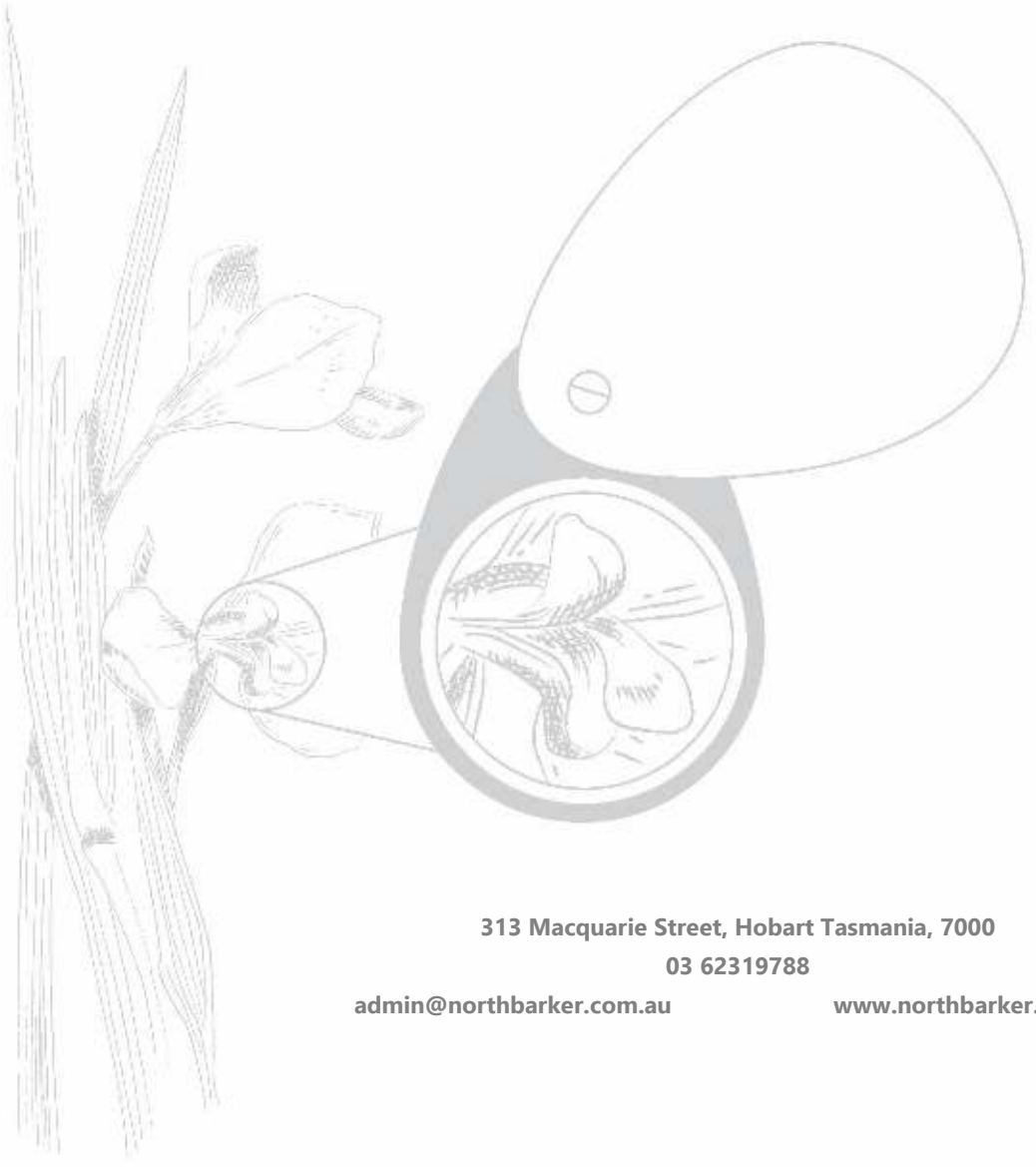
EPBC Act Ref: 2022/09282

38-Lot Subdivision, Ecclestone Road, Riverside
Preliminary Documentation

For Growth Developments

7th May 2026

SIX001

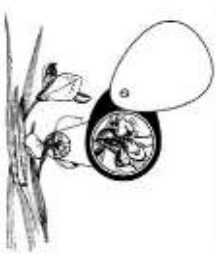


313 Macquarie Street, Hobart Tasmania, 7000
03 62319788
admin@northbarker.com.au www.northbarker.com.au

File Control

Project	Ecclestone Road 38-Lot Subdivision (EPBC Act Ref: 2022/09282)
Location	Ecclestone Road, Riverside, Tasmania
Proponent	Growth Developments
NBES job code	SIX001
NBES project manager	Tim Leaman – 0429 009 220 tleaman@northbarker.com.au

Version	Date	Author / Comment
Version 0.1	4/11/2023	Kelly Simpson
Version 1.0	8/11/2023	Phil Barker review
Version 2.0	04/07/2025	Tim Leaman
Version 2.1	15/10/25	Tim Leaman – updates to offset proposal
Version 2.2	11/12/2025	Tim Leaman – updates in response to DCCEEW PD comments Round 3
Version 2.3	07/05/2026	Tim Leaman – updates in response to public comments of March 2026



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List of Acronyms

Excluding measurement units and abbreviations defined within figures or tables

DAWE	Department of Agriculture, Water and the Environment
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DFTD	Tasmanian devil facial tumour disease
EBB	Eastern barred bandicoot (*Perameles gunnii gunnii*)
EPBCA	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
EQ	Eastern quoll (*Dasyurus viverrinus*)
ESD	Ecologically Sustainable Development
FPA	Forest Practices Authority
FTE	Full-Time Equivalent
HMA	Hazard Management Area
LIST	Land Information System Tasmania database (NRE, Tasmania)
LUPAA	Tasmanian *Land Use and Planning Approvals Act 1993*
MNES	Matters of National Environmental Significance
MO	Tasmanian masked owl (*Tyto novaehollandiae castanops*)
NBES	North Barker Ecosystem Services
NCA	Tasmanian *Nature Conservation Act 2002*
NRE	Department of Natural Resources and Environment, Tasmania
NVR	Natural Values Report generated from the Natural Values Atlas database (NRE, Tasmania)
NVA	Natural Values Assessment
PD	Preliminary Documentation
PWS	Tasmanian Parks and Wildlife Service
RFI	request for further information
SPRAT	Species Profile and Threats database (DCCEEW, ACT)
STQ	Spotted-tail quoll (*Dasyurus maculatus maculatus*)
TASCAT	Tasmanian Civil and Administrative Tribunal
TD	Tasmanian devil (*Sarcophilus harrisii*)
TEC	Threatened Ecological Community (listed under the EPBCA)
TSPA	Tasmanian *Threatened Species Protection Act 1995*
WTE	Tasmanian wedge-tailed eagle (*Aquila audax fleayi*)

Location of information responding to the RFI

The document Section, subheading number and page number are indicated below against each of the requirements for further information as provided in the letter dated July 28, 2023 and entitled - *Further information required for preliminary documentation for 38-Lot Subdivision, Ecclestone Road, Riverside, Tasmania (EPBC 2022/09282).* A copy of the letter is included as Appendix A.

General Content, Format and Style

Summary: Page 1

1 Description of the Action

Information required		Responding section
1.1	The location, boundaries and size (in hectares) of the disturbance footprint and of any adjoining areas which may be indirectly impacted by the proposal, including nearby vegetation. Include mapping and coordinates.	Section 1.1
1.2	An indicative layout plan for the proposed action area, including the location and type of land use, key infrastructure, and the number and location of buildings. Include mapping and coordinates for each of the above.	Section 1.2
1.3	A description of any changes to the project design since the referral documentation was submitted.	Section 1.2

2 Habitat Assessment

The RFI notes that the listed species identified below may be significantly impacted by the proposed action.

- Tasmanian Devil (*Sarcophilus harrisii*) – endangered
- Eastern Quoll (*Dasyurus viverrinus*) – endangered
- Eastern Barred Bandicoot (Tasmanian Population) (*Perameles gunnii gunnii*) – vulnerable
- Tasmanian Wedge-tailed Eagle (*Aquila audax fleayi*) – endangered
- Spotted-tailed Quoll (Tasmanian Population) – *Dasyurus maculatus maculatus* (Tasmanian population) – vulnerable
- Tasmanian Masked Owl (*Tyto novaehollandiae castanops*) – vulnerable

2.1 Species general information

Information required		Responding section
2.1.1	Provide a habitat assessment for relevant listed threatened species, including discussion of breeding, foraging and dispersal habitat requirements in the context of the proposed action area.	TD – Section 2.2.2 EQ – Section 2.3.2 STQ – Section 2.4.2 EBB – Section 2.5.2 WTE – Section 2.6.2 MO – Section 2.7.2
2.1.2	Identify and describe known historical records of the listed threatened species and ecological communities in the broader region. All known records must be supported by an appropriate source (i.e. Commonwealth and State databases, published research, publicly	TD – Section 2.2.3 EQ – Section 2.3.3 STQ – Section 2.4.3

Information required		Responding section
	available survey reports, etc.), the year of the record and a description of the habitat in which the record was identified.	EBB – Section 2.5.3 WTE – Section 2.6.3 MO – Section 2.7.3
2.1.3	Provide detailed mapping of suitable habitat within and adjacent to the project area for all listed threatened species, which: • is specific to the habitat assessment undertaken for each listed threatened species; • includes an overlay of the project disturbance footprint; • includes known records of individuals derived from desktop analysis and field surveys; and • is provided separately as attachments in JPEG format.	TD – Section 2.2 EQ – Section 2.3 STQ – Section 2.4 EBB – Section 2.5 WTE – Section 2.6 MO – Section 2.7
2.1.4	Include an assessment of the adequacy of any surveys referenced in the PD (including survey effort and timing). In particular, the extent to which these surveys were appropriate for the listed species or community and undertaken in accordance with relevant departmental survey guidelines.	Section 2.8
2.1.5	Attach all relevant ecological surveys referenced in the referral and preliminary documentation as supporting documents to the preliminary documentation.	Appendices B and C

3 Impact Assessment

3.1 Listed Threatened Species

Information required		Responding section
3.1.1	An assessment of the likely impacts associated with the habitat clearance and ongoing residential use.	TD – Section 3.3 EQ – Section 3.4 STQ – Section 3.5 EBB – Section 3.6 WTE – Section 3.7 MO – Section 3.8
3.1.2	An assessment of the likely impacts as a result of the direct and indirect loss and/or disturbance of MNES individuals and habitat as a result of the proposed action. This must include the quality of the habitat impacted and quantification of the individuals and habitat area (in hectares) to be impacted.	TD – Section 3.3 EQ – Section 3.4 STQ – Section 3.5 EBB – Section 3.6 WTE – Section 3.7 MO – Section 3.8
3.1.3	An assessment of the impacts of habitat fragmentation in the proposed action area and surrounding areas, including consideration	Section 3.2

Information required		Responding section
	of species' movement patterns and habitat requirements to support breeding.	
3.1.4	An assessment and justification of project design options with respect to fragmentation, habitat clearance and indirect impacts, and associated likely impacts.	Section 4.1
3.1.5	An assessment of impacts of increased presence of domestic animals in and around the proposed action area on listed threatened species.	TD – Section 3.3 EQ – Section 3.4 STQ – Section 3.5 EBB – Section 3.6 WTE – Section 3.7 MO – Section 3.8
3.1.6	An assessment of impacts of secondary poisoning to the Tasmanian Masked Owl, and other relevant listed threatened species, as a result of the proposed action.	Section 3.8.2
3.1.7	Justification, with supporting evidence, how the proposed action will not be inconsistent with: • Australia's obligations under the Biodiversity Convention, the Convention on Conservation of Nature in the South Pacific (Apia Convention), and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES); and • a recovery plan or threat abatement plan.	Section 3.9 TD – Section 0 EQ – Section 0 STQ – Section 0 EBB – Section 0 WTE – Section 3.7.3 MO – Section 3.8.3

4 Avoidance, Mitigation and Management Measures

Information required		Responding section
4.1	A detailed summary of measures proposed to be undertaken by the proponent to avoid, mitigate and manage relevant impacts of the proposed action on relevant MNES, including consideration of measures to reduce impacts of domestic animals and secondary poisoning, and to maintain connectivity through the site.	Section 4
4.2	An analysis of whether mitigation measures are suitable to maintain species persistence and habitat usage in the remainder of the habitat patch, or whether offsets for that habitat area is required.	TD – Section 4.2.3 EQ – Section 4.2.3 STQ – Section 4.2.3 EBB – Section 4.2.3 WTE – Section 4.3.3 MO – Section 4.4.3

Information required		Responding section
4.3	The proposed measures must be based on best available practices, appropriate standards, evidence of success for other similar actions and supported by published scientific evidence.	
4.4	All proposed measures for MNES must be drafted to meet the 'S.M.A.R.T' principle: • S – Specific (what and how) • M – Measurable (baseline information, number/value, auditable) • A – Achievable (timeframe, money, personnel) • R – Relevant (conservation advices, recovery plans, threat abatement plans) • T – Time-bound (specific timeframe to complete)	
4.5	Details of specific and measurable environmental outcomes to be achieved for relevant MNES. All commitments must be drafted using committal language (e.g. 'will' and 'must') when describing the proposed measures.	
4.6	Details of the proposed measures to be undertaken to avoid, mitigate and manage the relevant impacts of the proposed action, including those required through other Commonwealth, State and local government approvals.	Section 4
4.7	Information on the timing, frequency and duration of the proposed avoidance, mitigation, management and monitoring measures, and corrective actions to be implemented.	Section 4,
4.8	An assessment of the expected or predicted effectiveness of the proposed measures.	TD – Section 4.2.3 EQ – Section 4.2.3 STQ – Section 4.2.3 EBB – Section 4.2.3 WTE – Section 4.3.3 MO – Section 4.4.3
4.9	Any statutory or policy basis for the proposed measures, including reference to the SPRAT Database and relevant approved conservation advice, recovery plan or threat abatement plan, and a discussion on how the proposed measures are not inconsistent with relevant plans.	
4.10	Details of ongoing management, including monitoring programs to support an adaptive management approach, that validate the effectiveness of the proposed measures and overall demonstrate that environmental outcomes will be achieved.	Section 4.7
4.11	Details of tangible, on-ground corrective actions that will be implemented in the event the monitoring programs indicate that the environmental outcomes have not or will not be achieved.	Section 4.7

5 Offsets

Information required		Responding section
5.1	An assessment of the likelihood of residual significant impacts occurring on relevant MNES, after avoidance, mitigation and management measures have been applied.	TD – Section 5.1.1 EQ – Section 5.1.2 STQ – Section 5.1.3 EBB – Section 5.1.4 WTE – Section 5.1.5 MO – Section 5.1.6
5.2	A summary of the proposed environmental offset and key commitments to achieve a conservation gain for each protected matter.	Section 4.7
5.3	Include a draft OAMP as an appendix to the PD. The draft OAMP must meet the information requirements set out in Appendix B, and must be prepared by a suitably qualified ecologist and in accordance with the department's Environmental Management Plan Guidelines (2014), available at: www.environment.gov.au/epbc/publications/environmental-management-plan-guidelines.	Not applicable

6 Ecologically Sustainable Development (ESD)

Information required		Responding section
6.1	A description of how the proposed action meets the principles of ESD, as defined in section 3A of the EPBC Act. The following principles are **principles of ecologically sustainable development**: • decision making processes should effectively integrate both long term and short term economic, environmental, social and equitable considerations; • if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation; • the principle of inter-generational equity—that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations; • the conservation of biological diversity and ecological integrity should be a fundamental consideration in decision making; • improved valuation, pricing and incentive mechanisms should be promoted.	Section 6

7 Economic and Social Matters

Information required		Responding section
7.1	An analysis of the economic and social impacts of the action, both positive and negative.	Section 7.1
7.2	Details of any public consultation activities undertaken and their outcomes.	Section 7.2
7.3	Details of any consultation with Indigenous stakeholders. **Indigenous engagement** Identify existing or potential native title rights and interests, including any areas and objects that are of particular significance to Indigenous peoples and communities, possibly impacted by the proposed action and the potential for managing those impacts. Describe any Indigenous consultation that has been undertaken, or will be undertaken, in relation to the proposed action and their outcomes. The department considers that best practice consultation, in accordance with the Guidance for proponents on best practice Indigenous engagement for environmental assessments under the EPBC Act (2016) includes: • identifying and acknowledging all relevant affected Indigenous peoples and communities; • committing to early engagement; • building trust through early and ongoing communication for the duration of the project, including approvals, implementation and future management; • setting appropriate timeframes for consultation; and • demonstrating cultural awareness. Describe any state requirements for approval or conditions that apply, or that the proponent reasonably believes are likely to apply, to the proposed action with regards to Indigenous peoples and communities.	Section 7.2
7.4	Projected economic costs and benefits of the project, including the basis for their estimate through cost/benefit analysis or similar studies.	Section 7.3
7.5	Employment opportunities expected to be generated by the project (including construction and operational phases).	Section 7.4

8 Environmental Record of the Person Proposing to Take the Action

Information required		Responding section
Include details of any past or present proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources against:		
8.1	the person proposing to take the action;	Section 8

Information required		**Responding section**
8.2	for an action for which a person has applied for a permit, the person making the application;	Section 8
8.3	if the person is a body corporate—the history of its executive officers in relation to environmental matters; and	Section 8
8.4	if the person is a body corporate that is a subsidiary of another body or company (the parent body)—the history in relation to environmental matters of the parent body and its executive officers.	Section 8

Summary

The following document provides detailed information to fulfil the Request for Further Information (RFI) required to assist the assessment of potential impacts on matters protected by the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA) for the development of a 38-lot subdivision at Ecclestone Road, Riverside, Tasmania. Matters of National Environmental Significance (MNES) include species and threatened ecological communities.

The subdivision, proposed by Growth Developments and located approximately 1.9 km from the Ecclestone Road and West Tamar Road junction, is the referred Action (EPBC Act referral 2022/09282). This document is therefore supplementary to the information already provided in the referral.

This document is formatted and numbered to reflect the structure of the RFI. All primary documents on which this information relies are in Appendices to this document. The primary appendix is the original Referral document (Appendix B) and its own attendant attachments. Some additional studies were undertaken as part of a RFI from DCCEEW (dated 14 September 2022) in response to the Referral document. These are included as Appendices to this document.

The following provides a brief summary of findings, high level mitigation and the extent and significance of residual impacts.

Background

The Action is the development of a 38-lot subdivision on Ecclestone Road in Riverside, Tasmania (Property ID 7655464, Title Reference 43468/1) (Figure 1). The total proposal area is 36.8 ha and includes 37 low density residential lots (ranging between 5003 m^2 and 6893 m^2), a balance lot (14.6 ha) and associated access road (2.3 ha).

The proposal will involve the conversion of 16.9 ha of native vegetation for building areas and bushfire hazard management. Up to 30 % of each of the lots will be protected under a Part V Agreement with the West Tamar Council. The protection of a balance lot (14.6 ha) and an offsite offset at Vermont Road (26.31 ha) is proposed as a Conservation Agreement in accordance with Chapter 5, Part 14. The protected balance lot area of 14.6 ha constitutes approximately 39.5% of the entire subdivision proposal area.

The Natural Values Assessment and referral documentation submitted in relation to this Action considered all Matters of National Environmental Significance (MNES) known or likely to occur in the vicinity. The RFI focuses on six MNES:

- Tasmanian devil (*Sarcophilus harrisii*) – *Tasmanian Threatened Species Protection Act 1995* (TSPA) Endangered / EPBCA Endangered
- Eastern quoll (*Dasyurus viverrinus*) – TSPA Not listed / EPBCA Endangered
- Eastern barred bandicoot (Tasmanian Population) (Perameles gunnii gunnii) – TSPA Not listed / EPBCA Vulnerable
- Tasmanian wedge-tailed eagle (*Aquila audax fleayi*) – TSPA Endangered / EPBCA Endangered
- Spotted-tail quoll (*Dasyurus maculatus maculatus*) – TSPA Rare / EPBCA Vulnerable
- Tasmanian masked owl (*Tyto novaehollandiae castanops*) – TSPA Endangered / EPBCA Vulnerable

It should be noted that although *Eucalyptus ovata* forest and woodland (TASVEG unit DOV) occurs on the subject site, it does not qualify as the federally listed threatened ecological community (TEC), Tasmanian forests and woodlands dominated by black gum (*Eucalyptus ovata*) or Brooker's gum (*E. brookeriana*). As stated in the Referral (Appendix B), the DOV in the proposal area is a *E. viminalis*-dominated facies with very sparse *E. ovata* and does not meet the key diagnostic characteristics used to identify the EPBCA-listed *E. ovata* community protected under that act. In addition, the RFI does not reference the TEC as part of the information to be included in the PD. This TEC is not discussed further in the PD but it should be noted that DOV on the site will not be impacted and will be protected as a Conservation Agreement under Chapter 5, Part 14 of the EPBCA.

The focus of the information is on the distribution and abundance of MNES in the footprint of the Action, the vicinity and the national context. This information is presented in tables and maps derived from field data and State and Commonwealth databases. Consideration of the context of the occurrences, the impacts and the implications of the impacts and potential for offsetting residual impacts is presented in the context of the best available scientific literature.

Impact and mitigation

Tasmanian devil (*Sarcophilus harrisii*), spotted-tail quoll (*Dasyurus maculatus maculatus*), Eastern quoll (*Dasyurus viverrinus*) and Eastern barred bandicoot (*Perameles gunnii gunnii*): Up to 16.9 ha of the footprint of the Action represents foraging habitat that is suitable for these species. No suitable denning habitat for the devil or spotted-tail quoll is located within the development footprint. Denning requirements for the eastern quoll and eastern barred bandicoot are generally less rigid than for devils and these species may utilise areas of dense groundcover within the footprint for denning, despite that fact no den structures were observed during targeted surveys. The most suitable denning habitat on the site is located on the balance lot and will be protected under a Conservation Agreement under Chapter 5, Part 14 of the EPBCA A total of 14.6 ha of foraging habitat would also be protected under this agreement. An additional 5.3 ha of suitable habitat for these species will be retained through the retention of a 30% area on each of the 37 lots which will be protected under a Part V Agreement. The extent of habitat loss is considered to be negligible in the context of the range of the animals and the habitat in the vicinity and broader regions.

The majority of traffic generated as a result of the subdivision will spend a relatively higher portion of the time traveling along the bushland frontage below 60 km phr. With the implementation of specific mitigation measures, the risk from local traffic will be minimal.

A pre-clearance den survey and associated management and decommissioning protocol will ensure that no active den is disturbed, in the unlikely event one is discovered in the development footprint.

Specific mitigation measures would be implemented under the Conservation Agreement and Part 5 Agreement to mitigate impacts associated with domestic pets and ensure protected areas are maintained for habitat and connectivity.

The impact of the Action is unlikely to cause a significant residual impact based on EPBCA test for significance.

Tasmanian wedge-tailed eagle (*Aquila audax fleayi*): One inactive nest which has never been utilised by WTEs is located on the balance lot and will be protected under a Conservation Agreement under the EPBCA. Specific mitigation and management measures in relation to the nest will be implemented to ensure the impact of the Action is unlikely to cause a significant residual impact based on EPBCA test for significance.

Tasmanian masked owl (*Tyto novaehollandiae castanops*): One suitable nesting tree is located on the site within the balance lot and would be protected under a Conservation Agreement under the EPBCA. The Action is likely to require the removal of two of the five potential roost trees identified on the site. Detailed mitigation and management measures are provided to ensure that the Action is unlikely to cause a significant residual impact based on EPBCA test for significance.

Tasmanian forests and woodlands dominated by black gum (*Eucalyptus ovata*) or Brooker's gum (*E. brookeriana*): E. ovata forest on the site does not qualify as this Threatened Ecological Community and is not discussed in this document. No impacts to the DOV community on the site are anticipated. The DOV will be protected on the balance lot through the establishment Conservation Agreement under the EPBCA.

Mitigation: The acceptability of the proposal hinges on the acceptability of the clearance of some habitats and the measures proposed to mitigate the clearance. The impact of the clearance of habitat, or residual impact, is proposed to be reduced with a number of species-specific avoidance and mitigation measures to the extent that the residual impacts are not likely to be significant. A large proportion (almost 40%) of the site, including the most suitable devil and quoll denning habitat, the WTE nest and the only suitable MO nesting tree, will be protected and managed in the long-term through the establishment of a Conservation Agreement under the EPBCA.

Table 1 summarises the potential for direct and indirect impacts on each MNES. Consideration of those impacts against the *Matters of National Environmental Significance Significant impact guidelines 1.1*[1] and whether significant residual impacts can be avoided through mitigation. Table 2 (page 8) lists the areas of vegetation and the MNES habitats that occur within the impact area of the development footprint.

[1] Commonwealth of Australia (2013)

Table 1: Summary of impact consideration of Matters of National Environmental Significance

MNES	Potential for significant impact	Justification	Mitigation and avoidance recommendations	Potential for significant residual impact	Justification
Tasmanian devil *Sarcophilus harrisii*	No	Section 3.3, Table 5	Section 4.2	No	Section 5.1.1
Eastern quoll *Dasyurus viverrinus*	**Yes**	Section 3.4, Table 6		No	Section 5.1.2, Table 11
Spotted-tail quoll *Dasyurus maculatus*	**Yes**	Section 3.5, Table 7		No	Section 5.1.3, Table 11
Eastern barred bandicoot *Perameles gunnii gunnii*	**Yes**	Section 3.6, Table 8		No	Section 5.1.4, Table 11
Tasmanian wedge-tailed eagle *Aquila audax fleayi*	No	Section 3.7, Table 9	Section 4.3	No	Section 5.1.5
Tasmanian masked owl *Tyto novaehollandiae castanops*	**Yes**	Section 3.8, Table 10	Section 4.4	No	Section 5.1.6, Table 11

1 Description of the Action

1.1 Location, boundaries and size

The Action is the development of a 38-lot subdivision on Ecclestone Road, Riverside, Launceston in northern Tasmania (Property ID 7655464, Title Reference 43468/1), proposed by Growth Developments. The location of the Action is shown in Figure 1. The project area is 36.8 ha in size and is located approximately 1.9 km from the Ecclestone Road and West Tamar Road junction. The Subdivision is approximately 7.5 km drive from the Launceston CBD or 5 km direct line. The proposed area has 813 m of frontage to Ecclestone Road along its southern boundary and 230 m of frontage to Valley View Drive along the southern section of the eastern boundary.

1.2 Layout plan, disturbance footprint and associated works

The proposed subdivision is outlined in Figure 2, with a total impact area of 16.9 ha and avoidance of impacts to the remaining 19.89 ha of the project area. The proposal includes:

- 37 low density residential lots – rectangular in shape with an area ranging between 5003 m^2 and 6893 m^2 covering 19.95 ha of the project area. Approximately 30 % of each residential lot is proposed to be protected in perpetuity from clearance under a Part V Agreement with the West Tamar Council (protecting a total of 5.34 ha).
- A balance lot of approximately 14.6ha is to be protected under a Conservation Agreement under the EPBCA.

Infrastructure – including a road lot with a narrow width of 18 m, plus stormwater drainage and a detention basin, all of which will have an impact area of 2.3 ha. Associated works will include:

- Vegetation modification and clearance – To facilitate the new road and building areas, including hazard management areas required to satisfy the local planning schemes Bushfire-Prone Areas Code, 16.9 ha of vegetation is proposed to be cleared or modified. Apart from the small stormwater detention basin lot, vegetation clearance and modification is limited to the residential lots and the road lot.
- Road construction – An access road off Ecclestone Road is proposed to be developed to facilitate the access to the proposed residential lots. The road junction is located near the southwest corner of the project area and the entrance will include a slight bend and then continue straight for approximately 800 m before a T-junction that runs in a north-south alignment (100 m to the north and 215 m to the south) both ending in a cul-de-sac. The southern end of the cul-de-sac will include a 10 m wide walkway for pedestrians that connects with Valley View Drive to the east. The walkway is to be constructed in accordance with a Street Landscape Plan approved by the Manager Infrastructure (West Tamar Council). The walkway and associated walkway reserve are to be constructed to the following specifications:
    - A 2 m wide concrete path to link the cul-de-sac and Lot 22 with Valley View Drive
    - A solid, no-gap fence along the side boundaries
    - Bollards at either end to prevent vehicle access; and
    - Trees along one side of the concrete path at an average spacing of 15 m.
- Infrastructure services – Roadside drainage infrastructure will be incorporated alongside the access roads where open channels flowing north-easterly will collect and direct stormwater runoff to a drainage catchment to the south-east. The discharge point for the runoff from the drain will be the watercourse located in the south-eastern corner of the balance lot. A detention basin (identified as Lot 101) will be excavated at the frontage of Lot 23.
- Existing infrastructure services – Existing water and electricity infrastructure is proposed to be extended to service the subdivision. This infrastructure will be located underground. The site is not located within an area that is serviced by reticulated sewer infrastructure. Each lot will be of a size

and configuration that is capable of accommodating a suitable onsite wastewater management system.

The proposed subdivision would be confined within the boundaries of the site and no indirect impacts outside of the site are anticipated. No changes to the project design have been proposed since the referral documentation was submitted in August 2022.

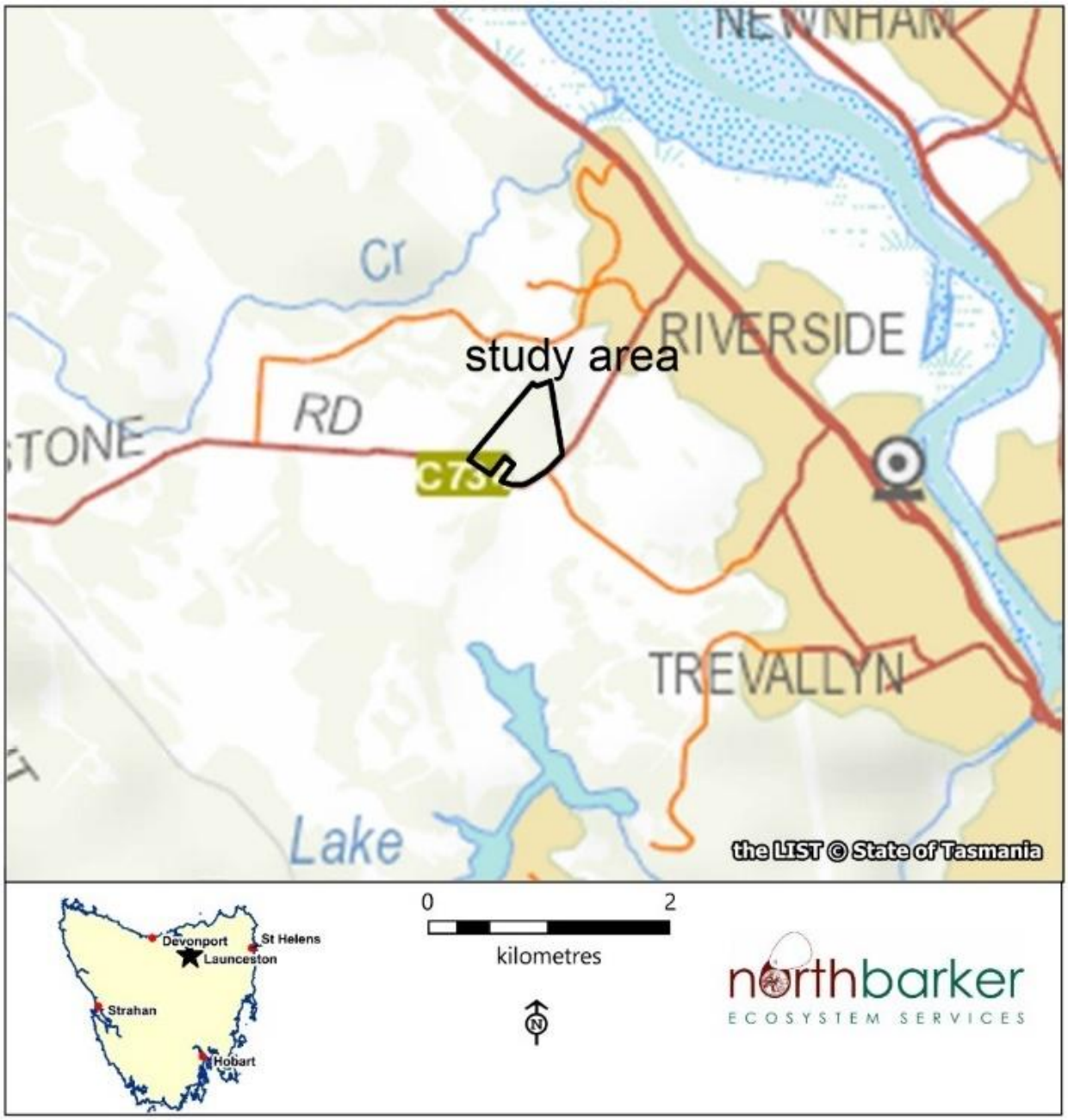

Figure 1: The location of the action

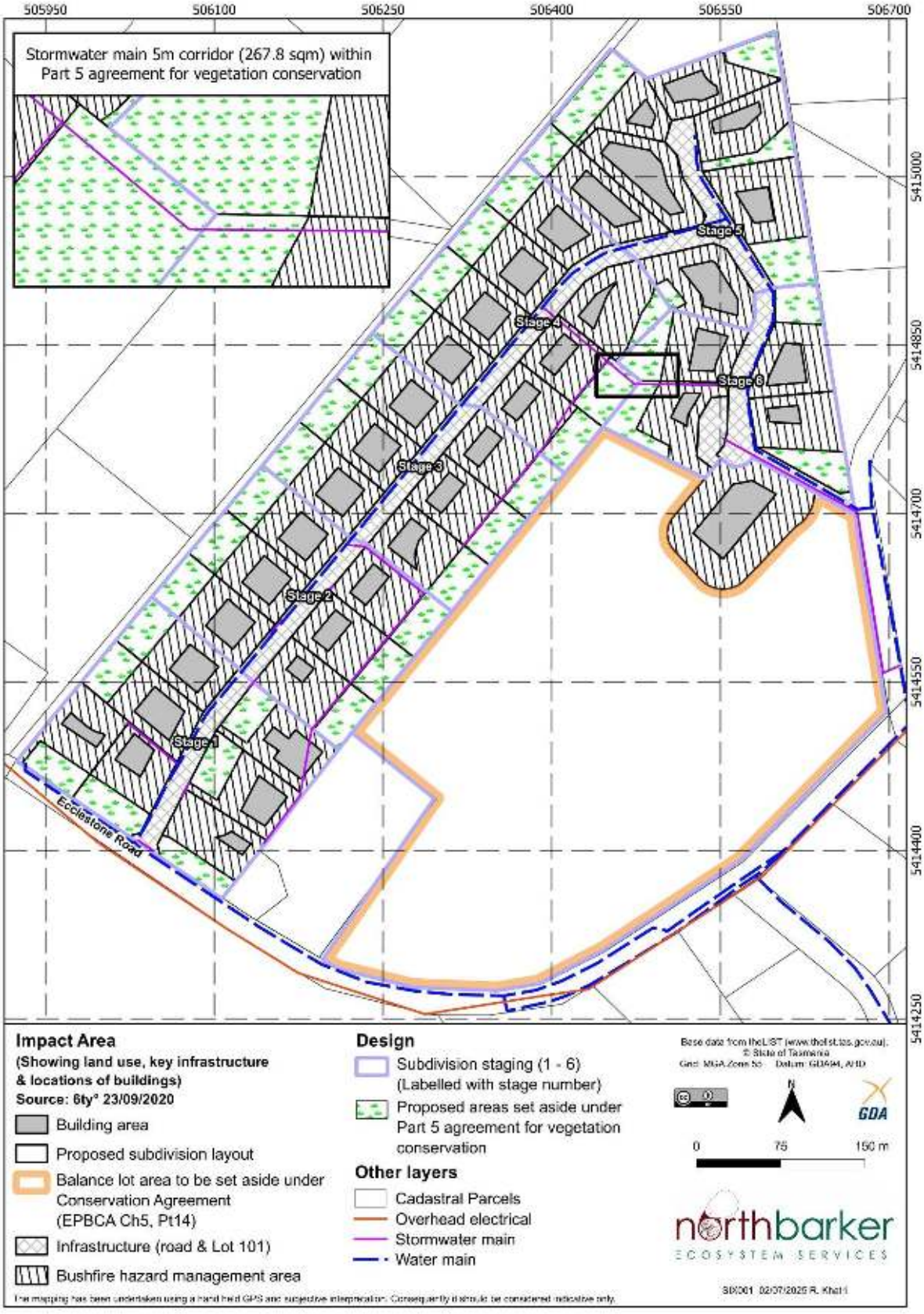

Figure 2: The layout of residential lots, the balance of land and the areas to be protected from development

2 Threatened species

2.1 Summary

To identify and assess the environmental values, biological records from the region were examined using the following resources:

- EPBCA Protected Matters Search Tool[2] – all matters of national environmental significance that may occur in the area or relate to the area in some way.
- Tasmanian Natural Values Atlas[3] – this NRE database includes biological records.
- TASVEG 4.0 (and TASVEG Live) digital data[4] – this layer has been field-truthed during ground surveys.

MNES vegetation and fauna habitat surveys were undertaken by North Barker Ecosystem Services (NBES) staff on site over the following dates:

- 26th June 2018 – general site survey, flora survey, vegetation, weeds and fauna habitat.
- 13th November 2018 – Targeted *Brunonia australis* survey.
- 1st November 2019 – Assessment of wedge-tailed eagle nest.
- 5th May 2020 – Identification of hollow-bearing trees suitable for the Tasmanian masked owl.
- August 2021 – Den survey, eagle nest inspection and masked owl survey (call playback and songmeter survey)

The results of these surveys are provided in the NVA completed by North Barker Ecosystem Services in February 2022 and were attached to the EPBC Referral (Appendix B).

Additional surveys were undertaken by NBES in response to an RFI received from DCCEEW on September 14, 2022. These included:

- Eagle nest activity assessment and masked owl survey (call playback and songmeter survey) in November 2022.
- An additional survey was undertaken in May 2023 by a masked owl expert and tree climber and included an inspection of all hollows in suitable trees.
- Traffic impact assessment in March 2021

These additional surveys are documented in Appendix C.

Threatened flora

The surveys included visiting any known locations of threatened flora (listed under either the EPBCA or the Tasmanian *Threatened Species Protection Act* 1995 [TSPA]), as well as concentrated survey effort within all potential habitats across the survey area to identify any additional threatened flora species. All native and exotic species encountered during surveys were recorded. All habitats and TASVEG polygons were surveyed sufficiently to describe the communities according to accepted community typologies. No threatened flora species listed under the EPBCA occur in the project area and none are predicted to occur based upon a habitat assessment.

Threatened fauna

Known and potential threatened fauna habitats on site were identified and mapped to gauge the importance of available habitat for each threatened species with regard to habitat distribution, quantity, quality, fragmentation, connectivity and surrounding habitat availability. All surveys were within the recommended survey periods for species with suitable habitat present.

Table 2 indicates the area of vegetation and the MNES habitat that occur across the entire site.

[2] EPBCA Protected Matters Report, Created: 20-Sep-2023, Department of Climate Change, Energy, the Environment and Water
[3] Natural Values Atlas Report, NVR_1_13_Sep_2023, NRE
[4] Department of Primary Industries, Parks, Water and Environment (2020)

Table 2: The area of vegetation communities and MNES potential habitat within the proposed development footprint[5]

The following code names are given to each species in the table: Tasmanian devil – TD; Spotted-tail quoll – STQ; Eastern quoll – EQ; Eastern barred bandicoot - EBB; Tasmanian wedge-tailed eagle – WTE; Tasmanian masked owl – MO.
Habitat suitability is based on the arrangement of vegetation communities across the entire site (i.e. vegetation community connectivity, access, fragmentation, and distribution):

- ✔ *Bold black ticks indicate potentially optimal habitat (i.e. best conditions for denning/nesting/foraging).*
- ✓ *Lightweight grey ticks indicate potential sub-optimal habitat (i.e. secondary habitat used to move through/forage and infrequently den/nest)*

Habitat description	Total extent in project area (ha)	Impact footprint (ha)	TD	STQ	EQ	EBB	WTE	MO
(DAD) *Eucalyptus amygdalina* forest and woodland	23.44	11.8	✓	✓	✓	✔	✓	✓
(DVG) *Eucalyptus viminalis* grassy forest and woodland	0.87	0	✓	✓	✓	✔	✓	✓
(DOV) *Eucalyptus ovata* forest and woodland	1.17	0	✔	✔	✔	✔	✓	✓
(NBA) *Bursaria - Acacia* woodland and scrub	11.32	5.1	✓	✓	✓	✔	✓	✓
Grand total	**36.8**	**16.9**	**16.9**	**16.9**	**16.9**	**16.9**	**16.9**	**16.9**

2.2 Tasmanian Devil (*Sarcophilus harrisii*) [Endangered]

2.2.1 Context

Tasmanian devils (TD), known as *purinina* in *palawa kani* (Tasmanian Aboriginal language), are distributed naturally throughout mainland Tasmania (Figure 3), with a broad ecological niche enabling them to occur within a variety of habitats and disturbance levels. The core habitat of the species comprises the low to moderate annual rainfall zone of the east and northwest of the State including the eastern half of the State, the northern coastal region and a narrow strip down the west coast.

The species is listed on both the Tasmanian TSPA and the Commonwealth EPBCA primarily due to the ongoing population decline attributed to Devil Facial Tumour Disease (DFTD)[6]. DFTD comprises two independent transmissible cancers, DFT1 (first identified in 1996) and DFT2 (first identified in 2014); DFT2 is currently restricted to the southeast of the island whereas DFT1 is spread across most of mainland Tasmania[7] (Figure 4).

They are usually solitary animals but they share continuously overlapping home ranges and come into contact with other TD's, around prey carcasses and during the mating season[8]. They typically travel around 8 km a night, although individuals have been recorded covering more than 50 km in a single night[9]. The Species Profile and Threats Database (SPRAT) listing for devils divides them into two population management units: north-western and eastern/south-western[10]. Devils have home ranges of 8 to 20 km^2

[5] Determined from habitat assessments and vegetation community mapping (Appendix C).
[6] Threatened Species Scientific Committee (2009)
[7] Woods et al. (2018)
[8] Hamede *et al.* (2009).
[9] Commonwealth of Australia (2022c)
[10] Commonwealth of Australia (2022c)

(800 to 2,000 ha), although more recent studies suggest smaller ranges[11] probably reflecting higher carrying capacity. They can be active during the day where there is no human disturbance but otherwise hunt during the night[12]. During the day animals hold up in shelter, including underground dens, wombat burrows, hollows and caves. Devils are more abundant in habitats (open eucalypt forests and woodlands, coastal scrub) that support dense populations of their prey (macropods, wombats, possums)[13], and thrive in a landscape mosaic of native habitat and agricultural land.

The species is thought to be relatively resilient to habitat change and fragmentation due to high levels of mobility (large home range size) and broad habitat preferences. Use of habitat for foraging is largely driven by the presence of prey, whereas suitable denning habitat can be sparse in some areas. As a result, the protection of denning sites and avoiding impacts to breeding individuals are the primary focuses of management efforts and impact mitigation.

Potential foraging habitat for the TD is all terrestrial native habitats, forestry plantations and pasture. Devils require shelter (e.g. dense vegetation, hollow logs, burrows or caves) and hunting habitat (open understorey mixed with patches of dense vegetation) within their home range (4-27 km^2)[14]. Roadsides are attractive as they offer easy passage and the opportunity to scavenge for roadkill.

Potential denning habitat for the TD 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[15].

Significant habitat for the TD is defined as 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[16]. This definition of significance is relied upon because the EPBCA conservation and listing advice does not provide one and has been developed through collaboration between Tasmanian experts.

Characteristics of natal dens include a dry, structurally stable inner chamber, a chamber that is sufficient size for the mother and litter but is not so large as to be un-defendable (which includes an entrance that is a tight fit for the mother), and the presence of nooks and crannies for the young to hide in[17]. Preferred habit characteristics include: direct sun near the den entrance, shelter from predators around the den mouth, a dearth of predators in the area (excluding other devils), an adequate prey base, habitat heterogeneity, complex shelter elements (such as cliffs, caves, earth banks and log piles), and friable soil for the burrows[18]. Thus, both fine scale and landscape scale attributes influence the denning potential of habitat.

2.2.2 Habitat assessment

Native vegetation across the site is considered to be suitable foraging habitat for the devil, although the site would form only part of the home range for TD. While no suitable den structures were observed in the footprint, such as burrows, rocky caverns and similar, it is possible that they occur in the dense vegetation near the creek line in the south east on the balance lot. This area on the land is the most likely area of the site to support dens and is dominated by DOV forest that cannot be developed. It is also equally possible that devils that utilise the land are denning on other properties within their home range either in natural or artificial den opportunities, including under sheds, old wood piles and the like. Devils are likely to disperse through the area, they are not particularly territorial, indicated by significant overlap in home ranges. Within 5 km there are 3300 ha of native habitat representing 36% of the land. This does not include cleared

[11] S. Troy *pers. comm.* – "Landscape ecology of the Tasmanian devil and spotted-tailed quoll"
[12] D. Pemberton *pers. comm.*
[13] Commonwealth of Australia (2022c)
[14] Forest Practices Authority & Threatened Species Section (DPIPWE) (2022)
[15] Forest Practices Authority (2013)
[16] Forest Practices Authority & Threatened Species Section (DPIPWE) (2022); Commonwealth of Australia (2022c)
[17] N. Mooney *unpub. data.*
[18] Natural and Cultural Heritage Division (2015).

paddock areas which will also be utilised by TDs to forage and traverse. The native remnant vegetation within 5 km forms a diffuse "corridor" between larger remnants to the south west and north west and the land. The notion of a corridor in this case includes the areas of low density residential areas adjacent to the land and in the same Zone. It is likely that animals utilise the land in the corridor and adjacent to it as foraging habitat and to traverse the landscape. The animals most likely to use it to traverse the landscape are the larger mammals and birds.

Mapping of suitable denning habitat for Tasmanian devils within the project area is shown in Figure 5. This includes areas of denser vegetation along the creekline in the south east of the property. No detailed surveys of adjacent properties have been undertaken but areas of native vegetation with similar characteristics, such as creeklines and gullies, with dense understory vegetation are likely to offer suitable denning habitat. This species may also utilise artificial structures adjacent to the site for denning such as underneath sheds and houses.

Foraging habitat for this species has not been specifically mapped as it includes all areas of native vegetation on and off site, as well as areas of open paddock adjacent to vegetation cover. Habitat at a landscape scale is presented in Figure 6 and illustrates dispersal habitat across the broader landscape. The species is known to utilise native vegetation as well as open areas for dispersal. The species is less likely to travel more than 100m from cover but can utilise rows of trees and patches of shrubs within a cleared landscape. This is highlighted in Figure 6 through the transparency of paddock areas which may still be utilised by mammals for dispersal where sufficient "islands" of cover occur.

2.2.3 Identify and describe known historical records

The Tasmanian Natural Values Atlas shows that the TD was recorded in 2019 and 2021 in the north west of the proposal area, on the nearby boundary[19].The seven records at this location are attributed to a camera trap placed on the boundary of the proposal site (adjacent to mapped DAD vegetation) and the cleared paddock on the adjacent property at 290 Ecclestone Road. The records are from March and October 2019 and March and August 2021 and include mostly healthy adult observations with one juvenile and one older scarred individual also noted.

There are an additional three (3) records approximately 200-300m north of these records from 2020 and 2022. Two are located in DAD and the other from a cleared paddock, all records are from camera traps with no further information provided.

Other less recent records occur from the broader area, mostly roadkill records along Ecclestone Road and New Ecclestone Road. Records from the NVR are shown in Figure 5 and included 13 records within 500m of the site and 58 records within 5km of the site.

[19] Natural Values Atlas Report, NVR_1_13_Sep_2023, NRE

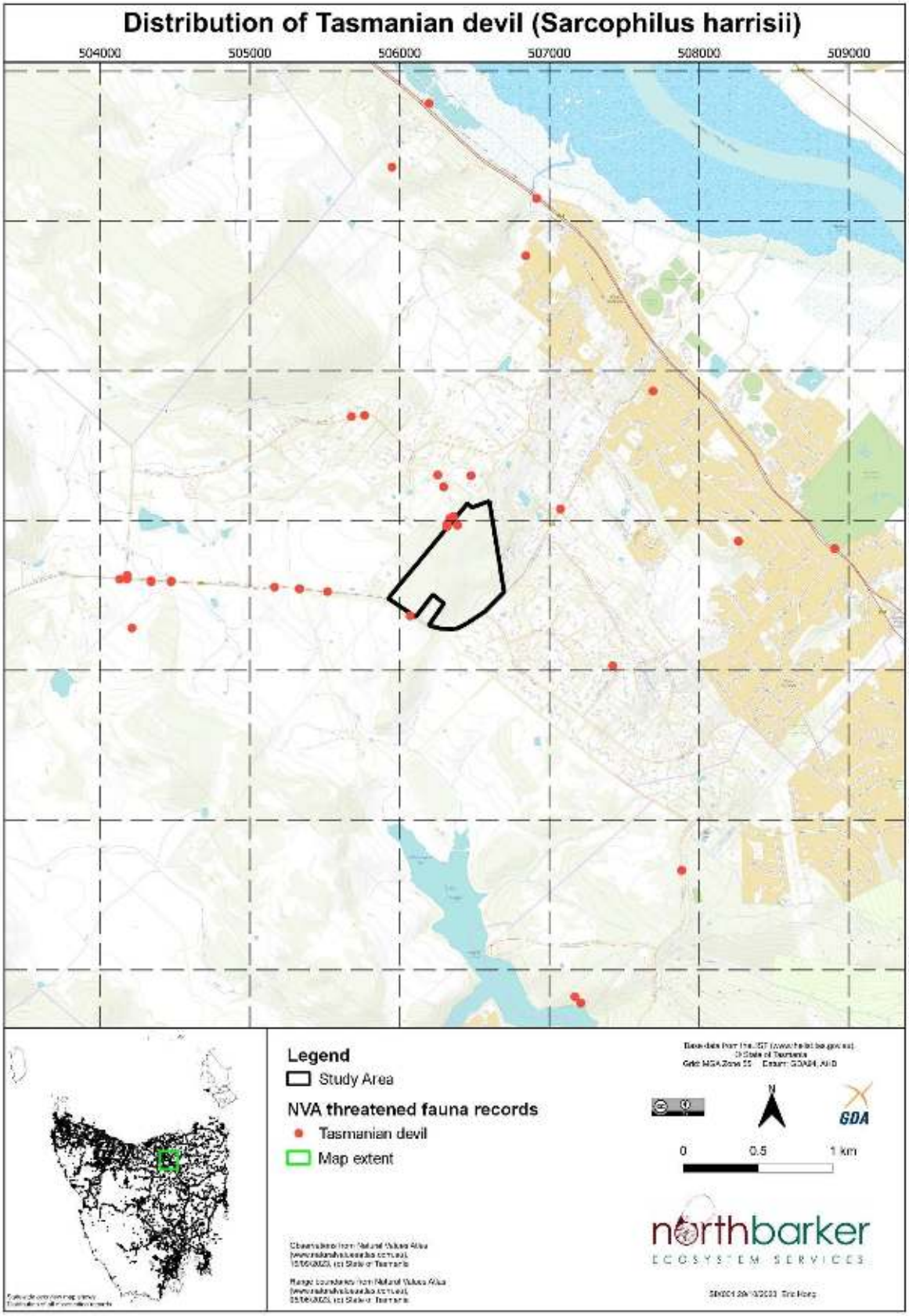

Figure 3: Distribution of Tasmanian devil records in Tasmania and the vicinity of the site

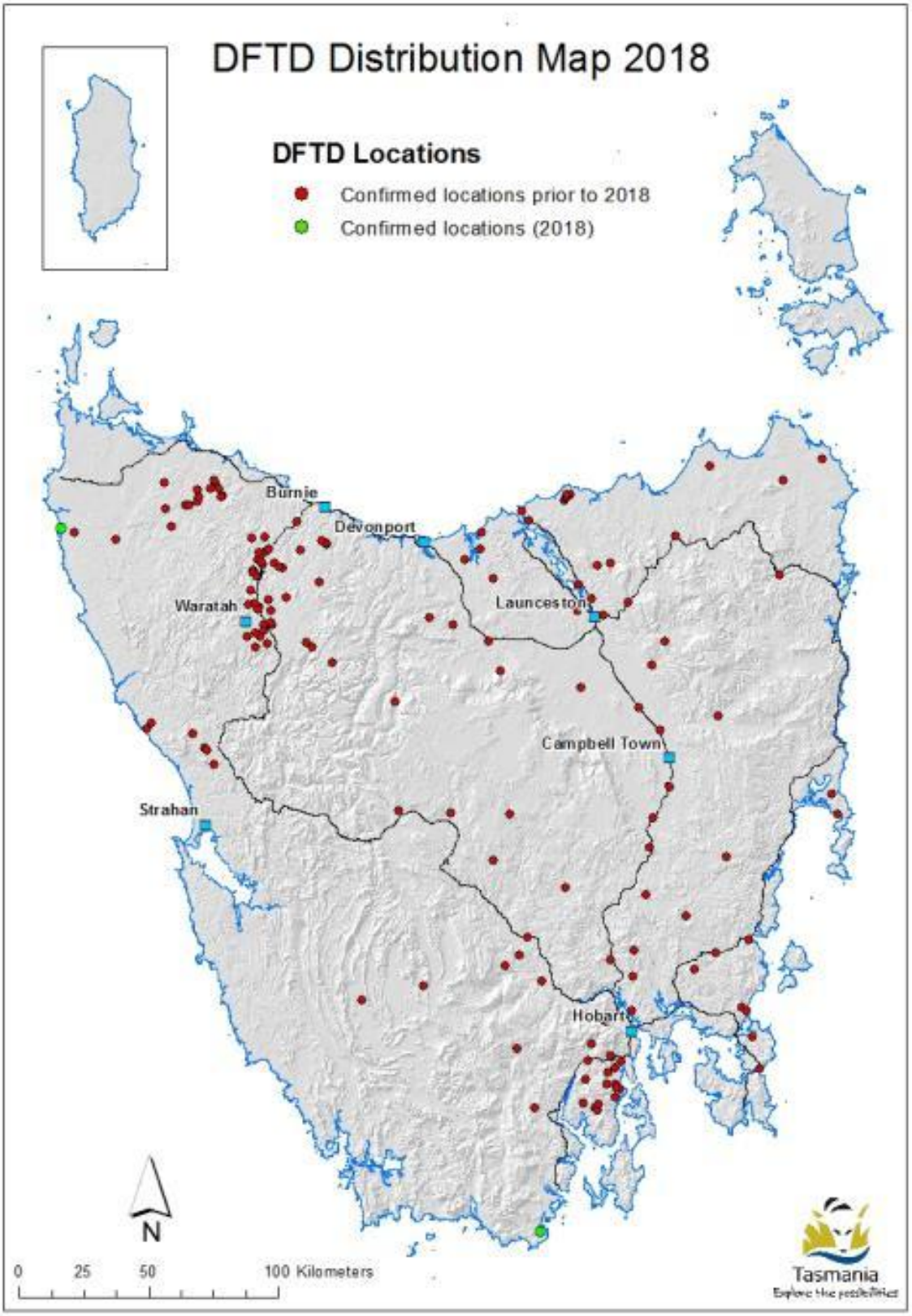

Figure 4: Distribution of Devil Facial Tumour Disease

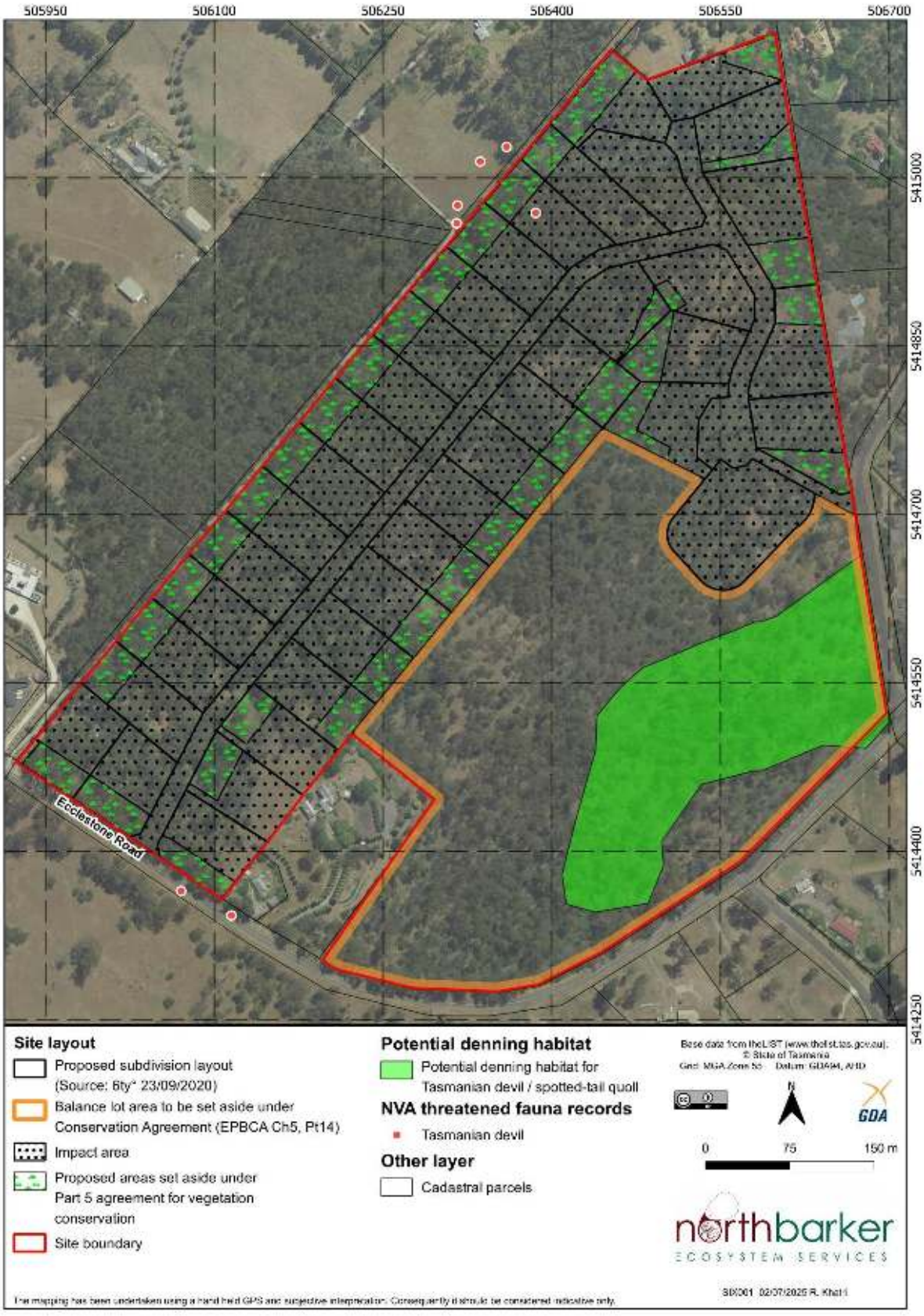

Figure 5: Tasmanian devil potential denning habitat within project area and records in the vicinity

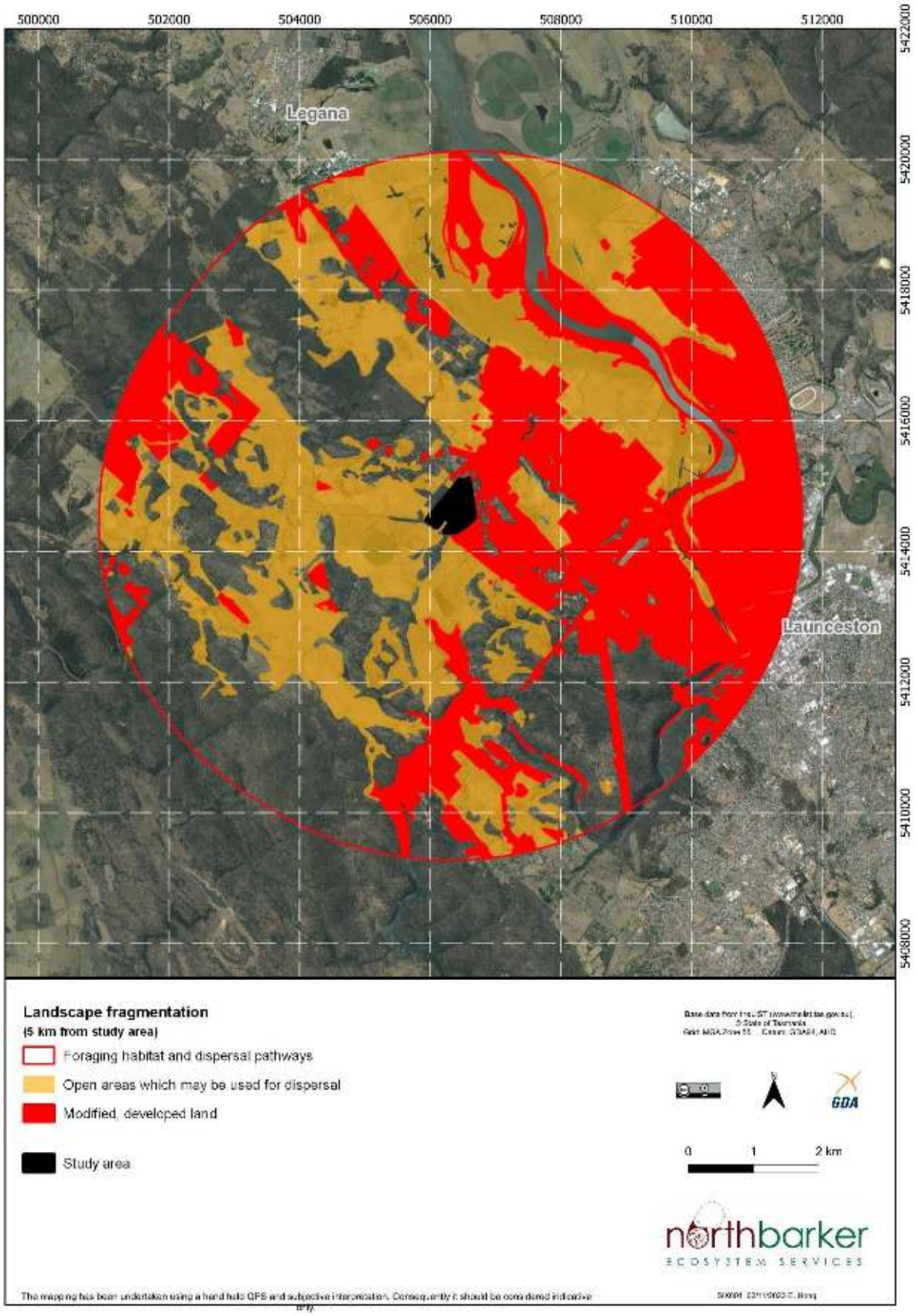

Figure 6: Developed land and water (red) as per TASVEG 4.0 within 5 km of the proposal area (black). The remaining uncoloured areas are native vegetation

2.3 Eastern Quoll (*Dasyurus viverrinus*) [Endangered]

2.3.1 Context

The Eastern Quoll (EQ) is widespread in Tasmania with more than 4700 records on the NRE Natural Values Atlas database (Figure 7). Records indicate that the EQ occurs in most parts of Tasmania, but is recorded infrequently in the wetter western third of the state and is typically absent from large tracts of wet eucalypt forest and rainforest[20].

It is commonly associated with dry grassland and forest mosaics which are bounded by agricultural land[21]. Animals sleep in dens under rocks, in underground burrows or fallen logs. The species is not territorial and the home ranges of many individuals may overlap. Females have a slightly smaller home range (35 ha) than males (44 ha), with males ranging more widely during the breeding season[22].

The EQ is listed as endangered on the EPBCA. The Conservation Advice indicates that the predominant threat identified as a cause of population decline is climate change. The elements of change that are identified are reduced severity of frosts and changed frequency and intensity of rainfall. The correlation of these factors has been viewed with some scepticism by numerous scientists as a cause of decline. Indeed, the EQ population is thought to fluctuate quickly in response to prey availability; specifically invertebrates.

Other threats are similar for all small mammals; predation by cats, disease and poisoning.

Potential habitat for the Eastern Quoll includes rainforest, heathland, alpine areas and scrub. However, it seems to prefer dry forest and native grassland mosaics which are bounded by agricultural land. There is no recovery plan nor Conservation Advice for this species and hence no habitat is described as critical to survival.

2.3.2 Habitat assessment

Suitable foraging habitat for the quoll is widespread on the site. No scats or tracks were located but suitable habitat is widespread on the site and it is possible this species occurs.

Denning requirements for eastern quoll are typically less than for devils and it is possible that this species utilises the proposal area for breeding. Targeted den surveys failed to locate any suitable den structures within the impact footprint. Dense vegetation near the creek line in the south east on the balance lot is the most suitable denning habitat on the site. Other areas of the site with dense ground cover of sedges and bracken are also mapped as suboptimal denning habitat. Mapping of denning habitat for Eastern quolls within the project area is shown in Figure 8. No detailed surveys of adjacent properties have been undertaken but areas of native vegetation with similar characteristics, such as creeklines and areas with dense understory vegetation are likely to offer suitable denning habitat. Foraging habitat for this species has not been specifically mapped as it includes all areas of native vegetation on and off site, as well as areas of open paddock adjacent to vegetation cover.

Eastern quolls are likely to disperse through the area utilising areas of native vegetation and farmland (Figure 6). The habitat availability in the region includes the secure reserve at Trevallyn NRA and the extensive areas such as 1 km north west (north of Cormiston Creek), Grassy Hut Tier and other hill country where development pressure is low are long term viable habitats for small mammals.

2.3.3 Identify and describe known historical records

The Tasmanian Natural Values Atlas report[23] shows the most recent record is a roadkill record of a young male in good condition from July 2021 within the developed suburban area of Forest Road in Trevallyn over

[20] Threatened Species Scientific Committee (2015)
[21] Fancourt (2015)
[22] Godsell (1983)
[23] Natural Values Atlas Report, NVR_1_13_Sep_2023, NRE

3km from the project site. Other records in the surrounding area include two roadkill records from 2021 (Blackstone heights around 4.6km south) and 2018 (Ecclestone Road over 5km west of the project site).

The most recent NVR[24] generated for the site shows no records of EQ within 500m and 10 records within a 5km range of the project site (Figure 7).

[24] Natural Values Atlas Report, NVR_1_13_Sep_2023, NRE

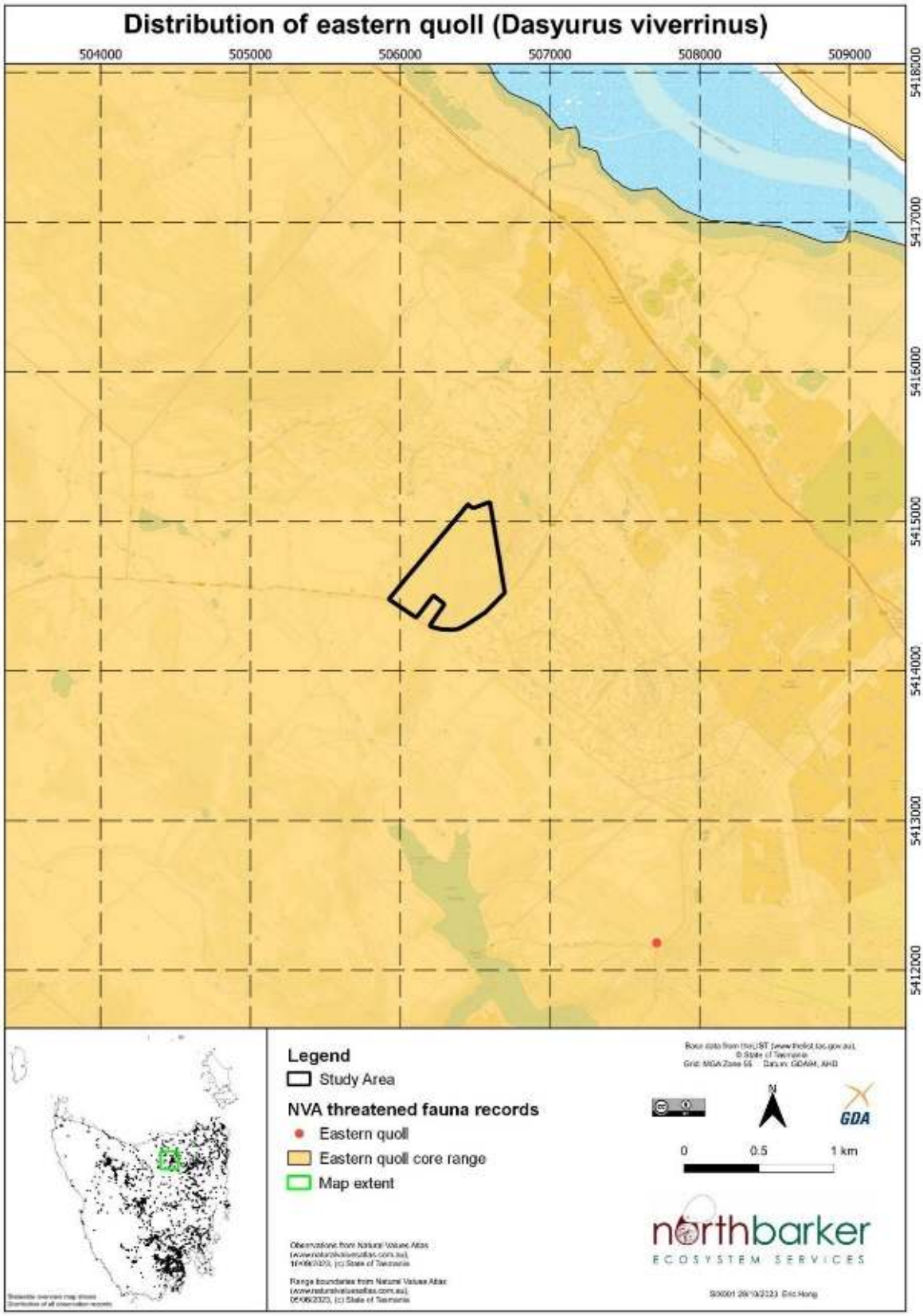

Figure 7: Distribution of Eastern quoll records in Tasmania and the vicinity of the site

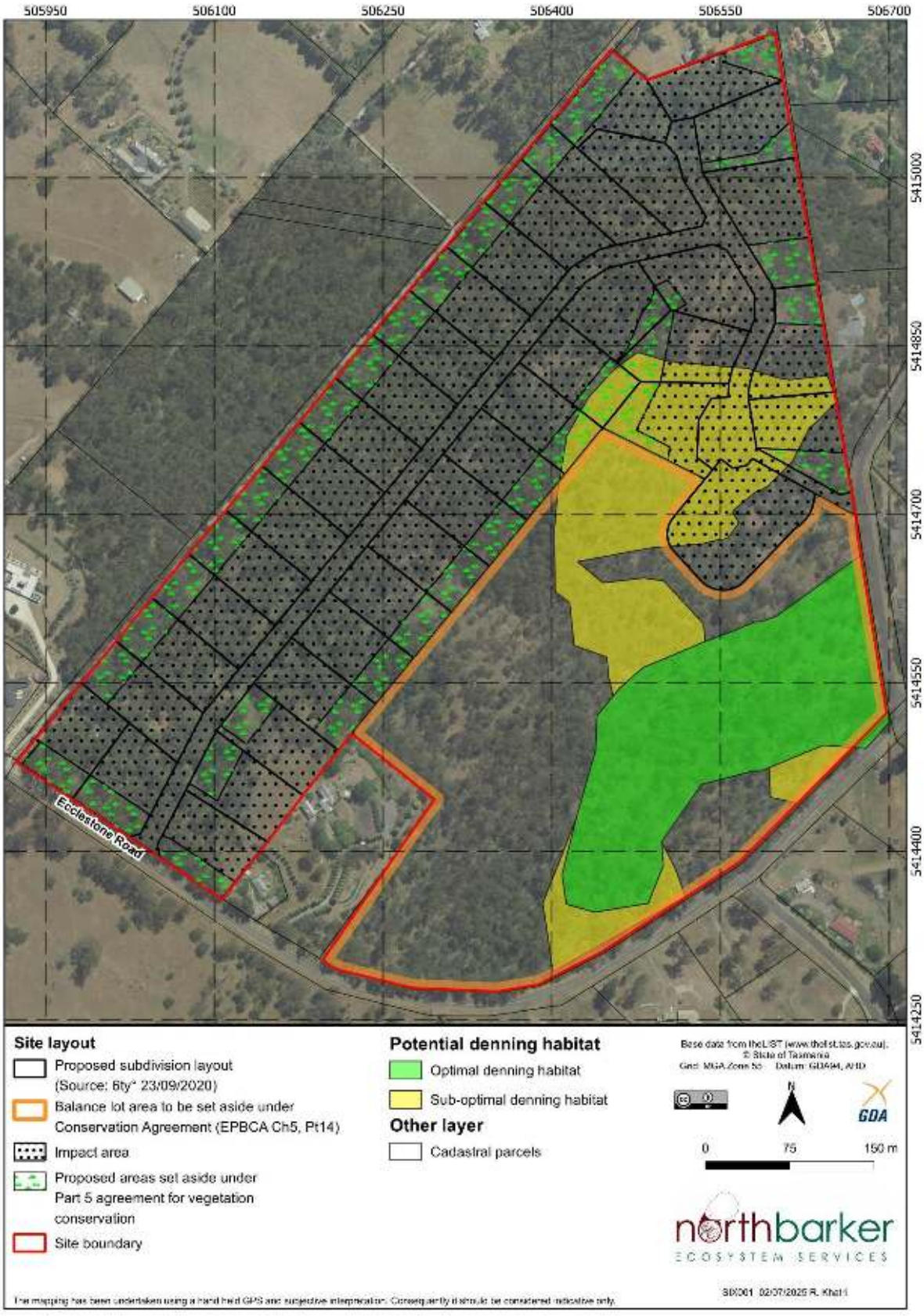

Figure 8: Eastern quoll denning habitat within the project area and records in the vicinity

2.4 Spotted-tailed Quoll (Tasmanian Population) – *Dasyurus maculatus maculatus* (Tasmanian population) [Vulnerable]

2.4.1 Context

The spotted-tailed quoll (STQ), known as *luwayina* in *palawa kani* (Tasmanian Aboriginal language), is a medium-sized carnivorous marsupial found mostly in forest habitats in south-eastern mainland Australia and Tasmania (Figure 11). Its distribution across much of the eastern mainland is highly fragmented. STQs in Tasmania have been recorded occurring in rainforest, tall eucalypt forest and medium eucalypt forest, but occur in highest densities in very wet forests, rainforest, and blackwood swamps[25]. The STQ typically occurs at low densities, and is predominately nocturnal and solitary with large home ranges. Males generally have larger overlapping home ranges compared to females, whom typically have smaller, non-overlapping home ranges. Home ranges of STQs have been measured in Victoria between 359 – 5,512 ha for males and 88 – 1,515 ha for females [26]. Home ranges of females in Tasmania are likely to be similar with Troy et al. (2011) measuring female home ranges of 150-520 ha at the highly productive Woolnorth region in north west Tasmania[27]. Habitat loss, fragmentation and modification pose the greatest threat to the STQ. An estimated 50 % of natural habitat has been removed throughout Tasmania, with the remaining habitat undergoing modification and fragmentation that has reduced the suitability of habitat and viability of populations. The recovery for this species is primarily dependent upon the protection of existing habitat[28].

Potential habitat for the spotted-tail quoll is coastal scrub, riparian areas, rainforest, wet forest, damp forest, dry forest and blackwood swamp forest (mature and regrowth), particularly where structurally complex areas are present, and includes remnant patches in cleared agricultural land or plantation areas[29].

Potential denning habitat for the STQ includes[30]:

a) any forest remnant (>0.5 ha) in a cleared or plantation landscape that is structurally complex (high canopy, with dense understorey and ground vegetation cover), free from the risk of inundation, or

b) a rock outcrop, rock crevice, rock pile, burrow with a small entrance, hollow logs, large piles of coarse woody debris and caves.

Significant habitat for the spotted-tail quoll is all potential denning habitat within the core range of the species[31].

Habitat that is critical to the survival The National Recovery Plan[32] also identifies "important populations" and the Threatened Fauna Handbook[33] identifies a number of "key sites" for the spotted-tail quoll in Tasmania (Figure 12).

2.4.2 Habitat assessment

Suitable foraging habitat for the quoll is widespread on the site and it may form part of the home range of one or potentially two females if the home ranges overlap on the site. Targeted den surveys undertaken by NBES in August 2021 (Appendix C) noted that key habitat elements required for potential denning habitat are not present within the impact footprint. If the site is within the core of a female home range the den opportunity is most likely to be on the balance lot rather than in the open forest of the residential proposal

[25] Jones and Rose (1996)
[26] Department of Environment, Land, Water and Planning (2016)
[27] Troy et al. (2011)
[28] Department of Environment, Land, Water and Planning (2016)
[29] Forest Practices Authority (2013); Commonwealth of Australia (2022d); Forest Practices Authority & Threatened Species Section (DPIPWE) (2022)
[30] Forest Practices Authority (2013)
[31] Commonwealth of Australia (2022d); Forest Practices Authority & Threatened Species Section (DPIPWE) (2022)
[32] Department of Environment, Land, Water and Planning (2016)
[33] Bryant and Jackson (1999)

due to the presence of higher protective cover provided by dense vegetation on the balance lot. If it is not within a female home range, male quolls remain likely to traverse the site from time to time.

STQs are likely to disperse through the area, particularly males. Within 5 km there are 3300 ha of native habitat representing 36% of the land. This does not include cleared paddock areas which will also be utilised by STQs to forage and traverse. The study area occurs within a broad area considered to be a key site for the spotted-tail quoll: the Central North Coast Dry Eucalypt Forests which encompasses the central part of northern Tasmania (Figure 12)[34].

Mapping of suitable habitat for Spotted-tail quolls within the project area is shown in Figure 13. The creekline in the southeast has been mapped as suitable denning habitat for this species given the dense ground cover and potential burrow opportunities in this area. No detailed surveys of adjacent properties have been undertaken but areas of native vegetation with similar characteristics, such as creeklines and gullies, with dense understory vegetation are likely to offer suitable denning habitat. Foraging habitat for this species has not been specifically mapped as it includes all areas of native vegetation on and off site, as well as areas of open paddock adjacent to vegetation cover.

2.4.3 Identify and describe known historical records

The Tasmanian Natural Values Atlas[35] shows three (3) records (caught on a camera trap) from March and August 2021 on the NW boundary of the site between DAD onsite and the adjacent cleared paddock on property 290 Ecclestone Road. Expert examination of the photos (Figure 9 and Figure 10) by NBES ecologists and associates suggest the photos are of males given the size and large jowl evident[36].

There is also one roadkill record from June 2021 of a large male on Ecclestone Road, approximately 70m south of the junction with Rowsphorn Road.

The most recent NVR[37] generated for the site shows 5 records of STQ within 500m and 29 records within a 5km range of the project site (Figure 13).

[34] Bryant and Jackson (1999)
[35] Natural Values Atlas Report, NVR_1_13_Sep_2023, NRE
[36] N. Mooney *pers. comm.*
[37] Natural Values Atlas Report, NVR_1_13_Sep_2023, NRE

Figure 9: Camera trap photo of STQ.

Figure 10: Camera trap photo of STQ.

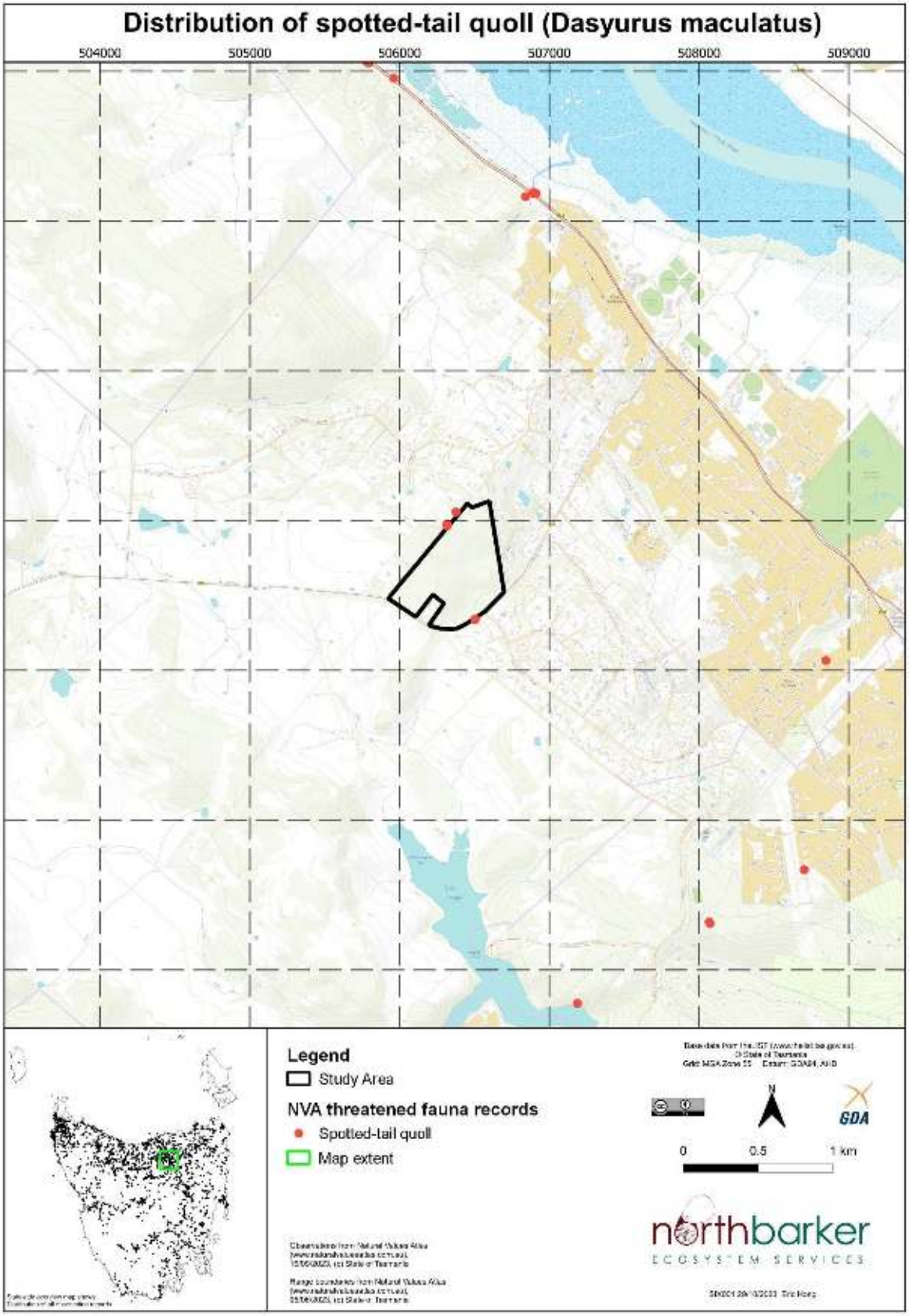

Figure 11: Distribution of spotted-tail quoll records in Tasmania and the vicinity of the site

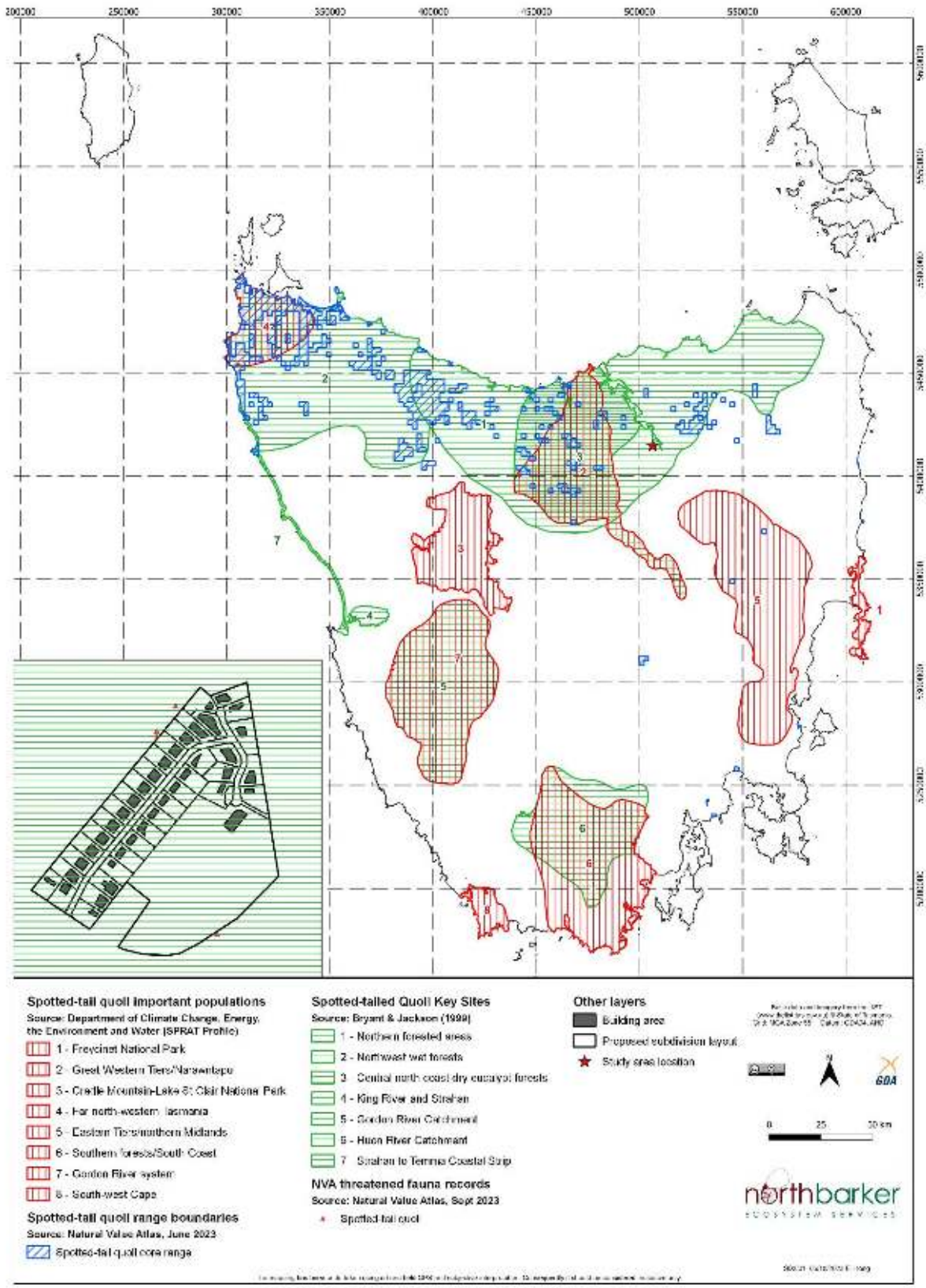

Figure 12: Important populations and key sites for the spotted-tail quoll

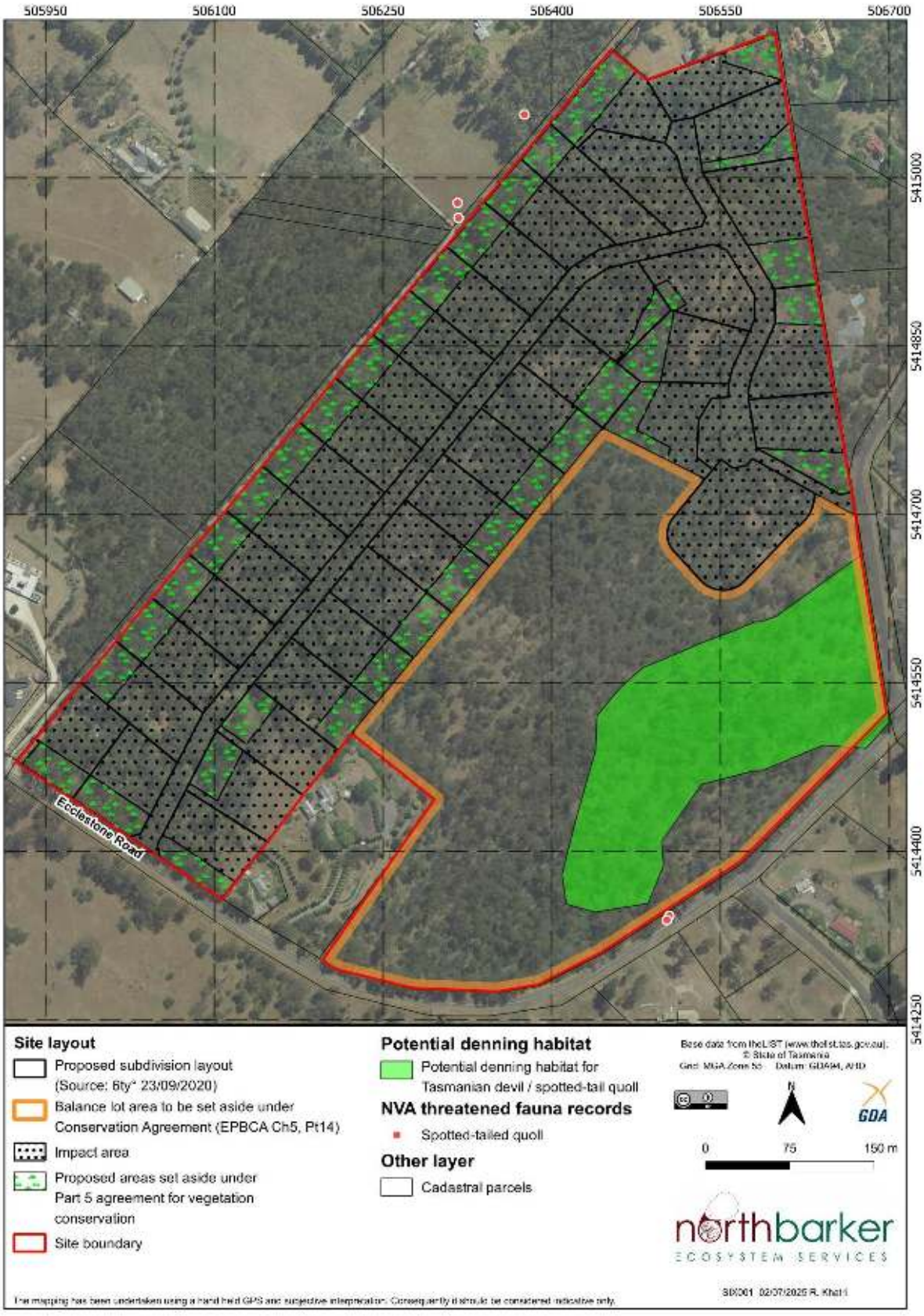

Figure 13: Spotted-tail quoll denning habitat within the project area and records in the vicinity

2.5 Eastern Barred Bandicoot (Tasmanian Population) (*Perameles gunnii gunnii)* [Vulnerable]

2.5.1 Context

The core range of the eastern barred bandicoot is the lowlands of the southern, northern and eastern Midlands, extending to coastal areas in the southeast, east and north (Figure 14).

Bandicoots are prolific breeders that build ephemeral grassy nests and can have multiple litters per year, not necessarily using the same natal location within a season[38]. This life strategy is thought to be one of the primary reasons they are successful in periurban locations[39]. The species is so highly fecund that, in the event a natal nest is disturbed, breeding is likely to be repeated in a nearby location shortly after disturbance. The species is also capable of moving their litter to a new location in the event of disturbance[40].

The main identified threats to the Eastern Barred Bandicoot (Tasmania) include clearing of habitat, in particular loss of ground cover, and predation by feral cats and dogs[41]. Invasive species that are harmful to the species include cats, dogs, and foxes. Cats are ubiquitous throughout Tasmania, dogs are abundant in periurban areas, and foxes are currently thought to be absent from the State.

Potential habitat for the eastern barred bandicoot 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.

Significant habitat for the eastern barred bandicoot 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.

2.5.2 Habitat assessment

Although no sign of eastern barred bandicoot was detected during the surveys, it has been recorded on the neighbouring property. Where the EBB occurs in high numbers sign evidence is expected to be common and easily observable, particularly the characteristic conical foraging holes. Given the lack of sign evidence during our survey efforts it is considered likely that EBB is present in low numbers across the site.

The habitat on the site is suitable: the open grassy understory and adjacent periurban gardens are ideal habitat for foraging. The bandicoot could potentially nest on adjacent lots and on parts of the site where patches of dense ground cover occur.

The habitat availability in the region is similar to the EQ and so the secure reserve at Trevallyn NRA and the extensive areas such as 1 km north west (north of Cormiston Creek), Grassy Hut Tier and other hill country where development pressure is low are long term viable habitats for small mammals.

Mapping of suitable nesting habitat for Eastern barred bandicoots within the project area is shown in Figure 15. Dense vegetation near the creek line in the south east on the balance lot is the most suitable nesting habitat on the site. Other areas of the site with dense ground cover of sedges and bracken are also mapped as suboptimal nesting habitat. No detailed surveys of adjacent properties have been undertaken but areas of native vegetation with similar characteristics, such as creeklines and areas of dense understory vegetation are likely to offer suitable nesting habitat. Foraging habitat for this species has not been specifically mapped as it includes all areas of native vegetation on and off site, as well as areas of open paddock adjacent to vegetation cover.

[38] G. Daniels *pers. comm.* (2021)
[39] Daniels (2011)
[40] G. Daniels *pers. comm.* (2021)
[41] Department of the Environment, Water, Heritage and the Arts (2008)

2.5.3 Identify and describe known historical records

The NVR[42] shows six (6) records of EBB within 500 m of the site, the most recent from 2022. These records are from camera traps set up on the boundary of the site and the cleared paddock within property 290 Ecclestone Road as well as other properties to the north of the site. There are a total of 39 NVR records of EBB within 5 km of the site, mostly from periurban settings west of Launceston and along major roads in the region (Figure 15).

[42] Natural Values Atlas Report, NVR_1_13_Sep_2023, NRE

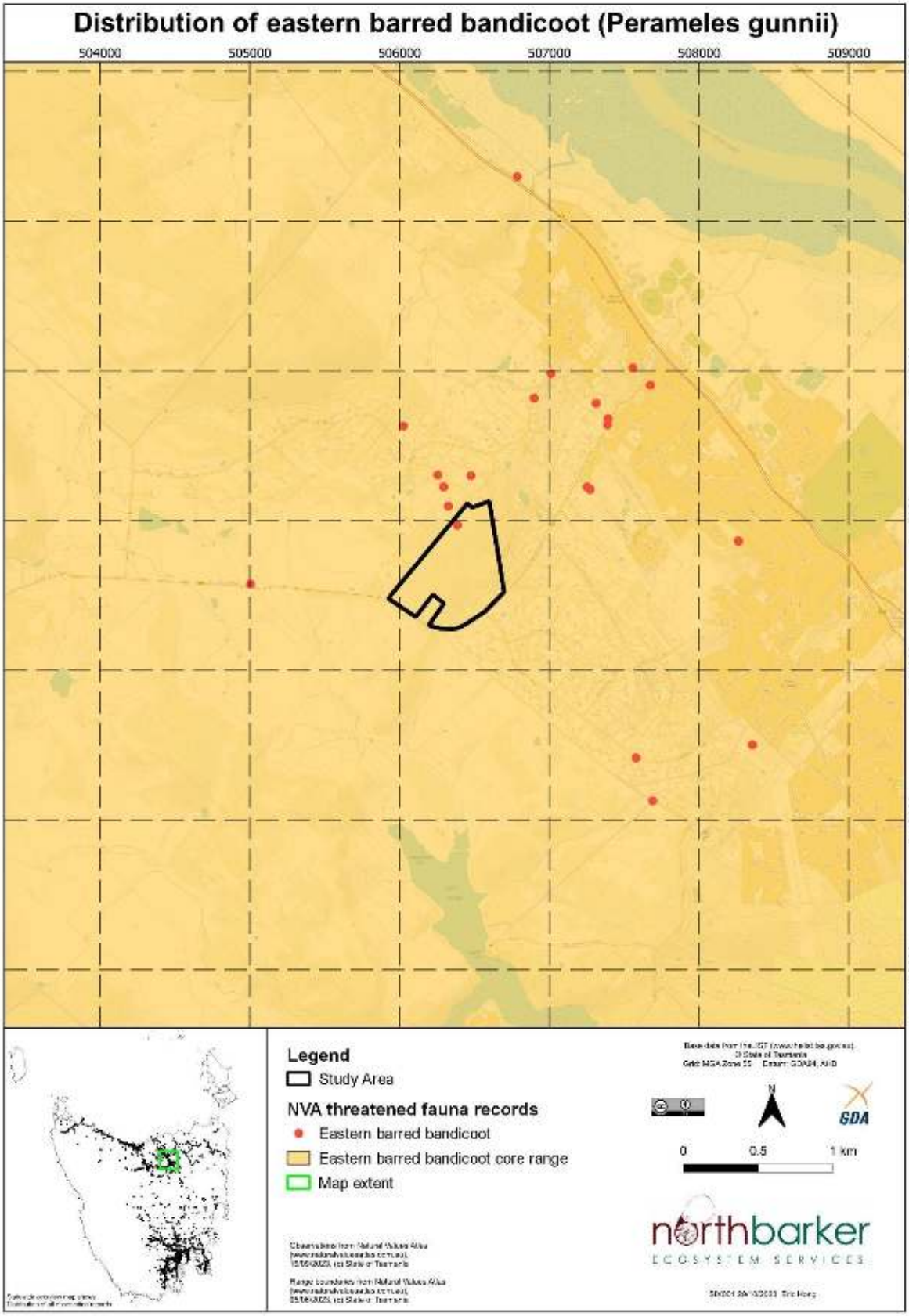

Figure 14: Distribution of eastern-barred bandicoot records in Tasmania and the vicinity of the site

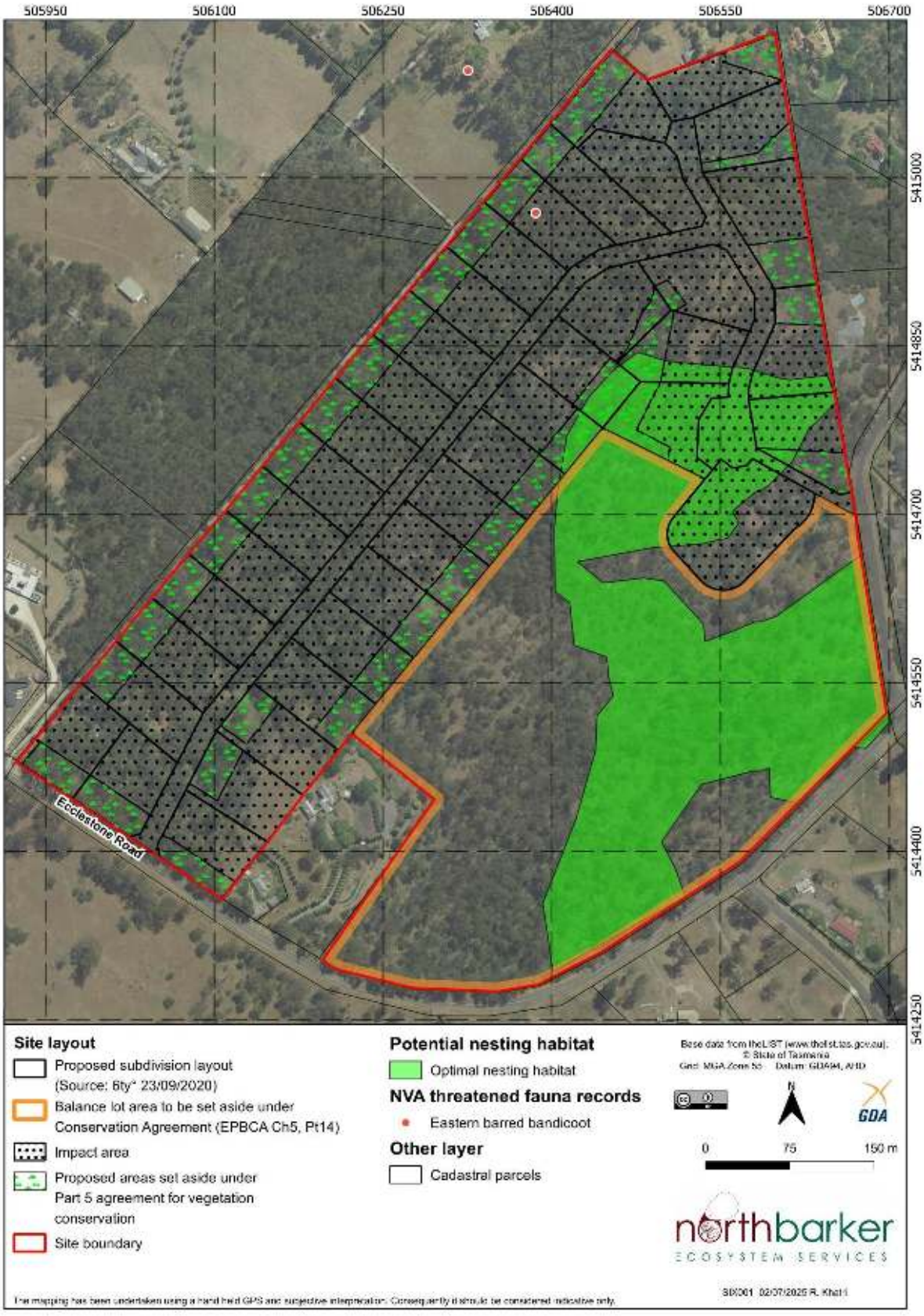

Figure 15: Eastern barred bandicoot denning habitat within the project area and records in the vicinity

2.6 Tasmanian Wedge-tailed Eagle (*Aquila audax fleayi*) [Endangered]

2.6.1 Context

The Tasmanian wedge-tailed eagle, known as *kurina* in *palawa kani* (Tasmanian Aboriginal language), occurs in a range of habitats across most of Tasmania (Figure 16). Habitat critical to the survival of the species is defined as nesting habitat within the 2006-2010 Recovery Plan[43]. Nesting for the species is restricted to very large trees in sheltered positions on leeward slopes, with nests generally not close to sources of disturbance[44]. The species is sensitive to disturbance when breeding and has been known to abandon its young because of disturbance close to the nest site[45]. Thus, loss of nesting habitat and nest disturbance are considered to be key threats to the survival of the species. To protect nests from disturbance in Tasmania, breeding season restrictions (management constraint period) are applied to activities regulated under the Forest Practices Code within 500 m and 1 km of sight of active nests[46]. Although these constraints are not regulated beyond forest practices, regulators have variously applied the same constraints as management and mitigation measures in other contexts as a measure of best practice.

Potential foraging habitat is a wide variety of forest (including areas subject to native forest silviculture) and non-forest habitats[47].

Potential nesting habitat 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[48]. Nests are usually not constructed close to sources of disturbance and nests close to disturbance are less productive. Due to this, some territories generally have several nests that they can choose from each season.

Significant habitat for the wedge-tailed eagle 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)[49]. The Threatened Tasmanian Eagles Recovery Plan defines habitat critical to the survival of the Tasmanian wedge-tailed eagle as nesting habitat, described as forests of predominantly old growth trees greater than 10 ha in area and occurring on sites sheltered from prevailing strong winds[50].

2.6.2 Habitat assessment

A nest (ID 2702) of this species was recorded in the balance lot of the site in 2019 (Figure 17). The nest was reported by a local resident and was not recorded earlier in 2018 during the NBES survey. Given the freshness of the material and the lack of compression, the nest appeared relatively new; in November 2019 the nest was aged at between a few months and a year, two at the most[51] (Figure 18). The nest was visited during the breeding season in 2019, August 2021 and November 2022; on all occasions no activity was apparent which is usually evident by the presence of whitewash, remnants of prey fallen to the ground and the establishment of a substantial recently renovated nest platform. These facts, combined with the brown falcon observed at the nest for an extended period, strongly indicate that the nest is not and has not been used by wedge-tailed eagles. Consequently, the eagle nest is inactive but may be utilised by brown falcons for nesting. There is no evidence that this nest has ever been active. It is possible that the construction was done by immature birds that failed to breed in that year and subsequently abandoned the attempt.

The site is largely sub-optimal for nesting trees and the nest tree itself is relatively small for this species (~70 cm DBH). Although birds have been seen near the nest, there is no evidence that it has been used for a breeding attempt. Given the relatively exposed location of the tree, the relatively small size of the tree and supporting boughs, and the nest structure itself, it is quite possible this nest will not be used for

[43] Threatened Species Section (2006)
[44] Forest Practices Authority (2014a)
[45] Mooney and Holdsworth (1991); Bekessy *et al.* (2009); Wiersma (2010)
[46] Forest Practices Authority (2014b); Threatened Species Section (2006)
[47] Forest Practices Authority & Threatened Species Section (DPIPWE) (2022)
[48] Forest Practices Authority (2014b); Forest Practices Authority & Threatened Species Section (DPIPWE) (2022)
[49] Forest Practices Authority & Threatened Species Section (DPIPWE) (2022)
[50] Threatened Species Section (2006)
[51] B. Brown and J. Wiersma pers. comm.

breeding. The species may forage in the area on occasion but the relatively closed nature of the forest across much of the proposal area is sub-optimal for this species.

The eagle nest model in Figure 17 indicates that the habitat on the land is in categories 0-2 and 2-3. This is among the least likely habitat to support a nest. So, the presence of the nest is unexpected and atypical. The nest is about 180 m from the nearest residential lot and 170 m from Ecclestone Road. Other nests recorded on the Natural Values Atlas also occur within 200 m of residential development. The degree of successful breeding in nests close to residential development is known to be lower largely due to abandonment caused by disturbance. The selection of the site by the eagles does not necessarily mean that the pair are more tolerant and so more valuable than other birds; well established ecological theory says that weaker animals, including juveniles, are pushed into marginal or suboptimal habitats through competition with the dominant animals. Thus prime territories are favoured and suboptimal sites occupied by less fit individuals.

Figure 19 and Figure 20 illustrate the location of known wedge-tailed eagle nests and the quality of nesting habitat in the broader landscape and bioregion. The quality of nesting habitat is based on modelling completed by the Forest Practices Board[52]. The figure depicts habitats most similar to those in which eagles nests are most commonly located (highest class 8-9) through to rarely located (lowest class 0-2). The higher probability habitat (4 and above) is most common on the slopes to the south west and in the Trevallyan State Reserve.

2.6.3 Identify and describe known historical records

The WTE is common in the vicinity due to the extent of open unforested land that presents productive hunting habitat with very large forest remnants offering suitable nesting habitat. The NVA report[53] identifies seven (7) wedge-tailed eagle sightings within 500 m of the site, most recently from 2020, with a further 41 records in a 5 km radius (Figure 19). Records are evenly dispersed across the surrounding landscape. With the exception of the inactive nest on the site, the closest known WTE nests listed on the NV Atlas are over 4km from the site to the northwest and southeast.

[52] Forest Practices Authority (2014a)
[53] Natural Values Atlas Report, NVR_1_13_Sep_2023, NRE

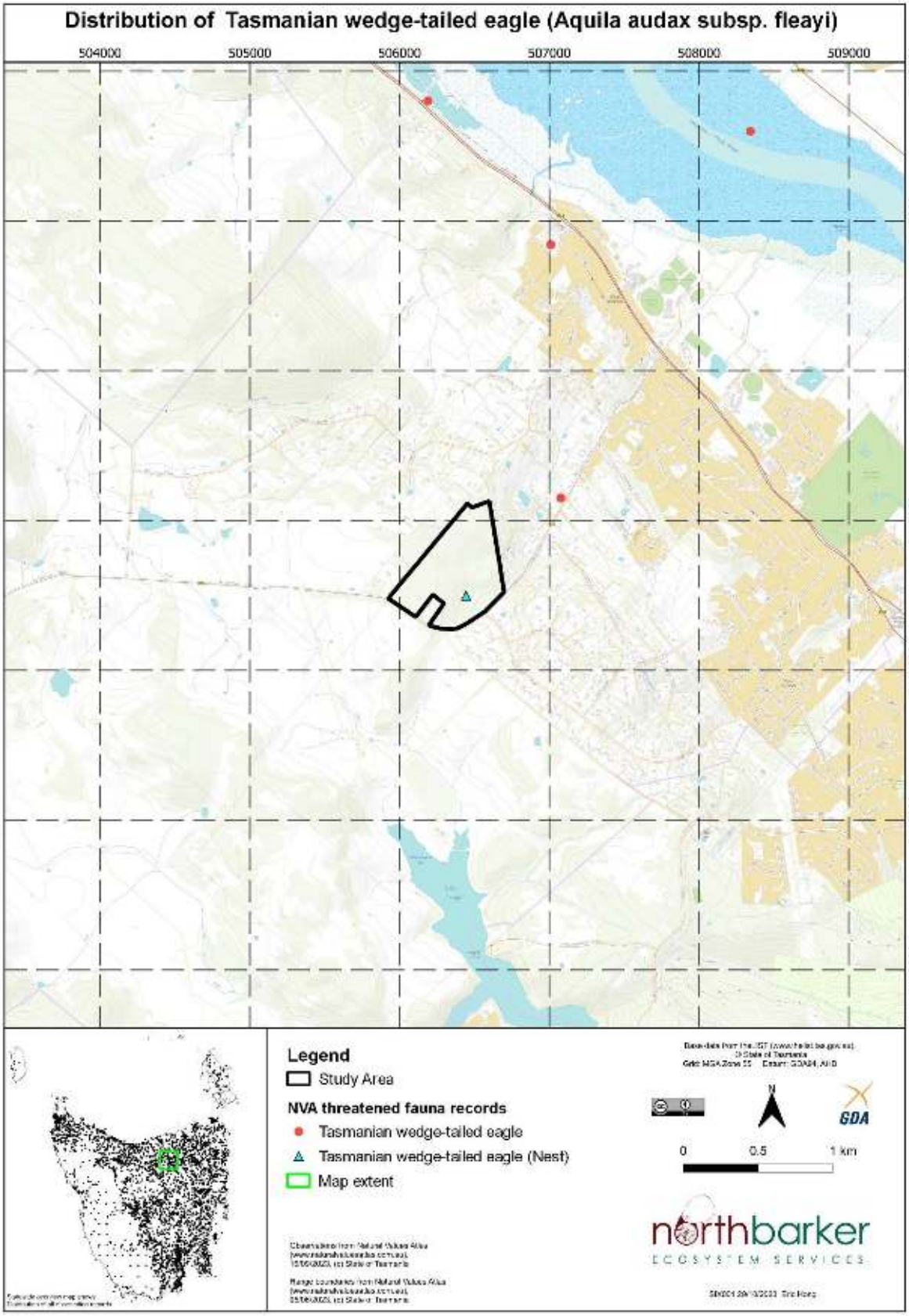

Figure 16: Distribution of Tasmanian wedge-tailed eagle nest records in Tasmania and the vicinity of the site

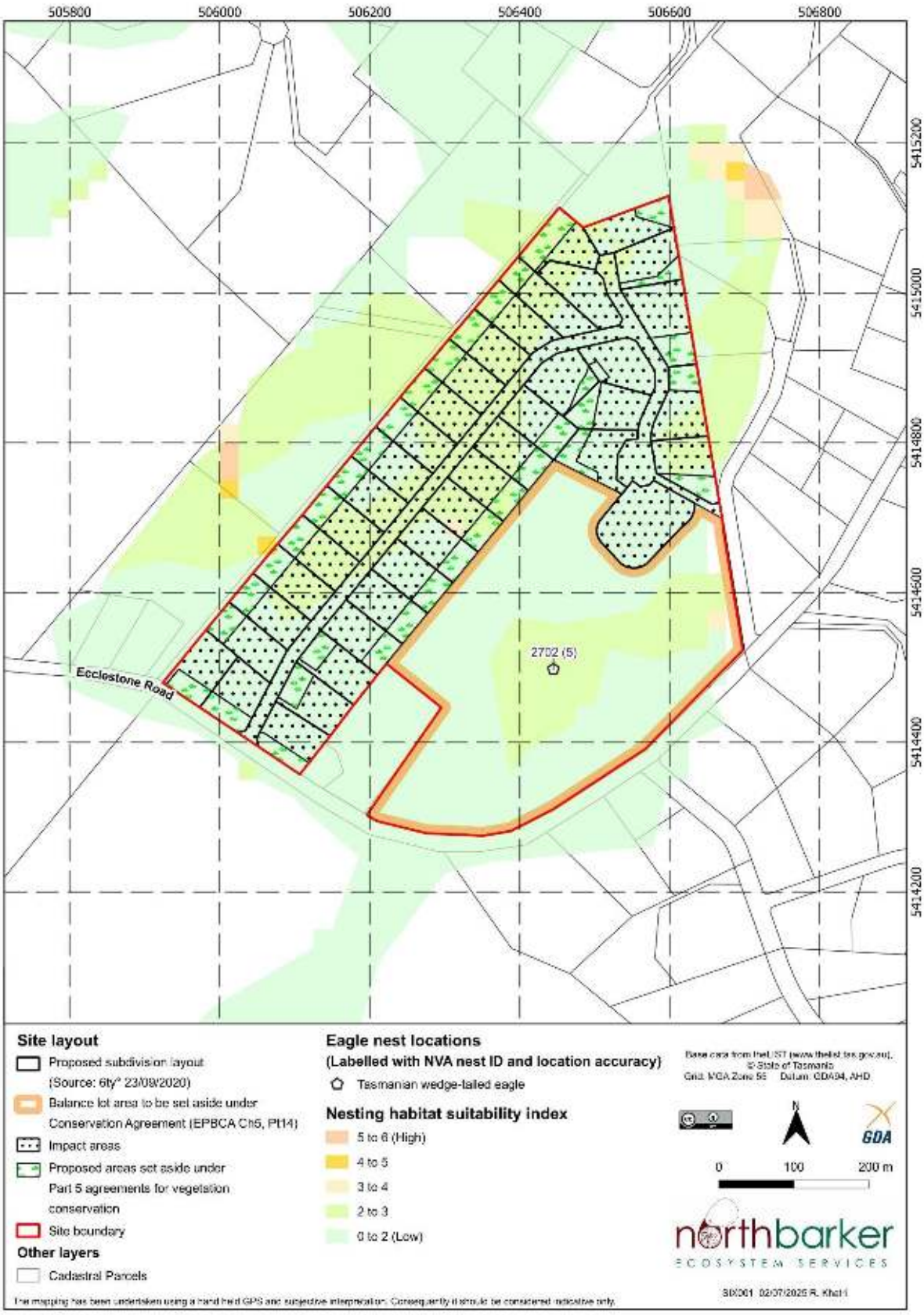

Figure 17: Eagle nest habitat model for the land and nest location

Figure 18: Identified nest located on the balance lot

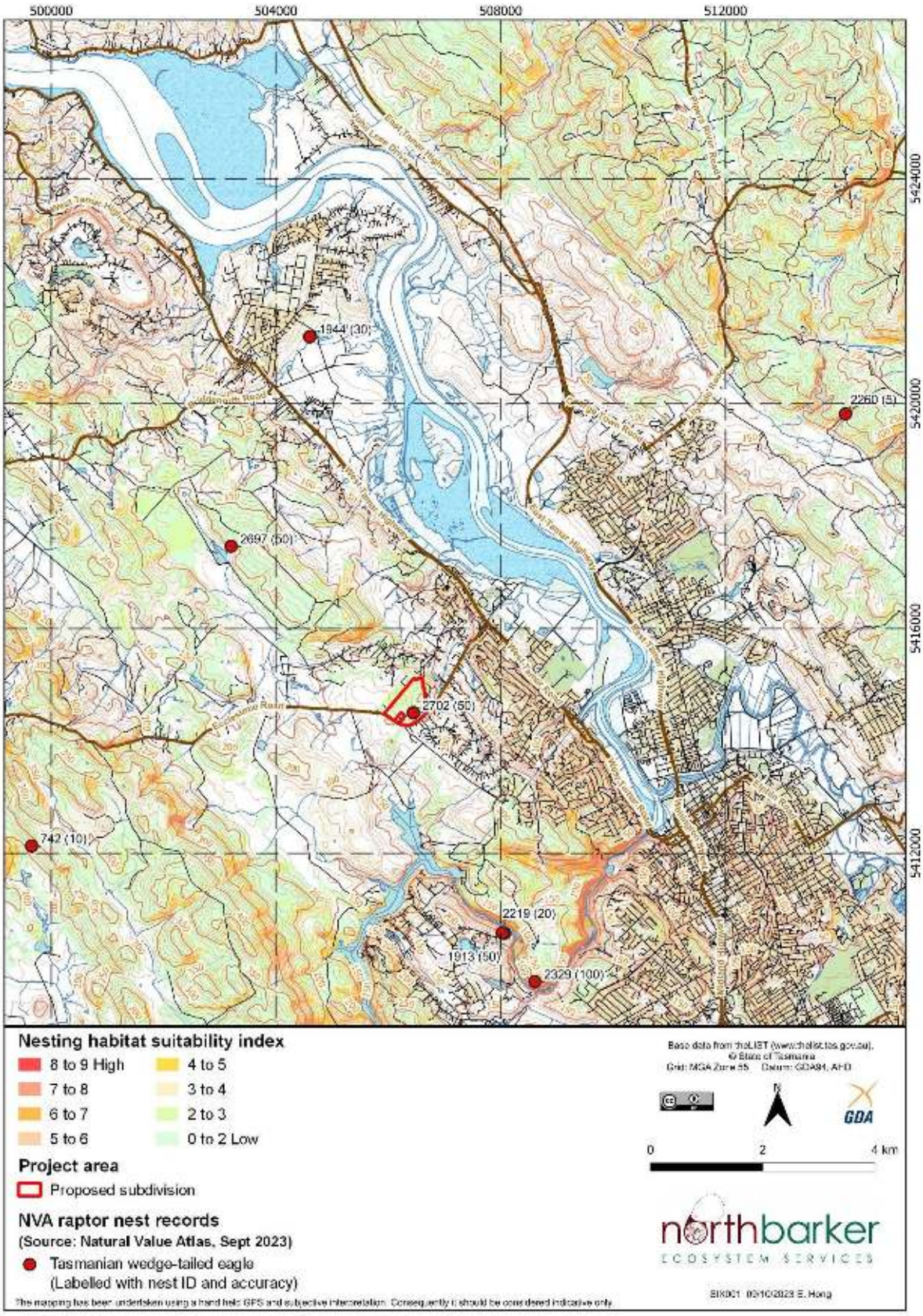

Figure 19: Eagle nest habitat model for the landscape

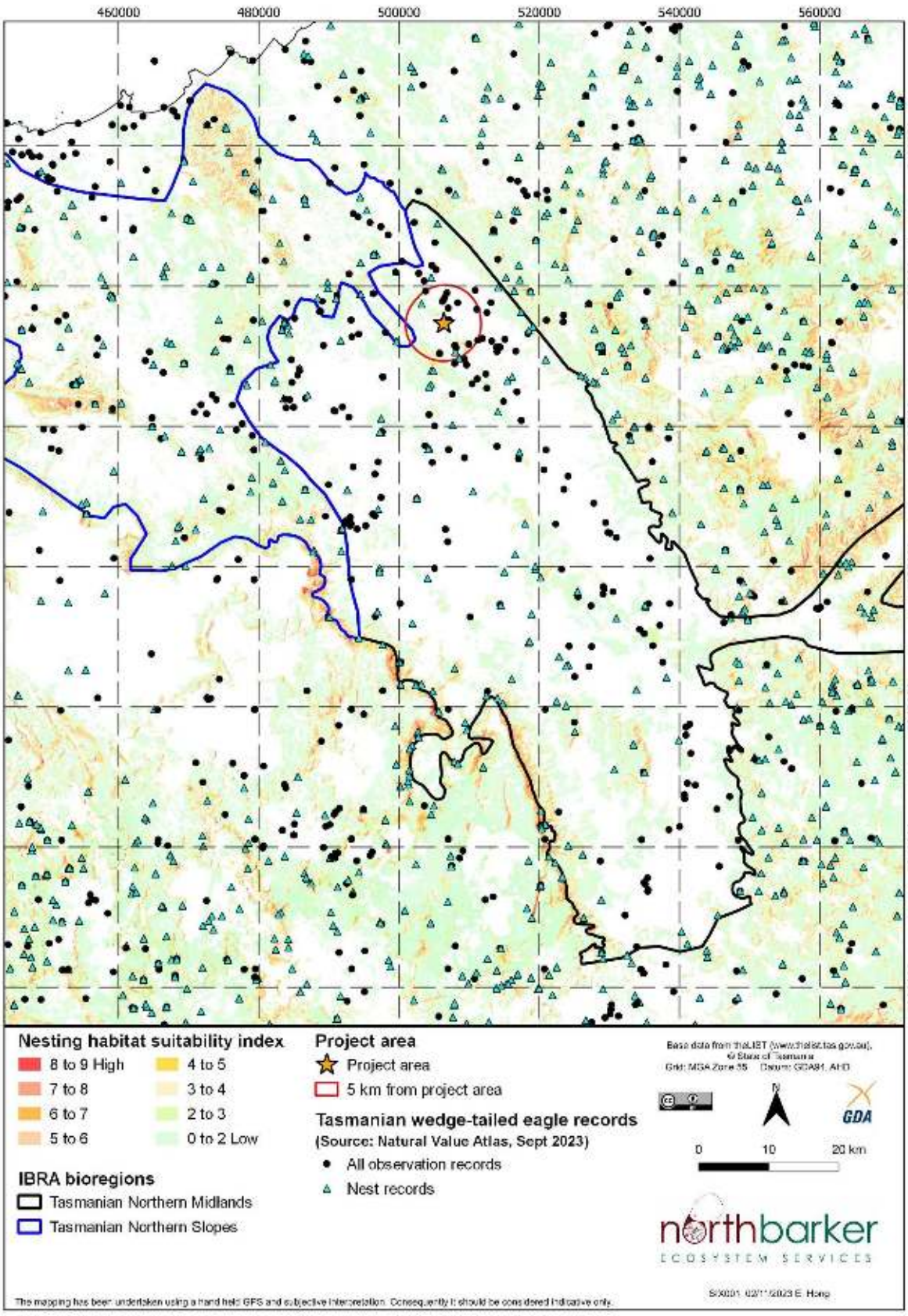

Figure 20: Eagle nest habitat model for the bioregion

2.7 Tasmanian Masked Owl (*Tyto novaehollandiae castanops*) [Vulnerable]

2.7.1 Context

The Tasmanian masked owl is endemic to Tasmania and is found in a range of habitats which contain some mature hollow-bearing forest, usually below 600 m altitude (Figure 21). This includes native forests and woodlands as well as agricultural areas with a mosaic of native vegetation and pasture. The bird has a home range in the order of 1500 - 2500 ha depending on the prey productivity of the landscape. Within this range the owl requires suitable tree hollows to breed. It is a territorial species. It can be faithful to a nest tree for many years but can adopt a new nest tree should anything happen to the tree. Nesting occurs in large tree hollows (≥ 15 cm entrance diameter) of living or dead trees, sometimes in vertical spouts or horizonal limbs but generally in the main trunk[54]. The tree must also be large enough to support a nest chamber capable of holding a large female and fledglings. The presence of such trees is thus used to define habitat value. If hollows can't be observed, trees ≥ 100 cm DBH are expected to have a higher probability of containing such hollows and nest chambers. Remnants and paddock trees in agricultural areas may also constitute significant habitat if they include large old hollow-bearing trees. Older, larger trees in areas with greater densities of similar trees constitute higher quality habitat for this species. Threats to the masked owl are considered to be habitat clearing and fragmentation, loss of nesting habitat through tree dieback, competition for tree hollows, secondary poisoning and collision mortality.

The **core range** of the Tasmanian masked owl is forest that occurs at low elevation (< 600 m above sea level)[55].

Potential habitat for the masked owl 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 also constitute potential habitat[56]. Tree size is frequently used as a substitute for hollow availability due to the difficulty of detecting suitable hollows from the ground, as trees with > 100cm diameter at breast height (DBH) have a higher probability of containing hollows suitable for masked owls than smaller diameter trees[57].

Significant habitat for the masked owl is any area of native dry forest, within the core range, with trees with large hollows (≥15 cm entrance diameter)[58]. The DCCEEW Conservation Advice does not described habitat critical to the survival of the masked owl.

2.7.2 Habitat assessment

Masked owl surveys included:

1. Call playback surveys (undertaken over 2 nights in August 2021 and 3 nights in November 2022). Weather at the time of the surveys was suitable for detecting owl presence.
2. Placement of a songmeter onsite for a 2 week period in 2021 (19th August – 2nd September) and over 18 nights in 2023 (10th February – 28th February).
3. Hollow inspection by a masked owl expert and tree climber

Call playback surveys undertaken involved the following procedure:

At last light the observer began listening for unelicited calls for one hour in silence while moving quietly between the identified potential habitat trees. Records of this nature are evidence that an owl is present and may be near a roast or nest hollow. Repeating this process and gaining the same response or lack of provides confidence in the result.

After one hour, if no calls were heard, masked owl calls were broadcast via a portable Bluetooth speaker for approximately five minutes. During this time the observer watched for silhouettes and listened for birds landing in proximity of the speaker. After 5 minutes the audio was stopped, and the observer listened a

[54] Forest Practices Authority (2016b)
[55] Forest Practices Authority (2016b); Forest Practices Authority & Threatened Species Section (DPIPWE) (2022)
[56] Forest Practices Authority (2016b); Forest Practices Authority & Threatened Species Section (DPIPWE) (2022)
[57] Forest Practices Authority (2016b)
[58] Forest Practices Authority (2016b); Forest Practices Authority & Threatened Species Section (DPIPWE) (2022)

further 5 minutes in silence. If no owl activity was observed, the audio was rebroadcast a further two more times with additional torchlight used to scan nearby trees for perched owls.

The above process was conducted in five locations illustrated in Figure 22.

The following morning the observer conducted a further callback survey while moving quietly between habitat trees. After sunrise, identified habitat trees were 'tapped' with a hammer to flush owls from hollows, and the approximate locations of callbacks were scoured for both signs of owl presence and unrecorded hollow-bearing trees.

Song meter recording involved the following:

A song meter (Wildlife Acoustics SM4 acoustic recorder) was installed post hoc within the development area (Figure 22). The device was programmed to record all night including during optimal masked owl call periods of pre-dawn and post dusk. This follows the survey methodology recommended by Todd[59]. The audio recordings are stored as wave (.wav) files using a 48 kHz sampling rate to cover the maximum frequency of the call of the Tasmanian masked owl. The recordings were manually assessed and all calls within the characteristic signatures of masked owl analysed and verified by experienced ecologists.

The methods described above are not detailed in the departments survey guidelines but are industry best practice.

Hollow inspection

The entire site was searched for trees with potentially suitable hollows. Each tree was assessed for sign evidence and potential to hold a nest chamber. A masked owl expert and tree climber inspected all hollows in all suitable trees in May 2023.

Findings

Hollows inspected in this study did not reveal the presence of masked owls or evidence of previous use (excavation of detritus failed to reveal fur, skeletal remains, regurgitated pellets or whitewash) (Appendix C). Some of the trees previously identified for their potential were not suitable. Ducks and brush-tailed possums were found to occupy 3 hollows. Of the 13 potential hollow bearing trees identified across the site, one hollow in Tree 1 appears suitable for possible masked owl nesting givens its internal size and entrance size. An additional 5 trees (Trees 3, 4, 5, 6 and 17(x)) were identified to have suitable hollows for potential roosting. Figure 22 illustrates the distribution of hollow bearing trees and their potential to be used for nesting/roosting.

Two call playback responses were recorded from survey locations 2 and 5. The estimated locations of the calls include 1 from the balance lot and the other from the north, within the development area (Figure 22).

Song meter data indicate the site is within the range of a pair of masked owls with the frequency of calls suggesting relatively frequent use of the area. This suggests owls frequently use the area in a way that suggests an active territory (not random dispersal) and some proximity to a regular roost which may also be a nest hollow. Much less consistent detection would be expected further away from a roost site or nest site. This suggests a high likelihood of masked owls roosting or nesting on nearby properties.

The Forest Practices Authority (FPA) have complied a Mature Habitat Availability Map[60]. The mature habitat availability map identifies areas as high, medium, low or negligible mature habitat availability, based on aerial photograph interpretation of mature crown density and senescence. Significant habitat for the masked owl is considered to be all areas of dry forest (TASVEG dry eucalypt forest and woodland) with at least 20% mature eucalypt crown cover. Figure 23 illustrates areas of mature habitat across the landscape around the project site. Areas of high hollow availability are mapped on the northern side of New Ecclestone Road (approx. 1.5km NW of the site) and along Grassy Hut Tier 4.5km to the west.

[59] Todd 2012
[60] Forest Practices Authority (2016a)

2.7.3 Identify and describe known historical records

The NVR lists two records of masked owl within 500m of the site, although the most recent of these is from 1978. An additional nine (9) records occur within 5km, with the most recent from 2016. There is one nest record (ID634) from 1985 within 5km of the project site located along Corminston Creek approximately 1.6 km to the northwest. Records are shown in Figure 23.

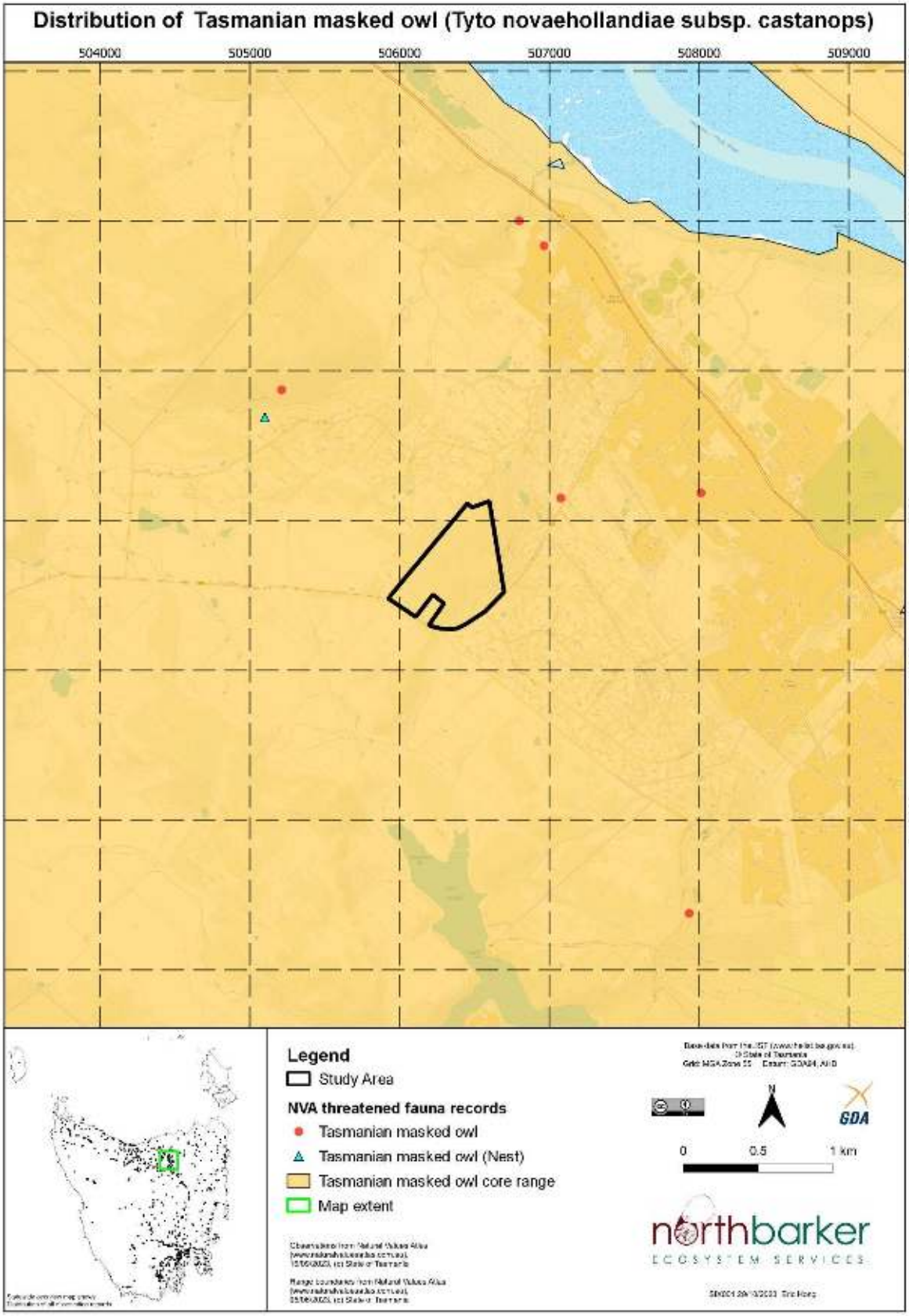

Figure 21: Distribution of Tasmanian masked owl records in Tasmania and the vicinity of the site

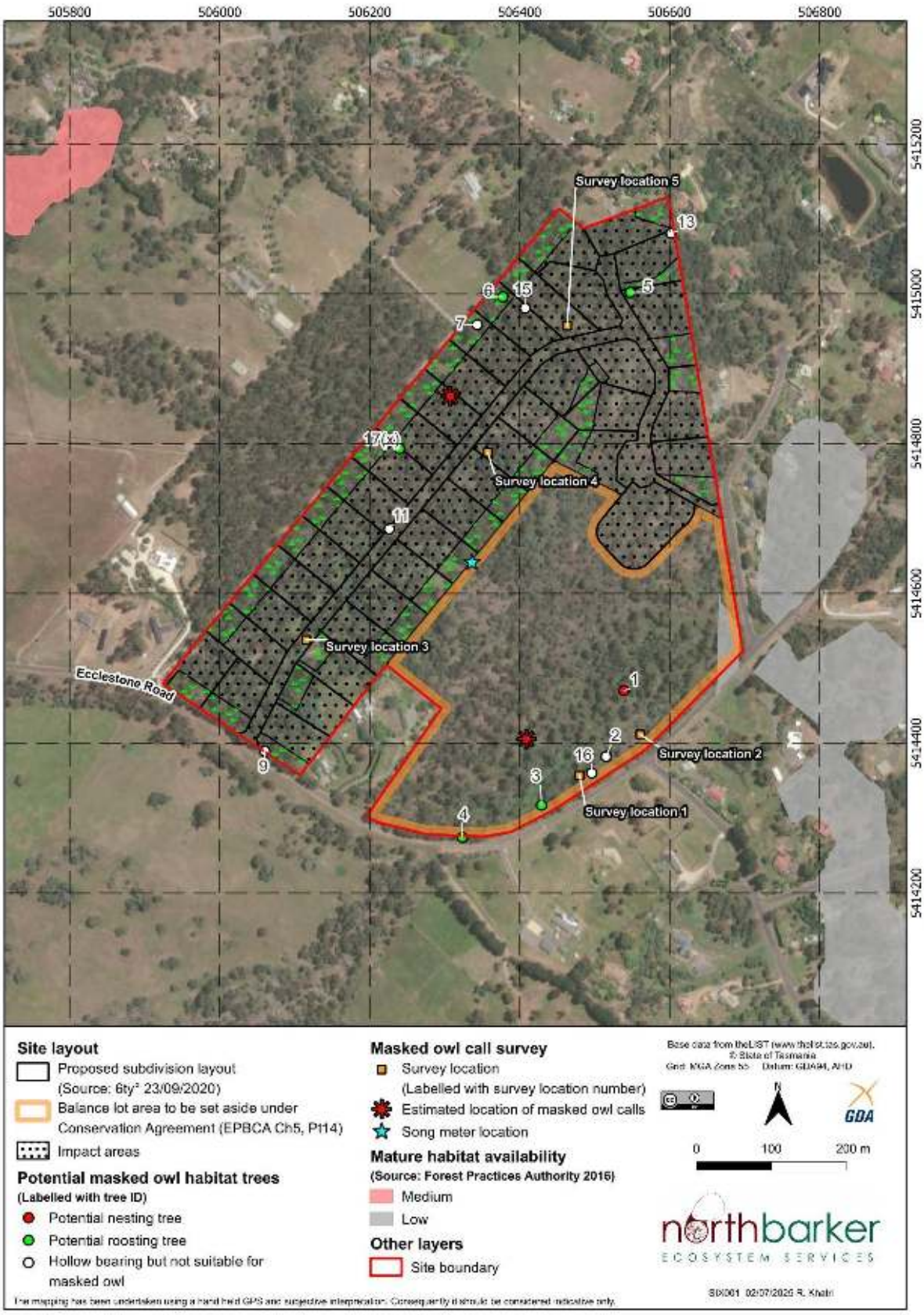

Figure 22: Masked owl survey locations and hollow bearing trees in relation to the proposed development

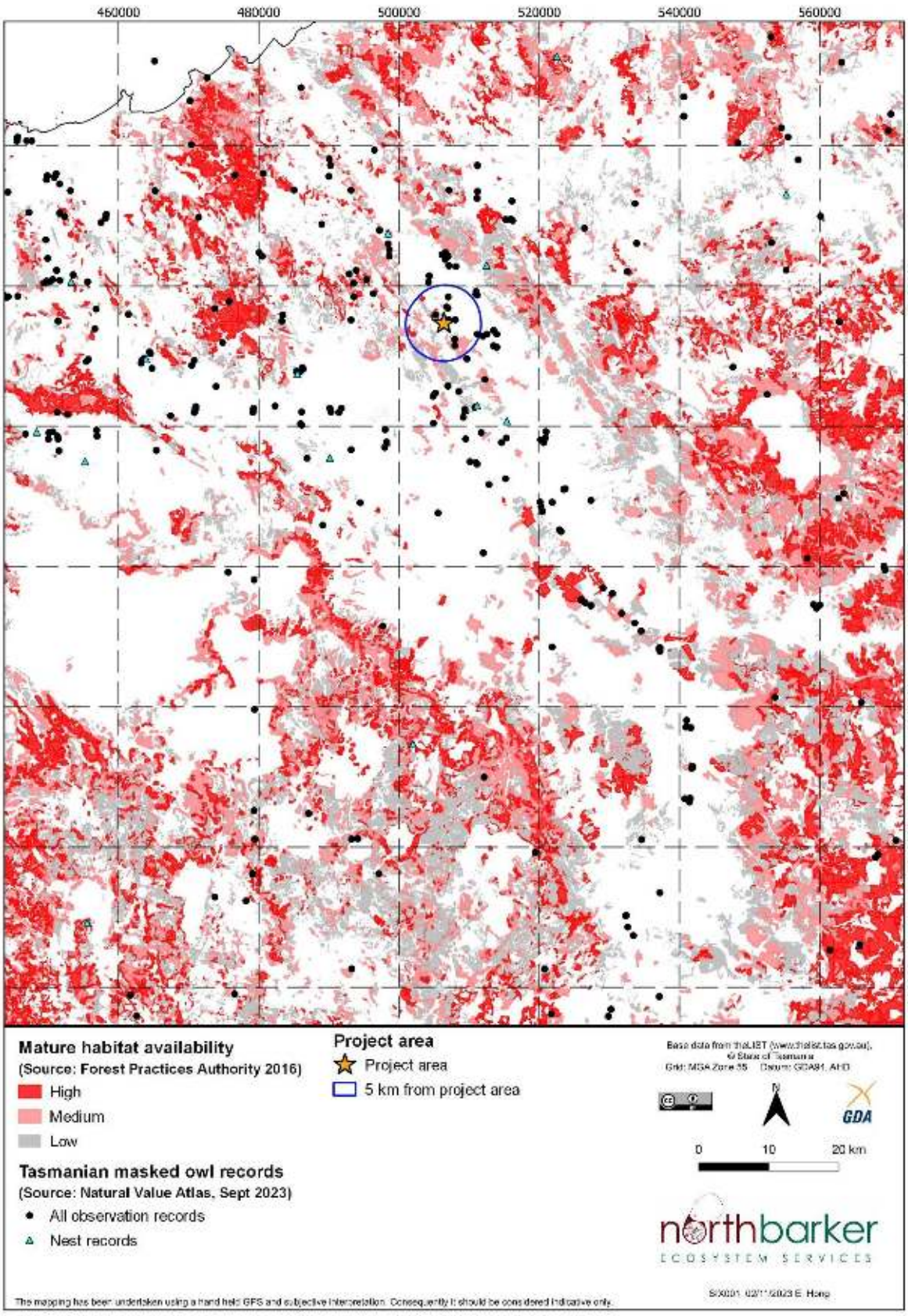

Figure 23: Mature habitat model at the landscape scale and historic records

2.8 Limitations and adequacy of surveys

The project area has been surveyed numerous times across different seasons between 2018 and 2023. In the 2018 survey, a search was made concurrently with the botanical survey for sign (e.g. scats, tracks), potential habitat and presence of threatened mammal fauna. The surveys were carried out in accordance with the *Survey Guidelines and Management Advice for Development Proposals that may impact on the Tasmanian Devil (Sarcophilus harrisii)*[61] (referred to hereon as the NRE Survey Guidelines), and included:

- As complete visual coverage as practicable of the proposal footprint (exceeding the minimum of 30 % requirement of the NRE Survey Guidelines), was achieved using a combination of systematic walking transects and strategic searching techniques, across the full range of vegetation and topographic situations within the site.
- GPS coordinates and photographs taken of tracks, scats, and any potential den opportunities (e.g., dry hollow logs, clusters of boulders with cavities, dense clumps of vegetation with visible animal use, rock outcrops, and soil burrows/holes in the substrate with an appropriate entrance hole).
- Visual assessments of the likelihood of use, where the general quality of the potential den was inspected in relation to factors such as soil warmth (sunlight), proneness to inundation, landscape position, adjacent vegetation structure, etc. Factors including spider webs, delicate fungi, wear marks, hairs, scats and footprints at potential den entrances were noted as potential indicators of activity (or non-activity) within.

The NRE Survey Guidelines are also appropriate for detecting quoll breeding activity, as the denning structures and habitat use overlap. These surveys were also in line with the *Survey guidelines for Australia's threatened mammals*[62] (referred to hereon as the EPBC Mammal Survey Guidelines) recommendations for detecting the presence of devils and quolls. These surveys were also appropriate for detecting the presence of eastern barred bandicoots, with the only variation being that surveyors also searched for bandicoot nests in grasses and sedges and characteristic conical foraging holes as per the EPBC Mammal Survey Guidelines.

No suitable breeding sites were located for devils, quolls or bandicoots in the initial surveys.

Additional targeted surveys applying the NRE Survey Guidelines were undertaken on 2 August and 19 August 2021. This involved multiple transects the length of the development area. Close investigation of structures including rock outcrops, hollow logs and root plates were investigated. Derelict sheds were also investigated with no signs of mammal occupation found.

Given the small scale of the development (which was covered on foot systematically during the above surveys) and the fact that vegetation within the development area is relatively open in the understory, it can be assumed that the den survey was adequate to detect a potential den in the development footprint at the time of the survey. Additional preclearance den surveys will be undertaken prior to construction to ensure no dens/burrows have been established in the time between the survey and commencement of the project.

The project area has also been surveyed numerous times across different seasons between 2018 and 2023 for potential nesting habitat and presence of threatened avifauna. These surveys were carried out in accordance with the *Survey guidelines for Australia's threatened birds*[63] (referred to hereon as the EPBC Bird Survey Guidelines) along with species-specific guidelines[64]. The entire site was searched from the ground in 2018 to detect eagle nests and all large potentially hollow-bearing habitat trees. Ground searches are suited to small search areas that contain drier open forest types, where visibility between trees and into canopies is good, as is the case onsite. All large trees identified onsite were later individually assessed for masked owl nesting hollows and eagle nests.

Subsequent to the initial 2018 surveys, a wedge-tailed eagle nest was located onsite by a local resident. This nest was then inspected for activity over three years, in November 2019, August 2021 and November

[61] Environment Strategic Business Unit (2023)
[62] Commonwealth of Australia (2011)
[63] Commonwealth of Australia (2010)
[64] Forest Practices Authority (2014b); Forest Practices Authority (2016b)

2022. Survey methods were guided by the Forest Practices Authority survey guidelines, though it is noted that these guidelines are written for application in forestry situations and thus are not directly applicable to all situations across Tasmania, and were carried out with consultation to the FPA. Ground-based monitoring of eagles nests is suited to the open forest types found onsite. Assessments included observations conducted from a concealed location, at a distance, over consecutive days to ascertain use of the nest with minimal risk of disturbance. No wedge-tailed eagle activity was observed during nest monitoring.

In addition to these activity surveys, visual inspections of the nest condition and checking around the base of the tree for whitewash, bones/carrion, feathers were also undertaken over these years outside the breeding season. The surveys have been adequate to ascertain that the nest appears to be new, possibly constructed in the spring of 2019, with no evidence it has ever been used by WTEs.

Masked owl surveys were undertaken by applying best practice survey protocols, which build on the EPBC Bird Survey Guidelines by incorporating recent increases in knowledge about this species. All large potentially hollow-bearing trees onsite were assessed over repeated visits and specific hollows were assessed by a tree climber. Surveys utilised unelicited and call playback surveys (as is recommended in the EPBC Bird Survey Guidelines), song meter recording, habitat tree identification and potential nest hollow inspections. These methods are described in detail in Section 2.7.2.

3 Impact Assessment

3.1 Summary of impacts on MNES habitats

Table 3 below indicates the extent of direct loss of fauna habitat due to the Action for each MNES described in Section 2 above. Table 3 is based on the habitat use of MNES from Table 2. The impact of the clearance of 16.9 ha is reduced by the protection of 19.9 ha including all optimal denning habitat and all but 1.6 ha of suboptimal denning or nesting habitat. Table 4 contextualises the habitat in the wider Northern Midlands bioregion.

No eagle nest will be disturbed and all potential masked owl habitat trees have been proven to not support a nest. See Section 4 Proposed Avoidance, Mitigation and Management Measures for details of mitigation that have minimised the residual impact. Table 5 through to Table 10 propose the likelihood of a significant residual impact for each MNES in this context of the particular manner in which the project will be undertaken including the ongoing protection and management of habitat.

3.2 Assessment of habitat fragmentation

The property is surrounded by modified land that has been partially or wholly cleared of native vegetation. The site represents the largest forest remnant within the existing residential development of Riverside. The proposal includes the clearance of 16.9 of the 36.8 ha on the site. The balance of 57% of the vegetation on the site will be protected by a Conservation Agreement under the EPBCA. The proposal would result in the maintenance of internal connection for the full length and breadth of the site. This protection maintains connectivity with the more diffuse and broadly dispersed "corridor" on the surrounding residential developments and so the site will maintain value as a wildlife corridor.

Figure 6 illustrates the developed land and water in red and the remnant native vegetation based on TASVEG 4.0 within 5 km. The native remnant vegetation (and adjacent open areas which would be utilised by mammals) within 5 km forms a diffuse "corridor" between larger remnants to the south west and north west and the land. The notion of a corridor in this case includes the areas of low-density residential areas adjacent to the land and in the same Zone. It is likely that animals utilise the land in the corridor and adjacent to it as foraging habitat and to traverse the landscape. The animals most likely to use it to traverse the landscape are the larger mammals and birds. Smaller animals and invertebrates are relatively sedentary. The notional corridor is not present by design but rather as a remnant. The proposal would result in a portion of the land mirroring the same diffuse corridor that is adjacent and a portion retained undisturbed (through a Conservation Agreement).

Table 3: The extent of direct loss of MNES habitat due to the Action

The following code names are given to each species in the table: Tasmanian devil – TD; Eastern quoll (EQ); Spotted-tail quoll – STQ; Eastern barred bandicoot (EBB); Tasmanian masked owl – MO; Tasmanian wedge-tailed eagle – WTE;

F potential foraging habitat (habitat used to move through/forage)

B potential breeding habitat (best conditions for denning/nesting), can overlap with foraging habitat

\- Dash indicates unsuitable habitat for individual species

* Asterisk indicates no impact on individual species

Habitat description	Area on site (ha)	Footprint (ha)	Habitat impacted (ha)											
			TD		STQ		EQ		EBB		WTE		MO	
			B	F	B	F	B	F	B	F	B	F	B	F
(DAD) *Eucalyptus amygdalina* forest and woodland	23.44	11.8	-	11.8	-	11.8	-	11.8	-	11.8	-	11.8	-	11.8
(DVG) *Eucalyptus viminalis* grassy forest and woodland	0.87	0	-	-	-	-	-	-	-	-	-	-	-	-
(DOV) *Eucalyptus ovata* forest and woodland	1.17	0	-	-	-	-	-	-	-	-	-	-	-	-
(NBA) *Bursaria – Acacia* woodland and scrub	11.32	4.1	-	5.1	-	5.1	1.6	5.1	1.6	5.1	-	5.1	-	5.1
Grand total	**36.8**	**16.9**	**0.0**	**16.9**	**0.0**	**16.9**	**1.6**	**16.9**	**1.6**	**16.9**	**0.0**	**16.9**	**0.0**	**16.9**
			16.9		**16.9**		**16.9**		**16.9**		**16.9**		**16.9**	

Table 4: The total area of habitats, area reserved and % impacted in Northern Midlands bioregion

TASVEG Code	Description	Impact (ha)	Area in Northern Midlands IBRA	Area Reserved	% reserved	% impacted	Area in Tasmania	Area Reserved	% reserved	% impacted
DAD	*Eucalyptus amygdalina* forest and woodland	**11.8**	19,700	1520	6.5%	0.06	167,654	53,240	21%	0.007
DVG	*Eucalyptus viminalis* grassy forest and woodland	**0.0**	27,400	4,228	5%	0.0	109,616	15,000	6%	0.00
DOV	*Eucalyptus ovata* forest and woodland	**0.0**	2,200	200	0.3%	0.0	17,750	4,465	2.5%	0.00
NBA	*Bursaria – Acacia* woodland and scrub	**5.1**	3,400	100	4%	0.15	16,600	1,162	7%	0.030

3.3 Tasmanian devil (*Sarcophilus harrisii*) [Endangered]

Anticipated impacts for this species have been assessed against the *Matters of National Environmental Significance Significant impact guidelines 1.1*[1] (Table 5). It has been determined that the anticipated impacts on this species do not breach the criteria, and therefore there are no significant impacts anticipated for the Tasmanian devil.

Significant habitat for the Tasmanian devil is defined as 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[65]. This is significant because (a) there is the potential for multiple individuals to be breeding there, so disturbance could have a particularly high local impact and (b) these features would imply that denning habitat is limited in the area, and its loss would be most likely to exert a higher long-term impact. This definition of significance is relied upon because it has been developed through collaboration between Tasmanian experts the EPBCA conservation and listing advice does not define significant or critical habitat for this species.

The development footprint's habitat is not considered critical for the survival of the species due to the lack of distinctive structural opportunities to support significant den clusters, such as cavernous rocky outcrops.

3.3.1 Direct impacts

There will be a loss of up to 16.9 ha of foraging habitat for this species with the remaining 14.6 ha of the project area protected under a Conservation Agreement (14.6 ha) (discussed in Section 4.7).

Potential denning habitat within the project area is limited, the area of dense vegetation near the creek line in the south east on the balance lot (mapped in Figure 5) is the mostly likely area to support dens. This area of potential denning habitat (4.1 ha) will not be directly impacted and will be protected under a Conservation Agreement.

The surrounding habitat is very extensive in the region and thus the small area within the development footprint is not considered critical when observed in the context of the larger region. The loss of the habitat may result in the displacement of a few individuals whose home ranges overlap. This displacement may result in a small amount of increased competition locally[66]. However, if the population is below carrying capacity, due to disease pressure, the displaced individuals are unlikely to cause a density dependant loss of animals and will fit within carrying capacity.

With the retention and protection of 54% of the site, the areal impact is not "likely" to cause a significant impact to the carrying capacity of the species and so no offset is warranted under the EPBC offset guidelines.

3.3.2 Indirect impacts

Tasmanian devils are susceptible to road mortality due to their scavenging, where they often use the roads to find roadkill to eat[67]. A comprehensive assessment of potential traffic impacts on this species is provided in Appendix C. While there is no doubt an increase in traffic increases the risk of roadkill, it is well known that roadkill frequency is reduced dramatically below 60 km phr. In this case all of the traffic generated by the subdivision will spend a relatively higher portion of the time traveling along the bushland frontage below 60 km phr. In the past the loss of animals to collisions with vehicles has not limited population growth whereby the population grew from relatively low numbers in the 1970's to a peak of nearly 200 000 in 1996 before the impact of the DFTD.

The introduction of domestic animals within the subdivision may have indirect impacts on this species. Cats and dogs are unlikely to pose a threat to adult Tasmanian devils, however, dogs have been known to injure

[65] Forest Practices Authority (2013); Forest Practices Authority & Threatened Species Section (DPIPWE) (2022); Commonwealth of Australia (2022c)
[66] Department of Primary Industries, Parks, Water and Environment (DPIPWE) (2010)
[67] Department of Primary Industries, Parks, Water and Environment (DPIPWE) (2010)

young devils, particularly if den sites can be accessed. Considering the developed nature of the local landscape, the threat from cats and dogs is already present within areas of habitat for this species and has not stopped the population from growing to very high numbers before the impact of the DFTD. Feral cats are not listed as a threat for this species.

An increased possibility of secondary poisoning through the consumption of prey (particularly rodents) that have been poisoned presents a potential indirect impact to this species. The development may provide new shelter and food for non-native rodents which could result in baiting to curtail the issue of a rodent invasion. Given the extensive number of rural and periurban properties in the vicinity of the development, the use of baits to control rodents is likely already present. The addition of 38 homes, in the context of the surrounding landscape, is unlikely to significantly increase the existing threat of secondary poisoning. Inclusion of relevant information in the Conservation Agreement will assist in minimising this potential. Secondary poisoning is not listed as a threat for this species.

3.3.3 Consistency with recovery plan or threat abatement plan

Recovery of this species centres around the management of DFTD, the biosecurity insurance populations, and development of a vaccine. The proposed project is not considered to pose any interference to the abatement of these threats and recovery of the species albeit from a relatively low population number but likely to be no lower than the population size before settlement by Europeans.

The TD requires protection to make a recovery from disease and in this context the proposal could contribute to that recovery by identifying and protecting potential den habitat. This is consistent with the NRE Tasmanian Devil Management Advice for known dens in medium sized development footprints[68].

[68] Environment Strategic Business Unit (2023)

Table 5 Significant impact criteria with regards to unmitigated impacts to the Tasmanian devil (Endangered)

Significant Impact Criteria	Likelihood of a significant unmitigated impact	Comments
1. Lead to a long-term decrease in the size of a population	Unlikely	The small loss of potential habitat is unlikely to result in a decrease to any local population, particularly in the context of the abundance of equivalent or better habitat in the broader landscape (< 1 % expected loss of potential habitat), which can be expected to have some spare capacity given that species with broad ecological niches are unlikely to be at carrying capacity within their range due to various factors limiting population growth.
2. Reduce the area of occupancy of the species	Unlikely	Tasmanian devils are known from the area. A loss of up to 16 ha of habitat is unlikely to adversely impact on the carrying capacity of the habitat for this species as they are known to have a home range of upwards of 1300 ha. The small loss of potential habitat is unlikely to result in any meaningful decrease in the area of occupancy of any local population, particularly in the context of the abundance of equivalent or better habitat in the broader landscape which can be expected to have some spare capacity given that species with broad ecological niches are unlikely to be at carrying capacity within their range due to various factors limiting population growth.
3. Fragment an existing population into two or more populations	Unlikely	This species frequently uses roads and narrow linear vegetation remnants or land with occasional cover to move around the landscape, thus the habitat loss will not fragment an existing population as this species will be able to traverse between patches including by utilising the continuous 19.9 ha of protected habitat linking the south of the lot to the north.
4. Adversely affect habitat critical to the survival of a species	Unlikely	Habitat within the project area cannot be considered critical for the survival of this species given the size impact area, the home range of this species, the lack of denning sites within the footprint area and the amount of suitable habitat surrounding the impact area.
5. Disrupt the breeding cycle of a population	Unlikely	**Note:** the likelihood of significant impact has been revised from Low to Unlikely based upon the absence of denning structures within the development footprint and the retention and protection of the most suitable denning habitat within the balance lot. The most significant risk to devil breeding cycles from the proposal is destruction of den sites. Given the project footprint does not support distinctive structural opportunities to support significant den clusters, this area is not critical to the survival of the devil. The proposal will thus not disrupt the breeding cycle of a population of devils.

Significant Impact Criteria	Likelihood of a significant unmitigated impact	Comments
		If dens are located prior to development, then den monitoring protocols will be in place to ensure that no natal dens are disturbed during the breeding season. Should an animal be displaced it will have the opportunity to utilise an alternative den for the subsequent breeding season.
6. Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	Unlikely	There is no 'critical' habitat present within the project area for this species and the project area is likely to be utilised for foraging only, although den management protocols must be in place to protect breeding individuals if breeding does occur. Significant areas of similar and better condition breeding habitat exist in the local vicinity. The loss of habitat from the project area is unlikely to result in any meaningful reduction in the availability of habitat from the local area and as such is unlikely to cause a measurable decline in the local population.
7. Result in invasive species that are harmful to the species becoming established in the species' habitat	Unlikely	The only invasive species listed as potentially harmful to the species is the red fox[69] which is currently thought to be absent from Tasmania. The proposed project is unlikely to result in the introduction of this species. The habitat of devils may be susceptible to weed invasion but weed and hygiene recommendations within the Natural Values Assessment (Appendix C) are considered to be sufficient for limiting this likelihood.
8. Introduce disease that may cause the species to decline	Unlikely	Disease is listed as a severe threat to the species due to DFTD[70]. The project area is within the known range of DFTD and is unlikely to have any influence on its virility or dispersal.
9. Interfere with the recovery of the species	Unlikely	Recovery of this species centres around the management of DFTD, the biosecurity insurance populations, and development of a vaccine[71]. The proposed project is not considered to pose any interference to the abatement of these threats and recovery of the species.

[69] Commonwealth of Australia (2022c)
[70] Hawkins *et al.* (2006)
[71] Department of the Environment, Water, Heritage and the Arts (2009)

3.4 Eastern quoll (*Dasyurus viverrinus*) [Endangered]

Anticipated impacts for this species have been assessed against the *Matters of National Environmental Significance Significant impact guidelines 1.1*[1] (Table 6). It has been assessed that the anticipated impacts on this species have the potential to breach criterion 2 and/or 7. However, with the implementation of mitigation measures (outlined in Section 4) this project will not have any residual significant impact on the eastern quoll.

3.4.1 Direct impacts

There will be a loss of up to 16.9 ha of foraging habitat for this species with the remaining 14.6 ha of the project area protected as Conservation Agreement and a Part 5 Agreement (discussed in Section 4.7). The majority of the retained habitat, being in a continuous area, will significantly mitigate the impact of the proposal on native foraging habitat. A total of 4.14 ha of optimal denning habitat and 4.60 ha of sub-optimal denning habitat is mapped for this species within the site (Figure 8). The proposal would impact upon 1.6 ha of sub-optimal habitat with the remainder of sub-optimal and all of the optimal habitat retained and protected under a Conservation Agreement.

The impact may result in an adjustment to home range, by displacement to neighbouring habitat. There is no known evidence that the site is important for dispersal or connectivity at the population level. On its own it is unlikely that the proposal will cause a significant impact to this species.

3.4.2 Indirect impacts

The proposed project including the addition of 38 dwellings may result in an increase of domesticated cats and dogs in the local area. Considering the developed nature of the local landscape, the threat from pets is likely already present within areas of habitat for this species, thus the significance of this increase is considered to be low. Feral cats are likely to already be present within the study area. Domesticated cats are considered unlikely to attack EQs.

Toxoplasmosis can be expected to be present in the area already, due to the ubiquity of feral and free-ranging domestic cats as vectors. It is not conceivable that the proposal will increase virility or transmission of the disease in a way that will result in the decline of this species.

A comprehensive assessment of potential traffic impacts on this species is provided in Appendix C. While there is no doubt an increase in traffic increases the risk of road kill it is well known that road kill frequency is reduced dramatically below 60 km phr. In this case all of the traffic generated by the subdivision will spend a relatively higher portion of the time traveling along the bushland frontage below 60 km phr.

An increased possibility of secondary poisoning through the consumption of prey (particularly rodents) that have been poisoned presents a potential indirect impact to this species. The development may provide new shelter and food for non-native rodents which could result in baiting to curtail the issue of a rodent invasion. Given the extensive number of rural and periurban properties in the vicinity of the development, the use of baits to control rodents is likely already present. The addition of 38 homes, in the context of the surrounding landscape, is unlikely to significantly increase the existing threat of secondary poisoning. Inclusion of relevant information in the Conservation Agreement and Part V Agreement will assist in minimising this potential. Secondary poisoning is not listed as a threat for this species.

3.4.3 Consistency with recovery or threat abatement plan

No recovery plan has been developed for this species. As an endangered species, all populations are seen as important, although some areas might be considered as the primary strongholds for the species (e.g. Cradoc and North Bruny island).

The key threats to this species, and thus recommendations for the recovery of this species surround the mitigation of predation/competition by introduced predators (e.g. cats and foxes). The proposed project is likely to increase the number of introduced predators in the local area.

Table 6: Significant impact criteria with regards to unmitigated impacts to eastern quoll [Endangered]

Significant Impact Criteria	Likelihood of a significant unmitigated impact	Comments
1. Lead to a long-term decrease in the size of a population	Unlikely	The small loss of potential habitat is unlikely to result in a decrease to any local population, particularly in the context of the abundance of equivalent or better habitat in the broader landscape which can be expected to have some spare capacity given that species with broad ecological niches are unlikely to be at carrying capacity within their range due to various factors limiting population growth.
2. Reduce the area of occupancy of the species	**Likely**	No eastern quolls are known from the area, according to the NVA with the closest record being 2.5 km south. A loss of up to 16 ha of habitat is likely to have a low impact on the carrying capacity of the habitat for this species as they are known to have a home range of upwards of 35 to 44 ha (females and males respectively), with an extensive amount of overlap between individuals. The small loss of potential habitat is unlikely to result in any meaningful decrease in the area of occupancy of any local population, particularly in the context of the abundance of equivalent or better habitat in the broader landscape which can be expected to have some spare capacity given that species with broad ecological niches are unlikely to be at carrying capacity within their range due to various factors limiting population growth.
3. Fragment an existing population into two or more populations	Unlikely	This species is relatively mobile and is known within urban environments, thus habitat loss will not fragment an existing population as this species will be able to cross fragmented patches. Retention of 54% of native vegetation on the site will allow for movement through the site.
4. Adversely affect habitat critical to the survival of a species	Unlikely	Habitat within the project area cannot be considered critical for the survival of the species given the size of the impact area, the home range of this species, the lack of denning sites within the footprint area and the amount of additional suitable habitat surrounding the proposed footprint.
5. Disrupt the breeding cycle of a population	Unlikely	**Note:** Likelihood of significant impact revised from low to Unlikely. The proposed site does contain potential denning habitat for eastern quolls although the presence of denning sites was limited. The development footprint is possibly part of the home

Significant Impact Criteria	Likelihood of a significant unmitigated impact	Comments
		range for a small number of eastern quolls, although these individuals likely don't have a den within the footprint itself and thus likely only use the area for foraging. The proposal will not disrupt the breeding cycle of a population of eastern quolls, but it could impact one or two breeding individuals if a den does occur within the footprint. Prior to any disturbance, den management protocol will be applied to mitigate potential for disturbance of denning activities of devils or quolls.
6. Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	Unlikely	The proposed development footprint is 16 ha and likely foraging habitat only. Significant areas of similar and better condition breeding habitat exist in the local vicinity. The loss of habitat from the project area is unlikely to result in any meaningful reduction in the availability of habitat from the local area and as such is unlikely to cause a measurable decline in the local population.
7. Result in invasive species that are harmful to the species becoming established in the species' habitat	**Likely**	**Note:** Likelihood of significant impact revised from moderate to likely. Invasive species that are harmful to the species include cats, dogs, and foxes. Cats are ubiquitous throughout Tasmania, dogs are abundant in periurban areas, and foxes are currently thought to be absent from the State. The proposed project including the addition of 38 dwellings may result in an increase of domestic cats and dogs in the local area. Domesticated pets are not included in the definition of "invasive species" which clearly relates to feral animals[72]. The threat from feral cats and possibly dogs is likely already present within the area, and unlikely to increase as a result of the proposal. The habitat of quolls may be susceptible to weed invasion but weed and hygiene recommendations within the Natural Values Assessment by NBES (Appendix C) are considered to be sufficient for limiting this likelihood.
8. Introduce disease that may cause the species to decline	Unlikely	**Note:** Likelihood of significant impact revised from low to unlikely.

[72] Invasive species - DCCEEW

Significant Impact Criteria	Likelihood of a significant unmitigated impact	Comments
		Disease is listed as a potentially severe threat to the species[73] (e.g. bubonic plague, distemper-like virus, toxoplasmosis)[74]. *Toxoplasma gondii* is still present in Tasmanian Eastern Quolls, however, it does not appear to negatively affect them and thus is not responsible for any rapid declines of this species. Therefore, the project is unlikely to encourage the spread of disease through either: introduction of new diseases or spread of infected individuals, to the local population.
9. Interfere with the recovery of the species	Unlikely	No recovery plan has been developed for this species. As an endangered species, all populations are seen as important, although some areas might be considered as the primary strongholds for the species (e.g. Cradoc and North Bruny island[75]). The key threats to this species, and thus recommendations for the recovery of this species surround the mitigation of predation/competition by introduced predators (e.g. cats and foxes). The proposed project may result in a slight increase in the number of introduced predators in the local area as specified above in response to invasive species. However, these threats are already present.

[73] Woinarski *et al.* (2014)
[74] Threatened Species Scientific Committee (2015)
[75] Fancourt *et al.* (2013)

3.5 Spotted-tail quoll (*Dasyurus maculatus maculatus*) [Vulnerable]

Anticipated impacts for this species have been assessed against the *Matters of National Environmental Significance Significant impact guidelines 1.1*[1] (Table 7). It has been assessed that the anticipated impacts on this species have the potential to breach criterion 7. However, with the implementation of mitigation measures (outlined in Section 4) this project will not have any residual significant impact on the spotted-tail quoll.

3.5.1 Direct impacts

The loss of potential foraging habitat (16.9 ha) by the current proposal could conceivably reduce the carrying capacity in the local area for this species. It is unknown exactly how many quolls could be displaced by the expected loss of habitat, but this is a low density carnivore and 1 km^2 approximates the smallest home range for a spotted-tailed quoll[76]; so, although home ranges do overlap and > 1 individual may be found in an area, the clearance area is relatively small (~16 ha or ~16 % of a home range) and this impact to potential habitat is not expected to have a significant impact on this species. In the broader area there is extensive habitat for this species, particularly, the forested areas in Trevallyn Nature Recreation Area as well as large areas of native habitat west and north west of the proposal area.

No dens were located and as such no impact on dens is anticipated. Potential denning habitat within the project area is limited, the area of dense vegetation near the creek line in the south east on the balance lot (mapped in Figure 13) is the mostly likely area to support dens. This area of potential denning habitat (4.14 ha) will not be directly impacted and will be protected under a Conservation Agreement (discussed in Section 4.7).

3.5.2 Indirect impacts

Spotted-tail quolls are susceptible to road mortality due to their scavenging, where they often use the roads to find roadkill to eat[77]. A comprehensive assessment of potential traffic impacts on this species is provided in Appendix C. While there is no doubt an increase in traffic increases the risk of road kill it is well known that road kill frequency is reduced dramatically below 60 km phr. In this case all of the traffic generated by the subdivision will spend a relatively higher portion of the time traveling along the bushland frontage below 60 km phr.

The proposed project including the addition of 38 dwellings may result in an increase of domesticated cats and dogs in the local area. Considering the developed nature of the local landscape, the threat from pets is likely already present within areas of habitat for this species, thus the significance of this increase is considered to be low. Domesticated cats are considered unlikely to attack a STQ. Feral cats are likely to already be present within the study area and would not be increased as a result of the proposal.

Toxoplasmosis can be expected to be present in the area already, due to the ubiquity of feral and free-ranging domestic cats as vectors. It is not conceivable that the proposal will increase virility or transmission of the disease in a way that will result in the decline of this species.

An increased possibility of secondary poisoning through the consumption of prey (particularly rodents) that have been poisoned presents a potential indirect impact to this species. The development may provide new shelter and food for non-native rodents which could result in baiting to curtail the issue of a rodent invasion. Given the extensive number of rural and periurban properties in the vicinity of the development, the use of baits to control rodents is likely already present. The addition of 38 homes, in the context of the surrounding landscape, is unlikely to significantly increase the existing threat of secondary poisoning. Inclusion of relevant information in the Conservation Agreement and Part 5 Agreement will assist in minimising this potential. Secondary poisoning is not listed as a threat for this species.

[76] This was the spatial scale used by Troy (2014)
[77] Department of Environment, Land, Water and Planning (2016)

3.5.3 Consistency with recovery or threat abatement plan

Recovery of this species is primarily dependent upon the protection of existing habitat[78]. The small loss of marginal foraging habitat within an area unlikely to support resident individuals does not conflict with the objectives of the recovery plan as equivalent habitat is not limiting in the greater area.

[78] Department of Environment, Land, Water and Planning (2016)

Table 7: Significant impact criteria with regards to unmitigated impacts to the spotted-tail quoll (Vulnerable)

Significant Impact Criteria	Likelihood of a significant unmitigated impact	Comments
1. Lead to a long-term decrease in the size of an important population	Unlikely	The small loss of marginal potential habitat within an area unlikely to support resident individuals is unlikely to result in a decrease to any local population.
2. Reduce the area of occupancy of an important population of the species	Unlikely	The small loss of marginal potential habitat within an area unlikely to support resident individuals is unlikely to result in any meaningful decrease in the area of occupancy of any local population.
3. Fragment an existing important population into two or more populations	Unlikely	A total of loss 16 ha of potential foraging habitat will have a less than 0.1 % impact on this species foraging and breeding range. This species has large home ranges (88 - 5512 ha) and thus the proposal will not result in the fragmentation of existing populations into two or more populations.
4. Adversely affect habitat critical to the survival of a species	Unlikely	Critical habitat is dependent on the availability of denning habitat and prey density[79]. This species has been recorded in the area on occasion, suggesting this site is used as a foraging site only. The habitat within the project area cannot be considered critical for the survival of the species given the location, the history of observations and the absence of denning opportunities found within the footprint.
5. Disrupt the breeding cycle of an important population	Unlikely	**Note:** Likelihood of significant impact revised from low to Unlikely. Denning habitat can include rocky outcrops, large logs and underground hollows[80]. Potential denning habitat occurs near the creek line on the balance lot and not within the development footprint. Parts of the study area may occur within the home range of resident spotted-tailed quolls and they have been noted by camera traps on the NV Atlas in the vicinity. Given the lack of suitable breeding habitat within the development footprint, it is not likely the proposal will disrupt the breeding cycle of any local population, perhaps only a single individual. Prior to any disturbance, den management protocol will be applied to mitigate potential for disturbance of denning activities of devils or quolls.

[79] Department of Environment, Land, Water and Planning (2016);
[80] Forest Practices Authority (2013)

Significant Impact Criteria	Likelihood of a significant unmitigated impact	Comments
6. Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	Unlikely	The proposed development footprint is 16 ha and likely foraging habitat only. Significant areas of similar and better condition breeding habitat exist in the local vicinity. The loss of habitat from the project area is unlikely to result in any meaningful reduction in the availability of habitat from the local area and as such is unlikely to cause a measurable decline to this species.
7. Result in invasive species that are harmful to the species becoming established in the species' habitat	**Likely**	Invasive species that are harmful to the species include cats, dogs, and foxes. Cats are ubiquitous throughout Tasmania, dogs are abundant in periurban areas, and foxes are currently thought to be absent from the State. The proposed project including the addition of 38 dwellings may result in an increase of domestic cats and dogs in the local area. Domesticated pets are not included in the definition of "invasive species" which clearly relates to feral animals[81]. The threat from feral cats and possibly dogs is likely already present within the area, and unlikely to increase as a result of the proposal. The habitat of quolls may be susceptible to weed invasion but weed and hygiene recommendations within the Natural Values Assessment (Appendix C) are considered to be sufficient for limiting this likelihood.
8. Introduce disease that may cause the species to decline	Unlikely	Disease is not currently listed as a cause of species decline[82]. Proposed project is unlikely to introduce or spread any known diseases that will impact this species.
9. Interfere with the recovery of the species	Unlikely	Recovery of this species is primarily dependent upon the protection of existing habitat[83]. The small loss of marginal foraging habitat within an area unlikely to support resident individuals does not conflict with the objectives of the recovery plan as equivalent habitat is not limiting in the greater area.

[81] Invasive species - DCCEEW
[82] Department of Environment, Land, Water and Planning (2016)
[83] Department of Environment, Land, Water and Planning (2016)

3.6 Eastern Barred Bandicoot (Tasmanian Population) (*Perameles gunnii gunnii*) [Vulnerable]

Anticipated impacts for this species have been assessed against the *Matters of National Environmental Significance Significant impact guidelines 1.1*[1] (Table 8). It has been assessed that the anticipated impacts on this species have the potential to breach criterion 7. However, with the implementation of mitigation measures (outlined in Section 4) this project will not have any residual significant impact on the eastern barred bandicoot.

3.6.1 Direct impacts

This species has been recorded in the proposed impact area. The scale of the development (~16 ha) is unlikely to cause a significant impact on the population either in the vicinity or in total[84]. It is uncertain if the conversion to low density residential habitat will reduce the carrying capacity of the habitat at all. The retention of ~21 ha of the ~37 ha site, with the majority of the 21 ha to be protected being in a continuous area, will significantly mitigate the impact of the proposal on native foraging habitat. A total of 8.8 ha of nesting habitat is mapped for this species within the site (Figure 15). The proposal would impact upon 1.6 ha of nesting habitat with the remainder protected under a Conservation Agreement and Part 5 Agreement (discussed in Section 4.7).

In the broader area there is extensive habitat for this species, particularly the forested areas in Trevallyn Nature Recreation Area as well as large areas of native habitat west and north west of the proposal area. Locally, the area consists of a mosaic of forest, residential area and agricultural land that is suitable for the species.

By undertaking a preclearance survey of suitable nesting habitat, the chances of injuring animals during site preparation will be minimized.

3.6.2 Indirect impacts

The proposed project including the addition of 38 dwellings may result in an increase of domesticated cats and dogs in the local area. Considering the developed nature of the local landscape, the threat from cats and dogs is already present within areas of habitat for this species, thus the significance of this increase is considered to be low. Eastern barred bandicoots are known to be successful in periurban environments, despite the presence of cats and dogs. In addition, the retention of 30% of vegetation on each lot under a Part 5 Agreement will provide some protection from domestic pets and an avenue of escape[85].

Toxoplasmosis can be expected to be present in the area already, due to the ubiquity of feral and free-ranging domestic cats as vectors. It is not conceivable that the proposal will increase virility or transmission of the disease in a way that will result in the decline of this species.

A comprehensive assessment of potential traffic impacts on this species is provided in Appendix C. While there is no doubt an increase in traffic increases the risk of road kill it is well known that road kill frequency is reduced dramatically below 60 km phr. In this case all of the traffic generated by the subdivision will spend a relatively higher portion of the time traveling along the bushland frontage below 60 km phr.

An increased possibility of secondary poisoning through the consumption of prey (particularly rodents) that have been poisoned presents a potential indirect impact to this species. The development may provide new shelter and food for non-native rodents which could result in baiting to curtail the issue of a rodent invasion. Given the extensive number of rural and periurban properties in the vicinity of the development, the use of baits to control rodents is likely already present. The addition of 38 homes, in the context of the surrounding landscape, is unlikely to significantly increase the existing threat of secondary poisoning. Inclusion of

[84] Barker (2021)
[85] Barker (2021)

relevant information in the Conservation Agreement and Part 5 Agreement will assist in minimising this potential. Secondary poisoning is not listed as a threat for this species.

3.6.3 Consistency with recovery plan or threat abatement plan

Habitat loss/ degradation, predation, and *Toxoplasma* are considered the main drivers for declines[86], none of which are considered a risk of meaningfully increasing as a result of this proposal in a way that might interfere with the recovery of the species. Noting that as the species is not listed at the state level in Tasmania its status here may be effectively redundant in discussion of a national recovery.

[86] Department of Sustainability and Environment (2009)

Table 8: Significant impact criteria with regards to unmitigated impacts to the eastern barred bandicoot (Vulnerable)

Significant Impact Criteria	Likelihood of a significant unmitigated impact	Comments
1. Lead to a long-term decrease in the size of an important population	Unlikely	The small loss of habitat within the context of the abundance of equivalent habitat in the broader landscape (thousands of hectares present, such that the potential loss is < 1 % loss of potential habitat), has no likelihood of resulting in a long-term decrease of the local population as there is no reason to suspect the small area of habitat within the project footprint contains a limited or particularly critical resource for the local population, let alone an important population. Eastern barred bandicoots do not have full saturation of occurrence across suitable habitats within a population, with various fine-scale factors influencing local distribution, with ostensibly ideal areas of habitat not always occupied due to chance, land management, and/or past events[87]. It can thus be expected that within the thousands of hectares of suitable bandicoot habitat around the project area, there will be some spare capacity to compensate for any individuals that could be evicted from the local area due to clearance within the footprint.
2. Reduce the area of occupancy of an important population	Unlikely	**Note:** Likelihood of significant impact revised from low to Unlikely. Given that thousands of hectares of equivalent suitable habitat are present in the local area, the fact that bandicoots do not have perfect occupation of suitable habitat[88], and the fact that conversion to modified land will not preclude the bandicoots from occurring at a site[89], it is not conceivable that the proposal will result in a decrease in the area of occupancy of the local population of the species, let alone an important population. It may at worst result in the shifts in the ranges of some individuals.
3. Fragment an existing important population into two or more populations	Unlikely	Habitat within project area already consists of small fragments and remaining remnants are further perforated by low density residential use. The proposal will further fragment the available habitat and possibly the home range of an individual or pair, as this species has such small home ranges, however the development likely won't result in the fragmentation of an existing important population, due to the small size of the development footprint in a single given area. The operation of the road however will introduce the new threat of roadkill.

[87] Daniels (2011)
[88] Daniels (2011)
[89] Daniels (2011)

Significant Impact Criteria	Likelihood of a significant unmitigated impact	Comments
4. Adversely affect habitat critical to the survival of a species	Unlikely	There is no reason to suspect the small area of habitat within the project footprint contains a limited or particularly critical resource for the local population such that it may be critical to their survival. Given that thousands of hectares of equivalent suitable habitat are present in the local area, the fact that bandicoots do not have perfect occupation of suitable habitat[90], and the fact that conversion to modified land will not preclude the bandicoots from occurring at a site[91], it is not conceivable that the proposal will result in the loss of the local population.
5. Disrupt the breeding cycle of a an important population	Unlikely	Bandicoots are prolific breeders that build ephemeral grassy nests and can have multiple litters per year, not necessarily using the same natal location within a season[92]. This life strategy is thought to be one of the primary reasons they are successful in periurban locations[93]. Given the local population is not considered to be at risk from the proposal and that conditions for breeding will still be suitable, it is not conceivable the proposal will breach this criterion.
6. Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	Unlikely	**Note:** Likelihood of significant impact revised from low to Unlikely. This species likely persists across the project area. This area is likely used for foraging and possibly nesting where grasses are longer and areas are more protected. In the unlikely scenario of disturbance of a natal nest, the species is so highly fecund that breeding is likely to be repeated in a nearby location shortly after disturbance. The species is also capable of moving their litter to a new location in the event of disturbance (G. Daniels pers. Obs.). The loss of habitat from the project area is unlikely to result in any meaningful or measurable reduction in the availability of habitat from the local area as this species will likely take up new habitat and as such is unlikely to cause a measurable decline in the local population.
7. Result in invasive species that are harmful to the species becoming established in the species' habitat	**Likely**	**Note:** Likelihood of significant impact revised from moderate to Likely

[90] Daniels (2011)
[91] Daniels (2011)
[92] G. Daniels *pers. comm.* (2021)
[93] Daniels (2011)

Significant Impact Criteria	Likelihood of a significant unmitigated impact	Comments
		Invasive species that are harmful to the species include cats, dogs, and foxes [94]. Cats are ubiquitous throughout Tasmania, dogs are abundant in periurban areas, and foxes are currently thought to be absent from the State. The proposed project including the addition of 38 dwellings may result in an increase of domestic cats and dogs in the local area. Domesticated pets are not included in the definition of "invasive species" which clearly relates to feral animals[95]. The threat from feral cats and possibly dogs is likely already present within the area, and unlikely to increase as a result of the proposal. The habitat of bandicoots may be susceptible to weed invasion, although conversely, they can also use certain weeds as shelter and nest sites. Weed and hygiene recommendations[96] are considered to be sufficient for limiting the likelihood of this being a detrimental impact.
8. Introduce disease that may cause the species to decline	Unlikely	**Note:** Likelihood of significant impact revised from low to Unlikely. Toxoplasmosis can be expected to be present in the area already, due to the ubiquity of feral and free-ranging domestic cats as vectors[97]. It is not conceivable that the proposal will increase virility or transmission of the disease in a way that will result in the decline of this species.
9. Interfere with the recovery of the species	Unlikely	**Note:** Likelihood of significant impact revised from low to Unlikely. Habitat loss/ degradation, predation, and *Toxoplasma* are considered the main drivers for declines[98], none of which are considered a risk of meaningfully increasing as a result of this proposal in a way that might interfere with the recovery of the species. Noting that as the species is not listed at the state level in Tasmania its status here may be effectively redundant in discussion of a national recovery.

[94] Department of Sustainability and Environment (2009)
[95] Invasive species - DCCEEW
[96] Department of Primary Industries, Parks, Water and Environment (DPIPWE) (2015)
[97] Department of the Environment, Water, Heritage and the Arts (2008)
[98] Department of Sustainability and Environment (2009)

3.7 Tasmanian wedge-tailed eagle (*Aquila audax fleayi*) [Endangered]

Anticipated impacts for this species have been assessed against the *Matters of National Environmental Significance Significant impact guidelines 1.1*[1] (Table 9). It has been assessed that the anticipated impacts on this species do not breach the criteria, and therefore there are no significant impacts anticipated for the Tasmanian wedge-tailed eagle.

A Tasmanian wedge-tailed eagle (*Aquila audax fleayi*) nest was identified in the balance area (506443 E, 5414498 N) in late 2019. During the 2019 breeding season the nest was determined as being inactive. The nest was resurveyed during the 2022 breeding season to establish whether the nest was active (Appendix C). No eagle activity was observed and there was no evidence to suggest that the nest was active (e.g., no significant whitewash, feathers, carrion at tree base). There is no evidence that this nest has ever been active. It is likely that the construction was done by juvenile birds that failed to breed in that year and subsequently abandoned the attempt. Known WTE nest records on the NV Atlas are over 4km from the site.

A viewshed analysis for the eagle nest was undertaken as part of the RFI requested by DCCEEW. Figure 24 illustrates the view shed of the land surface without vegetation and the view of buildings in the development with the retained vegetation. It shows that a few buildings in the north will be visible, these are more than 300 m from the eagle nest.

Suitable nesting habitat for this species, based on FPA nest habitat modelling[99] indicates no high quality nesting habitat within 1km of the project site.

Eagles are likely to utilise the area on occasion for foraging. The development footprint represents a small fraction of the likely territory of an individual pair. Clearance of the habitat is unlikely to have any impact on the size of the territory.

3.7.1 Direct impacts

This species likely uses the area within the footprint for foraging. It has been documented in Tasmanian that eagles will still utilise a site for foraging during and after developments[100]. Thus wedge-tailed eagles will likely still utilise the area after the development and won't be deterred by the disturbance when it comes to foraging.

The lack of evidence of utilisation of the nest by eagles suggests that that there will be no impact to the wedge-tailed eagle as a result of the subdivision and works. The nest is about 150 m from the nearest occupied residential lot and 170 m from Ecclestone Road. The proposal would result in the nest being ~170 m from proposed new residential lots. The nest will be no closer than it is now to existing development but the density of the proposed development will be higher.

3.7.2 Indirect impacts

The progression of the development over time may mean it is increasingly less likely that the nest will be utilised as time passes. If the nest were ever to be utilised it would be in the context of works proceeding on the site and as such a "choice" by the breeding pair to utilise the nest despite the development. Successful eagle nests are known elsewhere in similar circumstances whereby eagle nests are within 300 m line of sight of residential developments.

An increased possibility of secondary poisoning through the consumption of prey (particularly rodents) that have been poisoned presents a potential indirect impact to this species. The development may provide new shelter and food for non-native rodents which could result in baiting to curtail the issue of a rodent invasion. Given the extensive number of rural and periurban properties in the vicinity of the development, the use of baits to control rodents is likely already present. The addition of 38 homes, in the context of the surrounding landscape, is unlikely to significantly increase the existing threat of secondary poisoning. Inclusion of

[99] Forest Practices Authority (2014a)
[100] Hull and Muir (2013)

relevant information in the Conservation Agreement will assist in minimising this potential. Secondary poisoning is not listed as a threat for this species.

The introduction of domestic animals within the subdivision may have indirect impacts on this species. Cats and dogs are unlikely to pose a direct threat to Tasmanian wedge-tailed eagles, however, they may compete for eagles' preferred prey species such as rabbits, hares, cats, wallabies, possums, echidnas, wombats, birds, sheep, goats, and reptiles[101]. Considering the developed nature of the local landscape, the threat from cats and dogs is already present within areas of habitat for this species, thus the significance of this increase is considered to be low. Feral cats are not listed as a threat for this species.

3.7.3 Consistency with recovery plan or threat abatement plan

Recovery of this species is primarily dependent upon the protection of existing critical habitat. The habitat within the footprint is not considered critical and the suboptimal habitat in the area will be protected from impact under a Conservation Agreement and so will not affect recovery.

The proposed project is thus considered to be consistent with the recovery plan of the species.

[101] O'Sullivan (2014)

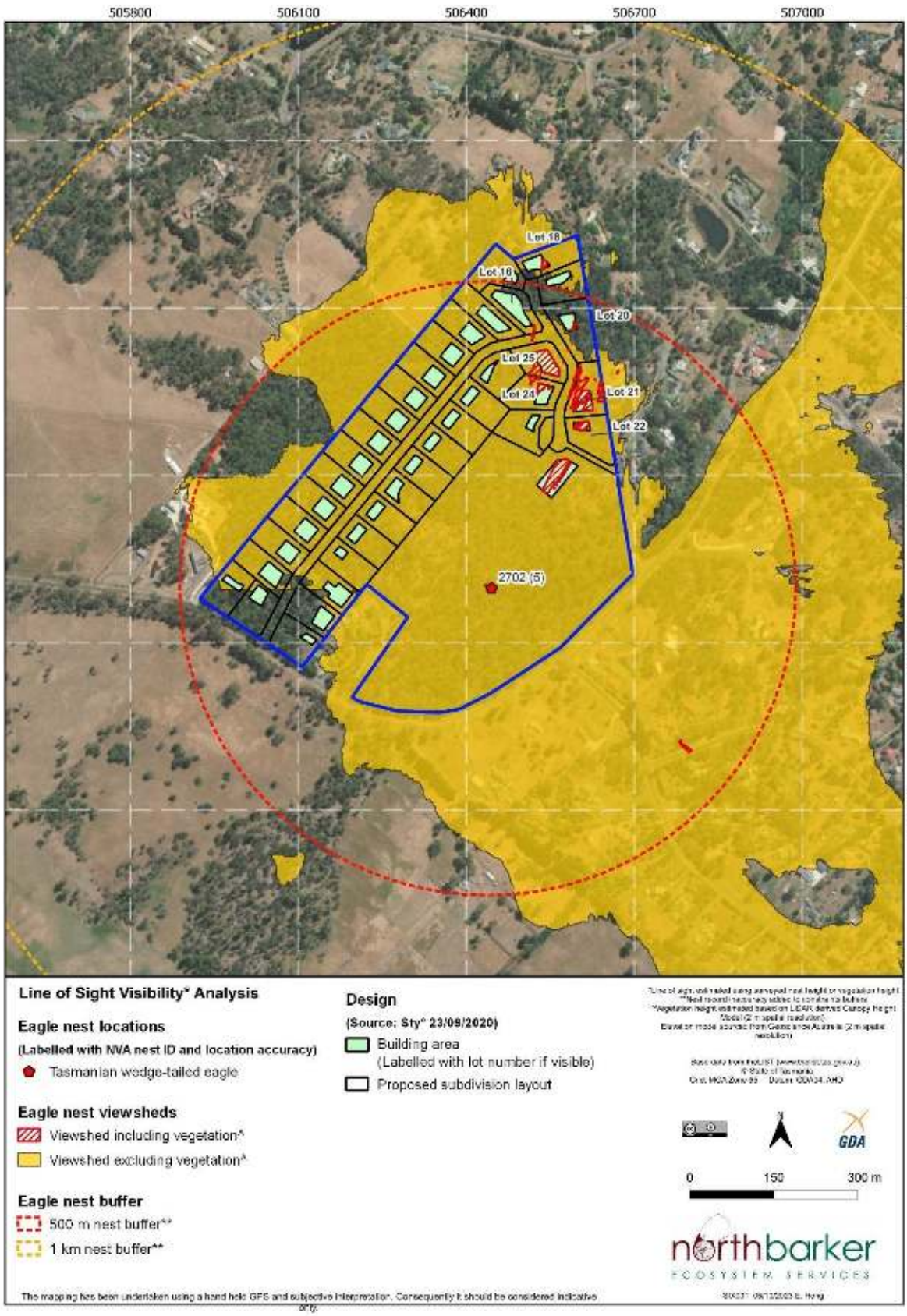

Figure 24: The extent of viewshed from the eagle nest with and without vegetative cover

Table 9: Significant impact criteria with regards to unmitigated impacts to the Tasmanian wedge-tailed eagle (Endangered)

Significant Impact Criteria	Likelihood of a significant unmitigated impact	Comments
1. Lead to a long-term decrease in the size of a population	Unlikely	The Tasmanian wedge-tailed eagle occurs as a single, contiguous population[102] across the state and some islands of Tasmania. The total population size is estimated at less than 1,000 birds, including an estimated adult population of 440 individuals. The habitat at risk of impact is not considered to be 'critical habitat' due to its relatively small area and lack of suitable trees within the impact footprint. The habitat is thus not considered likely to have a measurable influence on the local carrying capacity and/or size of the extant population.
2. Reduce the area of occupancy of the species	Unlikely	Much of this habitat is considered suboptimal for eagle nesting and only represents <1 % of the available potential habitat within 5 km of the project. Regardless, the disturbance caused by the development may deter breeding eagles from returning to the nest within the retention area. Visual disturbances at the nest level have been well documented for this species[103]. This species likely uses the area within the footprint for foraging. It has been documented in Tasmanian that eagles will still utilise a site for foraging during and after developments[104]. Thus wedge-tailed eagles will likely still utilise the area after the development and won't be deterred by the disturbance when it comes to foraging. The scale of the proposal and potential loss of what is considered to be suboptimal habitat, is not considered to constitute a meaningful potential reduction in the area of occupancy of the species for foraging, although may deter eagles from nesting where line of sight of the development is visible.
3. Fragment an existing population into two or more populations	Unlikely	The entire project area is likely to be within a foraging territory of at least one pair of eagles and thus the proposed footprint is too small to contain a 'population' of eagles. Furthermore, the species is a strong flyer, and has the capacity to fly between habitat patches; as such it can be expected to be less vulnerable to habitat fragmentation than sedentary and terrestrial species. The proposed development is thus unlikely to result in fragmentation of a local population.

[102] Commonwealth of Australia (2022a)
[103] Threatened Species Section (2006); Bekessy et al. (2009); Wiersma (2010); O'Sullivan (2014); Munks & Crane (2017).
[104] Hull and Muir (2013)

Significant Impact Criteria	Likelihood of a significant unmitigated impact	Comments
4. Adversely affect habitat critical to the survival of a species	Unlikely	The habitat at risk of impact is not considered to be 'critical habitat' to the survival of the species due to its relatively small area. More suitable habitat can be found within 10 km of the site. Favoured nesting sites likely occur in the greater vicinity where there is less disturbance. The proposed development is thus unlikely to affect habitat critical to the survival of this species.
5. Disrupt the breeding cycle of a population	Unlikely	**Note:** Likelihood of significant impact revised from low to Unlikely Loss of nesting habitat and disturbance of nesting birds are listed as key threats to the Tasmanian wedge-tailed eagle[105]. As stated above, the entire distribution of this species comprises a single population, and while this project may indirectly impact the breeding of an individual pair of eagles, it will not impact at the population scale. One eagle nest occurs within the balance lot, however, recent surveys indicate it has never been used by eagles (Appendix C). The progression of the development over time may mean it is increasingly less likely that the nest will be utilised as time passes. If the nest were ever to be utilised it would be in the context of works proceeding on the site and as such a "choice" by the breeding pair to utilise the nest despite the development. Successful eagle nests are known elsewhere in similar circumstances whereby eagle nests are within 300 m line of sight of residential developments.
6. Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	Unlikely	There is no 'optimal' eagle nesting habitat present in the development footprint and the project area is likely to be utilised for foraging only. Significant areas of similar and better condition breeding habitat exist in the local area to the north and southwest. The loss of habitat from the project area is unlikely to result in any meaningful reduction in the availability of habitat from the local area and as such is unlikely to cause a measurable decline in the local population.
7. Result in invasive species that are harmful to the species becoming established in the species' habitat	Unlikely	There are no invasive species that are harmful to the species are known. The proposed project is unlikely to result in the increase of any other introduced species that may negatively interact with this species.

[105] Commonwealth of Australia (2022a); Threatened Species Section (2006)

Significant Impact Criteria	Likelihood of a significant unmitigated impact	Comments
8. Introduce disease that may cause the species to decline	Unlikely	Disease is not listed as a threat to this species and is not expected to pose a threat from this project. The project is unlikely to have any impact on the species in this regard.
9. Interfere with the recovery of the species	Unlikely	Recovery of this species is primarily dependent upon the protection of existing critical habitat. The habitat within the footprint is not considered critical and the suboptimal habitat in the area will be protected from impact and so will not affect recovery. The proposed project is thus not considered to pose any interference to the recovery of the species.

3.8 Tasmanian masked owl (*Tyto novaehollandiae castanops*) [Vulnerable]

Anticipated impacts for this species have been assessed against the *Matters of National Environmental Significance Significant impact guidelines 1.1*[1] (Table 10). It has been assessed that the anticipated impacts on this species have the potential to breach criterion 7 and/or 9. However, with the implementation of mitigation measures (outlined in Section 4) this project will not have any residual significant impact on the masked owl.

Acoustic data from 2023 (Appendix C) indicate the site is within the range of a pair of masked owls with the frequency of calls suggesting relatively frequent use of the area. However, our investigation of hollow bearing trees found no evidence of utilisation by owls (refer to Attachment 3 of Appendix C). The only suitable nesting hollow is located in a tree on the balance lot which will be protected under a Conservation Agreement (discussed in Section 4.7)

3.8.1 Direct impacts

There will be a direct loss of 16.9 ha of foraging habitat, with the remaining 19.9 ha of the project area protected as a Conservation Agreement and Part V Agreement. Tree 1 (Figure 22) was the only hollow bearing tree identified as having a hollow suitable for nesting by masked owl (refer to Attachment 3 of Appendix C). This tree will not be impacted by the proposal and would be protected in the balance lot under a Conservation Agreement.

Of the five potential roost trees identified (Figure 22), three are located within the vicinity of the subdivision. These trees (Tree 17, 6 and 5) should be retained where possible. Tree 6 is located within the proposed protection area of Lot 14 and is likely to be retained. Trees 17 and 5 are located outside proposed protection areas and in close proximity to lot boundaries so their retention cannot be guaranteed at this stage of the project. Subsequently, the assessment of significant impact is based upon worst-case scenario and the removal of 2 out of the 5 potential roost trees.

3.8.2 Indirect impacts

Indirect impacts to the Tasmanian masked owl primarily relate to the increased possibility of secondary poisoning through the consumption of prey (particularly rodents) that have been poisoned. The introduction of the development may provide shelter and food for non-native rodents which could result in baiting to curtail the issue of a rodent invasion. Secondary poisoning is a listed threat for this species.

Given the extensive number of rural and periurban properties in the vicinity of the development, the use of baits to control rodents is likely already present. The addition of 38 homes, in the context of the surrounding landscape is unlikely to significantly increase the existing threat of secondary poisoning. Nevertheless, the persistence of the masked owl in the vicinity indicates that in the existing low density residential setting the owl has survived. Inclusion of relevant information in the management plan attendant to the Conservation Agreement will assist in minimising this potential.

The introduction of domestic animals within the subdivision may have indirect impacts on this species. Cats and dogs are unlikely to pose a direct threat to Tasmanian masked owls, however, they may compete for prey and/or reduce prey populations. Considering the developed nature of the local landscape, the threat from cats and dogs is already present within areas of habitat for this species, thus the significance of this increase is considered to be low.

3.8.3 Consistency with recovery plan or threat abatement plan

There is no recovery plan for this species. The key threats to this species are habitat clearing, fragmentation and rural tree decline along with competition for hollows, collision and secondary poisoning[106].

No suitable breeding hollows would be affected by the proposal. There is the potential for secondary poisoning as a result of the subdivision development.

[106] Commonwealth of Australia (2022b)

Table 10: Significant impact criteria with regards to unmitigated impacts to the Tasmanian masked owl (Vulnerable)

Significant Impact Criteria	Likelihood of a significant unmitigated impact	Comments
1. Lead to a long-term decrease in the size of an important population	Unlikely	**Note:** Likelihood of significant impact revised from low to Unlikely. Conservation listing advice treats the entire population of the subspecies on Tasmania as one population[107], thus the entire population is classed as important. The total population size of the Tasmanian masked owl is estimated at less than 1,000 birds, including an estimated adult population of 440 individuals. The project footprint falls inside the core range for this species[108]. The amount of suitable habitat within the development footprint is 16.9 ha which is relatively small given the home range for this species (1800 – 2500 ha). The only suitable nesting tree onsite would be protected on the balance lot under a Conservation Agreement No other suitable nesting trees occur within the development footprint. Up to 2 potential roost trees may be impacted. An additional 3 potential roost trees would be protected under a Conservation Agreement. To affect a long-term decrease in the size of the population would require a proposal to cause major changes in habitat availability or substantially increased demographic pressures on the species at the state level. It is therefore not conceivable that a proposal of this size would lead to a long-term decrease in the size of the population.
2. Reduce the area of occupancy of an important population of the species	Unlikely	The species range covers a large portion of Tasmania and some near-shore islands, generally < 600 m a.s.l, with the highest densities occurring in low land areas of dry mature forest in the east and north[109]. The Tasmanian masked owl Species Profile and Threats Database (SPRAT) profile[110] lists the extent of occurrence for the species as 50,000 km^2, and the area of occupancy as 7,300 km^2. The territory will continue to be utilised. Given the highly mobile nature of this species, their large home range and the suitable nesting habitat that will remain within the surrounding vicinity, the species will still have the same

[107] Threatened Species Scientific Committee (2010)
[108] The core range of the Tasmanian masked owl is forest that occurs at low elevation (< 600 m above sea level)
[109] Commonwealth of Australia (2022b); Department of the Environment, Water, Heritage and the Arts (2010)
[110] Commonwealth of Australia (2022b)

Significant Impact Criteria	Likelihood of a significant unmitigated impact	Comments
		potential for local occupancy and thus the project will not reduce the area of occupancy for this species or any population.
3. Fragment an existing important population into two or more populations	Unlikely	Fragmentation is not a listed threat for this species[111]. The ecology of this species (highly nomadic, highly mobile and found in a range of environments including fragmented agricultural landscapes) makes Tasmanian masked owls resilient to fragmentation. Clearing of trees within the project area will thus have no fragmentation effect on this species nor the local population.
4. Adversely affect habitat critical to the survival of a species	Unlikely	The species' listing advice does not define critical habitat, however the Tasmanian Forest Practices Authority defines 'significant habitat' for the masked owl as any area of native dry forest, within the core range, with trees with large hollows (≥15 cm entrance diameter)[112]. The species is known to occur within the project site, and likely uses the area for foraging and roosting. No previous evidence of nesting was noted during the hollow inspections. The only suitable nesting tree identified on the site will be retained and protected under a Conservation Agreement. The proposal would impact upon 16.9 ha of foraging habitat and up to 2 potential roost trees. This cannot equate to habitat critical to the survival of this species.
5. Disrupt the breeding cycle of an important population	Unlikely	**Note:** Likelihood of significant impact revised from low to Unlikely No previous evidence of nesting was noted during the hollow inspections. The only suitable nesting tree identified on the site will be retained and protected under a Conservation Agreement. Call playback and songmeter results suggest a regular roost is close to the site but the hollow inspection confirmed an absence of hollow use by masked owls. Any potential disturbance would occur at the pair level rather than the population level.

[111] Department of the Environment, Water, Heritage and the Arts (2010)
[112] Forest Practices Authority (2014b); Forest Practices Authority & Threatened Species Section (DPIPWE) (2022)

Significant Impact Criteria	Likelihood of a significant unmitigated impact	Comments
6. Modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline	Unlikely	No suitable breeding habitat would be lost and only a small amount (16.9 ha) of foraging habitat for this species would be impacted. This is highly unlikely to result in a decline of the species.
7. Result in invasive species that are harmful to the species becoming established in the species' habitat	**Likely**	Mortality resulting from secondary poisoning is listed as a key threat for this species[113]. Secondary poisoning through the consumption of prey (particularly rodents) that have been poisoned is often fatal. The introduction of the development may provide shelter and food for non-native rodents which could result in baiting as a result of curtailing the issue of a rodent invasion. However, the persistence of the masked owl in the vicinity indicates that in the existing low density residential setting the owl has survived. Inclusion of information in the Conservation Agreement will assist in minimising this potential.
8. Introduce disease that may cause the species to decline	Unlikely	Disease is not listed as a key threat for this species[114]. The project is unlikely to encourage the spread or introduction of diseases.
9. Interfere with the recovery of the species	**Likely**	There is no recovery plan for this species. The key threats to this species are habitat clearing, fragmentation and rural tree decline along with competition for hollows, collision and secondary poisoning[115]. No suitable breeding hollows would be affected by the proposal. There is the potential for secondary poisoning as a result of the subdivision development.

[113] Department of the Environment, Water, Heritage and the Arts (2010); Threatened Species Scientific Committee (2010)
[114] Department of the Environment, Water, Heritage and the Arts (2010); Threatened Species Scientific Committee (2010)
[115] Commonwealth of Australia (2022b)

3.9 Consistency with International Agreements

Australia's Strategy for Nature 2019-2030[116] has been prepared to meet our ongoing obligations and commitments made to a number of international agreements including the UN Convention on Biological Diversity, the Convention on International Trade of Endangered Species, Sustainable Development Goals, Convention on Migratory Species and the Convention on Conservation of Nature in the South Pacific (Apia Convention). The strategy: *sets a national framework for government, non-government and community action to strengthen Australia's response to biodiversity decline and care for nature in our many environments.* The proposed Action is consistent with the goals and objectives of the strategy as outlined in Table 11 below.

Table 11: Australia's Strategy for Nature goals and alignment with proposed Action

Australia's Strategy for Nature goals and objectives	**Alignment with proposed Action**
Goal 1: Connect all Australians with nature	The retention and protection of bushland on each lot and the requirement for future landowners to manage the natural values will endeavour to instil knowledge and stewardship of nature and increase understanding of the value of nature.
Goal 2: Care for nature in all its diversity	The proposed design has been revised to ensure 40% of the property is retained and protected under a Conservation Agreement and a Part 5 Agreement. This includes the protection and ongoing management of key natural values identified on the site including riparian vegetation, threatened vegetation and threatened fauna breeding habitat. The design also ensures connectivity through the site is maintained. These offset protection measures will secure these important habitats for threatened species and the ongoing commitment to manage these areas will reduce any potential threats and risks to nature which would not be the case if these agreements were not in place.
Goal 3: Share and build knowledge	The proposed Action includes the implementation of a Conservation Agreement and a Part 5 Agreement (which is detailed in Section 4.7). Agreement includes a detailed management plan which will emphasise the importance of the retention area and detail land owner obligations and provide information in relation to: • Habitat protection • Fire management • Weed management • Pest control • Cat and dog control • Habitat tree management • Roadkill management The management plan will also include monitoring requirements which will serve to increase our understanding of nature through the collection of qualitative data in relation to the success or otherwise of management prescriptions. In addition, all survey data collected as part of the proposal has been uploaded to relevant state databases in order to share and expand our knowledge and understanding of nature and further improve decision making and assessments in the future.

[116] Commonwealth of Australia (2019)

4 Proposed Avoidance andMitigation Measures

4.1 Assessment and justification of project design

The site is the appropriate zoning (Low Density Residential) for this sort of development (subdivision) and thus is considered the most suitable location. There aren't suitable sites in the area at this scale with appropriate zoning.

Originally in the early planning stages the entire 36.8 ha lot was proposed to be subdivided (Figure 25). This was later revised to the current 38-lot subdivision and the decision to retain the majority of the property for conservation (19.9 ha). The project has been designed to retain key natural values including riparian vegetation, the threatened DOV community, the wedge-tailed eagle nest, best quality denning habitat and the only suitable nesting tree for the masked owl. These values will be protected under a Conservation Agreement and a Part 5 Agreement which will include application of a management plans (outlined in Section 4.7) and protection in perpetuity. A detailed history of the subdivision development is included as Appendix D.

The legal mechanism we propose to use to secure the offsets, as outlined in the Offset Proposal accompanying this RFI, is a conservation agreement under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). We had previously proposed securing the offsets through an agreement under Part 5 of the Land Use Planning and Approvals Act 1993 (LUPAA) (Tas). However, following further consideration and in light of the offset proposal provided, we have determined that a conservation agreement under the EPBC Act is the preferred option for legally securing the offsets. The conservation agreement would be subject to review and agreement of its final terms, ensuring alignment with both the legal requirements and the specific conservation outcomes sought.

Detailed natural values assessments undertaken over 5 years (between 2018 and 2023) by North Barker Ecosystem Services identified important habitat areas for MNES and an assessment of use of identified habitats for specific MNES (Appendix C). A number of design iterations were undertaken to avoid or otherwise minimise impacts on MNES as well as protect and manage important areas of habitat for MNES into the future.

All avoidance and management / mitigation measures described below will commence during the pre-construction phase and remain during construction and occupation of the subdivision. The mitigation measures proposed include high level guidelines and practical implementation methods that have been applied within the regulatory framework in Tasmania for many years. They are considered to be best practice, and as such there is a high level of confidence in their effectiveness when undertaken as and where described in site-specific management plans.

A Site Manager will oversee the construction of the subdivision. The Site Manager has a responsibility to ensure that the conditions outlined in all approvals under Tasmania's *Threatened Species Protection Act 1995* (TSPA), *Land Use Planning and Approvals Act 1993* (LUPAA), *Nature Conservation Act 2002* (NCA), and the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBCA) are met.

A total of 19.9 ha (54%) of the property will be protected under a Conservation Agreement (14.6 ha) and a Part 5 Agreement (5.3 ha) and the areas to be protected are shown in Figure 2. Management prescriptions outlined in the Part 5 Agreement are the responsibility of the future landowners.

High level impact mitigation includes:

- Areas indicated on design drawings and maps as Conservation Zones (protected under a Conservation Agreement and a Part 5 Agreement) are to be clearly marked as exclusion zones.
- Ensure all site workers and machine operators are familiar with the conditions of the permits and environmental aspects of the project at a site induction.
- Prior to the commencement of works, all contractors will arrange a meeting to be held with the Project Manager or the Site Manager to outline environmental requirements for the project.

- All future landowners are to be provided a copy of the Part 5 Agreement and their obligations under the agreement are to be made known.

A complete account off all proposed environmental management actions, monitoring and reporting regimes and corrective actions are defined in the Offset Proposal and Environmental Management and Monitoring Plan[117]

A summary of all avoidance and mitigation measures is provided below in Table 12.

Table 12. Summary of avoidance and mitigation measures

MNES	Avoidance/mitigation measure
Tasmanian devil Eastern quoll Spotted-tailed quoll Eastern barred bandicoot	Avoidance of all areas of highest quality denning habitat. Avoidance of habitat within a balance lot (14.57 ha) and 30% retention of habitat within all subdivision lots (5.33 ha) to achieve a habitat retention of 54% throughout the total property area. Protection of fauna den sites by applying a pre-clearance protocol. Avoidance of residual/peripheral disturbance impacts through clear definition and demarcation of the development area. Injured wildlife management procedures. Limitations for new owners to be prescribed via Part V Agreement including vehicle speed controls, warning signage, roadside vegetation maintenance and roadkill removal. Education of prospective owners with mitigations prescribed via a Part V agreement to include the following: • Dog fencing constraints • Controls for domestic pets/animals • Prohibiting the use of any rodenticide baits or poisons • Roadkill mitigations and controls • Weed and disease management obligations.
Wedge-tailed eagle	Avoidance of direct impacts to confirmed eagle nest tree. Retention of a buffer of forest surrounding the nest within a 14.57 ha balance lot. Prescription of nest activity/productivity checks to determine if the nest is in use, with operational constraints applied to construction when the nest is active/in use for breeding Strict limits on the movements of domestic animals. Prohibition of use of rodenticide baits and poisons
Masked owl	Retention of masked owl habitat trees within the 14.57 ha balance lot including g1 suitable nest tree, 5 potential roost trees and 4-7 other hollow bearing trees not currently suitable for masked owl use Impact area of subdivision to be clearly defined with hollow bearing trees marked out with their respective TPZ protection areas Pre-clearance tree observation and management protocols for any hollow bearing trees which must be removed within the development footprint.

[117] North Barker Ecosystem Services (2025)

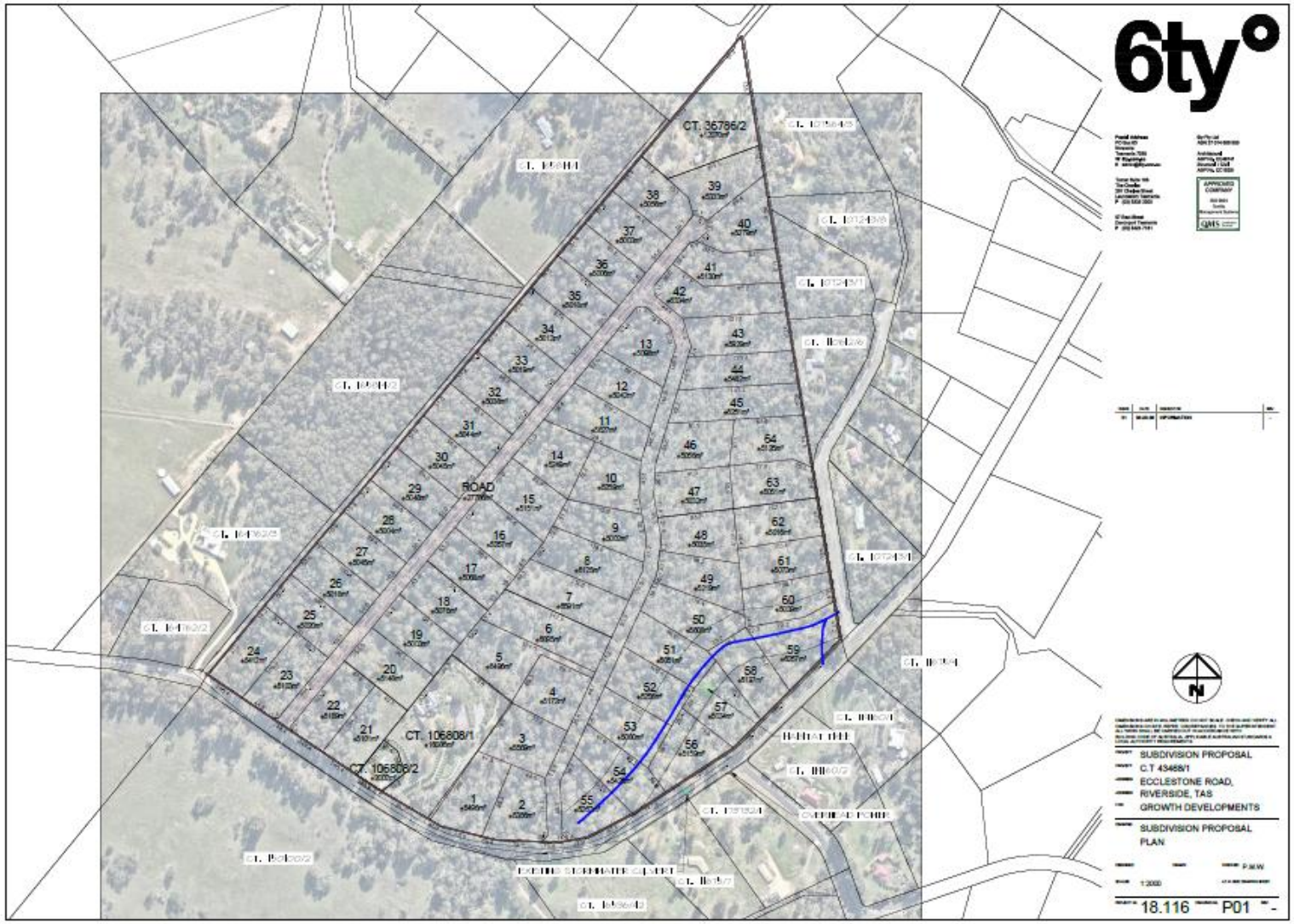

Figure 25: Original concept subdivision plan of the entire site.

4.2 Tasmanian devil (*Sarcophilus harrisii*) [Endangered], Spotted-tail quoll (*Dasyurus maculatus maculatus*) [Vulnerable], Eastern quoll (*Dasyurus viverrinus*) [Endangered] and Eastern barred bandicoot (Tasmanian Population) (*Perameles gunnii gunnii*) [Vulnerable]

The greatest risk to mammals during the construction phase will be the potential loss of maternal dens. Following construction, the greatest risks associated with the operational phase of the residential subdivision will be vehicle strike and the introduction of domestic pets.

4.2.1 Avoidance

Thirty percent of each residential lot and the balance lot will be retained and protected under a Conservation Agreement. The agreements will be given affect through associated management plans. This provides a minimum 54% retention of habitat (19.9 of 36.8 ha) which is an outstanding outcome for residential subdivision. This level of retention will allow the site to continue as viable wildlife habitat and will significantly mitigate the impact of the proposal on native foraging habitat.

4.2.2 Mitigation

The following outlines the mitigation measure to be implemented to reduce impacts on MNES listed mammals. These measures have been modified in some cases from that detailed in the referral due to further information being available.

4.2.2.1 Pre-construction and construction phase

Den protection

Although no dens were located in the proposed impact area it is best practice to undertake additional den searches prior to the beginning of land clearance works to confirm the continuing absence of dens because dens may be established in the intervening period. The following mitigation measures for these species are based upon the NRE Tasmania *Survey Guidelines and Management Advice for Development Proposals that may impact on the Tasmanian Devil (Sarcophilus harrisii)*[118] and will include:

- a dedicated pre-clearance survey for dens in line with state guidelines.
- a 50 m exclusion zone around potential dens that warrant an assessment.
- A den assessment that includes a combination of expert inspection and camera monitoring.
- Den decommissioning (if applicable for nonactive dens) to reduce direct impact on devils. This will require a permit under the Nature Conservation Act 2002.

Den searches are undertaken along notionally parallel transects at a maximum of 30 m apart. All structures potentially suitable for dens are inspected and potential dens recorded. All dens on the reserved land will be protected through the instalment of exclusion fencing and signage around the perimeter of the protected land. The probability of den occurrence is highest in the land to be protected on the balance lot due to its greater vegetative cover and structures for den opportunities.

Den monitoring (if applicable for active dens) to determine use of den (i.e. use of other species such as wombats, use of pouch-laden devils, use of shelter for adult devils). All potential dens in the impact area are to be photo monitored for activity prior to commencement of any construction works.

Den decommissioning - Where a den is required to be decommissioned it is first monitored with cameras for 1 week. This will indicate if the den is in use by a devil or any other fauna. For dens that have a breeding female devil or other fauna evidenced by repeated observations it will be assumed to be a natal den and the den will be protected with a 50 m buffer until the activity ceases. Once breeding activity ceases a one-way gate will be fitted and monitored until all fauna have left the den and cannot re-enter. The den will only then be decommissioned.

[118] Environment Strategic Business Unit (2023)

Habitat clearance

Clearly define the extent of clearance required for the project and ensure that any additional impacts are considered. The works area must be marked, and all works, vehicles and materials will be confined to the works area. This will mitigate and prevent indirect impacts to retention areas and ensure no loss to mammal habitat outside the footprint. The footprint boundaries will be managed and maintained in a way that ensures no encroachment into areas not proposed to be cleared. Ongoing maintenance of exclusion fencing will be included in the Conservation Agreement and Part 5 Agreement.

Injury to animals during vegetation clearance

A suitably qualified person will be available on-site during all site clearances and to check all known dens (even decommissioned ones) prior to clearing. In the unlikely event of an injured Tasmanian devil, the suitably qualified person will transport any injured animal to a wildlife clinic.

4.2.2.2 Post-construction phase and ongoing management

Car strikes (Roadkill)

The traffic study (Appendix C) demonstrates a substantial increase in traffic. However, it predicts that 90% of the traffic will be during the peak hours. The peak hours are outside of the high-risk period except during the evening peak in winter between 5 pm and 6 pm.

Speed control – the Conservation Agreement and Part 5 Agreement will include information on animal protection. In this case it will provide information on the risk of roadkill and the mitigating factors. This will include high risk times, speed and visibility and caution.

Wildlife warning signs will be placed at each end of the site on Ecclestone Road to alert all road users including existing users. It is anticipated that this will modify the behaviour of existing road users and so reduce the risk and incidence of roadkill.

The roadside vegetation will be maintained at a low height in the road reserve between the seal and the boundary fence to improve visibility of animals to all road users. The responsible party for carrying out this maintenance will be dictated by the Conservation Agreement and Part 5 Agreement.

Council is party to the development of the subdivision and the Part 5 Agreement will include reference to the Council's commitment to the collection of roadkill of all animals to minimise the risk of scavenging carcasses attracting devils and quolls and so leading to animals being killed.

With mitigation through the provision of information and the practical elements above the risk from the local traffic will be minimal. This mitigation will also influence the existing drivers and so may generate a net reduction in roadkill events along this section of road.

Education and regulation

The areas to be retained and protected will include a standalone Conservation Agreement and have a Part 5 Agreement on each of the titles. Both agreements will have an attendant management plan (Offset Management Plan). Further information on the management prescriptions to be included in the Part 5 Agreement is outlined in Section 4.7. Both agreements will include measures to reduce potential impacts of domestic animals, secondary poisoning and traffic.

4.2.3 Effectiveness

Mitigation measures for the Tasmanian devil, spotted-tail quoll, eastern quoll and eastern barred bandicoot have been adapted from the *Survey guidelines and management advice for development proposals that may impact on the Tasmanian devil (Sarcophilus harrisii) – A supplement to the Guidelines for natural values surveys – terrestrial development proposals*[119] developed by the Policy and Environment Strategic Business Unit within Department of Natural Resources and Environment Tasmania. This document is based on the

[119] Environment Strategic Business Unit (2023)

best information available regarding Tasmanian devil ecology and habitat requirements. The document outlines the management guidelines for Tasmanian devil impact mitigation, which can also be used as a proxy for quoll species which share similar denning requirements and are impacted by vehicle strikes in much the same way. All three of these denning mammals are broad ranging species with relatively large home ranges (Tasmanian devil approximately 2,000+ ha[120], spotted-tailed quoll approximately150-600 ha[121], eastern quoll approximately 35-45 ha[122]). As such, the impacts of the proposed action on individuals of these species will be lessened as they relate to a minor proportion of individual home ranges. The scale of local habitat retention proposed for avoidance as part of the proposed action will ensure large viable areas of suitable habitat are retained at the scale which ensures that there will be substantial native habitat retention at the individual devil or quoll home range. The scale of the impacts is such that some local displacement or reshaping of home ranges for these species is to be expected, however no individuals are expected to be entirely displaced or decline as a result of these changes given adequate habitat availability within both the local and broader landscapes.

The habitat avoidance and mitigation measures which are proposed in general as part of the proposed action will also ensure that sufficient levels of habitat are retained and managed in a manner that will ensure the long-term persistence and success of the eastern barred bandicoot. This species has rapid reproductive rates and displays considerable resilience to habitat modification and fragmentation. As such the species displays a has a high degree of success in modified and peri-urban environments in Tasmania[123]. No significant residual impacts to this species are identified.

The proposal includes the retention of 19.9 ha of the vegetation on the site, which equates to 54% of the site footprint, that will be protected by a Conservation Agreement and a Part 5 Agreement. This includes 30% of the vegetation on each of the 37 lots and retention of the balance lot. The proposal would thus ensure the maintenance of internal connection for the full length and breadth of the site, maintaining connectivity with the more diffuse and broadly dispersed "corridor" on the surrounding residential developments and so the site will maintain value as a wildlife corridor. Thus, this project will ensure continued species persistence and habitat usage in the retained habitat.

The Conservation Agreement and Part 5 Agreement (outlined in Section 4.7) will ensure the ongoing efficacy of the proposed mitigation measures through an attendant monitoring program and management plan, which will stipulate remedial actions in the event that a decline in habitat quality or other adverse outcome is detected.

Significance of residual impacts

It is our assessment that there will be **no significant residual impacts** to either the Tasmanian devil (Section 5.1.1), the eastern quoll (Section 5.1.2), the spotted-tail quoll (Section 5.1.3) or the eastern barred bandicoot (Section 5.1.4) caused by the subdivision construction and future occupation of the residences. However, it is our understanding that DCCEW are of the opinion that there will be outstanding significant residual impacts to the Tasmanian devil and eastern quoll. Mitigation measures to reduce the impacts on individuals and the local populations of these species will continue throughout the construction phase and in perpetuity as part of the Conservation Agreement and Part 5 Agreement.

4.3 Tasmanian wedge-tailed eagle (*Aquila audax fleayi*) [Endangered]

The greatest risk to wedge-tailed eagles is the disturbance to a nesting site, by both sound and sight. The Tasmanian wedge-tailed eagle is particularly vulnerable to disturbance during the breeding season, and if disturbed may abandon their nest resulting in the loss of their eggs or chicks.

Mitigation measures outlined in Section 4.1.4.10 of the referral for this species have been revised based upon the results of additional activity surveys undertaken by NBES in November 2022 (Appendix C). Based

[120] Thalmann et al (2016)
[121] Troy (2014), Andersen et al (2020)
[122] Godsell (1983)
[123] Daniels (2011)

upon the nest not being active and likely never has been, breeding season constraints on the development are not considered warranted.

If the nest were ever to be utilised it would be in the context of works proceeding on the site and as such a "choice" by the breeding pair to utilise the nest despite the development. Successful eagle nests are known elsewhere in similar circumstances whereby eagle nests are within 300 m line of sight of residential developments.

4.3.1 Avoidance

The nest is located within the protected area of the balance lot and will not be directly impacted.

4.3.2 Mitigation

4.3.2.1 Pre-construction and construction phase

If the proposed development commences after the start of the breeding season, an additional nest activity assessment at the end of October will be conducted. In the event the nest is found to be active then the commencement of works will be required to wait until after the breeding season. If the nest becomes active after the commencement of works, then it can be assumed the breeding pair already have some level of habituation to the surrounding disturbances. In the unlikely event this occurs then ongoing monitoring of the activity and productivity status of the nest would be documented as part of the Conservation Agreement and Part 5 Agreement.

4.3.2.2 Post-construction and ongoing management

Ongoing protection of the nest will be ensured through the development of a Conservation Agreement and a Part 5 Agreement (refer to Section 4.7). The management plan attendant to these agreements will also include measures to reduce potential impacts of domestic animals and secondary poisoning.

4.3.3 Effectiveness

In Tasmania it is common practice to protect active eagle nests during the breeding season with a 500 m exclusion zone and 1 km line of sight exclusion zone[124]. Given that the nest is not active and has never been active, no significant impacts are anticipated and mitigation measures are not required.

Nonetheless, the nest tree will be protected in perpetuity under the Conservation Agreement. Thus, this project will allow for continued species persistence and habitat usage in the retained habitat.

With the nest tree protected with an adequate buffer of retained forest and the ability to apply breeding period exclusions if the nest should become active, the viability of the site for use by future breeding eagles will remain unchanged from the current conditions.

The Conservation Agreement and Part 5 Agreement (outlined in Section 4.7) will ensure the ongoing efficacy of the proposed mitigation measures through an attendant monitoring programs and management plans, which will stipulate remedial actions in the event that a decline in habitat quality or other adverse outcome is detected.

Significance of residual impacts

It is our assessment that there will be **no significant residual impacts** to breeding Tasmanian wedge-tailed eagles or their habitat (Section 5.1.5) given the inactive status of the nest and the long-term protection of the nest tree under a Conservation Agreement. As there are no significant residual impacts, no offset is required.

[124] Threatened Species Section (2006)

4.4 Tasmanian masked owl (*Tyto novaehollandiae castanops*) [Vulnerable]

The greatest risk to Tasmanian masked owls due to this development will be the direct impact to potential roosting trees and the indirect impacts of secondary poisoning. Both of these impacts can be managed and mitigated through the measures outlined below.

4.4.1 Avoidance

All hollow bearing trees that occur in the protected areas will be retained. This includes:

- the only suitable masked owl nesting tree (Tree 1)
- at least three of the five potential roost trees (Tree 3, 4 and 6)
- at least four of the seven other hollow bearing trees not suitable for masked owl use (Tree 2, 7, 9 and 16)

Mitigation measures outlined below will ensure no indirect impacts occur to these trees.

All other hollow bearing trees which occur on the site (Tree 5, 11, 13, 15 and 17) will be protected where achievable. If these trees cannot be retained then the mitigation measures outlined below are to be adhered to during their removal.

4.4.2 Mitigation

4.4.2.1 Pre-construction and construction phase

Protection of hollow-bearing trees

Clearly define the extent of clearance required for the project and ensure that all retention areas are fenced. No works, vehicles or materials to be stored in the retention areas. Any hollow bearing trees to be retained outside of these retention areas are to be fenced around their Tree Protection Zone (TPZ) to avoid accidental damage to tree roots.

These measures will mitigate and prevent indirect impacts to retention areas and ensure no loss to masked owl habitat trees outside the footprint. The footprint boundaries will be managed and maintained in a way that ensures no encroachment into areas not proposed to be cleared. Ongoing maintenance of exclusion fencing will be included in the Conservation Agreement and Part 5 Agreement.

Clearing of hollow bearing trees

Where avoidance is not feasible – as in the case of trees 5 and 17 (which are potential roost trees) and hollow bearing trees 11, 13 and 15 – trees will be observed by an ecologist at around dawn and dusk to prove they are vacant prior to felling within 1 week of works (See Figure 22). If this timing cannot be achieved, unused hollows are to be blocked off following ecologist assessment to prevent birds or mammals entering them prior to felling. Hollows with any signs of roosting of masked owls must be left in place until after the masked owl breeding season. After the breeding season hollows are to be reassessed and blocked if vacant.

4.4.2.2 Post-construction and ongoing management

Information on the protection of masked owls by controlling the use of rodent poisons and domestic animal management will be included in the Management plan attendant to the Conservation Agreement and Part 5 Agreement (refer to Section 4.7)

4.4.3 Effectiveness

The mitigation measures outlined in this document are informed by expert advice based on ongoing research and on the conservation listing advice for this species[125]. A priority action identified in the

[125] Threatened Species Scientific Committee (2010); D. Young *pers. comm.* (2022)

conservation advice for the abatement of habitat loss, disturbance and modification is to minimise disturbance in areas where the Tasmanian masked owl is known to breed.

The NSW Recovery Plan for the Large Forest Owls[126], developed in response to research into the impact of various disturbance and development types including urban developments, addresses the mainland subspecies of *T. novaehollandiae* but the management guidelines of identification and protection of nest and roost sites and pre-clearing surveys can be applied to this subspecies and this proposal.

This project will protect potential nest and roost trees under the Conservation Agreement and Part 5 Agreement to ensure continued species persistence and habitat usage in the retained habitat. These agreements (outlined in Section 4.7) will ensure the ongoing efficacy of the proposed mitigation measures through attendant monitoring programs and management plans, which will stipulate remedial actions in the event that a decline in habitat quality or other adverse outcome is detected.

Significance of residual impacts

It is our assessment that there will be **no significant residual impacts** to breeding Tasmanian masked owls or their habitat (Section 5.1.6) if mitigation measures to reduce the proposal's direct and indirect impacts on this species are implemented throughout the duration of the construction and future occupation of the residences. Mitigation measures to reduce the impacts on masked owls will continue throughout the construction phase and in perpetuity as part of offset conservation measures (Section 4.7)

4.5 Weed and disease management

An additional mitigation measure to protect species habitat is to minimise the transfer or introduction of weeds, infectious plant diseases and fungal infestation within and between sites. Site specific weed and hygiene control guidelines must be developed and followed. By following these guidelines, the spread of weeds, infectious plant disease and fungal infestation within the site or to adjoining land will be significantly reduced, with the target to stop the spread of weeds and disease altogether.

The following management actions will be prescribed within a site-specific Weed Management Plan (prior to commencement of the proposed action):

1. A survey of the proposed impact and avoidance areas to confirm the presence and distribution of existing weeds and disease.
2. Definition of a site works plan which identifies all areas to be physically disturbed within the footprint of the proposed action.
3. Identification of a site-specific wash-down station for all earth-moving machinery to be applied to all machines upon arrival to site or before departing from the site.
4. Potentially contaminated vehicles (*i.e.* vehicles with soil from offsite) will be cleaned before entering the site.
5. Maintenance of a reporting ledger that documents all incidences of when the washdown station is utilised.
6. Collate a schedule of all declared weeds present throughout the impact and avoidance areas with prescribed control methods and optimal control timing as per contemporary standards defined for each species[127].
7. A prescribed weed monitoring schedule that defines annual inspections and follow-up treatments of all areas previously treated and/or disturbed within the impact and avoidance areas.
8. Bi-annual reporting to DCCEEW on the implementation of measures applied to weed and disease management.

These methods will significantly reducing the chance of weeds being spread onsite and offsite.

A Weed Management Plan will form part of the management plans attendant to the Conservation Agreement and Part 5 Agreement. This will ensure the ongoing control and eradication of declared and

[126] Department of Environment and Conservation (NSW) (2006)
[127] Department of Primary Industries, Parks, Water and Environment (DPIPWE) (2015)

environmental weeds within the retention areas, resulting in a long-term improvement to the habitat values of these areas.

4.6 Reporting and delegation

All mitigation measures described above will commence during the pre-construction phase and remain in force until the construction is certified as complete. The Site Manager is responsible for all pre-clearance mitigation. The Site Manager will ensure that all contractors are aware of the protocol and understand their obligations. The Site Manager is responsible for:

- Delineating the works zone and installing protective fencing around retention areas and trees to be retained.
- Ensuring any potential roost trees to be removed are inspected prior to felling.
- Ensuring pre-clearance den surveys have been undertaken prior to clearing site vegetation.
- Ceasing work and notifying a wildlife carer in the event of injury to wildlife.
- Development and compliance with a Weed and Hygiene Management Plan
- Report a summary of proof of compliance

4.7 Conservation Value (MNES) Protection

This proposal includes direct impacts to suitable habitat for MNES to a total of approximately 16.9 ha.

To compensate for the loss of this habitat, areas of both onsite and offsite habitat for MNES have been identified for protection and long-term management for their conservation values. The nature of these areas and their associated protection mechanisms are detailed in the following:

1. Protection of approximately 5.3 ha of habitat through the retention of approximately 30% of each subdivision lot. These areas will be protected by way of a Part V Agreement between the landowner and the local government.
2. Protection and management of approximately 14.6 ha of habitat by way of establishing a Conservation Agreement in accordance with Chapter 5, Part 14 of the EPBCA.
3. Protection and management of an offsite offset reserve of approximately 26.31 ha at Vermont Road by way of establishing a Conservation Agreement in accordance with Chapter 5, Part 14 of the EPBCA (same agreement relevant to point 2 above).

In relation to the Part V Agreement a monetary bond equivalent to the costs of implementing, monitoring and reporting on outstanding actions under the management plan would be bonded to Council prior to issue of building approval and the commencement of onsite works. A yearly monitoring report is to be submitted to the Council until works related to the agreement are satisfied. The report is to be undertaken by an independent consultant and include an inspection of the site and an audit of the management prescriptions and weed management tasks outlined in the Conservation Agreement and Part 5 Agreement. The bond would be repaid to the payer in stages on an annual basis upon completion of the actions to the satisfaction of Council and receipt of the annual monitoring report.

4.7.1 Habitat protection

Specifies vegetation management prescriptions in relation to maintaining and enhancing the natural values of the protected areas. Prescriptions will include the following:

- Prohibition of clearing or modification to native vegetation
- Prohibition of buildings, structures or infrastructure
- Prohibition of firewood collection
- Prohibition of vehicle access and tracks
- Restrictions on recreational use, fencing, herbicides, grazing by domestic and stock animals
- Dog proof wire fencing (100 mm mesh) or other exclusion fencing

4.7.2 Fire management

Exclusion of fire(s) from the protected areas unless otherwise required by the Tasmania Fire Service or Council. Appropriate intensity fires are permitted for ecological purposes (e.g. the maintenance of biodiversity) with appropriate permits from Tasmania Fire Service and the consent of Council, adhering to the principles of Planned Burning in Tasmania prescriptions[128]. The tolerable fire interval and intensity of fire will vary depending on vegetation community and habitat objectives and burning should be consistent with a fire management plan prepared by a qualified expert.

4.7.3 Weed management

Includes a 5 year Weed Management Plan (WMP) which documents weed control works to be undertaken to effectively eradicate declared and locally important environmental weeds located within the protection areas. The WMP must also outline annual monitoring and reporting requirements to ensure the effectiveness of control efforts and prioritise future works.

4.7.4 Pest control

New homeowners will be given information discussing the impacts of baiting rodents on owls and other raptor species. Specific baits which can cause secondary poisoning will be prohibited from use on the site including all forms of rodenticide. An information sheet documenting the risk of such threats and the strict prohibition of rodenticide use will be provided to all landowners prior to or at the point of property purchase.

4.7.5 Cat and dog control

Signage around the protection area would be erected to state the importance of the protection area as a 'wildlife refuge' with emphasis on keeping cats and dogs confined to their properties. The protection area on the balance lot will have a 'no dogs allowed sign' on the boundary of each adjacent residential lot in the subdivision and be suitably fenced to exclude access by dogs (100 mm mesh). Details regarding the impacts of domestic cats on wildlife will also be highlighted in the Conservation Agreement and Part 5 Agreement. The option of declaring the protection area a "Cat Prohibited Area" under the *Cat Management Act 2009* will be assessed as part of the development of the Conservation Agreement and Part 5 Agreement.

4.7.6 Habitat tree management

Part of the annual monitoring and reporting requirements would include an inspection of the health and status of the known WTE nest tree and the potential MO nest tree (Tree 1 Figure 22). Monitoring will include an assessment of any signs of activity by these species. Reporting is to include management measures to ensure the long-term protection and management of these trees.

4.7.7 Roadkill management

The Part 5 Agreement is to include Council's commitment to the regular collection of roadkill of all animals to minimise the risk of scavenging carcasses attracting devils and quolls and so leading to animals being killed. The roadside vegetation will be maintained at a low height in the road reserve between the seal and the boundary fence to improve visibility of animals to all road users. The Part 5 Agreement will include information on animal protection. In this case it will provide information on the risk of roadkill and the mitigating factors. This will include high risk times, speed and visibility and caution.

[128] Refer to http://www.fire.tas.gov.au/userfiles/stuartp/file/Publications/PlannedBurningInTasmania.pdf

5 Residual Impacts and Proposed Offsets

5.1 Residual impacts

The DCCEEW EPBCA Environmental Offsets Policy (2012) details the process for determining when offsets are required. That policy notes that "offsets are not required for all approvals under the EPBCA. Offsets are not required where the impacts of a proposed action are not thought to be significant or could reasonably be avoided or mitigated".

The offsets implementation guide that is used to support application of the policy only applies where the proposed action is likely to have a residual significant impact on a threatened species or ecological community.

A residual impact is the impact that remains after all efforts at minimisation and avoidance have been implemented.

5.1.1 Tasmanian devil (*Sarcophilus harrisii*) [Endangered]

The likely impacts on Tasmanian devils have been assessed not to represent a significant impact for this species even in the absence of additional mitigation measures (Table 5), thus it is **unlikely to cause a significant residual impact**. Nevertheless, several mitigation measures have been proposed in Section 4.2 to reduce the proposal's impact on the local population or on individual devils.

5.1.2 Eastern quoll (Dasyurus viverrinus) [Endangered]

Any *Matters of National Environmental Significance Significant impact guidelines 1.1*[1] criteria that were assessed as having the potential to be breached by this proposal (Table 6) have been reassessed in light of the proposed minimisation and avoidance measures proposed in Section 4.2; it has been determined that this project is **unlikely to cause a significant residual impact** on the Eastern quoll (Significant unmitigated impact).

5.1.3 Spotted-tail quoll (*Dasyurus maculatus maculatus*) [Vulnerable]

Any *Matters of National Environmental Significance Significant impact guidelines 1.1*[1] criteria that were assessed as having the potential to be breached by this proposal (Table 7) have been reassessed in light of the proposed minimisation and avoidance measures proposed in Section 4.2; it has been determined that this project is **unlikely to cause a significant residual impact** on the Spotted-tail quoll (Table13).

5.1.4 Eastern barred bandicoot (*Perameles gunnii gunnii*) [Vulnerable]

Any *Matters of National Environmental Significance Significant impact guidelines 1.1*[1] criteria that were assessed as having the potential to be breached by this proposal (Table 8) have been reassessed in light of the proposed minimisation and avoidance measures proposed in Section 4.2; it has been determined that this project is **unlikely to cause a significant residual impact** on the Eastern barred bandicoot (Table13).

5.1.5 Tasmanian wedge-tailed eagle (*Aquila audax fleayi*) [Endangered]

The likely impacts on the Tasmanian wedge-tailed eagle have been assessed not to represent a significant impact for this species even in the absence of additional mitigation measures (Table 9), thus it is **unlikely to cause a significant residual impact**. Regardless, several mitigation measures have been proposed in Section 4.3 to reduce the proposal's impact on the population or on individual wedge-tailed eagles.

5.1.6 Tasmanian masked owl (*Tyto novaehollandiae castanops*) [Vulnerable]

Any *Matters of National Environmental Significance Significant impact guidelines 1.1*[1] criteria that were assessed as having the potential to be breached by this proposal (Table 10) have been reassessed in light of the proposed minimisation and avoidance measures proposed in Section 4.4; it has been determined that this project is **unlikely to cause a significant residual impact** for the Tasmanian masked owl (Table13).

It is noted that in DCCEEW's consideration of the proposed action they have determined that significant residual impacts are anticipated in relation to the Tasmanian devil and eastern quoll and that the impacts will require offsetting. In response to this, the proponent has developed a draft Offset Proposal[129] which now incorporates all the relevant management actions, target outcomes, monitoring , corrective action and reporting commitments that will be implemented to ensure that residual impacts are offset by more than 100% in accordance with the Offsets Assessment Guide.

[129] North Barker Ecosystem Services (December 2025)

Table13: Significant impact criteria with regards to anticipated residual impacts to MNES species.

Species identified as having impacts that potentially breach one or more criteria in the absence of mitigation measures are included, as determined in Section 3. Significant impact criteria with no potential to breach and species with no significant impact are not included.

Species	Significant Impact Criteria	Likelihood of causing a significant residual impact	Comments
Eastern quoll (Endangered)	2. Reduce the area of occupancy of the species	Unlikely	• Enforcement of avoidance and mitigation mechanisms will secures the long-term protection and management of ~19.9 ha of habitat for this species will sufficiently reduce the potential for impacts associated with habitat clearance.
	7. Result in invasive species that are harmful to the species becoming established in the species' habitat	Unlikely	• Implementation and enforcement of the management plan under avoidance and mitigation mechanisms which details specific requirements for pet owners will reduce impacts associated with domesticated pets (although these are not specifically included in the definition of "invasive species"). • Implementation of a Construction Weed Management Plan (CWMP) and a 5-year WMP will reduce impacts associated with invasive weeds.
Spotted-tail quoll (Vulnerable)	7. Result in invasive species that are harmful to the species becoming established in the species' habitat	Unlikely	• Implementation and enforcement of the management plan under the Conservation Agreement and Part 5 Agreement which details specific requirements for pet owners will reduce impacts associated with domesticated pets (although these are not specifically included in the definition of "invasive species"). • Implementation of a Construction Weed Management Plan (CWMP) and a 5-year WMP will reduce impacts associated with invasive weeds.
Eastern barred bandicoot	7. Result in invasive species that are harmful to the species becoming established in the species' habitat	Unlikely	• Implementation and enforcement of avoidance and mitigation mechanisms which details specific requirements for pet owners will reduce impacts associated with domesticated pets (although these are not specifically included in the definition of "invasive species"). • Implementation of a Construction Weed Management Plan (CWMP) and a 5-year will reduce impacts associated with invasive weeds.

Species	Significant Impact Criteria	Likelihood of causing a significant residual impact	Comments
Tasmanian masked owl (Vulnerable)	7. Result in invasive species that are harmful to the species becoming established in the species' habitat	Unlikely	• Implementation and enforcement of the management plan which details specific requirements in relation to secondary poisoning will reduce impacts associated with baiting rodents.
	9. Interfere with the recovery of the species	Unlikely	• Implementation and enforcement of the management plan which details specific requirements in relation to secondary poisoning will reduce impacts associated with baiting rodents. • Implementation of the avoidance and mitigation mechanisms will alleviate hollow competition by protecting the majority of habitat trees for this species and enabling the protection of future hollow-bearing trees to develop.

6 Ecological Sustainable Development

6.1 Principles of ESD

The following provides a description of how the proposed action meets the principles of ESD as defined in section 3A of the EPBCA.

The proposed subdivision has been designed to ensure an effective balance between development and conservation. Over half of the site (54%) will be retained and protected as a Natural Values Protection Area" under a Conservation Agreement and Part 5 Agreement. The area to be protected has been designed to encompass the important natural values within the site including riparian vegetation, denning habitat, threatened vegetation communities, WTE nest and the suitable MO nesting tree as well as the majority of roosting trees. The protection area has also been designed to retain 30% of vegetation on each of the low-density lots to ensure connectivity and movement for local wildlife through the site. Establishment of a legally binding agreement which is attached to the title of each lot will enable the protection of these habitats for future generations and the long-term conservation of biological diversity and ecological integrity.

7 Social and Economic Impacts

7.1 Costs and benefits

The proposed development involves subdivision of land to create 38 lots on land located at Ecclestone Road, Riverside. The proposed subdivision development complies with the applicable Scheme provisions in the Low-Density Residential zone and relevant code standards, The proposed subdivision would provide social benefits with the addition of 38 homes in close proximity to Launceston. The development would also provide employment opportunities associated with construction contracts etc.

7.2 Public consultation

Public consultation under the *Land Use and Planning Approvals Act 1993*

Stakeholder engagement is not a routine part of this type of subdivision development. That being said, public consultation is built into the Tasmanian land use planning system where by the discretionary subdivision application was advertised for a period of 2 weeks and adjoining land owners were notified. The public were able to make a submission within this period. In this instance, public submissions were made and they were dealt with through the standard assessment process undertaken by Council.

This application also proceeded to an Appeal where all representors were able to become a Joined Party to the appeal proceedings.

The appeal process concluded with the decision of Council (for approval) being upheld by the Tribunal.

Indigenous Consultation and Engagement

The proponent is aware of the Interim National Guidelines for engaging with First Nations People and Communities in relation to Assessments and Approvals under the EPBCA[130]. The proponent acknowledges the intention of these guidelines to motivate reconciliation and foster respect, understanding and unity between First Nations peoples and communities and non-First Nation Australians. The proponent recognises the role of First Nations peoples and communities in caring for and managing our unique environment including land, sea, waterways, flora and fauna.

The proponent has undertaken engagement and consultation with Aboriginal Heritage Tasmania (AHT) in accordance with the Tasmanian Aboriginal Heritage Standards and Procedures[131]. AHT administer the

[130] DCCEEW (2023)
[131] DNRET (2024)

Tasmanian *Aboriginal Heritage Act 1975* which establishes the Aboriginal Heritage Council of Tasmania, and the *Aboriginal Lands Act 1995*, which establishes the Aboriginal Land Council of Tasmania, and the *Native Title (Tasmania) Act 1994*.

Under the AHT assessment procedures, proponents are required to undertake an Aboriginal Heritage Property Search to determine if a planned development has any potential of impacting upon Aboriginal Properties or heritage. Where potential impacts are identified, proponents must engage with an Aboriginal Heritage Practitioner (AHP) to assess the development site, consider impacts and prepare an Aboriginal Heritage Assessment Report. A key part of the Assessment Report includes the AHP's direct engagement with Tasmanian Aboriginal people, communities and interest groups.

In the case of the proposed action, the proponent has considered the impacts of their proposed development by undertaking an Aboriginal Heritage Property search, the results of which are presented in Appendix F. The search determined that the action would not result in direct or indirect impacts to any Aboriginal Heritage Properties or heritage and was permitted to proceed on the basis of applying an Unanticipated Discovery Plan (UDP) (Appendix F), which the proponent has experience in implementing with other similar developments.

These steps which have been undertaken by the proponent demonstrate their intention to ensure that Aboriginal Properties and heritage will not be impacted by the proposed action and that engagement with Aboriginal, indigenous and First Nations Peoples and communities has been undertaken in a manner consistent with the Tasmanian Aboriginal Heritage Procedures and the Interim Guidelines for *Engaging with First Nations People and Communities on Assessments and Approvals under the Environment Protection and Biodiversity Conservation Act 1999*[132].

7.3 Projected economic costs and benefits of the project

Knight Frank have been engaged to prepare a consolidated economic overview of the proposed subdivision post development (Appendix E). This looks at the economic impact associated with the purchase of the proposed residential lots and the construction of a dwelling on each of the lots. The total cost of residential development on the 38 lots is estimated to be in the vicinity of $38 million. It is noted that this excludes the construction cost of the proposed subdivision which is estimated to be in the vicinity of $3.5 million.

In additional to the above, significant fees have been spent on local environmental, planning, engineering and bushfire consultants to progress the subdivision development to this stage which included following the application through the TASCAT planning appeal process. All fees spent locally have a substantial economic multiplier effect within the local community.

7.4 Employment opportunities

Growth Developments employ more than 50 Tasmanians in addition to many other local contractors and consultants. Construction of the proposed subdivision will employ approximately 10 people. In addition to this, it is estimated that the proposed subdivision will require 38 FTE employees during the construction period which excludes employment associated with design and subconsultants (architectural, engineering, surveying, building surveying, bushfire management and onsite wastewater management) and material supply and manufacturing associated with each dwelling (refer to Appendix E).

8 Environmental Record of Person Proposing to Take the Action

Growth Developments is a Launceston based company which was established in 2008. Over the past 15 years we have developed in excess of 800 lots in around 18 separate subdivision developments across West Tamar, City of Launceston and Northern Midlands municipalities. Many of our past subdivisions were subject to significant constraints including natural values, natural hazards, scenic values which required a mixture of environmental, planning engineering solutions to overcome in a way that benefits all parties. In

[132] DCCEEW (2023)

addition to our subdivision developments, we have also constructed over 100 homes. Further details on specific subdivision developments that involved natural values and required close management is included in Appendix E.

All development projects have only been undertaken when relevant approvals have been obtained from statutory authorities and in accordance with the conditions of approval. To this effect, Growth Developments have never been subject to enforcement action relating to non-compliance or any other environmental or planning breaches.

Growth Developments has not referred any previous actions.

9 Conclusion

The residual impact of the Action is not considered to be significant based on the EPBCA tests for significance.

Summary

Tasmanian devil (*Sarcophilus harrisii*), spotted-tail quoll (*Dasyurus maculatus maculatus*), Eastern quoll (*Dasyurus viverrinus*) and Eastern barred bandicoot (*Perameles gunnii gunnii*): Up to 16.9 ha of the footprint of the Action represents foraging habitat that is suitable for these species. No suitable denning habitat for the devil or spotted-tail quoll is located within the development footprint. Denning requirements for the eastern quoll and eastern barred bandicoot are generally less than for devils and these species may utilise areas of dense groundcover within the footprint for denning, despite that fact that no den structures were observed during targeted surveys. The most suitable denning habitat on the site is located on the balance lot and would be protected under the Conservation Agreement. A total of 19.9 ha of foraging habitat would also be protected under this agreement. The extent of habitat loss is considered to be negligible in the context of habitat in the vicinity and broader regions.

The majority of traffic generated as a result of the subdivision will spend a relatively higher portion of the time traveling along the bushland frontage below 60 km phr. With the implementation of specific mitigation measures, the risk from local traffic will be minimal.

A pre-clearance den survey and associated management and decommissioning protocol will ensure that no active den is disturbed, in the unlikely event one is discovered in the development footprint.

Specific mitigation measures would be implemented under the Conservation Agreement and Part 5 Agreement to mitigate impacts associated with domestic pets and ensure protected areas are maintained for habitat and connectivity.

The impact of the Action is unlikely to cause a significant residual impact based on EPBCA test for significance.

Tasmanian wedge-tailed eagle (*Aquila audax fleayi*): One inactive nest which has never been utilised by WTEs is located on the balance lot and will be protected under a Conservation Agreement. Specific mitigation and management measures in relation to the nest will be implemented to ensure the impact of the Action is unlikely to cause a significant residual impact based on EPBCA test for significance.

Tasmanian masked owl (*Tyto novaehollandiae castanops*): One suitable nesting tree is located on the site within the balance lot and would be protected under the Conservation Agreement. The Action is likely to require the removal of two of the five potential roost trees identified on the site. Detailed mitigation and management measures are provided to ensure that the Action is unlikely to cause a significant residual impact based on EPBCA test for significance.

Mitigation: The acceptability of the proposal hinges on the acceptability of the clearance of some habitats and the measures proposed to mitigate the clearance. The impact of the clearance of habitat, or residual impact, is proposed to be reduced with a number of species-specific avoidance and mitigation measures to the extent that the residual impacts are not likely to be significant. Over half of the site, including the most

suitable devil and quoll denning habitat, the WTE nest and the only suitable MO nesting tree, will be protected and managed in the long-term through the establishment of a Conservation Agreement.

Ecologically Sustainable Development: The proposal complies with the principals of the National Strategy for Ecologically Sustainable Development (ESD).

10 Information Sources

10.1 Source and currency of information

The field data used to quantify and describe the MNES and analyse the quality of habitats has all been collected since 2018. The most recent surveys were conducted in February 2023 (songmeter recordings and masked owl hollow inspection) and November 2022 (call playback surveys for masked owl and WTE nest inspection surveys).

Distributional data is derived from the NRE Natural Values Atlas and Commonwealth Protected Matters Search Tool. These data include most known records and viability of habitat for threated species. Range boundaries were sourced from the NVA data. The currency is recent.

10.2 Reliability of the information

All NBES data and specialist input has a high degree of reliability.

The Natural Values Atlas only accepts data that have been deemed to be reliable. The reliability of this data is tested in a variety of ways including, but not limited to, expert review and field verification. The Protected Matters Search Tool predicts occurrences from habitat mapping only, and the certainty of predicted values is moderate. To increase reliability, each MNES predicted to occur is individually assessed against the proposal area to determine the risk of impact.

In addition, a Natural Values Planning Review was undertaken by ECOtas at the request of the West Tamar Council. The review (dated 14 May 2020) provided an external expert review of planning documentation related to the then proposed 22 lot subdivision at Ecclestone Road, with specific reference to advice in relation to the original natural values report, representations and the addendum natural values report. The report (included as Attachment 2 of the referral) concluded that the initial NVA provided sufficient information for the planning authority to assess the proposal against P2.1 of the Biodiversity Code of the West Tamar Interim Planning Scheme 2013 but that the additional information provided in the addendum to the natural values assessment adds clarity to several matters.

10.3 Uncertainties in the information

The reliability and certainty of the assessment is very high. Survey limitations exist (as described in Section 2.8), but these have been supplemented by using other sources such as the NVA and PMST reports to account for any survey limitations.

10.4 Guidelines, plans and/or policies considered

The collection and interpretation of the data, the assessment of likely impacts and the development of mitigation measures were undertaken in compliance with:

- *Matters of National Environmental Significance Significant impact guidelines 1.1 Environment Protection and Biodiversity Conservation Act 1999*, Commonwealth[133]
- Species Profile and Threats (SPRAT) database profiles and conservation advice listings, Commonwealth[134]

[133] Commonwealth of Australia (2013)

[134] Department of the Environment, Water, Heritage and the Arts (2008); Department of the Environment, Water, Heritage and the Arts (2009); Threatened Species Scientific Committee (2009); Department of the Environment, Water, Heritage and the Arts (2010); Threatened Species Scientific Committee (2010); Threatened Species Scientific Committee (2015); Commonwealth of Australia (2022a); Commonwealth of Australia (2022b); Commonwealth of Australia (2022c); Commonwealth of Australia (2022d)

- National and state recovery plans[135]
- *Environment Protection and Biodiversity Conservation Act 1999 Environmental Offsets Policy*, Commonwealth[136]
- *Survey guidelines for Australia's threatened birds: Guidelines for detecting birds listed as threatened under the Environment Protection and Biodiversity Conservation Act 1999*, Commonwealth[137]
- *Survey guidelines for Australia's threatened mammals: Guidelines for detecting mammals listed as threatened under the Environment Protection and Biodiversity Conservation Act 1999*, Commonwealth[138]
- *Guidelines for Natural Values Surveys - Terrestrial Development Proposals*, NRE Tasmania[139]
- *Survey Guidelines and Management Advice for Development Proposals that may impact on the Tasmanian Devil (Sarcophilus harrisii)*, NRE Tasmania[140]
- Additional survey and management guidelines produced as a series of *Technical Notes*, Forest Practices Authority Tasmania[141]

[135] Department of Environment and Conservation (NSW) (2006); Threatened Species Section (2006); Department of Sustainability and Environment (2009); Department of Primary Industries, Parks, Water and Environment (DPIPWE) (2010); Woinarski et al. (2014); Department of Environment, Land, Water and Planning (2016)
[136] Commonwealth of Australia (2012)
[137] Commonwealth of Australia (2010)
[138] Commonwealth of Australia (2011)
[139] Natural and Cultural Heritage Division (2015)
[140] Environment Strategic Business Unit (2023)
[141] Forest Practices Authority (2013); Forest Practices Authority (2014a); Forest Practices Authority (2014b); Forest Practices Authority (2016a); Forest Practices Authority (2016b)

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12 Appendices

Appendix A – DCCEEW (28 July 2023) Further information required for preliminary documentation for 38-Lot Subdivision, Ecclestone Road, Riverside, Tasmania (EPBC 2022/09282).

Appendix B – EPBC Act Referral (Submitted August 2022).

Appendix C – North Barker Ecosystem Services (2023) *Ecclestone Road Subdivision: Request for Additional Information EPBC 2022/09828*. 8th June 2023.

Appendix D – Memo from George Walker (Growth Developments) dated 28 September 2023 in relation to the history of the subdivision development.

Appendix E – Letter from Jason Sherriff (Growth Developments) dated 23 October 2023 in relation to items 8.4 and 8.5 of the RFI and the environmental record of the company.

Appendix **F** – Results of consultation with Aboriginal Heritage Tasmania – Aboriginal Heritage Property Search Results and Unanticipated Discovery Plan. December 2025.