<br>the most general of senses.<br>This species should not require further<br>consideration.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <i>Haliaeetus leucogaster</i><br>white-bellied sea-eagle                     | v<br>-                  | <b>Potential habitat</b> comprises<br><b>potential nesting habitat</b> and<br><b>potential foraging habitat</b> .<br><b>Potential foraging habitat</b> is any<br>large waterbody (including sea coasts,<br>estuaries, wide rivers, lakes,<br>impoundments and even large farm<br>dams) supporting prey items (fish).<br><b>Potential nesting habitat</b> is tall<br>eucalypt trees in large tracts (usually<br>more than 10 ha) of eucalypt or mixed<br>forest within 5 km of the coast (nearest                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | <b>Potential foraging habitat</b> present<br>(although it would be mainly over open<br>sea).<br><b>Potential nesting habitat</b> present<br>within title and surrounds but no nests<br>reported from part of title proposed for<br>development.<br><b>Significant habitat</b> absent.<br>The species may very occasionally<br>utilise the greater title area as part of a<br>home range and for foraging but small-<br>scale development should not have a                                                                                                                                                                                                                                            |



| Scientific name<br>Common name                               | Status<br>TSPA<br>EPBCA | Tasmanian habitat description<br>(and distribution)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Comments on project area and<br>database records                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
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|                                                              |                         | coast including shores, bays, inlets and peninsulas), large rivers (class 1), lakes or complexes of large farm dams. Scattered trees along river banks or pasture land may also be used.<br><b>Significant habitat</b> is all native forest and native non-forest vegetation within 500 m or 1 km line-of-sight of known nest sites (where nest tree still present).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | significant impact on this aspect of the life history of the species.<br>This species should not require further consideration.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <i>Hirundapus caudacutus</i><br>white-throated<br>needletail | -<br>VU<br>#            | Seasonal migrant (December through March) with habitat open skies over any habitat, more commonly associated with forested hills and mountains (McNab 2022).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <b>Potential habitat</b> widespread but this is a species that flies at high altitude, very fast and highly mobile, feeding on the wing and virtually never perches (McNab 2022).<br>This species should not require further consideration.                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <i>Lathamus discolor</i><br>swift parrot                     | e<br>CR<br>#            | <b>Potential breeding habitat</b> comprises <b>potential foraging habitat</b> and <b>potential nesting habitat</b> , and is based on definitions of foraging and nesting trees (see Table A in swift parrot habitat assessment Technical Note).<br><b>Potential foraging habitat</b> comprises <i>E. globulus</i> or <i>E. ovata</i> trees that are old enough to flower. In the Eastern Tiers, potential foraging habitat also includes <i>E. brookeriana</i> where it has the potential to contribute a substantial foraging resource. The occurrence of foraging-habitat can be remotely assessed, although only to a limited extent, by using mapping layers such as GlobMap (DPIPWE 2010). Due to the scale and inadequacies in current foraging-habitat mapping, potential foraging-habitat density within operational areas should be identified by ground-based surveys as per Table B in the swift parrot habitat assessment Technical Note.<br>For management purposes <b>potential nesting habitat</b> is considered to comprise eucalypt forests that contain hollow-bearing trees. The FPA mature habitat availability map (see Technical Note 2) predicts the availability of hollow-bearing trees using the relevant definitions of habitat provided in Table C of the swift parrot habitat assessment Technical Note. The mature habitat availability map is designed to be used to make landscape-scale assessments and may not be reliable for stand-level assessments required during the development of a Forest Practices Plan. At the stand-level the availability and distribution of hollow-bearing trees across a coupe or operation area is best determined from a ground-based assessment (see Table C in the swift | <b>Potential foraging habitat</b> absent (both <i>Eucalyptus globulus</i> and <i>Eucalyptus ovata</i> are absent from the part of the title proposed for development).<br><b>Potential nesting habitat</b> absent (no hollow-bearing trees at present and none expected to develop for many decades – forest is regrowth from post-1967). Site is atypical of most recorded breeding locations that tend to be on ridges and upper slopes in mature forest with a high abundance of hollow-bearing trees.<br><b>Significant habitat</b> absent.<br>This species should not require further consideration but see <b>FINDINGS Threatened fauna</b> for more details. |



| Scientific name<br>Common name                             | Status<br>TSPA<br>EPBCA   | Tasmanian habitat description<br>(and distribution)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Comments on project area and<br>database records                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
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|                                                            |                           | <p>parrot habitat assessment Technical Note).</p> <p><b>Significant habitat</b> is all potential breeding habitat within the SE potential breeding range and the NW breeding areas.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <p><i>Lissotes menalcas</i><br/>Mt Mangana stag beetle</p> | <p>v<br/>-</p>            | <p><b>Potential habitat</b> is any eucalypt forest that contains rotting logs (often numerous, and usually greater than about 40 cm diameter at mid-log length) below about 650 m a.s.l. (generally moist habitats that have not been subject to high intensity or frequent fires in about the last 20 years). The species has a patchy distribution within areas of potential habitat. Some rainforest will support the species, although in low densities as the species has an apparent preference for eucalypt logs.</p> <p><b>Significant habitat</b> is all potential habitat within the known range.</p>                               | <p><b>Potential habitat</b> effectively absent because while the fringing forest is eucalypt forest, coarse woody debris is scattered only and only just starting to form downers with suitable decay.</p> <p><b>Significant habitat</b> absent.</p> <p>This species should not require further consideration but see <b>FINDINGS Threatened fauna</b> for more details.</p>                                                                                                                                                                               |
| <p><i>Litoria raniformis</i><br/>green and golden frog</p> | <p>v<br/>VU<br/>#</p>     | <p><b>Potential habitat</b> is permanent and temporary waterbodies, usually with vegetation in or around them, including features such as natural lagoons, permanently or seasonally inundated swamps and wetlands, farm dams, irrigation channels, artificial water-holding sites such as old quarries, slow-flowing stretches of streams and rivers and drainage features.</p> <p><b>Significant habitat</b> is still or very slow flowing water bodies, with at least some vegetation, and a lack of obvious pollutants (oil, chemicals, etc.). See FPA Fauna Technical Note 18 for further guidance on assessing significant habitat.</p> | <p><b>Potential habitat</b> absent (tributary of Schemers Creek is ephemeral, heavily forested and lacks pools or slow-flowing sections).</p> <p><b>Significant habitat</b> absent.</p> <p>This species should not require further consideration.</p>                                                                                                                                                                                                                                                                                                      |
| <p><i>Myiagra cyanoleuca</i><br/>satin flycatcher</p>      | <p>-<br/>-<br/># only</p> | <p>Seasonal migrant (November through march) with habitat scrub, wet and dry sclerophyll forests, woodlands and creeklines (McNab 2022).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <p><b>Potential habitat</b> present (in the form of regrowth-form trees).</p> <p>The species may very occasionally utilise the greater title area as part of a home range and for foraging (nesting possible in main forested area of title) but small-scale development (house extension and establishment / maintenance of a hazard management area in the fringe of already disturbed forest) should not have a significant impact on this aspect of the life history of the species.</p> <p>This species should not require further consideration.</p> |
| <p><i>Neophema chrysostoma</i><br/>blue-winged parrot</p>  | <p>-<br/>VU<br/>#</p>     | <p>Seasonal migrant (October through April) with habitat agricultural lands, crops, dams, paddocks, coastal scrub, open grassy woodlands, heathland and saltmarshes (McNab 2022).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                         | <p><b>Potential habitat</b> marginally present (somewhat atypical in that the site is in wet forest).</p> <p>The species may very occasionally utilise the greater title area as part of a home range and for foraging (nesting</p>                                                                                                                                                                                                                                                                                                                        |



| Scientific name<br>Common name                                           | Status<br>TSPA<br>EPBCA | Tasmanian habitat description<br>(and distribution)                                                                                                                                                                                                                                                                                                                                                                                                                                           | Comments on project area and<br>database records                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------------------------------------------------------|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                          |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | very unlikely as no hollow-bearing trees noted) but small-scale development (house extension and establishment/maintenance of a hazard management area in the fringe of already disturbed forest) should not have a significant impact on this aspect of the life history of the species.<br>This species should not require further consideration                                                                                                                                                                                                                                                                                            |
| <i>Pardalotus quadragintus</i><br>forty-spotted pardalote                | e<br>EN<br>#            | <b>Potential habitat</b> is any forest and woodland supporting <i>Eucalyptus viminalis</i> (white gum) where the canopy cover of <i>E. viminalis</i> is greater than or equal to 10% or where <i>E. viminalis</i> occurs as a localised canopy dominant or codominant in patches exceeding 0.25 ha.<br><b>Significant habitat</b> is all potential habitat associated with known colonies and such habitat.                                                                                   | <b>Potential habitat</b> absent ( <i>Eucalyptus viminalis</i> is absent).<br><b>Significant habitat</b> absent.<br>This species should not require further consideration.                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <i>Perameles gunnii</i> subsp. <i>gunnii</i><br>eastern barred bandicoot | -<br>VU<br>#            | <b>Potential habitat</b> is open vegetation types including woodlands and open forests with a grassy understorey, native and exotic grasslands, particularly in landscapes with a mosaic of agricultural land and remnant bushland.<br><b>Significant habitat</b> is dense tussock grass-sedge swards, piles of coarse woody debris and denser patches of low shrubs (especially those that are densely branched close to the ground providing shelter) within the core range of the species. | <b>Potential habitat</b> present because of existing house and grassed area (otherwise, steep sloped wet forest is rarely considered as potential habitat).<br><b>Significant habitat</b> absent (habitat not as described).<br>The species may very occasionally utilise the greater title area as part of a home range and for foraging but small-scale development (house extension and establishment/maintenance of a hazard management area in the fringe of already disturbed forest) should not have a significant impact on this aspect of the life history of the species.<br>This species should not require further consideration. |
| <i>Prototroctes maraena</i><br>Australian grayling                       | v<br>VU<br>#            | <b>Potential habitat</b> is all streams and rivers in their lower to middle reaches. Areas above permanent barriers (e.g. Prosser River dam, weirs) that prevent fish migration, are not potential habitat.                                                                                                                                                                                                                                                                                   | <b>Potential habitat</b> absent (tributary of Schemers Creek is ephemeral).<br>This species should not require further consideration.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <i>Pseudemoia pagenstecheri</i><br>tussock skink                         | v<br>-                  | <b>Potential habitat</b> comprises native grasslands dominated by tussock-forming grasses.                                                                                                                                                                                                                                                                                                                                                                                                    | <b>Potential habitat</b> absent (site is heavily not native grassland).<br>This species should not require further consideration.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <i>Pteropus poliocephalus</i><br>grey-headed flying-fox                  | -<br>VU                 | Species is a vagrant to Tasmania and listed because of a review of database records and other sightings (Driessen 2010) that reported an historical sighting from Woodbridge in 1946.                                                                                                                                                                                                                                                                                                         | Not applicable – vagrant species only.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <i>Sarcophilus harrisii</i><br>Tasmanian devil                           | e<br>EN<br>#            | <b>Potential habitat</b> all terrestrial native habitats, forestry plantations and pasture. Devils require shelter (e.g. dense vegetation, hollow logs, burrows or caves) and hunting habitat                                                                                                                                                                                                                                                                                                 | <b>Potential habitat</b> present.<br><b>Significant habitat</b> absent.<br>The species may very occasionally utilise the greater title area as part of a                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

| Scientific name<br>Common name                                                | Status<br>TSPA<br>EPBCA | Tasmanian habitat description<br>(and distribution)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Comments on project area and<br>database records                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------------------------------------------------------------|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                               |                         | <p>(open understorey mixed with patches of dense vegetation) within their home range (427 km<sup>2</sup>).</p> <p><b>Significant habitat</b> is a patch of potential denning habitat where three or more entrances (large enough for a devil to pass through) may be found within 100 m of one another, and where no other potential denning habitat with three or more entrances may be found within a 1 km radius, being the approximate area of the smallest recorded devil home range. <b>Potential denning habitat</b> is areas of burrowable, well-drained soil, log piles or sheltered overhangs such as cliffs, rocky outcrops, knolls, caves and earth banks, free from risk of inundation and with at least one entrance through which a devil could pass.</p> | <p>home range and for foraging but small-scale development (house extension and establishment/maintenance of a hazard management area in the fringe of already disturbed forest) should not have a significant impact on this aspect of the life history of the species.</p> <p>This species should not require further consideration but see <b>FINDINGS Threatened fauna</b> for more details.</p>                                                                                                                                                                                                                                                          |
| <p><i>Tyto novaehollandiae</i><br/>subsp. <i>castanops</i><br/>masked owl</p> | <p>e<br/>VU<br/>#</p>   | <p><b>Potential habitat</b> is all areas with trees with large hollows (≥15 cm entrance diameter). Remnants and paddock trees (in any dry or wet forest type) in agricultural areas may constitute potential habitat.</p> <p><b>Significant habitat</b> is any areas within the core range of native dry forest with trees over 100 cm dbh with large hollows (≥15 cm entrance diameter).</p>                                                                                                                                                                                                                                                                                                                                                                            | <p><b>Potential habitat</b> absent (large trees with large hollows absent – in fact, no hollow-bearing trees were recorded).</p> <p><b>Significant habitat</b> absent.</p> <p>The species may very occasionally utilise the greater title area as part of a home range and for foraging but small-scale development (house extension and establishment/maintenance of a hazard management area in the fringe of already disturbed forest) should not have a significant impact on this aspect of the life history of the species.</p> <p>This species should not require further consideration but see <b>FINDINGS Threatened fauna</b> for more details.</p> |



**APPENDIX E. DNRET's *Natural Values Atlas* report for study area**

Appended as pdf file.

**APPENDIX F. Forest Practices Authority's *Biodiversity Values Atlas* report for study area**

Appended as pdf file.

**APPENDIX G. CofA's *Protected Matters* report for study area**

Appended as pdf file.

**ATTACHMENTS**

- .shp file of revised vegetation mapping
- .dwg file of tree data