



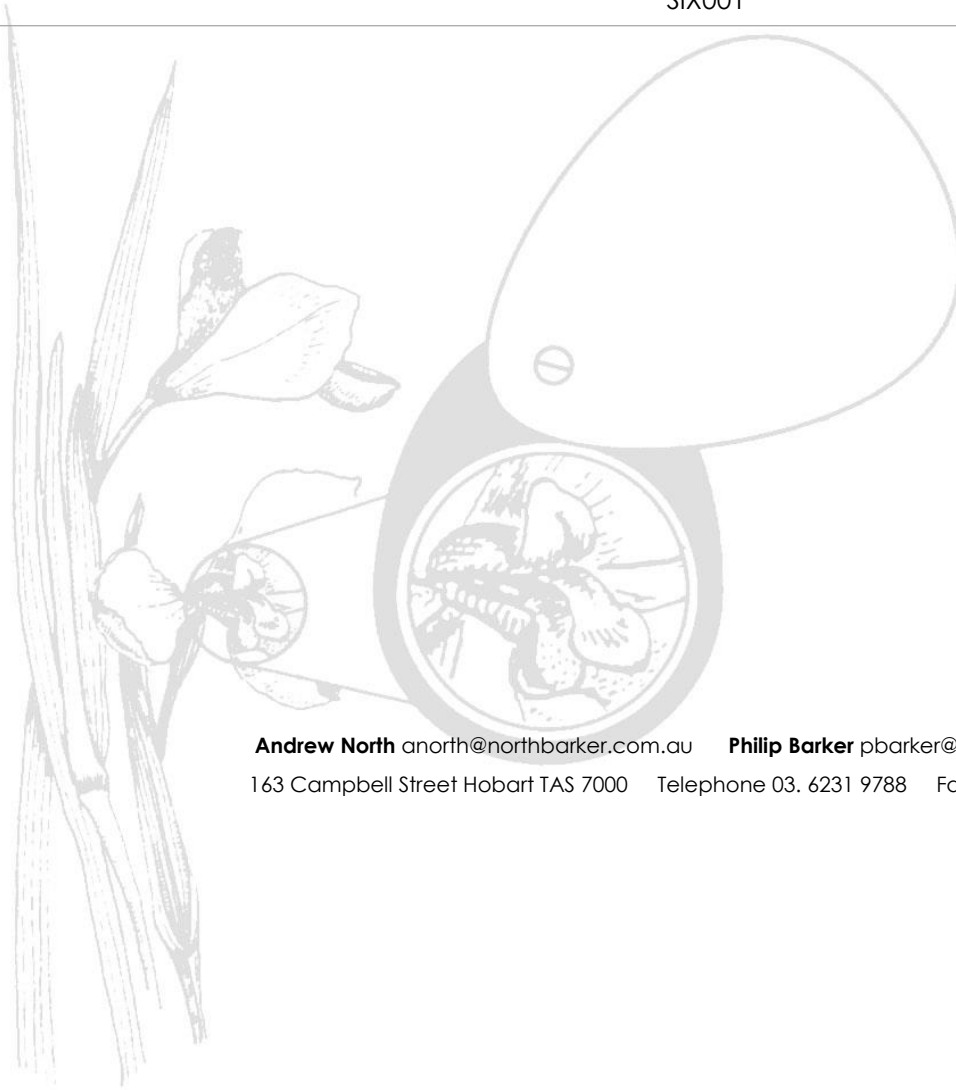
Ecclestone Road subdivision

Natural Values Assessment – Response to Representations Addendum

5TH February 2020

For 6ty°

SIX001

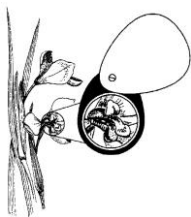


Andrew North anorth@northbarker.com.au **Philip Barker** pbarker@northbarker.com.au
163 Campbell Street Hobart TAS 7000 Telephone 03. 6231 9788 Facsimile 03. 6231 9877

CONTRIBUTORS

Report: Dr Philip Barker

Edits and mapping: Richard White



North Barker Ecosystem Services, 2019- This work is protected under Australian Copyright law. The contents and format of this report cannot be used by anyone for any purpose other than that expressed in the service contract for this report without the written permission of North Barker Ecosystem Services

Contents

1	Introduction	4
1.1	Contextual Framework.....	4
1.1.1	Survey	4
1.1.2	Landscape and land use context	4
1.1.3	Vegetation.....	6
1.2	Threatened fauna.....	7
1.3	Threatened flora	20
1.4	Planning Scheme	21
1.5	Impact.....	23
1.6	Mitigation	23

1 Introduction

A 22-lot subdivision is planned for a portion of a 36 ha lot on Ecclestone Road in Riverside. The development would involve the clearing of native vegetation including threatened flora and potential threatened fauna habitats. The proponent wishes to develop the land further but no plan for further development exists.

In response to advertising of the Development Application representations have been made with a focus on the natural values. Of particular concern is the value of the habitat for threatened native mammals and the disturbance of a eagles nest which was not recorded in the initial natural values assessment.

This Addendum serves to provide the context of the site and the natural values that it supports at the local, regional and state-wide scale. The Addendum reiterates the findings and possible impacts. In doing so it will address the representations. The representations have been grouped under the substantive issues and addressed collectively. Appendices 1 and 2 contain details in this regard. Appendix 1 contains the topics raised consistently in the representations or else are substantive, and in appendix 2 the location of where these are addressed in the report.

Finally, a conservation area is proposed as a mitigatory measure; notably, this addresses a number of the representations and assists in meeting the requirements of the West Tamar Interim Planning Scheme 2013.

1.1 Contextual Framework

1.1.1 Survey

The entire area was considered and traversed but the area proposed for residential development received more intense assessment. The assessment that was undertaken and reported meets the DPIPWE guidelines for Terrestrial Natural Values Impact Assessments. The first was a general assessment in winter and the second a targeted survey for spring flowering plants. The assessment process allows for consideration of the Natural Values Assessment and any subsequent request for further information. There are additional detailed assessments that can be undertaken should they be required. For example, given the recorded presence of Tasmanian devils on the site a pre-clearance survey for dens/burrows may be warranted. Additionally, tree hollows of a size that may support masked owl should be surveyed if they are to be disturbance (including any additional locations of trees raised in the representations).

1.1.2 Landscape and land use context

The lot is 30 ha and is zoned as low density residential. It occurs between the zones of general residential and rural resource. It has no planning scheme overlays on the title.

The land fronts directly to Ecclestone Road. Ecclestone Road (C764) connects the A7 (West Tamar Highway) to the C732 (Bridgenorth Road).

There is a drainage line in the south east of the lot outside of the proposed development area.

Excluding the proposal and within 1 km of the lot, there are 140 ha of native habitat representing 23% of land.

Within 2 km, there are 530 ha of native habitat representing 30% of land. A substantial habitat patch is 1.3 km north and another 1.4 km west in the rural resource zone. A large patch occurs 2.3 km south in the environmental protection zone.

These habitats include the habitats type as the lot on Ecclestone Road.

Within 5 km there are 3300 ha of native habitat representing 36% of the land. The predominant habitat type is the same as is at Ecclestone Road.

The listed proportions of native vegetation are accepted as desirable levels of retention by conservation biologists. This is in the context of the 15% target for reservation of each native vegetation type in Tasmania.

Figure 1 illustrates the developed land and water in red and the remnant native vegetation based on Tasveg within 5 km. 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. 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 (see the conservation area in the Mitigation section below).

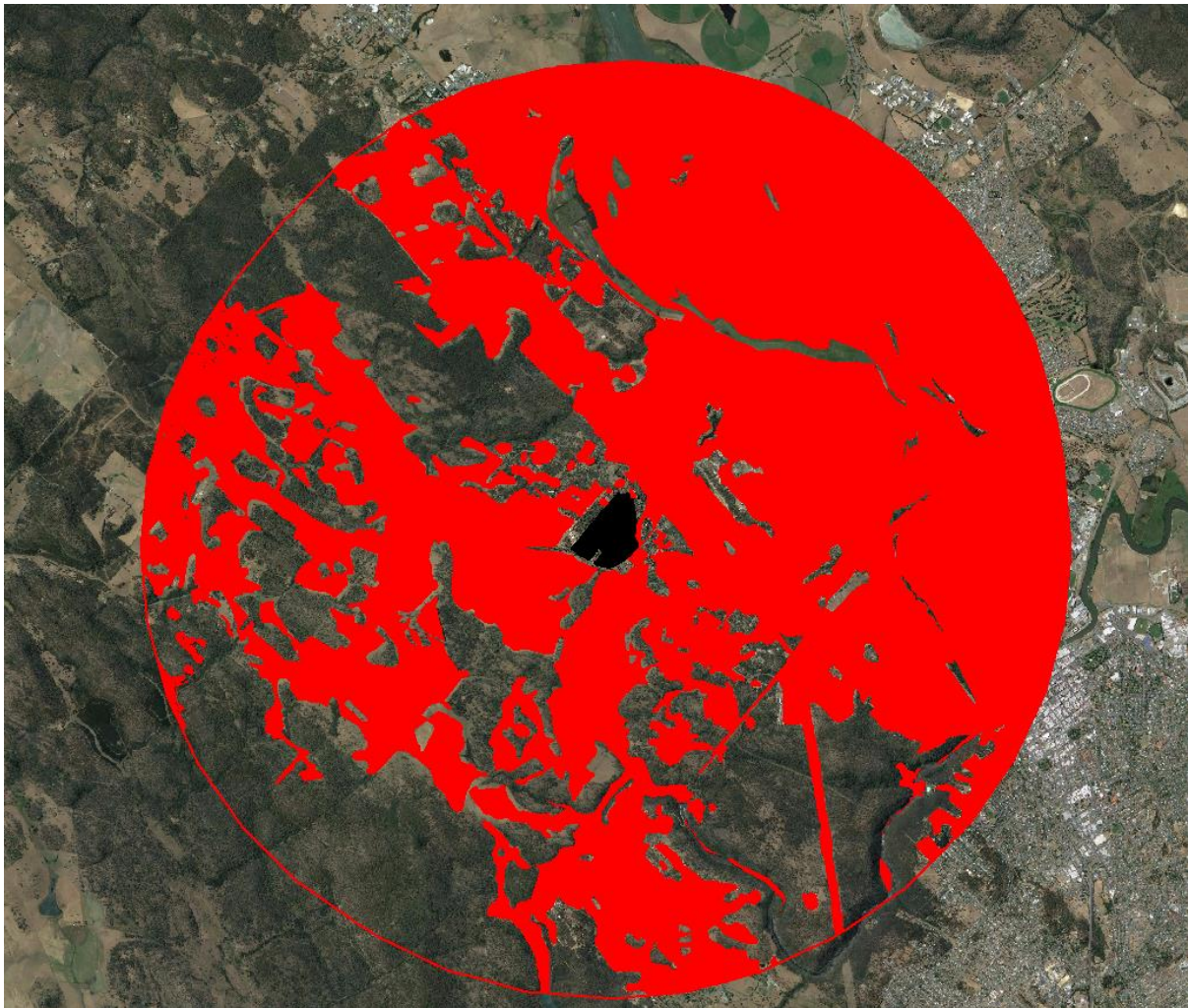


Figure 1: Developed land and water (red) as per TASVEG 3.0 within 5 km of the proposal area (black). The remaining uncoloured areas are native vegetation.

1.1.3 Vegetation

Table 1 indicates the reservation level of the vegetation types in Tasmania. The West Tamar municipality overlaps with two bioregions. The Northern Slopes and the Northern Midlands. The Ecclestone Road proposal is just in the northern midlands. To provide a municipal context Table 1 provide data for both bioregions.

DAD covers more than 50% of the land in the project area. It is well reserved at the state level and in all bioregions. The impact of the proposal is confined to the DAD, bar 0.1 ha in NBA.

DOV is listed as endangered on the EPBC and as threatened on the NCA. The area is not affected by the proposal.

DVG is a very extensive dry forest type with more than 15 000 ha reserved.

NBA is not precisely mapped across its range. This is generally due to it being so closely related to DVG and often derived from it. This forest is largely excluded from the proposal.

Equivalent described floristic community ¹² Equivalent Mapped Community³	State Wide Extent / NRS Reservation Status ⁴⁵	Northern Slopes Extent / Reservation Status	Northern Midlands Extent / Reservation Status
<i>E. amygdalina on dolerite</i>			
DAD 23.5 ha	167,654 ha mapped 53,240 ha reserved 21% of original reserved	10,800 ha mapped 3,100 ha reserved 20 % of original reserved	19,700 ha mapped 1,520 ha reserved 6.5% of original reserved
<i>E. ovata shrubby forest</i>			
DOV 1.2 ha	17,750 ha mapped 4,465 ha reserved 2.5% reserved	3950ha mapped 877ha reserved 2.6% reserved	2,200 ha mapped 200 ha reserved 0.3% reserved
<i>E. viminalis grassy forest</i>			
DVG 0.9 ha	109,616 ha mapped 15,000 ha reserved 6% reserved	984 ha mapped 97 ha reserved 9% reserved	27,400 ha mapped 4,228 ha reserved 5% reserved

¹ Kirkpatrick *et al* 1995.

² Harris and Kitchener 2005

³ Harris and Kitchener 2005

⁴ DPIPW 2014 Tasveg 3 National Reserve System.

⁵ Knight 2012 (forest)

Equivalent described floristic community ¹² Equivalent Mapped Community ³	State Wide Extent / NRS Reservation Status ⁴⁵	Northern Slopes Extent / Reservation Status	Northern Midlands Extent / Reservation Status
<i>Bursaria Acacia woodland</i>			
NBA 11.4 ha	16,600 ha mapped 1162 ha reserved 7%	500 ha mapped 10 ha reserved 2%	3,400 ha mapped 100 ha reserved 4%

1.2 Threatened fauna

The DA indicated that it is possible that eastern-barred bandicoot eastern quoll, Tasmanian devil, masked owl, and Tasmanian wedge-tailed eagle occur in the study area. See Appendix 3 for maps showing the distribution of each species at the state and regional scale. None of these species has habitat listed on the EPBC critical habitat register.

Whether the land acts as a source or a sink for flora and fauna is likely scale dependant. For example, it is unlikely that plant propagules such as those of *Brunonia australis* will arrive at the site or spread from it naturally in its current landscape context and so it is neither a source nor a sink. For the Tasmanian devil, even if it were to den on the site and produce young from time to time it may still be dependent on immigration to be sustained in the face of disease, road deaths or persecution in the existing landscape context.

The importance of the site for fauna is a difficult and scale-dependant judgement. The data presented here and in the vegetation assessment below indicate that the predominant habitat type is common and well reserved across the State and Northern Slopes bioregion. At a local scale any remnant habitat supports native fauna more than the non native habitat. At the landscape and land use planning scale it is inevitable that the last remnant to be developed in an area identified for residential development is ultimately the most important in this context.

Eastern barred bandicoot (EBB)

Context

The habitat was reported as suitable and representations indicate observations on the land. A record was entered on the DPIPW Natural Values Atlas (NVA) on 4/11/2019. Of the nearly 3000 records on the DPIPW Natural Values Atlas (NVA) (Appendix 1) most are associated with roadkill observations.

The species is listed as vulnerable in Tasmania. The EPBC Conservation Advice describes the range, ecology and the conservation status of the EBB. The EBB is widely distributed in Tasmania but has declined in the Central Midlands portion of its natural range. This is likely to have been caused by over clearance of its habitat in a landscape with too few remnants of viable size.

Despite its EPBC listing the EBB is generally considered to be secure in Tasmania due to relative and increasing abundance in parts of its large range being sustained by its utilisation of modified vegetation.

Despite agriculture and residential development being reported as threats to the EBB it has become abundant in the south east and spread elsewhere in response to vegetation modification for these purposes. This is not to say that habitat loss does not pose a threat but modification of previously unsuitable habitat does present new habitat opportunities. The EBB often uses cover of native vegetation for protection and forages in gardens such as those of the surrounding low density residential development.

Findings

Grassy habitat was found to be patchy and widespread on the land. Good cover is present that could be utilised for breeding and judged likely to support low numbers. The EBB often uses cover of native vegetation for protection and forages in gardens such as those of the surrounding low-density residential development.

Impact

The modification of the habitat at Ecclestone Rd to a structure similar to the residential development around it is likely to allow the EBB to persist albeit with fewer opportunities for cover.

It is also highly likely to persist in the secure reserve at Trevallyn NRA and in the extensive areas such as Grassy Hut Tier and other hill country where development pressure is low.

Eastern quoll (EQ)

Context

There are more than 4700 records of the EQ on the DPI/PWE natural values database (Appendix 1). The EQ is listed as endangered on the EPBC. 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.

The habitat availability in the region is similar to the EBB 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.

Findings

The DA indicates that the habitat for the quoll is widespread on the land and that the impact is likely to result in displacement. However, the EQ is not territorial and so adjustment of the population to carrying capacity will not be affected by competition for territories.

Spotted tailed quoll (STQ)

Context

There are more than 2000 records of the STQ on the NVA (Appendix 1). There are estimated to be 3,000-4,000 animals in Tasmania with a density of about 1 animal per 3 km² in core habitat⁶. The habitat within its range is very broad and includes wet and dry forests, heaths and scrubs. The species requires forested areas with suitable shelter sites such as hollow logs or rocky caverns as denning habitat. This is distinguished from foraging habitat, which can include non-

⁶ Meander Dam Mitigation Strategy for spotted-tailed quoll (North Barker 2003).

forest and regenerating forest areas adjacent to suitable denning habitat⁷. The best foraging habitat is characterised by an abundance of mammalian prey species, which tends to be on fertile land and is often associated with riparian or alluvial sites.

The key sites and important populations are illustrated in Figure 2.

They are known to have a large home range⁸. Home ranges extend to more than 1,500 ha of continuous suitable habitat for a male and less for a female spotted-tailed quoll. Female home ranges vary in size depending on habitat productivity. They may have an virtually exclusive range from 100 – 500 ha or so. Males however, traverse the landscape and ranges overlap.

Continuous habitat patches (denning and hunting) totalling more than 15,000 ha may be required to sustain a minimum viable population of 50 spotted-tailed quoll based on an exclusive home range of 300 ha⁹.

The Listing Advice indicates that the predominant threat identified as a cause of population decline is habitat loss.

Findings

The DA indicates that the habitat for the quoll is widespread on the land and a representation indicated observing a footprint. It is not known if the habitat is part of a female home range. A suitable den opportunity is more likely to be on the balance of land rather than in the open forest of the residential proposal due to the presence of high protective cover on the balance.

Impact

The loss of 20 ha of open forest is unlikely to result in the loss of a den because the balance of land is better suited to denning. If the land is within the range of a female quoll then the potential impact is a reduction in habitat quality within the home range of a single female.

Male quolls are likely to continue to traverse the site.

⁷ Mallick 2003

⁸ Tasmania's Threatened fauna handbook, Bryant & Jackson, 1999

⁹ PLUC 1996

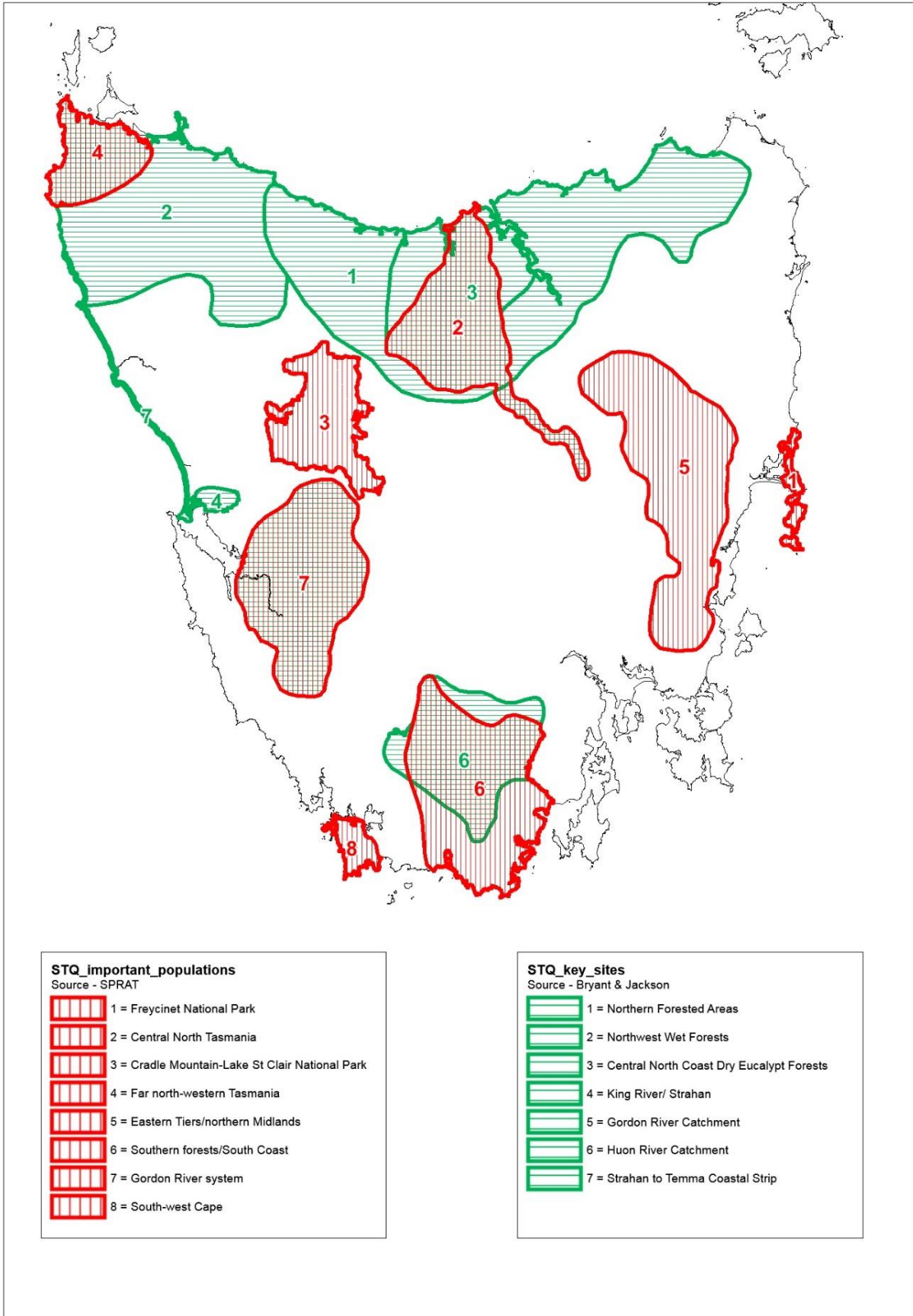


Figure 2: Distribution of key and important sites for the spotted-tailed quoll.

Tasmanian devil (TD)

Context

There are more than 9000 records of the TD on the DPIPWE natural values database (Appendix 1). The TD is listed as endangered on the EPBC. The Conservation Advice indicates that the predominant threat identified as a cause of Devil Facial Tumour Disease. One effect of the disease is to reduce the density of devils very substantially. One response to the disease has been females breeding younger and another has been an immune response to combat the disease naturally. This response has been modelled and the majority of scenarios modelled (57%) suggest that the disease will fade away while 22% indicate that the TD will co-exist with the disease (Hamede 2019).

It is also notable that the natural population size of the TD may have been similar to the population size after TFD spread through most of the range, roughly 15- 20 000 animals. There was however very significant population growth before disease entered the population in the 1990's to perhaps 130 000 animals. This growth was likely to be in response to agricultural practices promoting abundant prey, particularly wallabies as well as carrion from dead livestock.

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 entirely consistent with the DPIPWE Tasmanian Devil Management Advice for known dens in medium sized development footprints. The FPA Tasmanian devil Tech note identifies clusters of devil dens that are more than 1 km from other devil dens as significant.

The DPIPWE guidelines allow for the decommissioning of TD dens to facilitate developments. This protocol reflects PCABs confidence that an alternative den can be found and utilised with no significant impact on the population.

Findings

The DA indicates that the habitat for the devil is suitable for foraging. While no suitable den structures were observed, 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. It is 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.

The area on the land most likely to support dens is dominated by DOV forest that cannot be developed.

Impact

The proposal may reduce carrying capacity of the habitat in the vicinity if prey species are reduced in home ranges. This may result in displacement of adults. However, the devil is not particularly territorial, indicated by significant overlap in home ranges. It is more likely that devils would be displaced and the population would adjust to carrying capacity over a generation or two. If the carrying capacity is currently not met due to the effects of DFTD then displacement will have little to no effect on competition. The increasing application of irrigation water in the region will result in higher prey densities and this may support the population of devils.

An increase in road traffic due to residential development may result in higher risk of devils and other fauna being killed on the road. There is affective mitigation for this through speed control but the efficacy on Ecclestone road is not known. Reduced traffic speed is an effective

measure in mitigating road kill due to existing traffic. Additional local traffic such as generated by the proposal is likely to travel slower than the existing through traffic.

The relative increase in through traffic on Ecclestone road is likely to be small. The increase in local traffic will reflect the number of vehicles residing at and services the 22-lot subdivision. This traffic may travel during the high risk period of dusk but little additional traffic likely to travel near dawn.

Masked Owl

Context

The endemic race of this Australia wide species is widely distributed in Tasmania particularly in lowland dry forests and woodlands but also in the central highlands. It has extensive foraging territories, however is threatened by loss of breeding habitat which are old growth eucalypts with nesting hollows. There are estimated to be between about 500 and 1,300 breeding birds in Tasmania. The highest densities are below 600 m elevation in the east and the north of Tasmania.

The bird has a home range in the order of 2500 ha and within this range 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.

Nest trees are known to occur within forests, at forest edges and as sole paddock trees (NBES pers obs).

Potential habitat is defined by the FPA as trees with a diameter of greater than 100 cm dbh. Significant habitat is trees with hollows > 15 cm diameter.

The habitat is suitable for a perch hunter and its natural diet has been much supplemented by mice and rats. Given its hunting technique open ground provides an advantage because undergrowth provides protection for its prey.

The masked owl is threatened by habitat loss, rural tree decline and paddock tree removal and secondary poisoning by rodenticides.

Findings

Potential habitat was reported from the site and an example of a potentially suitable hollow was presented. Additional trees with hollows are also present and so the site could potentially support a masked owl. No observations have been recorded nor reported from the site. The masked owl has been recorded on the NVA within 1 km.

Impact

The proposal for a 22 lots residential development may result in the loss of a potential nest tree. It is noted that the site supports several potential nest trees (as raised in representations) and potential nest trees are scattered throughout the landscape within the 2500 ha range of a masked owl.

Wedge-tailed eagle

Context

There is no Conservation advice or current Recovery Plan for this species.

The wedge-tailed eagle in Tasmania is an endemic subspecies. Adults are resident, highly territorial and have very large home ranges. The home ranges vary in size depending on the productivity of the landscape. Although considered to be widespread but uncommon at the

time of European settlement, the breeding success has decreased to a point where it is now considered that fewer than 100 pairs are successful at breeding each year¹⁰.

Wedge-tailed eagles nest in a range of native forests. It nests almost exclusively in mature eucalypts because they need to be large to be capable of supporting their nests. Nests can be developed over many years of use and grow to over 2 m in diameter. The eagles typically choose trees in relatively sheltered sites for locating their nests. Territories can contain multiple nests and up to five alternative nests have been located. Nests within a territory are usually close to each other but may be up to 1 km apart where habitat is locally restricted.

Wedge-tailed eagles prey and scavenge on a wide variety of fauna including fish, reptiles, birds and mammals.

The main threat to the species is the continuing decline in productivity as a result of disturbance of breeding birds and loss of nesting habitat¹¹. High levels of unnatural mortality because of persecution (illegal shooting, trapping and poisoning); electrocution and collision (with powerlines, vehicles, fences and wind turbines) have led to a reduction in the mean age of the population, resulting in a reduction in breeding success¹². They are sensitive to disturbance during the breeding season, which occurs between August and January.

Tasmania supports more than 400 territories, and this is likely to be carrying capacity. A floating population of young birds exists among the breeding population. These floaters replace or displace dead or older birds.

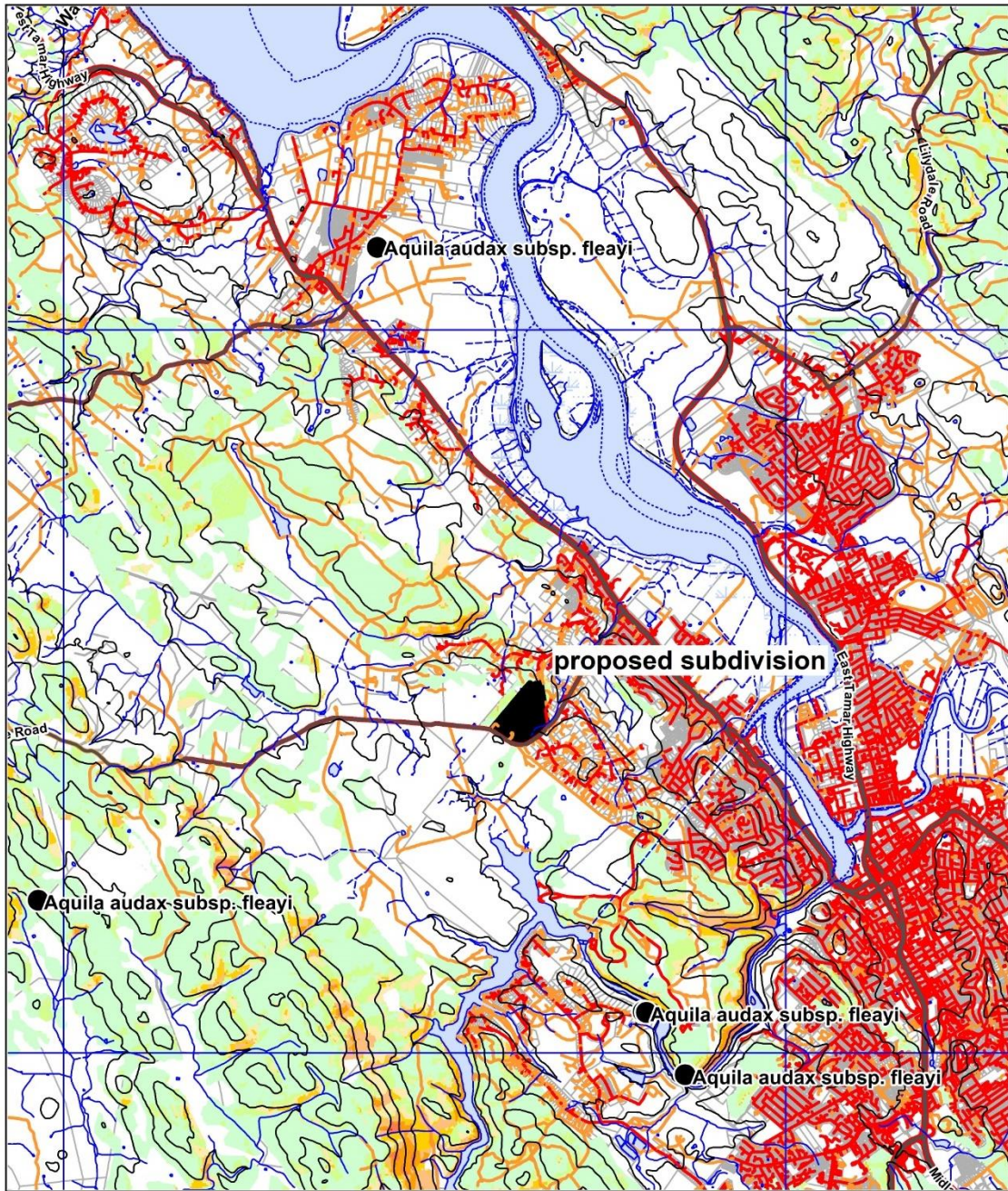
The likelihood of forest to support an eagle's nest has been modelled by the Forest Practices Authority (2013). In the regulatory environment including the DPIPWE guidelines and eagle nest search is a requirement for land categorized in the model as category 4 and above. The model is illustrated in Figures 3 and 4. The higher probability habitat (4 and above) is most common on the slopes to the south west and in the Trevallyan State Reserve. Known eagles nests are also illustrated.

Across all habitats breeding success is around 60% which is influenced by weather events, abandonment of the nest and young due to disturbance or due to insufficient prey etc.

¹⁰ B. Brown *pers. com.*

¹¹ Threatened Species Section 2006

¹² Threatened Species Section 2006



Wedge-tailed eagle nesting habitat
 Supplied by FPA 20/6/2013; (by GRIDCODE)

- 8 to 9 highest quality habitat
- 7 to 8
- 6 to 7
- 5 to 6
- 4 to 5
- 3 to 4
- 2 to 3
- 0 to 2

0 1,600
 metres

Base data from theLIST, © State of Tasmania
 Datum: GDA94, AHD Grid: MGA Zone 55



Figure 3. Eagle nest habitat model for the landscape

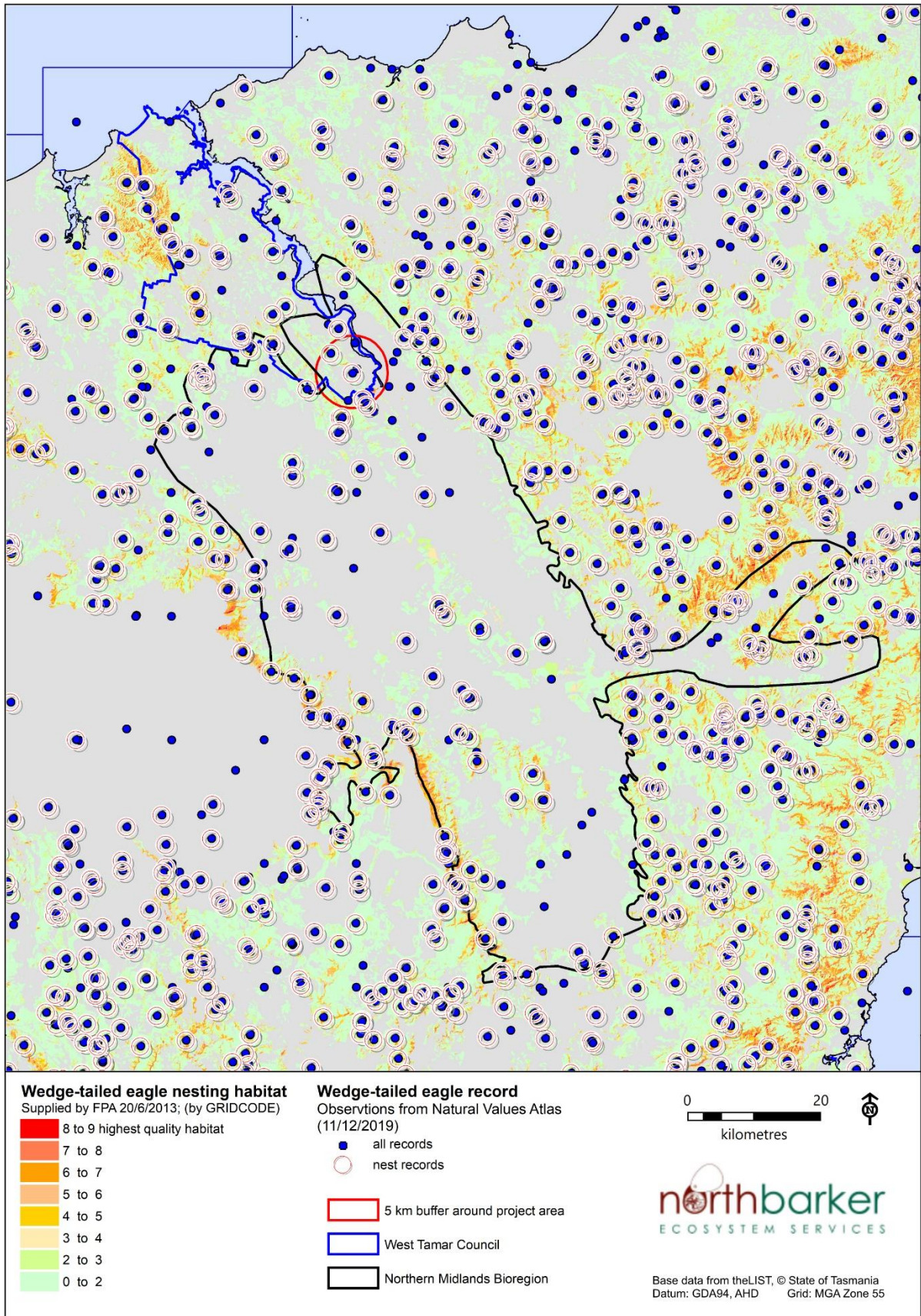


Figure 4 Eagle nest habitat model for the bioregion

Findings

A single nest has been located in a relatively small tree (DBH ~70 cm) in the south east of the study area. The nest was reported by a local resident and was not recorded earlier in 2018 during the NBES survey. Two experts have examined photographs and independently aged it at between a few months and a year, two at the most. This was determined by the lack of compression of nest material and leaves present throughout the structure. These tend to fall away with age. Plates 1 and 2 show the foliage and lack of compression as well as a sticks below which appear to have recently fallen away during construction.

The eagle nest model in Figure 5 below indicates that the habitat on the land is 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 NVA (DPIPWE) 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 are pushed into marginal or suboptimal habitats through competition with the dominant animals. So prime territories are favoured and suboptimal sites occupied by less fit individuals. It has not been determined if the nest was successful this year but an assessment will be undertaken.

Impact

The proposal would result in the nest being 170 m from 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. The increased activity on the land may result in lower success than expected in a well protected site. The nest is unlikely to have being utilized successfully to date and so the impact can not be judged against previous success.



Plate 1: Eagle nest at Ecclestone Road



Plate 2: Eagle nest at Ecclestone Road

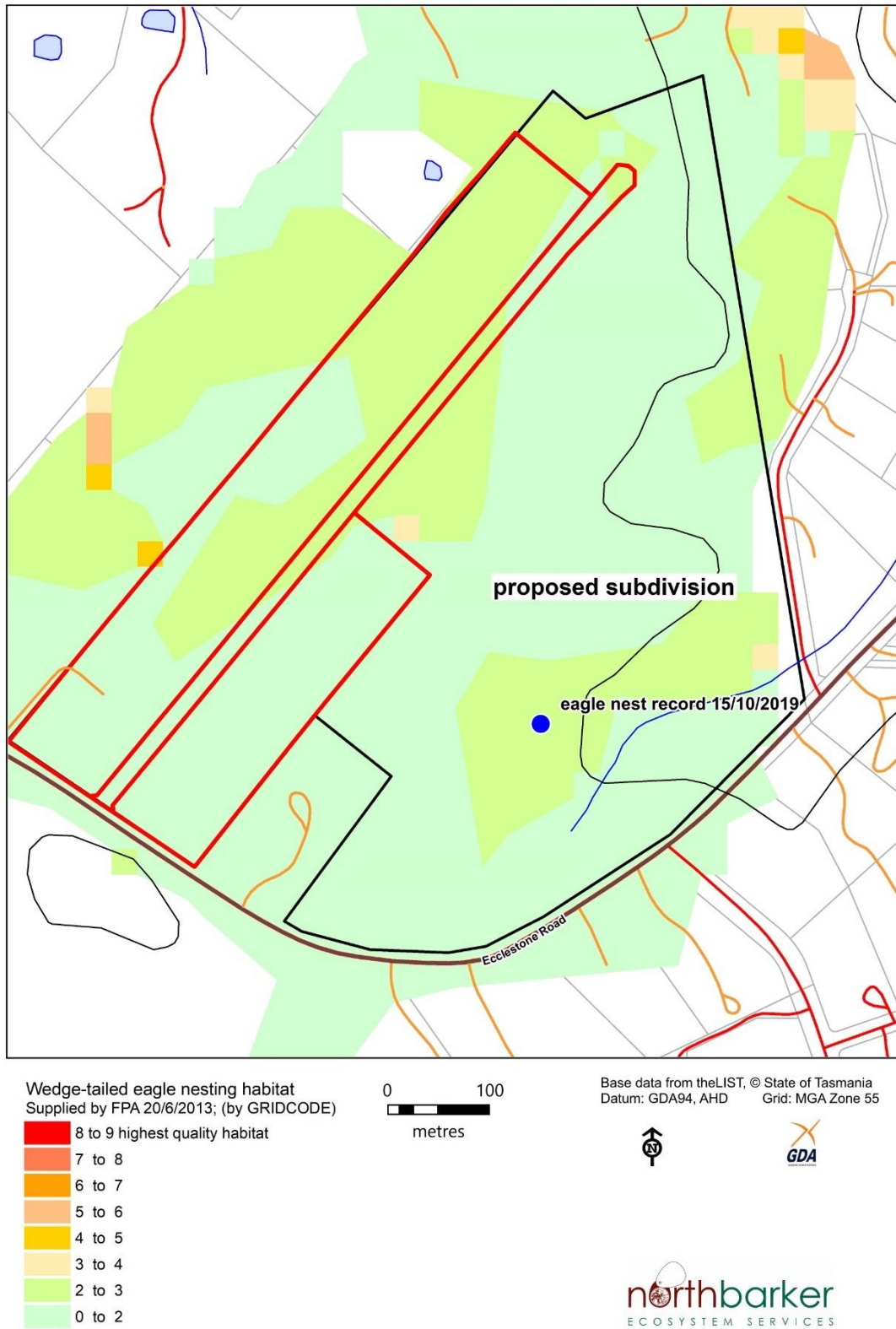


Figure 5. Eagle nest habitat model for the land

Grey goshawk

Context

The Tasmanian morph of the grey goshawk (*Accipiter novaehollandiae*) is exclusively white in colour. It is typically associated with rainforest, wet forest and swamp forests with a preference for nesting in blackwoods, often in riparian situations. Nest sites are often, although not exclusively, reused in following seasons. There are only approximately 100 known nesting pairs in Tasmania. Blackwood swamp forest, mature wet forest and stream side blackwood forest in the north west has been identified as a key area for the grey goshawk¹³. The distribution of the goshawk is illustrated in Appendix 2.

Significant habitat for this species is described as high (category 1) and medium (category 2) priority nesting and foraging habitat within the core range; as defined in the FPA Tech Note 12.

The balance of habitat is primarily foraging habitat and categorised as 3. This is based on the structure of the habitat and tree species present. Foraging habitat becomes more important when in near association with nesting habitat.

Findings

No category 1 or 2 habitat was recorded. The DA indicates that the goshawk may forage in the area but closed structure of the melaleuca dominated forest may not be ideal. The potential for nests to occur on the proposed residential lots was deemed low. The records reported as nearby in the DA confirm its potential for the bird to be present from time to time foraging.

Impact

The residential proposal will not impact on nesting habitat. It will not impact of category 3 foraging habitat. The forest on the proposed lots is unlikely to contribute substantively to sustaining goshawk breeding in the vicinity.

Chaostola skipper

The skipper has been listed as endangered. There are 75 records from the north east to the south of Hobart. The skipper is dependent on the host plants of *Gahnia radula* and *G. microstachya*. Both of these are extremely common in eastern Tasmania but records of the skipper are relatively rare. Recent survey has however extended the range and found it to be more common than previously thought¹⁴. It is likely that its apparent rarity is in part due to a lack of survey.

Nevertheless *Gahnia* is common on parts of the land often forming dense swards. There are however no records of the skipper within 5 km of the site, nor west of the Tamar. The closest record is east of Bridport. On this basis no targeted search was undertaken.

The recent survey recommendations are not on the DPIW or EPBC websites and although possibly being on the FPA website a few months before survey it was not known to us at the time.

The habitat should be surveyed for the chaostola skipper.

Green and gold Frog

¹³ Bryant & Jackson 1999

¹⁴ Bell 2018 Forest Practices Authority Report 21.

There is no suitable habitat within the area of the residential development. It is conceivable that the frog occurs from time to time in association with the creek in the south east but unlikely because it is a basking frog that prefers open water and open ground. Frogs do migrate from suitable habitat in wet years but generally only colonise similar core habitats.

Threatened flora

1.3 Threatened flora

Brunonia australis

Context

Brunonia is the only genus in the family Brunoniaceae. It was listed as vulnerable under the Tasmanian TSPA 1995 but has been down listed to rare due to its relative abundance and reduced risk. The DPIPWE note sheet indicates that there is debate as to whether this species should be listed due to the large number of populations and the high number of individuals. It is also found on the Australian mainland in all states.

The species is predominantly found in the northern Midlands and Northern Slopes bioregion and as such Ecclestone Road is within its core range. It is generally associated with cenozoic cover sequences which include laterite deposits and gravels from that period.

The species is protected in nine formal reserves including Carr Villa Conservation Area, Henry Somerset Orchid Private Sanctuary, Punchbowl Conservation Area, Lefroy Forest Reserve, Franklin Rivulet Forest Reserve, Trevallyn State Reserve and the Yorktown Historic Site

There are hundreds of records on the NVA. The plants persist in grazing country and is known from degraded landscapes with significant cover of gorse.

The plants are readily identified when flowering but not all plants flower every year and so the small rosette can be overlooked if in low numbers.

Findings.

Ref 11 *Brunonia* was recorded three of the 22 lots: a total of 50 plants in 4 locations. An additional colony has been reported since then along the northern boundary. The abundance is very low in comparison to other locations where 1000's exist in single populations (NBES pers obs).

Impact

The plants exist within residential lots and so are at risk of removal. It is conceivable that they could persist on the lots if the habitat is not converted in a house or garden footprint (see Mitigation section below).

Poa mollis

Context

Poa mollis is widespread in northern and eastern Tasmania. It is listed as rare under the Tasmanian TSPA 1995 There are 369 records on the NVA. It is endemic to Tasmania.

The species is predominantly found in the northern Midlands and the central east and as such Ecclestone Road is within its known range. It is generally associated with dry open areas.

The species is protected in nine formal reserves including numerous sites in the Trevallyn State Reserve, Butlers Ridge Nature Reserve, Buxton River Forest Reserve, Douglas-Apsley National

Park, Hardings Falls Forest Reserve, Meetus Falls Forest Reserve, Pelham West Nature Reserve, St Pauls Regional Reserve and the Wye River State Reserve

The plants are very similar to *Poa rodwayi* but are readily identified by the purple leaf sheaths.

Findings. Three records are reported from the land (one of these was included in the NVA after the NBES surveys). The NBES search was unable to relocate plants at the two sites known at the time of the survey despite considerable effort and repeated sampling of material that superficially looked like *Poa mollis*.

Two of the three records are on proposed lots the third is on land not proposed to be developed.

Impact

The plants that exist within residential lots may be at risk of removal. It is conceivable that they could persist on the lots if the habitat is not converted in a house or garden footprint (see Mitigation section below).

1.4 Planning Scheme

The following reconsiders the standards in the planning scheme. This is considered in the context of the proposed subdivision.

The proposal does not impact a water course and there is no relevant overlay in the planning scheme. The Water Quality Code applies within 30 m of a stream or water course. This is not relevant to the proposal.

E8 - The clearance of native vegetation triggers the Biodiversity Code (E8) of the Scheme. The purpose of the code (E.8.1.1) is to:

- a) *protect, conserve and enhance the region's biodiversity in consideration of the extent, condition and connectivity of critical habitats and priority vegetation communities, and the number and status of vulnerable and threatened species; and*
- b) *ensure that development is carried out in a manner that assists the protection of biodiversity by:*
 - i) *minimising vegetation and habitat loss or degradation; and*
 - ii) *appropriately locating buildings and works; and*
 - iii) *offsetting the loss of vegetation through protection of other areas where appropriate.*

The objective of the Development Standards of the Scheme (E.8.6.1) are to ensure that:

- a) *vegetation identified as having conservation value as habitat has priority for protection and is appropriately managed to protect those values; and*
- b) *the representation and connectivity of vegetation communities is given appropriate protection when considering the impacts of use and development.*

Acceptable Solution A1 to the Standards is:

A1.1 Clearance or disturbance of priority habitat is in accordance with a certified Forest Practices Plan or;

A1.2 Development does not clear or disturb native vegetation within areas identified as priority habitat.

There is no Priority Vegetation overlay in the study area, so the development can meet Acceptable Solution A1.2 and so a certified FPP will not be required.

Acceptable Solution A2 to the Standards is:

A2 Clearance or disturbance of native vegetation is in accordance with a certified Forest Practices Plan.

The development will require the clearance of native vegetation and is exempt from requiring a Forest Practices Plan under the Forest Practices Act so will rely on Performance Criteria P2.1.

P2.1 Clearance or disturbance of native vegetation must be consistent with the purpose of this Code and not unduly compromise the representation of species or vegetation communities of significance in the bioregion having regard to the:

a) quality and extent of the vegetation or habitat affected by the proposal, including the maintenance of species diversity and its value as a wildlife corridor; and

The quality of the vegetation likely to be impacted (mostly DAD and a small area of NBA) is in moderate condition. There are infestations of blackberry on the southern and eastern boundaries, and there is evidence of selective harvesting of wood throughout. Several roads and tracks are also evident, permitting access for the dumping of waste; this is especially evident in the south-west. While there are occasional large trees (>100 cm DBH) in the impact area, most trees are < 80 cm DBH.

The property is surrounded by modified land that has been partially or wholly cleared of native vegetation. The nearest block of native vegetation lies to ~1 km to the north west. Hence, the vegetation in the study area cannot be considered an important corridor.

As discussed above the notion of corridor can be expanded to include a more diffuse "corridor" that includes low density development. No continuous one exists. The proposal would result in a portion of the land mirroring the same diffuse corridor that is adjacent and a portion retained undisturbed (see Mitigation section below).

The implementation of this proposal is unlikely to reduce species diversity in the bioregion.

Accordingly, the development can meet this criterion.

b) means of removal; and

This is unknown but should mirror the standards of the Forest Practices Code.

c) value of riparian vegetation in protecting habitat values; and

The riparian vegetation is in the south-east corner of the property, and this vegetation will not be impacted by this development. The development can therefore meet this criterion.

d) impacts of siting of development (including effluent disposal) and vegetation clearance or excavations, in proximity to habitat or vegetation; and

Within the context of this development there are no alternatives regarding siting as the entire property is entirely native vegetation. The proposed location of the development will minimise the impact but unavoidably impact native vegetation. The native vegetation community (DAD and NBA) is well-represented in the bioregion. The development therefore does not unduly compromise its representation.

e) need for and adequacy of proposed vegetation or habitat management; and

Given the nature of this development and the landscape context a weed management plan would be appropriate to minimise the risk of the introduction and spread of weeds that are present, particularly on the balance lot. The development can provide adequate management.

f) conservation outcomes and long-term security of any offset in accordance with the General Offset Principles for the RMPS, Department of Primary Industries, Parks, Water and Environment.

RMPS and DPIPWE Offset guidelines - The guidelines do not identify a requirement for offsets for any vegetation or species affected by the development of any lot. The guidelines are high level and not species specific.

The potential need for an offset would be a consideration of council and based on the proposed outcome for threatened flora. An offset may not be required.

Rep 13 E9 Water Quality Code – the code applies to use or development of land within 50 m of wetland or waterway. There is only one water way mapped on the LIST. The water way is in the south east on the balance of land and is not affected by the proposal and so the code does not apply.

1.5 Impact

Based on the current proposal and the current knowledge of the matters of National Environmental Significance the impact is not significant. Should further survey result in a significant change to the findings then reconsideration should be given to the significance of the impact.

1.6 Mitigation

The proposed development and an area that may be proposed for development is illustrated in Figure 6. A conservation area is also illustrated and it supports the eagle nest, threatened and poorly reserved vegetation and the creek line. This land will be protected by Conservation Covenant if DPIPWE judge it to be worthy.

The conservation area maintains the minimum distance that already exists between the nest and existing development that was present when it was built.

The habitats of the threatened flora could be managed and protected in Part 5 Agreements.

A weed management plan will be developed to minimise the risk of weeds spreading to and from the development area.

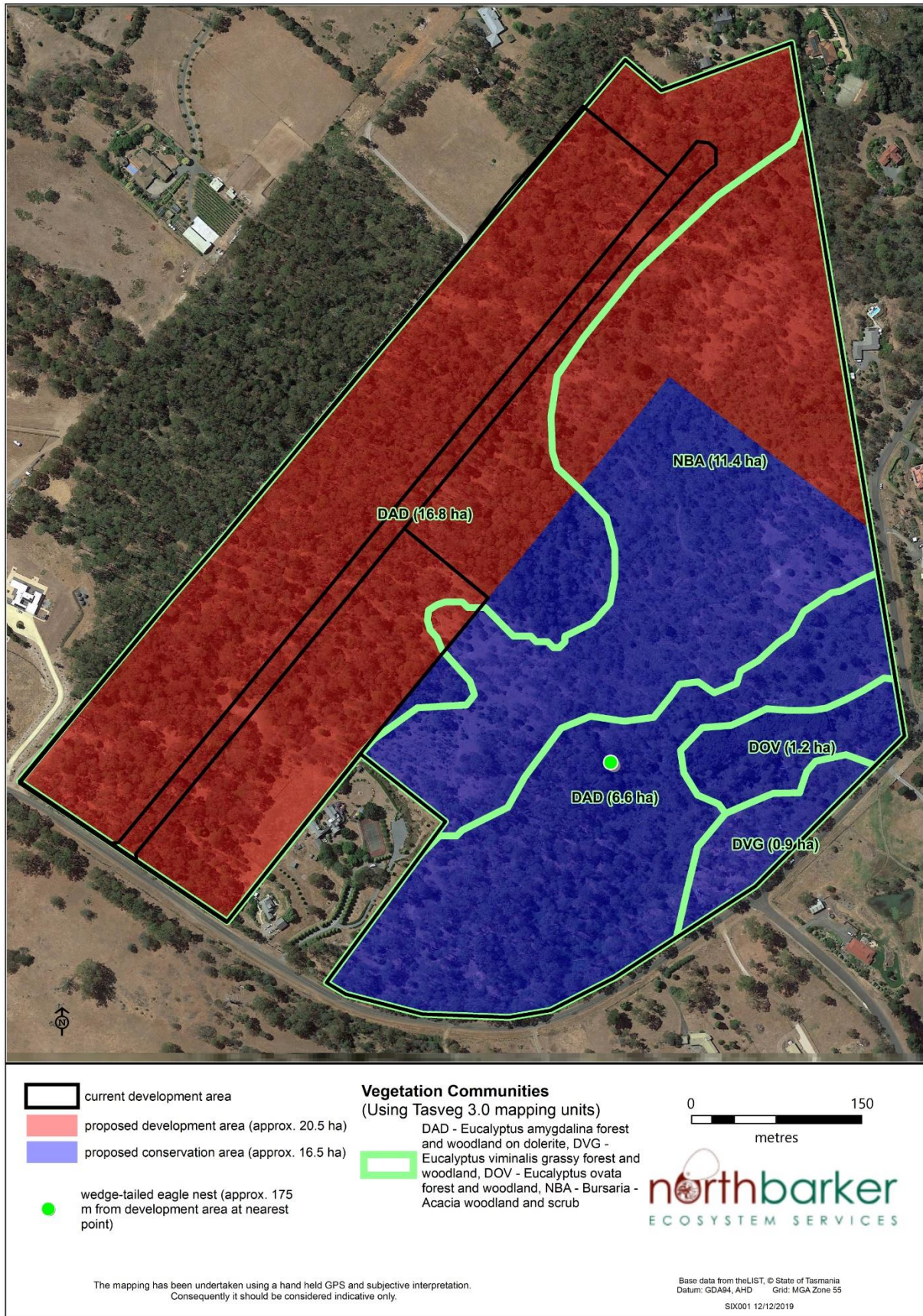


Figure 6. Proposed conservation area

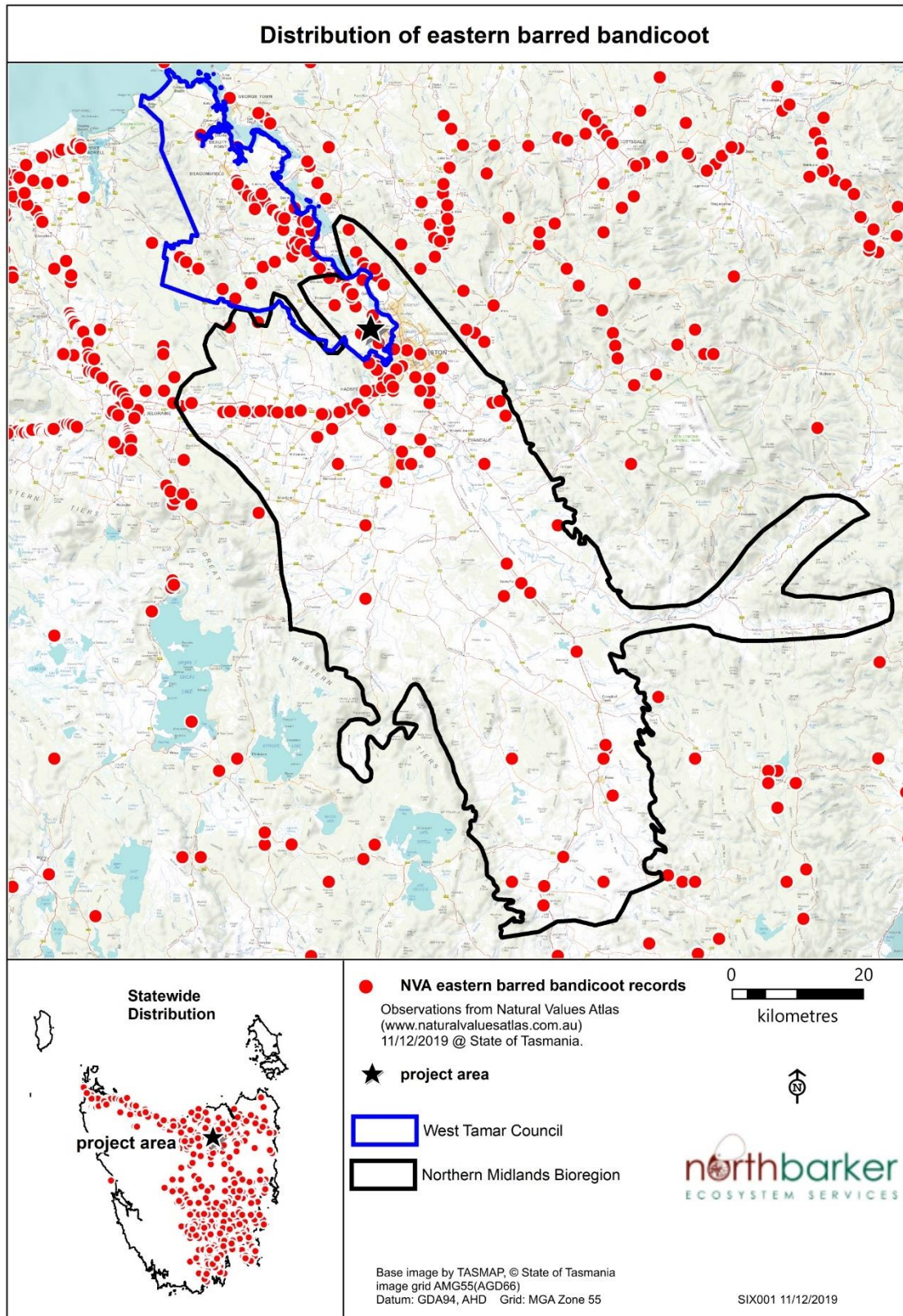
Appendix 1. Substantive topics of representations

- 1) Development to all the land should be considered in the DA, not just the 12 ha for the 22 lots but the full 36 ha.
- 2) No areas within the development have been set aside for conservation and there are no formal provisions to protect the areas outside the BAL areas in each lot (~30 % of each lot).
- 3) The NBES survey was inadequate:
 - only two survey days and these were in spring and winter, so some seasonal species may have been missed
 - only part of the site (the 22 lots) was surveyed
- 4) The site is locally important for fauna – it is the last remnant of bush in the area.
- 5) The site is important/critical habitat for threatened species and should therefore be protected:
 - The site is an important corridor or stepping stone for species moving between areas of priority habitat at New Ecclestone Road and Trevallyan Dam and the Gorge, and for moving in the area in general
 - The site serves as both a corridor and a source site
- 6) The development has not been referred to the Minister as it should be under the EPBCA (as the impact to fauna is significant)
 - There are threatened fauna and flora species present and the impact to these is significant, in particular:
 - Tasmanian devil (recorded on the site by camera trapping),
 - eastern barred bandicoot (recorded on the site by camera trapping),
 - spotted-tail (and eastern?) quoll,
 - wedge-tailed eagle (recorded on the site and nesting within 200 m),
 - masked owl,
 - grey goshawk (recorded on the site),
- 7) The eagle's nest should be managed according to FPA guidelines and buffered accordingly
- 8) Impact has not been duly considered for chaostola skipper – it is hard to find and if not there now the clearing of the lot means no habitat in future.
- 9) Impact has not been considered for green and gold frog
- 10) There are hollow bearing trees that have not been assessed in the application – on lots 11 to 15 there are trees with developed hollows
- 11) The impact to *Brunonia* is underestimated as there are more than what is shown on the side of the driveway on the northern boundary
- 12) The *Poa mollis* was not recorded during the NBES surveys.
- 13) There is a watercourse that passes through lots 11 and 12 and in the north east of the balance so the relevant Code should therefore apply
- 14) The increase in traffic and pets associated with the development will increase the impact on fauna in the area
- 15) The development does not comply with the planning scheme
- 16) The development should require an FPP

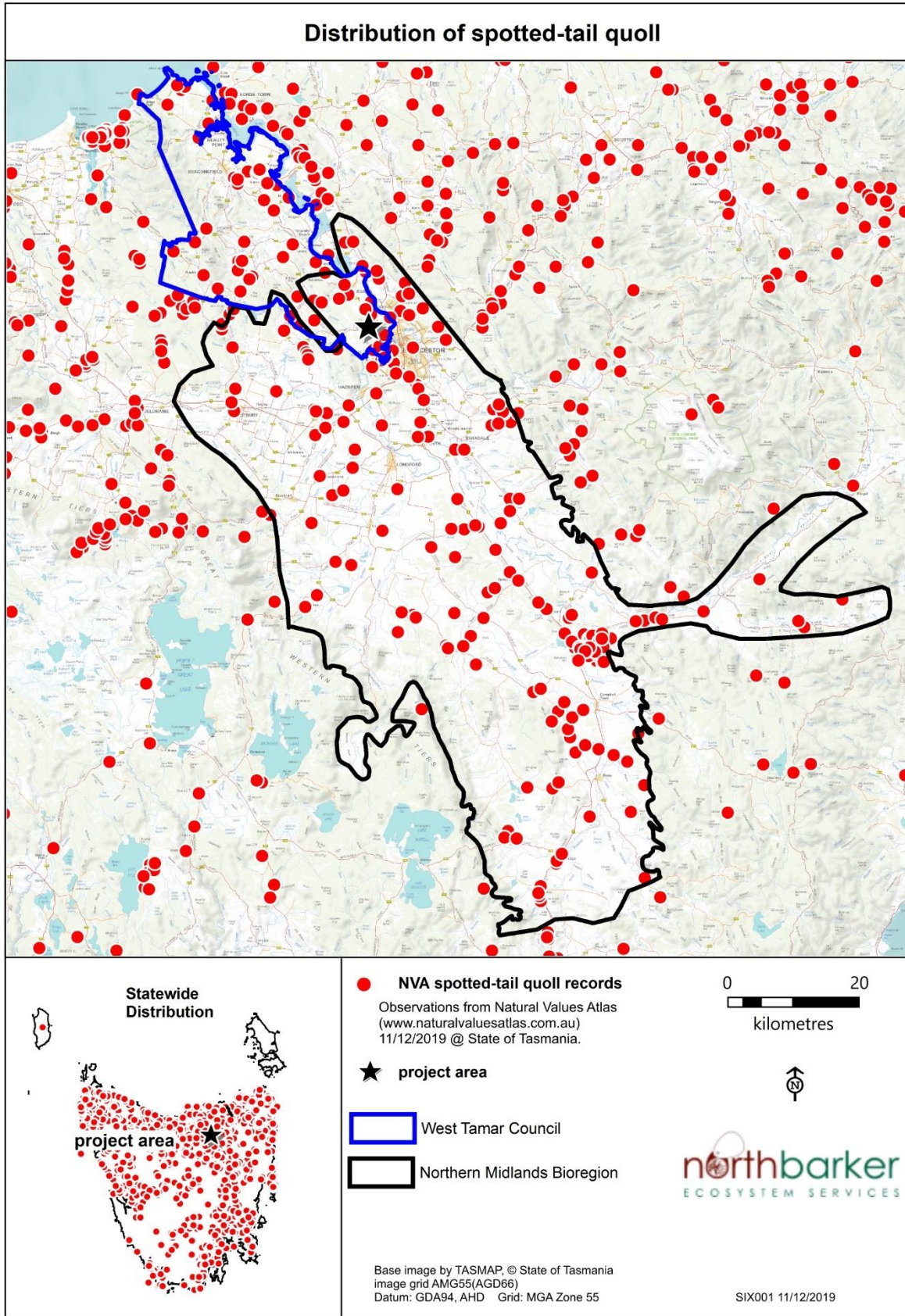
Appendix 2. Table of representation number, topics and location (page) in the Addendum

Representation number	Substantive topic of representations	Report location (page no.)
1,2,4,6,9,11,12,17	1	23-24
3,6,8,12	2	23-24
6,8	3	4
3,4,5,8,10,11,12,13,15,17	4	4-7, 7-19
4,6,9,10,11,12,14,18	5	5, 4-7
1-18	6	7-19, 23
5,6,16	7	12-16
9	8	19
9	9	19-20
11,12,14	10	4,12
5,9,10,11,12,15,16	11	20
5,9,11,12,15,16	12	20-21
12	13	23
6,11	14	11
2,3,4,6,10,11,12	15	21-23
3	16	22

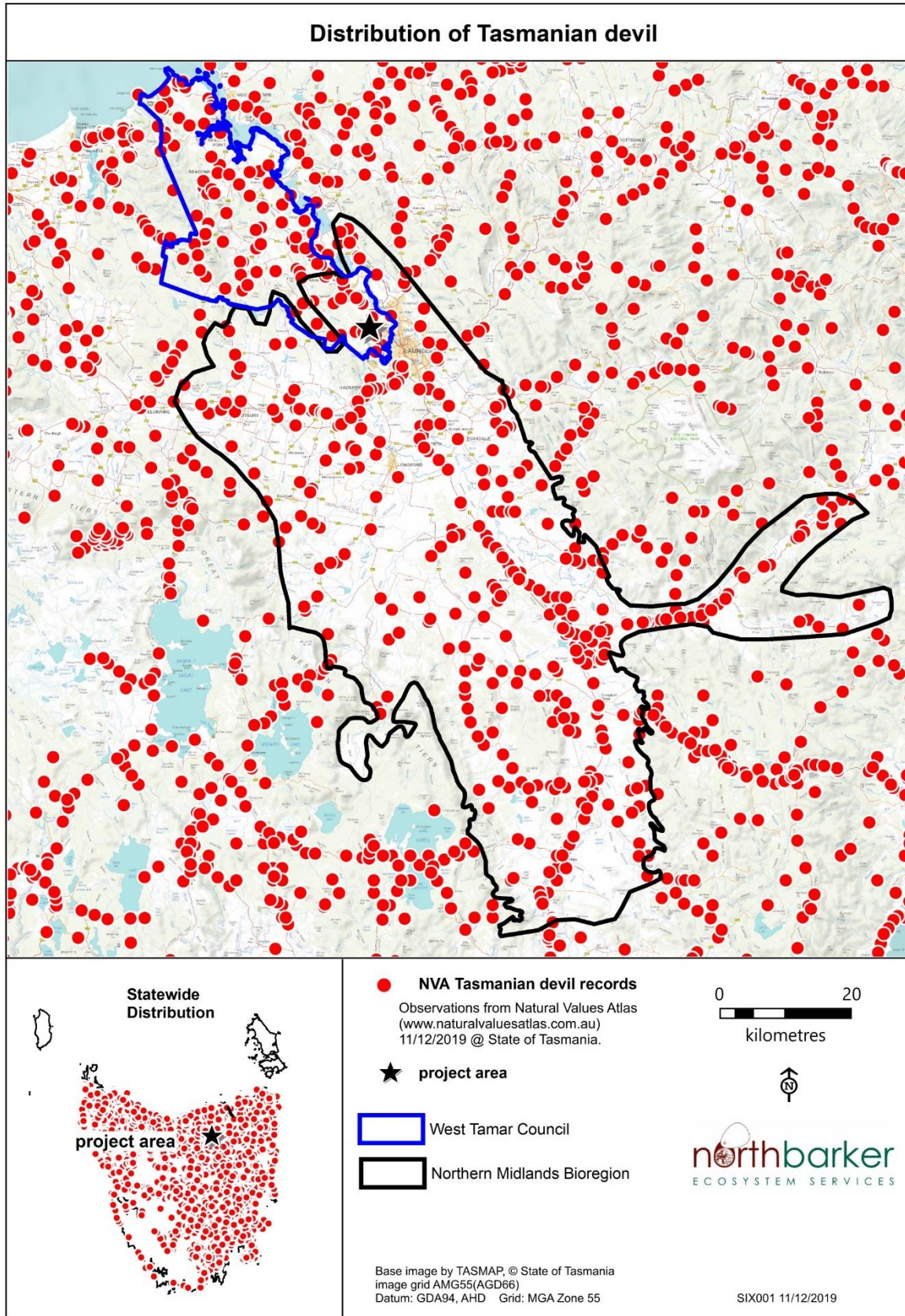
Appendix 3. Natural Values atlas distribution data



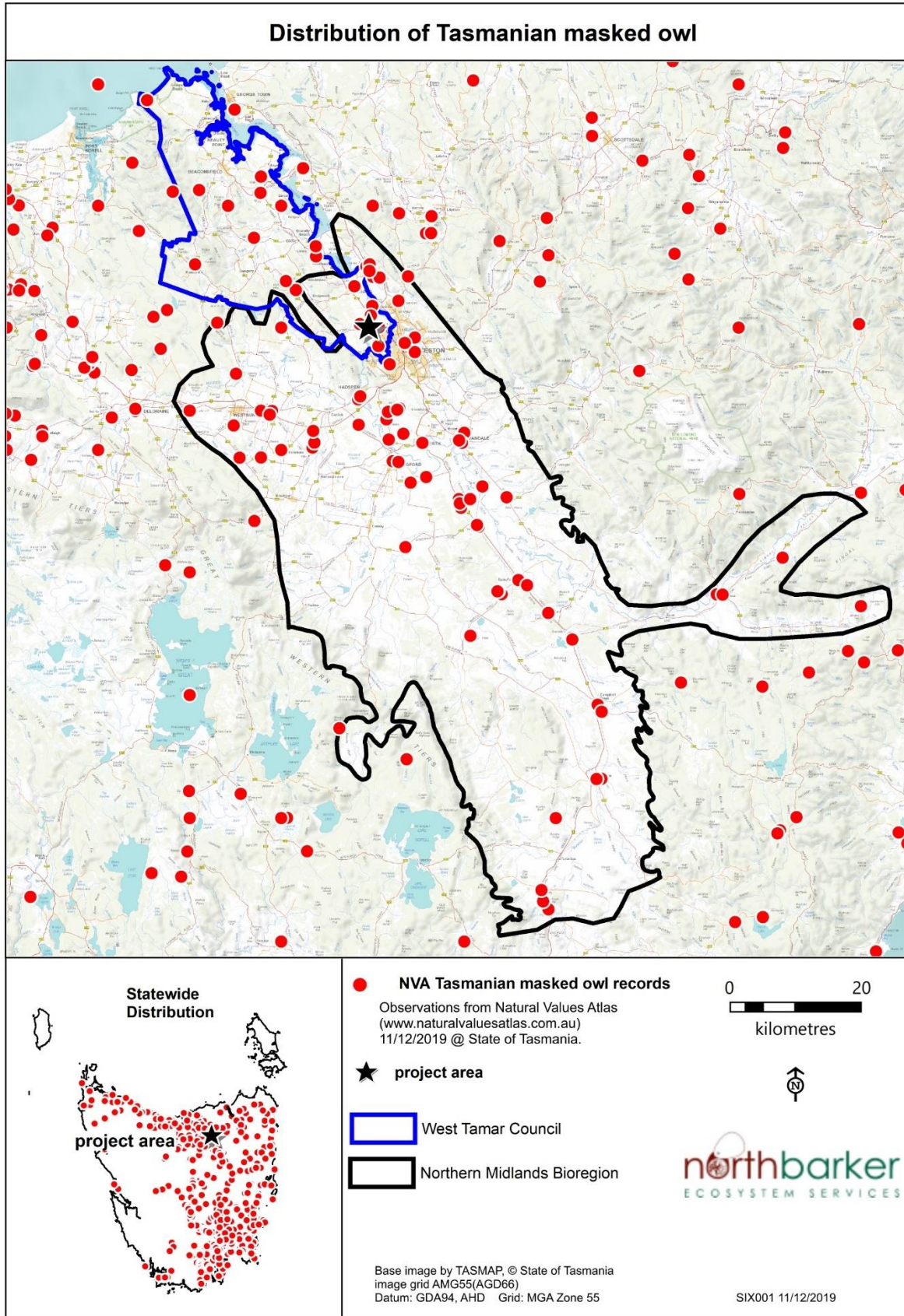
Distribution records of eastern-barred bandicoot



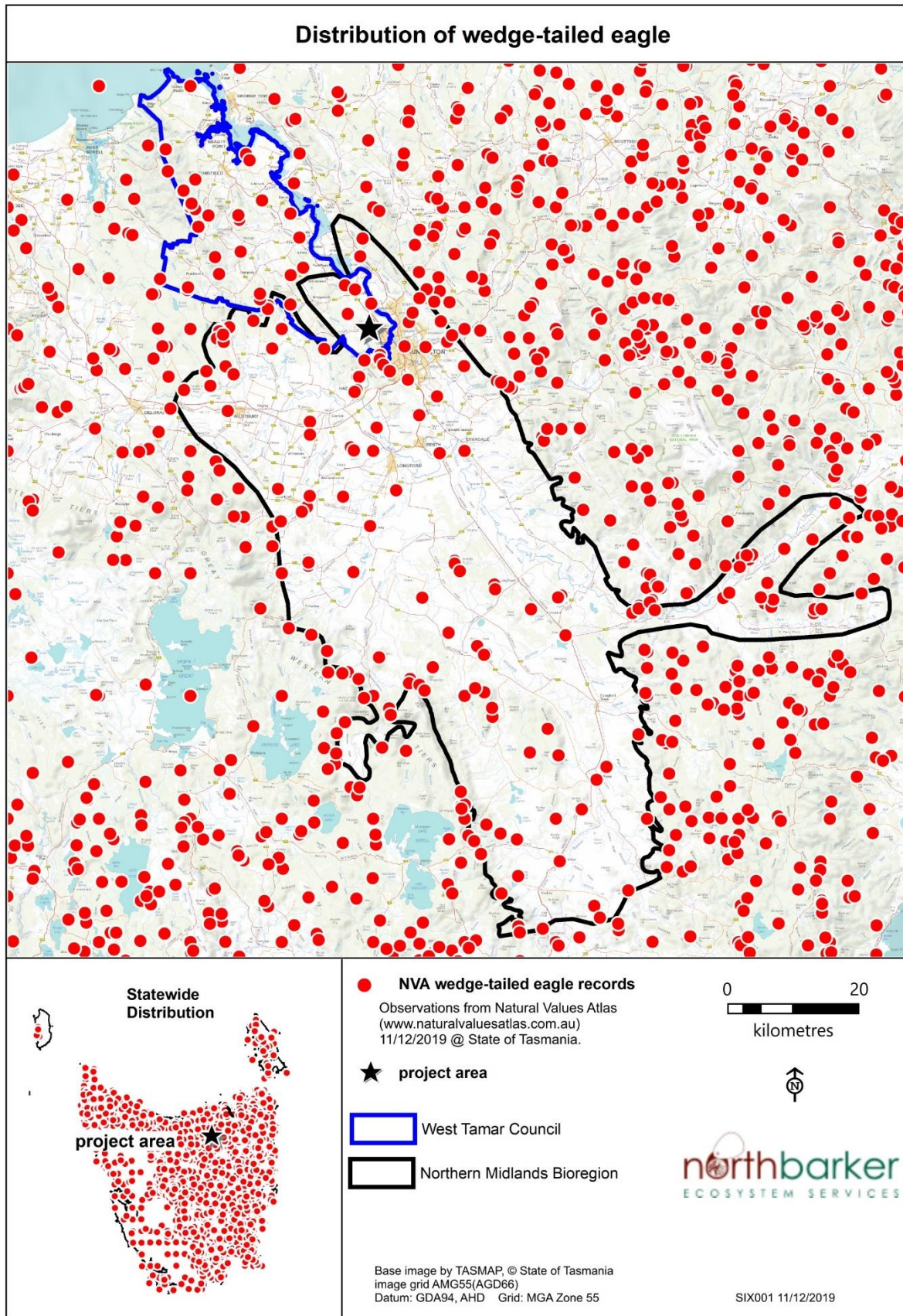
Distribution of records of the spotted-tailed quoll



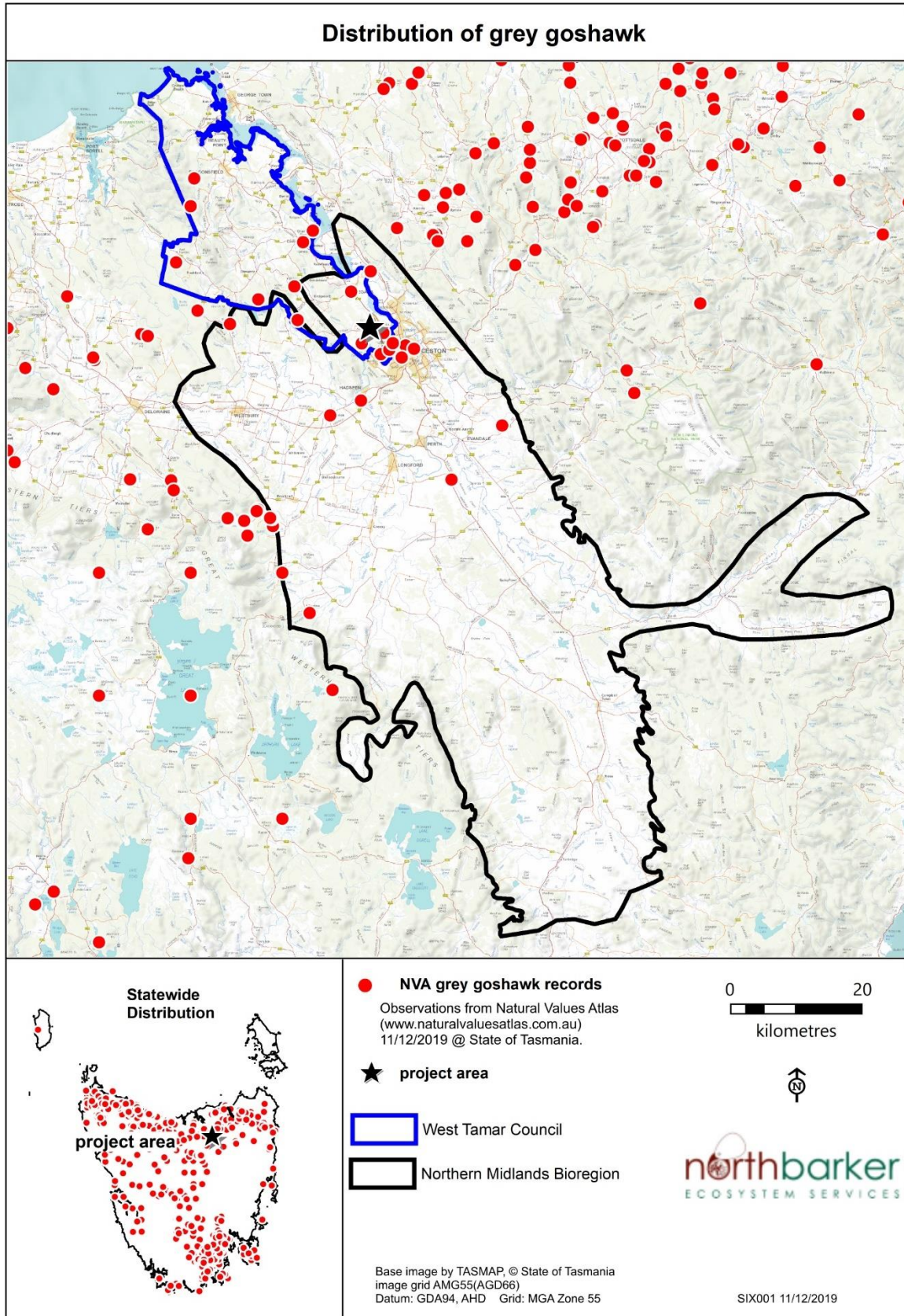
Distribution of records of the tasmanian devil



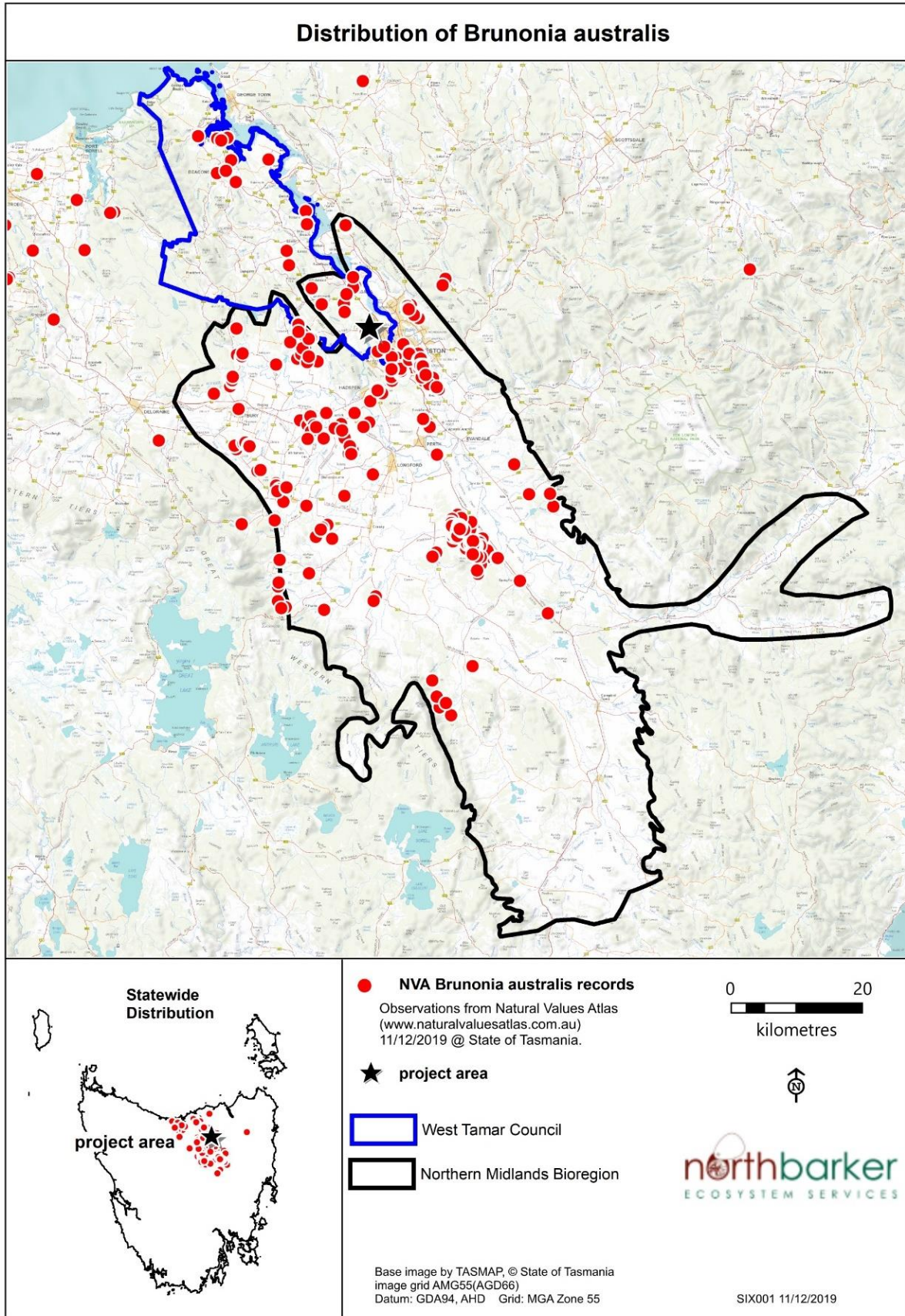
Distribution of records of masked owl



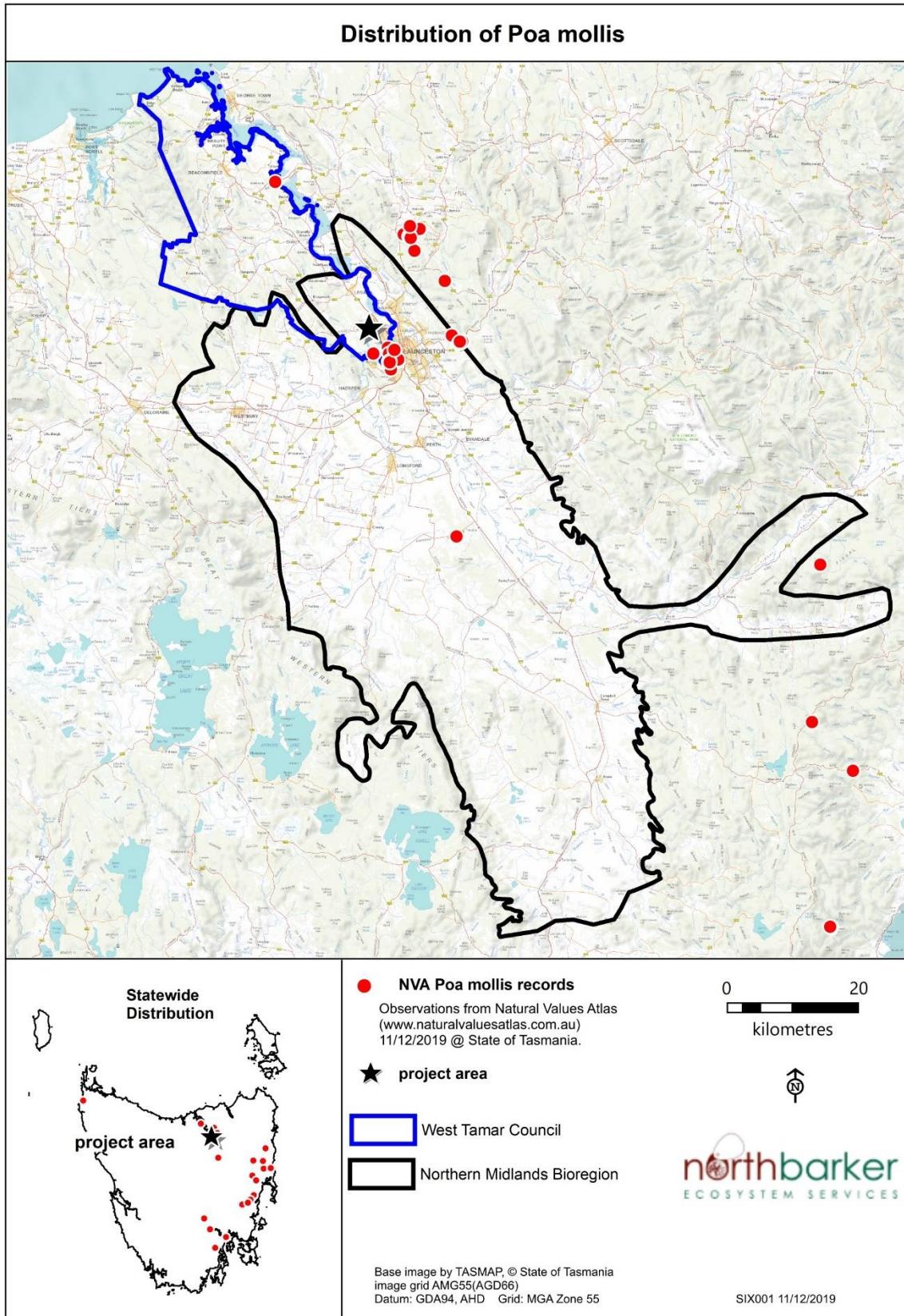
Distribution of records of wedge-tailed eagle



Distribution of records of grey goshawk



Distribution of records of *Brunonia australis*



Distribution of records of *Poa mollis*