Seaton Waterfield/Compost Kings Composting facility

Lovely Banks Road, Melton Mowbray

Natural Values Assessment

04/08/2022

For Bill Cromer OBO Seaton Waterfield

CRO021

163 Campbell Street, Hobart Tasmania, 7000

03 62319788

admin@northbarker.com.au www.northbarker.com.au

Contributors

Project	Compost facility
Location	Lovely Banks Road, Melton Mowbray, southern Tasmania
Proponent	Seaton Waterfield/Compost Kings
NBES job code	CRO021
NBES project manager	Richard White, rwhite@northbarker.com.au
Field surveys	Richard White, Cameron Geeves and Fiona Walsh
Survey Dates	16th June and 4th November 2021
Reporting	Richard White
Mapping	Richard White

Summary and recommendations

A composting facility (approximately 6.70 ha including the access road) is proposed for development at Lovely Banks Road in Tasmania's Southern Midlands council. The area is comprised primarily of degraded grassland with a notable native component, including two threatened plant species. The main findings of two natural values surveys (winter and spring), and the impacts of the development on those values, with recommendations, are as follows:

Vegetation

Three native TASVEG units were recorded at the 22.66 ha site:

- DAS - *Eucalyptus amygdalina* forest and woodland on sandstone (1.29 ha)
- GCL - Lowland grassland complex (19.28 ha)
- GSL - Lowland grassy sedgeland (1.87 ha)

Broadly, the grassland communities are degraded, anthropogenically derived communities with a notable component of introduced species. The project will impact **5.53 ha** of GCL and **1.04 ha** of GSL. Neither of these communities are threatened, and this impact is not considered significant.

RECOMMENDATION

- The works area should be marked in construction plans and on the ground, and all works, vehicles and materials should be confined to the works area.

Threatened flora

Two threatened flora species were recorded during the initial survey and subsequent extension survey:

- ***Leucopogon virgatus* var. *brevifolius*** (TSPA rare): Two plants of the 317 recorded occur in the facility area but additional plants occur just outside the facility area.
- ***Scleranthus fasciculatus*** (TSPA vulnerable): Four of 78 plants recorded occur in the facility area but additional plants occur just outside the facility area.

Although these impacts are not significant, the occurrence of the *L. virgatus var. brevifolius* is important given the paucity of records in the area. Recommendations to reduce impact to threatened flora given their proximity to the facility area are as follows:

RECOMMENDATIONS

- Eight *Leucopogon virgatus var. brevifolius* and four *Scleranthus fasciculatus* at the site occur under two trees near and just outside the southern boundary of the proposed facility (see figure 3 below). Ensure there is no disturbance or development, including subsurface digging, within 15 m of the two trees. This 15 m zone should be delineated as an exclusion zone on plans and on the ground to ensure no inadvertent impact to these trees. This will protect both threatened plant species in this area.
- Fourteen *Scleranthus fasciculatus* are near the western boundary of the proposed facility. There should be no disturbance or development within 5 m of these plants and this area should be demarked as an exclusion zone on plans and on the ground to ensure no inadvertent impact to these plants.
- The design of the earthen bank around the facility should include a measure to manage drainage given the proximity of threatened flora to the bank. There should be no run-off from this bank to the surrounding areas such that the occurrences of threatened flora beyond the project footprint will be negatively impacted.

Threatened fauna and threatened fauna habitat

The proposed facility contains foraging habitat for Tasmanian devil, eastern quoll, Tasmanian masked owl and Tasmanian wedge-tailed eagle. This habitat occurs widely in the broader area. The loss of this 6.70 ha of degraded grassland is not expected to have a significant impact on any species of threatened fauna. A single tree that may support hollows suitable for masked owl occurs very near the north western edge of the facility area. The facility is also likely to increase scavenging by native fauna at the facility. The following are recommended to manage impact associated with these risks:

RECOMMENDATIONS

- To ensure no impact to masked owl, avoid any impact within 15 m of the potential hollow-bearing tree to the north-west of the facility boundary. Before construction or if impact within 15 m is unavoidable, this tree should be inspected by a suitably qualified arborist to ensure it is not in use by a masked owl. If the tree is found to be in use, further measures that restrict development may be required to avoid impact to this species.
- Animals may cross Lovely Banks Road, especially at night, to access the facility. Traffic calming signage should be implemented on the road on the western and eastern extents of the site that aim to 1) reduce speed of drivers in the area and 2) raise awareness of potential native fauna on the road.
- Coverage of organic waste can reduce fly propagation and pest animal issues. If possible, organic waste that is likely to attract scavengers (especially food waste) should be covered to the extent practicable as soon as practicable.

Weeds

Without mitigation, the proposal runs the risk and spreading and/or worsening the spread of weeds on site.

RECOMMENDATIONS

- Best practice construction hygiene should be applied to prevent the spread of weed propagules in contaminated soil. This should involve cleaning all machinery before leaving the works area, as well as not bringing dirty machinery into the site. To this end, a register of washdowns should be kept and there should be regular inspections to ensure compliance.
- It should also be ensured that all spoil/soil brought onto site is free of weeds and weed propagules. Accordingly, all spoil/soil should be guaranteed by the supplier to be non-contaminated in this regard. This should be written into contracts.

Legislation

Environment Protection and Biodiversity Conservation Act 1999: By following the recommendations it is not likely that any species or natural value protected under this act that has the potential to occur on this site will be significantly impacted.

Threatened Species Protection Act 1995: A permit to take will required for impact to the threatened flora species *Leucopogon virgatus* var. *brevifolius* (rare) and *Scleranthus fasciculatus* (vulnerable).

Tasmanian Planning Scheme – Southern Midlands: In terms of natural values, there are no apparent planning impediments.

Table of Contents

1 Introduction

1.1 Background

A compost facility is proposed at Lovely Banks Road in southern Tasmania (Figure 1). In the Project Specific Guidelines supplied by the Tasmanian Environment Protection Agency (EPA),[1] mandatory requirements from the Southern Midlands Council are detailed. Although these do not require an assessment of natural values, and that the EPA specify there is no requirement for a natural values survey, the proponent was advised to assess the potential for the project impact to natural values. Accordingly, in June 2021, North Barker Ecosystem Services (NBES) undertook a natural values survey of the 22.66 ha site where the facility is located. The findings of that survey resulted in an additional extension survey in November 2021. The findings of these surveys, with recommendations and a comment on relevant legislation, are presented in this Natural Values Report (NVA).

Notably, since the initial publishing of this report on 24/12/2021, the design of the facility has changed and the area increased to 6.70 ha (including the area for the access road to the facility).

1.2 The site, the facility and survey areas

The site is on the Somerton property ~5.5 km north-east of Melton Mowbray on the Somerton property on Lovely Banks Road in Tasmania's southern midlands (Figure 1). The site is in the Southern Midlands Council area and is in the Tasmania South East Bioregion[2].

Topography is relatively gentle. The land slopes from ~350 m ASL in the north to ~310 m ASL in the south. The geology is predominantly Triassic sediments (sandstone, siltstone and mudstone). There is a small dam on the site but no permanent creeks or obvious drainage lines.

Initially, a 22.66 ha area of the Somerton property was surveyed (the site), with a focus on the access road and the southern area planned for the compost facility (~4.3 ha, the facility). Since the initial survey of the site, the facility area was increased to 6.7 ha. Given the site was surveyed in entirety, and the increased area extended into rough pasture, the need for additional surveying because of this increase is not warranted. Based on the findings of the initial survey of the site, a buffer area of 250 m around the site was surveyed for threatened flora (i.e. an extension survey area for *Leucopogon virgatus* var. *brevifolius*).

2 Methods

The 22.66 ha site was surveyed by one ecologist on the 16th of June 2021. Based on these findings, an additional survey of the site, and a 250 m buffer around the site, was recommended. The timing of this survey was planned to coincide with the spring flowering season and was conducted by two ecologists on the 4th of November 2021 with the following aims:

- A spring survey for threatened flora species in the facility area (Figure 1).
- A presence/absence survey in the facility area for tussock skink using the DPIPWE approved method (Plate 1, Appendix A).
- An extension survey for *Leucopogon virgatus* var. *brevifolius* in areas of potential habitat within 250 m of the 22.66 site area (Figure 1). (Two plants were recorded in the facility area during the June 2021 survey; an outcome of this was a recommendation for an extension survey.)

[1] Environment Protection Authority Tasmania (2020)
[2] IBRA 7 (2012)

- A natural values survey in the facility area in accordance with the *Guidelines for Natural Values Survey – Terrestrial Development Proposals* [3]. This used a meandering area search technique[4].

Native vegetation was mapped in accordance with units defined in TASVEG 4.0[5]. Vascular plants were recorded in accordance with the current census of Tasmanian plants[6]. All data were recorded with a handheld GPS.

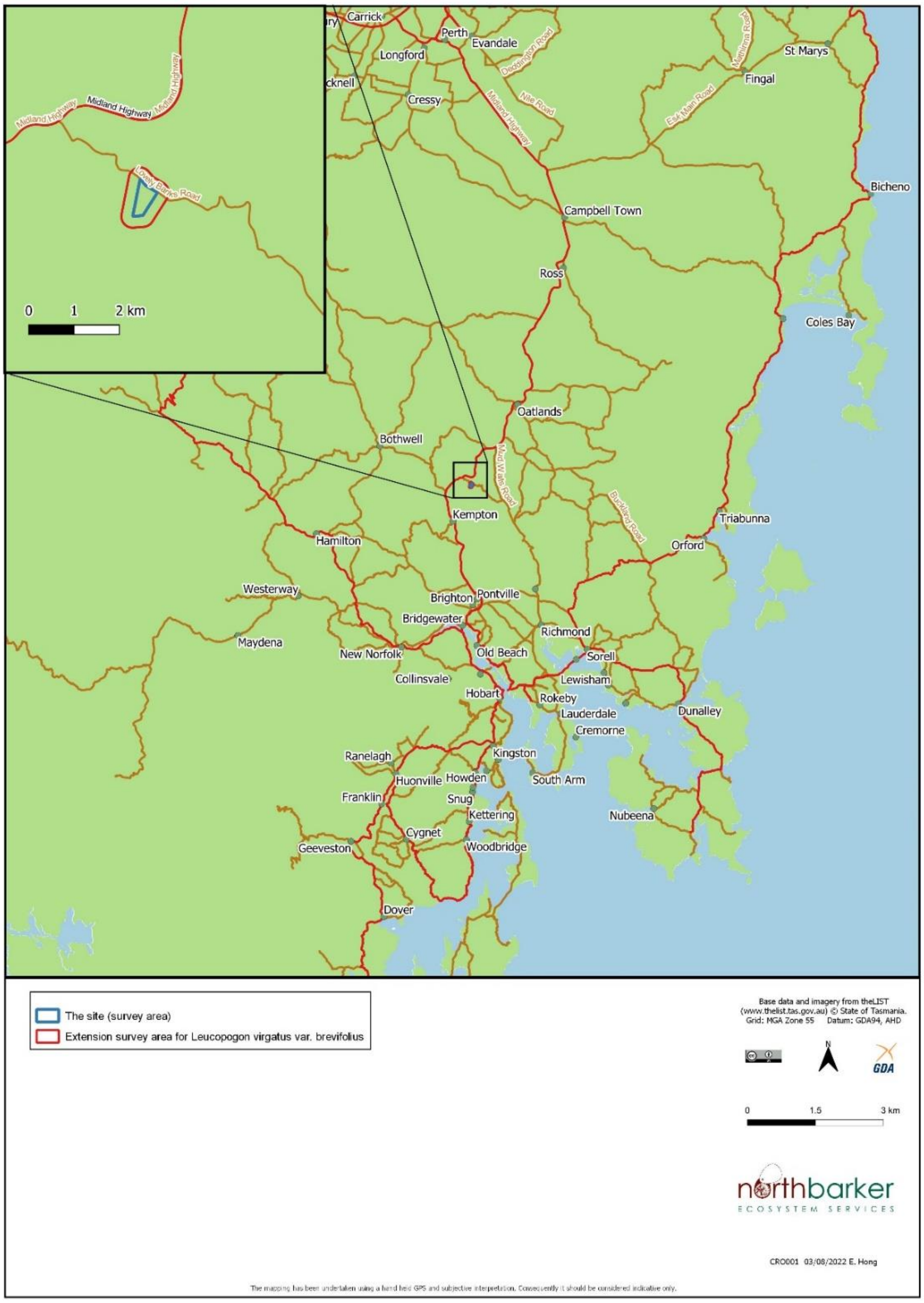


Figure 1: The site of the facility in southern Tasmania (plus extension survey area).

[3] DPIPWE 2015
[4] Goff *et al.* 1982
[5] Kitchener and Harris 2013
[6] de Salas and Baker 2021

Plate 1: Tussock skink survey method - double layer of roof tin placed in the field for > 1 month (weights were used to keep the tin in place)

2.1 Limitations

The field surveys were undertaken in winter and in spring. Some seasonal species may have been overlooked or seasonally absent. To compensate for these limitations, data from the present survey are supplemented with data from the Tasmanian *Natural Values Atlas* (NVA)[7]. These data include records of all threatened species known to occur, or with the potential to occur, up to 5 km from the site.

3 Results - Biological values

3.1 Vegetation

The following native TASVEG units were recorded in the 22.66 ha site area:

1. DAS - *Eucalyptus amygdalina* forest and woodland on sandstone (1.29 ha)
2. GCL - Lowland grassland complex (19.28 ha)
3. GSL - Lowland grassy sedgeland (1.87 ha)

[7] DPIPWE 2021a, nvr_1_15-Jun-2021

The DAS on site accords to the threatened vegetation community *Eucalyptus amygdalina* forest and woodland on sandstone, which is listed as threatened under the Tasmanian *Nature Conservation Act 2002* (NCA).

A small recently cleared area (0.22 ha) present in the south of the site was mapped as extra urban miscellaneous (FUM).

3.1.1 DAS - Eucalyptus amygdalina forest and woodland on sandstone (1.29 ha)

A small area of DAS occurs in the north-western corner of the site (Plate 2, Figure 2). *E. amygdalina* is dominant throughout the DAS, with *E. viminalis* occasional. Canopy trees are 60-90 cm DBH and appear relatively healthy. As with other areas of native vegetation at the site, this community has been exposed to a long history of disturbance, primarily browsing/grazing by livestock. There is no understorey layer, but the ground/subshrub layer still contains mostly native species. The native grass layer is mostly comprised of *Poa rodwayi* and *Microlaena stipoides*, and species of *Austrostipa* and *Rytidosperma* are also common. *Lissanthe strigosa* is the most common understorey sub shrub. Introduced species are regular and include: *Acetosella vulgaris*, *Dactylis glomerata* and *Stellaria media*.

This community is listed as threatened under the Tasmanian *Nature Conservation Act 2002*.

Plate 2: DAS in the north west of the site

3.1.2 GCL - Lowland grassland complex (19.28 ha)

This community occurs throughout most of the site (Figure 2). The community is anthropogenically derived through an established history of clearing and livestock farming. It is highly degraded and very closely cropped (from grazing pressure) across much of the site and was therefore difficult to assess in terms of species present (Plate 3). Species diversity is apparently relatively low; *Microlaena stipoides*, and species of *Austrostipa* and *Rytidosperma* are regular in many areas. Introduced grasses and herbs form a notable component of the community with clover (*Trifolium subterraneum)* and Capeweed (*Arctotheca calendula*) particularly common. Browntop bent grass

(*Agrostis capillaris*), sheep sorrel (*Acetosella vulgaris*) and buckshorn plantain (*Plantago coronopus*) also contribute significantly. Scattered trees occur in a few places, including *Eucalyptus ovata* and *E. pauciflora*.

The GCL in the southern and western parts of the site are in better condition with more obvious coverage of native species, especially *Themeda triandra* and *Poa labillardierei* (Plate 4). The diversity of native herbs and subshrubs is relatively poor with *Acaena novae-zelandiae* one of the more regularly encountered natives.

Although challenging to assess, it is expected that native grass cover exceeds 25 % in most areas: this is the minimum native component percentage for classification as GCL; less than this, and the community would be classified as agricultural land (FAG). So, despite the significant component of introduced species, GCL is the most suitable vegetation community to assign the vegetation across much of the site. However, it must be acknowledged that the quality of this habitat is generally poor and that localised areas (parallel to the existing access road for example) will have less than the 25 % native species coverage.

Plate 3: Degraded GCL but with a native component in the north of the site

Plate 4: Better quality GCL in the west of the site (this small patch is dominated by *Themeda triandra*.)

3.1.3 GSL - Lowland grassy sedgeland (1.87 ha)

This community occurs in the southern part of the site (Figure 2, Plate 5). As with the GCL, it is anthropogenically derived through an established history of disturbance. Although species diversity is low and the dominance of *Lomandra longifoli*a forms a monoculture in places, the diversity is greater, or at least more obvious, than in the GCL where heavy browsing has cropped much of the ground cover. The threatened *Scleranthus fascicularis* (TSPA vulnerable) and *Leucopogon virgatus* var. *brevifolius* (TSPA rare) occur in this community. Other species include *Chrysocephalum apiculatum, Lissanthe strigosa, Gonocarpus tetragynus, Pimelea humilis* and *Viola hederacea.*

Plate 5: GSL in the south of the site

3.2 Threatened flora

Sixty-five species of vascular plant were recorded at the site. A notable portion of these (24 species or 35 %) are introduced species. A complete species list from the field survey is presented in Appendix B.

Two species listed as threatened under the TSPA occur in the facility area:

- ***Leucopogon virgatus* var. *brevifolius*** (TSPA rare, Figure 2, Plates 6 and 7): A total of 317 were recorded during the surveys (2 in the facility area, 8 just outside the facility area and within the site, and 307 in the extension survey area). Notably, the extension survey was recommended due to the paucity of records in the area: the main cluster of records is ~60 km to the north and the nearest record is an observation 20 km to the north from 2007.
- ***Scleranthus fasciculatus*** (TSPA vulnerable, Figure 2, Plate 8): A total of 78 plants were recorded during the surveys (4 in the facility area, 19 just outside the facility area and within the site, and 55 in the extension survey area).

Previous surveys within 5 km of the site identified an additional 5 species listed under the TSPA and EPBCA[8]. These are listed in Appendix C together with a description of their preferred habitat and an assessment of the likelihood of their occurrence in the proposed facility; none of these have a reasonable chance of occurring in the proposed facility.

Plate 6. *Leucopogon virgatus* var. *brevifolius* in the proposed facility

Plate 7: *Leucopogon virgatus* var. brevifolius in the proposed facility

[8] DPIPWE 2021a, nvr_1_15-Jun-2021

Plate 8: *Scleranthus fasciculatus* in the proposed facility

3.3 Threatened fauna and threatened fauna habitat

During our field survey, no species of listed threatened fauna were observed. Habitat for the following threatened fauna species was recorded; additional species recorded within 5 km of the proposed facility are considered in Appendix D:

3.3.1 **Tasmanian masked owl** (*Tyto novaehollandiae*, TSPA endangered, EPBCA vulnerable):

There are no records within 500 m and 3 within 5 km. A single tree occurs in the west of the site (but ~2 m of the facility area) that is sufficiently large to contain hollows that may be suitable for this species (Figure 2, Plate 9). It is quite possible that this species forages over the site from time to time.

3.3.2 **Swift parrot** (*Lathamus discolor*, TSPA endangered, EPBCA critically endangered):

There are no records within 5 km. Six *Eucalyptus ovata* were recorded at the site (outside the proposed facility area). These are foraging habitat for this species. Four of these are in a small cluster. These are relatively isolated trees surrounded by rough pasture. They are moderately healthy showing some signs of dieback. A single hollow that may be suitable for breeding is visible in one tree.

Although it is possible this species occurs, given the relatively isolated occurrence of a few trees, it is not likely that this species occurs with any regularity at the site.

3.3.3 **Tasmanian wedge-tailed eagle** (*Aquila audax fleayi*, TSPA endangered, EPBCA endangered):

No records within 500 m and 9 within 5 km. No nesting habitat at the site but may forage over the area from time to time. There are no nest records within 1 km and the nearest nest is 3.2 km to the east of the proposed facility.

Potentially suitable breeding habitat is mapped primarily to the east and south of the site as per the Forest Practices Authority's eagle habitat model (see Appendix E)[9]. Based on the assessment of some of this habitat during the extension survey and on inspection of aerial images of the area, it is our assessment that the model has overestimated the suitability of the breeding habitat within 1 km. It is our assessment that the chances of eagles breeding within 1 km line-of-sight of the proposed facility is low and we suggest that further surveying is not necessary.

3.3.4 **Tasmanian devil** (*Sarcophilus harrisii*, TSPA endangered, EPBCA endangered):

There is one record within 500 m and 41 within 5 km. No scats, tracks or other signs of this species were recorded. However, it is quite possible that this species forages at the site. No suitable breeding habitat was observed: the habitat is structurally simple, and the substrate is not friable for much of the site including the area of the proposed facility.

3.3.5 **Eastern quoll** (*Dasyurus viverrinus*, EPBCA endangered):

There are no records within 500 m and 5 within 5 km. No scats, tracks or other signs of this species were recorded. However, it is quite possible that this species forages at the site. The breeding habitat requirements are relatively broad for this species and although it is possible that the species breeds at the site, the habitat is suboptimal and more suitable habitat is expected in the surrounding area.

3.3.6 **Tussock skink** (*Pseudemoia pagenstecheri*, TSPA vulnerable):

There are no records within 5 km. A targeted survey was undertaken for this species. Only two skinks were observed during the targeted survey (during the active search rather than under the tin sheets) but these were not able to be caught and were not identified. Regardless, on closer inspection and further consideration of the habitat, additional surveying is not considered necessary: there is low component of tussock grasses in the facility area (<10 %) and tussock skink is unlikely to occur in anthropogenically-derived habitat (the site has been converted from woodland) as this species typically occurs in areas that were grassland originally (pers. comm. Ray Brereton).

[9] Forest Practices Authority (2014)

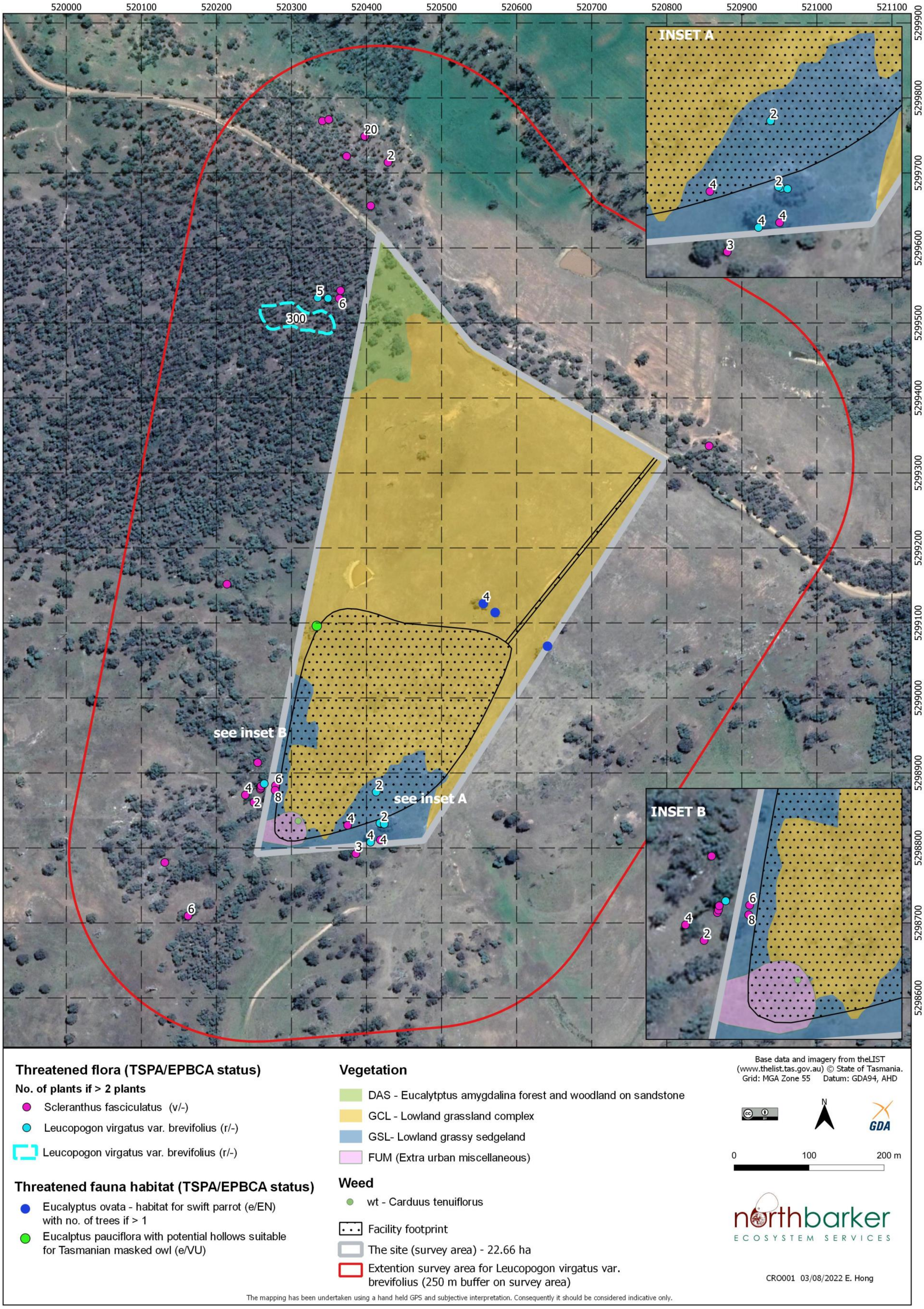


Figure 2: Map of the natural values at the site

Plate 6: Tree suitable for Tasmanian masked owl immediately adjacent to the proposed facility

4 Weeds

Introduced species are common at the site with twenty-four species recorded during the surveys. No species declared under the Tasmanian *Weed Management Act 1999* were recorded during the survey but several species of widespread and highly invasive weed such as Capeweed (*Arctotheca calendula*) and milk thistle (*Silybum marianum*) occur and are abundant in some areas.

Plate 7: Capeweed (*Arctotheca calendula* - yellow flower in the image) dominating this area of grassland just outside the proposed facility area.

5 Assessment of Impact and Mitigation

5.1 Vegetation

There will be no impact to the threatened vegetation in the proposed facility area on the site. The proposed facility will impact 6.57 ha native vegetation in the following TASVEG 4.0 vegetation communities:

- (GCL) Lowland grassland complex: 5.53 ha
- (GSL) Lowland grassy sedgeland: 1.04ha

These are anthropogenically derived grassland communities that are relatively low in diversity. The loss of this amount of these habitats is not significant.

Impact in these areas is expected to be total, and clearance is difficult to mitigate. However, the risk of unnecessary and indirect impacts on vegetation outside the footprint of the development can be minimised.

RECOMMENDATION

- The works area should be marked in construction plans and on the ground, and all works, vehicles and materials should be confined to the works area.

5.2 Threatened flora

Two species listed as threatened under the TSPA occur in the proposed facility area and will be impacted by the proposal. Additionally, several plants outside but near the facility with the nearest 5 m from the facility boundary.

Leucopogon virgatus* var. *brevifolius (TSPA rare): Two plants of the 317 recorded in the surveys occur in the proposed facility. This occurrence is important given the paucity of records in the area: the main cluster of records is ~60 km to the north and the nearest record is an observation 20 km to the north from 2007.

The loss of two plants is not substantial in terms of the number of plants found, but effort should be made to reduce the chances of any inadvertent impact to plants outside but near the facility impact area (see recommendations below).

Scleranthus fasciculatus (TSPA vulnerable): Four of 78 plants recorded during the surveys occur in the proposed facility. Although the loss of four plants is not significant given the broader occurrence of the species in the area, it is not negligible, and effort should be made to reduce the chances of any inadvertent impact to plants outside but near the facility impact area (see recommendations below).

Under the TSPA a permit to take will be required to impact these species. No impact to species listed under the EPBCA is expected.

RECOMMENDATIONS

Given the concentration of threatened flora in the southern and eastern part of the site but just outside the facility footprint, and the proximity of the facility boundary to these plants, efforts must be made to manage the development in this area to avoid inadvertent impact to these threatened plants.

- Eight *Leucopogon virgatus var. brevifolius* and four *Scleranthus fasciculatus* at the site occur under two trees near and just outside the southern boundary of the proposed facility (see figure 3 below). Ensure there is no disturbance or development, including subsurface digging, within 15 m of the two trees. This 15 m zone should be delineated as an exclusion zone on plans and on the ground to ensure no inadvertent impact to these trees. This will protect both threatened plant species in this area.
- Fourteen *Scleranthus fasciculatus* are near the western boundary of the proposed facility. There should be no disturbance or development within 5 m of these plants and this area should be demarked as an exclusion zone on plans and on the ground to ensure no inadvertent impact to these plants.
- The design of the earthen bank around the facility should include a measure to manage drainage given the proximity of threatened flora to the bank. There should be no run-off from this bank to the surrounding areas such that the occurrences of threatened flora beyond the project footprint will be negatively impacted.

The identification of the threatened species for the exclusion zones must be undertaken by a suitably qualified ecologist.

Figure 3: Threatened flora in and to the south of the south of the proposed facility; note the distribution of a number of plants is near the boundary of the proposed facility.

5.3 Threatened fauna and threatened fauna habitat

Although, none of the trees that have hollow-bearing potential will be directly impacted, the single large tree that has the potential to support hollows for masked owl is very near the north-western boundary of the facility and may be critically impacted (see recommendation below).

Overall, the facility footprint is relatively small (6.70 ha) and does not contain habitat that can be considered optimal or important for any species of threatened fauna. None of the *Eucalyptus ovata* that are potential foraging habitat for swift parrot will be impacted.

The project will impact habitat that may be utilised for foraging for a range of species including Tasmanian devil, eastern quoll, Tasmanian masked owl and Tasmanian wedge-tailed eagle, but this habitat occurs widely in the broader area. The loss of this 6.7 ha of degraded grassland is not expected to have a significant impact on any species of threatened fauna.

RECOMMENDATION

To ensure no impact to masked owl, avoid any impact within 15 m of the potential hollow-bearing tree to the north-west of the facility boundary. Before construction or if impact within 15 m is unavoidable, this tree should be inspected by a suitably qualified arborist to ensure it is not in use by a masked owl. If the tree is found to be in use, further measures that restrict development may be required to avoid impact to this species.

5.4 Scavenging

It is well understood that fauna and invertebrate species are attracted to facilities that process organic waste to exploit food sources. This may be to forage directly on the organic waste at the site, or to prey on species attracted to the site; for example, waste on the site may attract rodents who in turn are preyed on by carnivores.

In terms of scavenging, the most obvious species likely associated with the site are rats, forest ravens and potentially Tasmanian devils and the facility may increase the prevalence of these fauna at the site. The facility may also attract predators such as Tasmanian masked owl and Tasmanian wedge-tailed eagle due to the increase in prey fauna at the site. The scale of such an increase is however not expected to result in any significant risk to any native or threatened species or result in a significant 'knock on' effect that may negatively impact other native species. Regardless, relatively simple efforts can help reduce and manage risk to these species.

RECOMMENDATIONS

- Animals may cross Lovely Banks Road, especially at night, to access the facility. Traffic calming signage should be implemented on the road on the western and eastern extents of the site that aim to 1) reduce speed of drivers in the area and 2) raise awareness of potential native fauna on the road.
- Coverage of organic waste can reduce fly propagation and pest animal issues[10]. If possible, organic waste that is likely to attract scavengers (especially food waste) should be covered to the extent practicable as soon as practicable.

5.5 Weeds

Without mitigation, the proposal runs the risk and spreading and/or worsening the spread of weeds on site.

RECOMMENDATIONS

- Best practice construction hygiene should be applied to prevent the spread of weed propagules in contaminated soil. This should involve cleaning all machinery before leaving the works area, as well as not bringing dirty machinery into the site. To this end, a register of washdowns should be kept and there should be regular inspections to ensure compliance.
- It should also be ensured that all spoil/soil brought onto site is free of weeds and weed propagules. Accordingly, all spoil/soil should be guaranteed by the supplier to be non-contaminated in this regard. This should be written into contracts.

6 Legislative Requirements

6.1 Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*

The EPBCA is structured for self-assessment; the proponent must determine whether or not the project is considered a 'controlled action' which if confirmed would require approval from the Commonwealth Minister.

Referral under the EPBC Act will be necessary if, as the Act states:

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

[10] DPIPWE 2004

modify, destroy, remove, isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline.'

Although significant impact tests against impact criteria are required to better quantify the significance of potential impact to a species under this act, if recommendations are followed we do not think it is likely that any species or value that has the potential to occur on this site will be significantly impacted.

6.2 Tasmanian *Threatened Species Protection Act 1995*

The proponent will require a 'permit to take' for impact to the two plant species listed under this act that are in the proposed facility: *Leucopogon virgatus* var. *brevifolius* (TSPA rare) and the *Scleranthus fasciculatus* (TSPA vulnerable).

6.3 Tasmanian *Weed Management Act 1999*

No weeds species listed under this act occur in the proposed facility.

6.4 Tasmanian Planning Scheme - Southern Midlands

The project is in the Agricultural Zone. There are no Code overlays intersecting with the facility area. In terms of natural values, there are no apparent planning impediments.

7 Conclusion and summary of recommendations

A composting facility (approximately 6.70 ha including the access road) is proposed for development at Lovely Banks Road in Tasmania's Southern Midlands council. The area is comprised primarily of degraded grassland with a notable native component, including two threatened plant species. The main findings of two natural values surveys (winter and spring), and the impacts of the development on those values, with recommendations, are as follows:

Vegetation

Three native TASVEG units were recorded at the 22.66 ha site:

- DAS - *Eucalyptus amygdalina* forest and woodland on sandstone (1.29 ha)
- GCL - Lowland grassland complex (19.28 ha)
- GSL - Lowland grassy sedgeland (1.87 ha)

Broadly, the grassland communities are degraded, anthropogenically derived communities with a notable component of introduced species. The project will impact **5.53 ha** of GCL and **1.04 ha** of GSL. Neither of these communities are threatened, and this impact is not considered significant.

RECOMMENDATION

- The works area should be marked in construction plans and on the ground, and all works, vehicles and materials should be confined to the works area.

Threatened flora

Two threatened flora species were recorded during the initial survey and subsequent extension survey:

- ***Leucopogon virgatus* var. *brevifolius*** (TSPA rare): Two plants of the 317 recorded occur in the facility area but additional plants occur just outside the facility area.
- ***Scleranthus fasciculatus*** (TSPA vulnerable): Four of 78 plants recorded occur in the facility area but additional plants occur just outside the facility area.

Although these impacts are not significant, the occurrence of the *L. virgatus var. brevifolius* is important given the paucity of records in the area. Recommendations to reduce impact to threatened flora given their proximity to the facility area are as follows:

RECOMMENDATIONS

- Eight *Leucopogon virgatus var. brevifolius* and four *Scleranthus fasciculatus* at the site occur under two trees near and just outside the southern boundary of the proposed facility (see figure 3 below). Ensure there is no disturbance or development, including subsurface digging, within 15 m of the two trees. This 15 m zone should be delineated as an exclusion zone on plans and on the ground to ensure no inadvertent impact to these trees. This will protect both threatened plant species in this area.
- Fourteen *Scleranthus fasciculatus* are near the western boundary of the proposed facility. There should be no disturbance or development within 5 m of these plants and this area should be demarked as an exclusion zone on plans and on the ground to ensure no inadvertent impact to these plants.
- The design of the earthen bank around the facility should include a measure to manage drainage given the proximity of threatened flora to the bank. There should be no run-off from this bank to the surrounding areas such that the occurrences of threatened flora beyond the project footprint will be negatively impacted.

Threatened fauna and threatened fauna habitat

The proposed facility contains foraging habitat for Tasmanian devil, eastern quoll, Tasmanian masked owl and Tasmanian wedge-tailed eagle. This habitat occurs widely in the broader area. The loss of this 6.70 ha of degraded grassland is not expected to have a significant impact on any species of threatened fauna. A single tree that may support hollows suitable for masked owl occurs very near the north western edge of the facility area. The facility is also likely to increase scavenging by native fauna at the facility. The following are recommended to manage impact associated with these risks:

RECOMMENDATIONS

- To ensure no impact to masked owl, avoid any impact within 15 m of the potential hollow-bearing tree to the north-west of the facility boundary. Before construction or if impact within 15 m is unavoidable, this tree should be inspected by a suitably qualified arborist to ensure it is not in use by a masked owl. If the tree is found to be in use, further measures that restrict development may be required to avoid impact to this species.
- Animals may cross Lovely Banks Road, especially at night, to access the facility. Traffic calming signage should be implemented on the road on the western and eastern extents of the site that aim to 1) reduce speed of drivers in the area and 2) raise awareness of potential native fauna on the road.
- Coverage of organic waste can reduce fly propagation and pest animal issues. If possible, organic waste that is likely to attract scavengers (especially food waste) should be covered to the extent practicable as soon as practicable.

Weeds

Without mitigation, the proposal runs the risk and spreading and/or worsening the spread of weeds on site.

RECOMMENDATIONS

- Best practice construction hygiene should be applied to prevent the spread of weed propagules in contaminated soil. This should involve cleaning all machinery before leaving the works area, as well as not bringing dirty machinery into the site. To this end, a register of washdowns should be kept and there should be regular inspections to ensure compliance.
- It should also be ensured that all spoil/soil brought onto site is free of weeds and weed propagules. Accordingly, all spoil/soil should be guaranteed by the supplier to be non-contaminated in this regard. This should be written into contracts.

Legislation

Environment Protection and Biodiversity Conservation Act 1999: By following the recommendations it is not likely that any species or natural value protected under this act that has the potential to occur on this site will be significantly impacted.

Threatened Species Protection Act 1995: A permit to take will required for impact to the threatened flora species *Leucopogon virgatus* var. *brevifolius* (rare) and *Scleranthus fasciculatus* (vulnerable).

Tasmanian Planning Scheme – Southern Midlands: In terms of natural values, there are no apparent planning impediments.

References

Bryant, S. & Jackson, J. (1999). Tasmania's Threatened Fauna Handbook: what, where and how to protect. Threatened Species Unit, Parks & Wildlife Service, Hobart.

Commonwealth of Australia (1999). Environment Protection and Biodiversity Conservation Act 1999. No. 91, 1999.

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

DPIPWE 2004, Landfill Sustainability Guide 2004, Environment Division, GPO Box 44 Hobart, Tasmania, 7001

DPIPWE (2021a). Natural Values Report nvr_1_15-Jun-2021, Natural Values Atlas, Threatened Species Section, Department of Primary Industries and Water, Hobart.

DPIPWE (2021b). Notesheets for threatened flora species accessed on the Threatened Species Link at https://www.threatenedspecieslink.tas.gov.au/Pages/default.aspx

DPIPWE (2019). *Guidelines for Natural Values Survey – Terrestrial Development Proposals*. Version 1.1. 13th August 2019. Policy and Conservation Advice Branch. Department of Primary Industries, Parks, Water and Environment.

DPIPWE (2015) *'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'*

DPIPWE (2015). Weed and Disease Planning and Hygiene Guidelines - Preventing the spread of weeds and diseases in Tasmania. (Eds.) Karen Stewart and Michael Askey-Doran. Department of Primary Industries, Parks, Water and Environment, Hobart, Tasmania.

Environment Protection Authority Tasmania (2020) Project Specific Guidelines – Seaton Waterfield/Compost Kings – Composting facility, Melton Mowbray, December 2020

Forest Practices Authority (2014), *Fauna Technical Note No. 6: Wedge-tailed eagle nesting habitat model*, Forest Practices Authority, Hobart, Tasmania.

Goff, F.G, Dawson, G.A. and Rochow, J.J. (1982). Site examination for threatened and endangered plant species. Environmental Management 6 (4) pp 307-316.

IBRA 7 (2012). Interim Biogeographic Regionalisation for Australia, Version 7. Map produced by Environment Resources Information Network (ERIN), Australian Government Department of the Environment and Energy, Canberra, Commonwealth of Australia.

Kitchener, A. and Harris, S. (2013). From Forest to Fjaeldmark: Descriptions of Tasmania's Vegetation. Edition 2. Department of Primary Industries, Parks, Water and Environment, Tasmania.

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

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

Tasmanian State Government (2002). Nature Conservation Act 2002. No.63 of 2002. Government Printer, Hobart, Tasmania.

Appendix A: Threatened Species Advice Form

Threatened Species Advice Form

Threatened species officer name: Jo Potter-Craven **Date:** 21 September 2021

Development proposal name: Tussock Skink Survey Methods – Northern Midlands Irrigation Scheme and Lovely Banks Road composting facility

:: :: ::::::::::::

The Threatened Species Recovery Hub (NESP) recently released a factsheet about monitoring reptiles, where they compared active searching with artificial refuges and found that a combination of both methods yielded the highest number of species detected. Corrugated iron was found to yield higher counts of skinks than tiles. This advice is based on the factsheet (see here) and the articles referenced within it.

Recommendation: Surveys for tussock skink should combine the inspection of artificial refuges (made of stacked corrugated iron and in place for a minimum of 1 month) with timed active searching of habitat in sunny weather during times of the day and year when skinks are basking.

Suggested sampling regime of a 1 ha area: (replicate this regime for larger areas)

- Artificial refuges: 2 x stacks of corrugated iron (double-layered) placed about 100 m apart in suitable habitat. They may need to be weighed down to stop them from blowing away. They must be left in place for a minimum of 1 month prior to inspection.
- Active search: 20 minutes of active searching of habitat i.e. within tussocks, under rocks, logs, etc (replace habitat as found). Active searches must be performed on clear, sunny days during the hours when the skinks are likely to be basking (10-3pm) during their most active months (late spring to early autumn).

Animal Ethics Committee (AEC) approval: We understand that ethics approval is not required for these surveys. Relevant extracts from the Biosecurity Tasmania website (see here) are included below along with a flow chart (see here) which explains the AEC process.

> *"Section 3 of the Animal Welfare Act 1993 (the Act) defines animal research as a procedure, test, experiment, inquiry or study on an animal which is undertaken to develop, demonstrate or acquire knowledge, or techniques, in an area of science or teaching; and is likely to have a significant adverse effect on the welfare of the animal.*
>
> *Where clarification is required of whether an activity is animal research or not a determination can be made by an inspector authorised under the Animal Welfare Act 1993 (see Determinations by an inspector below).*
>
> *No activity is precluded by the Act from being submitted for AEC approval and monitoring as an animal research project in order to comply with institutional internal policies or funding and publishing requirements. This includes activities that have been determined not to be animal research or fall outside the definition or are exempt under section 27 of the Act from licensing."*

Appendix B: Vascular Plant Species list

Status codes:

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

Sites:

1	GCL - E520585, N5299019	4/11/2021	Fiona Walsh
2	GSL - E520434, N5298871	4/11/2021	Fiona Walsh
3	GCL (winter) - E520624, N5299399	16/06/2021	Richard White
4	GSL (winter) - E520496, N5298882	16/06/2021	Richard White
5	DAS - E520420, N5299498	16/06/2021	Richard White

Site	Name	Common name	Status
	DICOTYLEDONAE		
	ASTERACEAE		
1 3 4	*Arctotheca calendula*	capeweed	i
2	*Chrysocephalum apiculatum*	common everlasting	
2 3 4	*Cirsium vulgare*	spear thistle	i
1 2 5	*Hypochaeris radicata*	rough catsear	i
2 4	*Silybum marianum*	variegated thistle	i
4	*Solenogyne gunnii*	hairy flat-herb	
1	*Taraxacum officinale*	common dandelion	i
	BORAGINACEAE		
2	*Myosotis sp*	forget me not	i
	BRASSICACEAE		
1	*Capsella bursa-pastoris*	shepherds purse	i
	CAMPANULACEAE		
2	*Wahlenbergia sp.*	bluebell	
	CARYOPHYLLACEAE		
2 4	*Scleranthus biflorus*	twinflower knawel	
2	*Scleranthus fasciculatus*	spreading knawel	v
4 5	*Stellaria media*	garden chickweed	i
1 2	*Stellaria sp.*	chickweed	i
	CHENOPODIACEAE		
5	*Einadia nutans subsp. nutans*	climbing saltbush	
	CONVOLVULACEAE		
4	*Dichondra repens*	kidneyweed	
	CRASSULACEAE		
1 2	*Crassula decumbens var. decumbens*	spreading stonecrop	
	DROSERACEAE		
2	*Drosera sp.*	sundew	
	ERICACEAE		
2 4	*Leucopogon virgatus var. brevifolius*	shortleaf beardheath	r
2 5	*Lissanthe strigosa subsp. subulata*	peachberry heath	
2 4	*Styphelia humifusa*	native cranberry	
	FABACEAE		
4	*Acacia dealbata subsp. dealbata*	silver wattle	
3 4	*Trifolium sp.*	clover	i

1 2	*Trifolium subterraneum*	subterranean clover	i
	GERANIACEAE		
1	*Erodium sp.*	storksbill	
2	*Geranium potentilloides potentilloides*	mountain cranesbill	
	HALORAGACEAE		
2 4	*Gonocarpus tetragynus*	common raspwort	
	MYRTACEAE		
5	*Eucalyptus amygdalina*	black peppermint	en
3	*Eucalyptus ovata var. ovata*	black gum	
4	*Eucalyptus pauciflora subsp. pauciflora*	cabbage gum	
5	*Eucalyptus viminalis subsp. viminalis*	white gum	
	OXALIDACEAE		
2 4	*Oxalis sp.*	woodsorrel	
	PITTOSPORACEAE		
2	*Bursaria spinosa subsp. spinosa*	prickly box	
	PLANTAGINACEAE		
1 3	*Plantago coronopus*	buckshorn plantain	i
	POLYGONACEAE		
1 2 3 4 5	*Acetosella vulgaris*	sheep sorrel	i
	ROSACEAE		
2 3	*Acaena novae-zelandiae*	common buzzy	
	THYMELAEACEAE		
2 4	*Pimelea humilis*	dwarf riceflower	
	URTICACEAE		
3	*Urtica incisa*	scrub nettle	
2	*Urtica urens*	stinging nettle	i
	VIOLACEAE		
2	*Viola hederacea*	ivyleaf violet	
	MONOCOTYLEDONAE		
	ASPARAGACEAE		
1 2 3 4 5	*Lomandra longifolia*	sagg	
	ASPHODELACEAE		
2	*Bulbine sp*	bulbine-lily	
	JUNCACEAE		
3	*Juncus pallidus*	pale rush	
1	*Juncus sarophorus*	broom rush	
	ORCHIDACEAE		
2	*Calochilus sp.*	beard orchid	
2	*Thelymitra sp.*	sun-orchid	
	POACEAE		
4 5	*Agrostis capillaris*	brown top bent grass	i
3	*Agrostis sp.*	blown grass	
5	*Aira caryophyllea*	silvery hairgrass	i
2 4	*Aira sp.*	hair grass	i
2	*Anthoxanthum odoratum*	sweet vernalgrass	i
1 2 3 5	*Austrostipa sp.*	speargrass	
4 5	*Cynosurus echinatus*	rough dogstail	i
2 5	*Dactylis glomerata*	cocksfoot	i
3 4	*Holcus lanatus*	yorkshire fog	i
2	*Hordeum distichon*	two-row barley	i
3 4 5	*Microlaena stipoides*	weeping grass	

1 2	*Poa annua*	winter grass	i
1 2 4	*Poa labillardierei*	silver tussockgrass	
4 5	*Poa rodwayi*	velvet tussockgrass	
5	*Poa sp.*	poa	
1 3 4 5	*Rytidosperma sp.*	wallabygrass	
2 4	*Themeda triandra*	kangaroo grass	
	PTERIDOPHYTA		
	DENNSTAEDTIACEAE		
2 4	*Pteridium esculentum subsp. esculentum*	bracken fern	

Appendix C: Threatened flora recorded within 5 km of the site

Species	Status TSPA / EPBCA	Records in 500m / 5km	Habitat[11]	Potential to occur in the proposed facility	Commentary
RECORDED IN THE PROPOSED FACILITY DURING SURVEYS					
Ranunculus pumilio var. *pumilio* ferny buttercup	rare/ -	0/1	*Ranunculus pumilio* var. *pumilio* occurs mostly in wet places (e.g. broad floodplains of permanent creeks, "wet pastures") from sea level to altitudes of 800-900 m above sea level.	NONE	No suitable habitat in the proposed facility
Scleranthus fasciculatus spreading knawel	vulnerable/ -	0/22	*Scleranthus fasciculatus* is only recorded from a few locations in the Midlands and south-east. The vegetation at most of the sites is *Poa* grassland/grassy woodland. *Scleranthus fasciculatus* appears to need gaps between the tussock spaces for its survival and both fire and stock grazing maintain the openness it requires. Often found in areas protected from	PRESENT	78 plants were recorded during the surveys, 23 in the proposed facility.

[11]Informed in part from notesheets on the Threatened Species Link – see DPIPWE (2021b) in references

Species	Status TSPA / EPBCA	Records in 500m / 5km	Habitat[11]	Potential to occur in the proposed facility	Commentary
			grazing such as fallen trees and branches.		
Vittadinia cuneata var. *cuneata* fuzzy new-holland-daisy	rare/ -	0/1	*Vittadinia cuneata* var. *cuneata* occurs in native grassland and grassy woodland on fertile soils, typically overlying basalt. It is confined to the Derwent Valley, Central Midlands and central East Coast on areas of lowest rainfall in Tasmania.	VERY LOW	The substrate in the proposed facility is suboptimal for this species. The survey was conducted during the flowering time for this species, and it is unlikely to have been overlooked in the relatively limited proposed facility.
Vittadinia gracilis woolly new-holland-daisy	rare/ -	0/22	*Vittadinia gracilis* occurs in dry grassy habitats, often in relatively degraded grasslands and grassy woodlands. It has been found to occur in low- rainfall areas, on a range of substrates.	LOW	The proposed facility is suitable for this species but the extensive cover of *Lomandra longifolia* limits the available habitat. The survey was conducted during the flowering time for this species, and it is unlikely to have been overlooked in the relatively limited proposed facility.
Vittadinia muelleri narrowleaf new-holland-daisy	rare/ -	0/1	*Vittadinia muelleri* occurs in dry native grasslands and grassy woodlands particularly in open areas with lighter grass cover and patches of bare ground such as rock plates. It freely colonises	LOW	The proposed facility is suitable for this species but the extensive cover of *Lomandra longifolia* limits the available habitat. The survey was conducted during the flowering time for this species, and it is

Species	Status TSPA / EPBCA	Records in 500m / 5km	Habitat[11]	Potential to occur in the proposed facility	Commentary
			disturbed sites such as roadside cuttings. It is widely dispersed through the Midlands and South East.		unlikely to have been overlooked in the relatively limited proposed facility.
Xanthoparmelia amphixantha lichen	endangered/ -	0/3	*Xanthoparmelia amphixantha* occurs in the Southern Midlands on stony shallow basalt soils in native grassland.	NONE	No suitable basalt soil habitat in the proposed facility.

Appendix D: Threatened fauna recorded within 5 km of the site

Species	Status TSPA / EPBCA	Records in 500m / 5km	Habitat[12]	Potential to occur in the proposed facility	Commentary
BIRDS					
Aquila audax subsp. fleayi Tasmanian wedge-tailed eagle	Endangered / ENDANGERED	0/9	Pairs of the wedge-tailed eagle defend a large territory, nesting in patches of mature forests with sheltered aspects throughout Tasmania (including large offshore islands). The total adult population has been estimated as less than 1000 birds. While individual responses vary, disturbance occurring even many hundreds of metres away can cause breeding birds to temporarily leave eggs or chicks at risk, or even to desert their nest site for years. Disturbances involving visible people or helicopters can be particularly serious.	Foraging: MODERATE Nesting: NONE in proposed facility and LOW within 1 km.	No nesting habitat in the proposed facility but may forage over the area from time to time. There are no nest records within 1 km and the nearest nest is 3.2 km to the east of the proposed facility. Potentially suitable breeding habitat is mapped primarily to the east and south of the proposed facility as per the Forest Practices Authority's eagle habitat model (see Appendix E)[13]. Based on the assessment of some of this habitat during the extension survey and on inspection of aerial images of the area, it is our assessment that the model has overestimated the suitability of the breeding habitat within 1 km. Accordingly, the chances of eagles breeding within 1 km of the proposed facility is low and we

[12] Threatened Species Section (2020) and Bryant and Jackson (1999) were used to inform these in part

[13] Forest Practices Authority (2014 a)

					suggest that further surveying is not necessary.
Tyto novaehollandiae subsp. castanops Tasmanian masked owl	Endangered / VULNERABLE	0/3	The Tasmanian masked owl subspecies hunts at night for small mammals and birds in a range of habitats which contain some mature forest, usually below 600 m altitude - these include native forests and woodlands as well as agricultural areas with a mosaic of native vegetation and pasture. Birds occupy a permanent territory and rely on hollows in old-growth trees for nesting and often for roosting.	Foraging: MODERATE Nesting: NONE	A single tree occurs in the west of the site (but outside the proposed facility) that is sufficiently large to contain hollows that may be suitable for this species (Figure 2, Plate 9). It is quite possible that this species forages over the proposed facility from time to time.
Hirundapus caudacutus White-throated needletail	- / VULNERABLE	0 / 9	This is a migratory species, breeding in central and north-eastern Asia in Siberia, Mongolia, northern-eastern China and northern Japan. It migrates south through eastern China, Korea and Japan spending its non-breeding season in eastern and south-eastern Australia including Tasmania. Is almost exclusively aerial, occurring over most types of habitat with a preference to wooded areas, open forests, heathland and rainforests.	Nesting: NONE Foraging: MODERATE	It is possible that this species will fly over the proposed facility from time to time.
MAMMALS					

Dasyurus maculatus subsp. *maculatus* spotted tailed quoll	Rare / VULNERABLE	0/7	This naturally rare forest-dweller most commonly inhabits rainforest, wet forest and blackwood swamp forest. It forages and hunts on farmland and pasture, travelling up to 20 km at night, and shelters in logs, rocks or thick vegetation. Important habitat includes large patches of forest containing adequate denning sites and high densities of mammalian prey. Spotted-tailed quolls are solitary with home ranges that vary typically between 100 ha and 5,000 ha with females tending to have smaller ranges and male ranges overlapping several female ranges[14].	Foraging: VERY LOW Denning: VERY LOW	The lack of suitable wet forest/woodland habitat in the proposed facility significantly reduces the chance of this species utilising the site; it is highly unlikely to occur and less likely to breed in the proposed facility.
Dasyurus viverrinus eastern quoll	-/ ENDANGERED	0/5	The eastern quoll is widespread in Tasmania and was previously widespread in mainland south-eastern Australia but has been effectively extinct there since 1963 (some reintroductions have occurred). Not currently listed as threatened species within Tasmania under the TSPA.	Foraging: MODERATE Denning: LOW	No scats, tracks or other signs of this species were recorded. However, it is quite possible that this species forages in the proposed facility. The breeding habitat requirements are relatively broad for this species and although it is possible that the species breeds in the proposed facility, the habitat is suboptimal and more suitable habitat is expected in the surrounding area.

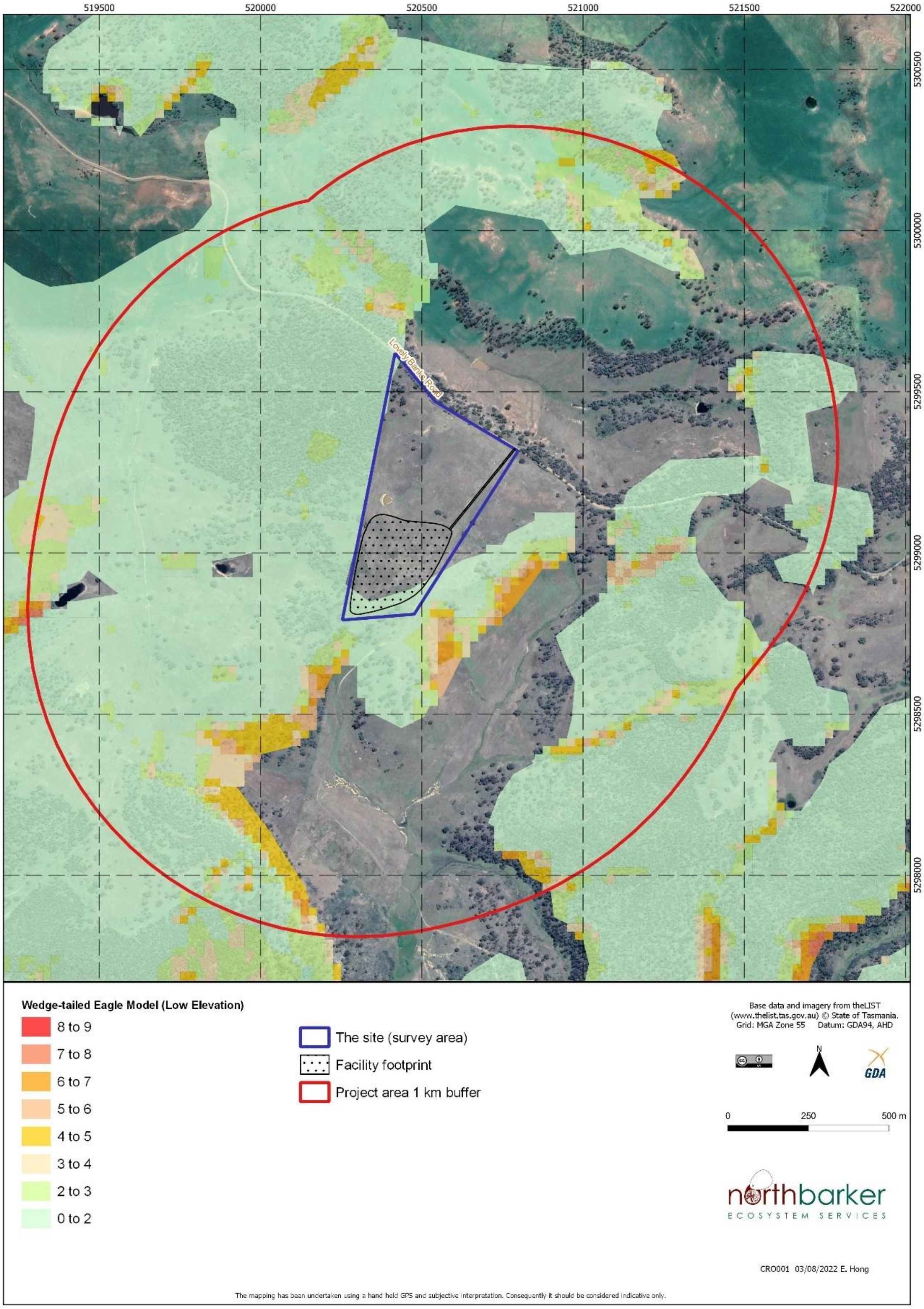
[14] Long & Nelson 2010 cited in the spotted-tailed quoll (Tasmanian population) Species Profile and Threats Database http://www.environment.gov.au,

			Records from the NVA indicate that the eastern quoll occurs in most parts of Tasmania but is recorded infrequently in the wetter western third of the state. The species' distribution is associated with areas of low rainfall and cold winter minimum temperatures. It is found in a range of vegetation types including open grassland (including farmland), tussock grassland, grassy woodland, dry eucalypt forest, coastal scrub and alpine heathland, but is typically absent from large tracts of wet eucalypt forest and rainforest.		
Sarcophilus harrisii Tasmanian devil	Endangered / ENDANGERED	1/41	The Tasmanian devil lives in a wide range of habitats across Tasmania, especially in landscapes with a mosaic of pasture and woodland. Populations have declined substantially since the first observations of the infectious cancer Devil Facial Tumour Disease (DFTD). DFTD has now spread across much of Tasmania. The reduced population is also likely to be more sensitive to additional threats such as death by roadkill, competition with cats and foxes, and loss or disturbance of areas	Foraging: MODERATE Denning: VERY LOW	No scats, tracks or other signs of this species were recorded. However, it is quite possible that this species forages in the proposed facility. No suitable breeding habitat was observed: the habitat is structurally simple, and the substrate is not friable for much of the proposed facility.

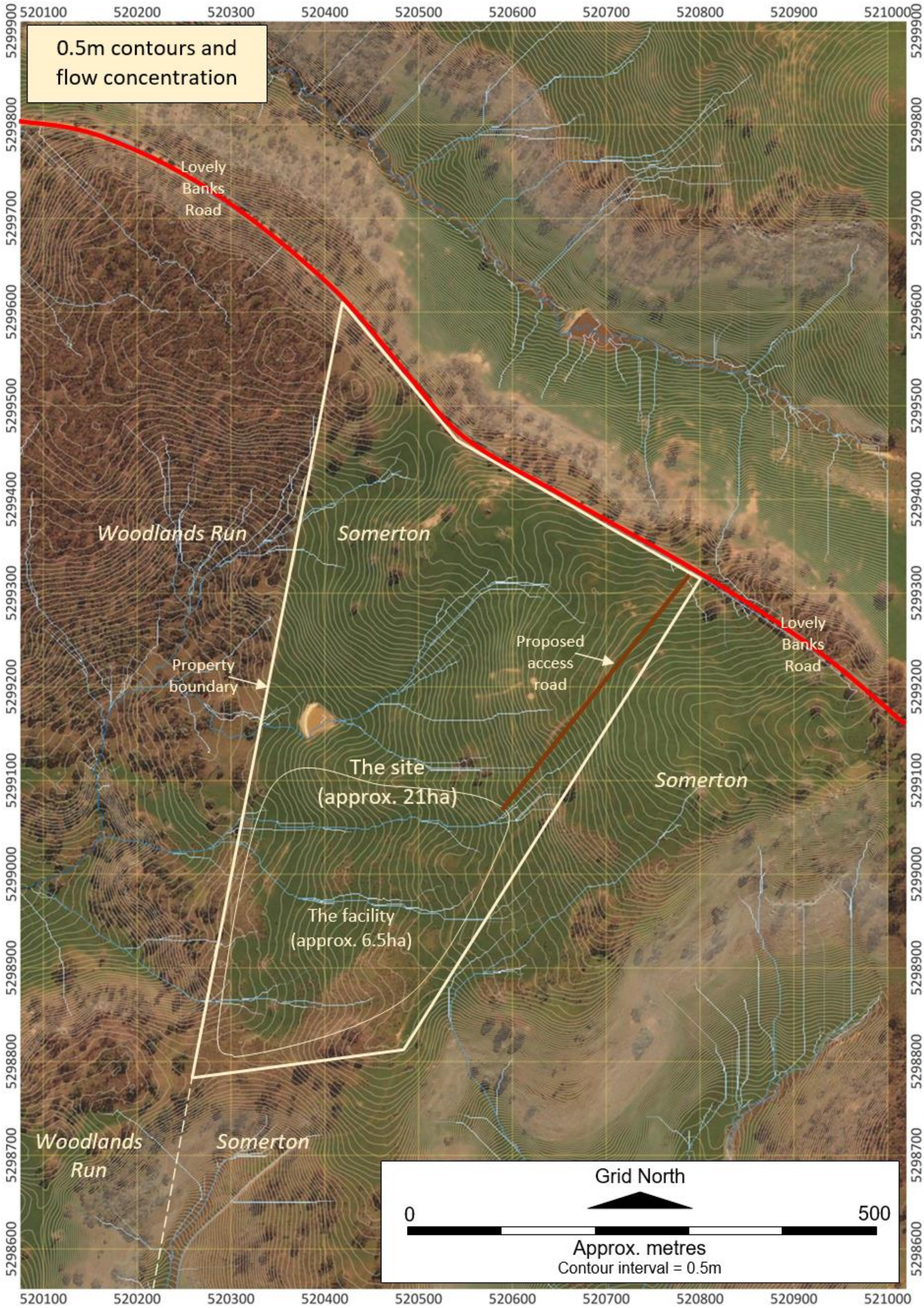
			surrounding traditional dens where young are raised. The protection of breeding opportunities is particularly important for the species due to the mortalities from demographic pressures. There are very few records from bases of trees or hollow logs and most are recorded from underground burrows or caves.		
Perameles gunnii Eastern barred bandicoot	- / VULNERABLE	/ 2	This species originally occurred in native grasslands and grassy woodlands in Tasmania's Midlands. However, it is now rare in the Midlands where most of its habitat has been cleared. Since European settlement the eastern barred bandicoot has spread into (originally heavily forested) agricultural areas in the state's southeast, northeast and northwest. It favours a mosaic of open grassy areas for foraging and thick vegetation cover for shelter and nesting. Removal of plant cover in agricultural areas is seen as one of the main threats to the species.	VERY LOW	The most recent record within 5 km is from 1975 and this species is now rare in this part of Tasmania. It is unlikely that tis species occurs in the proposed facility.
OTHER					
Litoria raniformis Green and gold frog	vulnerable / VULNERABLE	0/1	In Tasmania, the species occurs in lowland areas in the south-east (where it is very rare) and north,	NONE	No Suitable habitat in the proposed facility

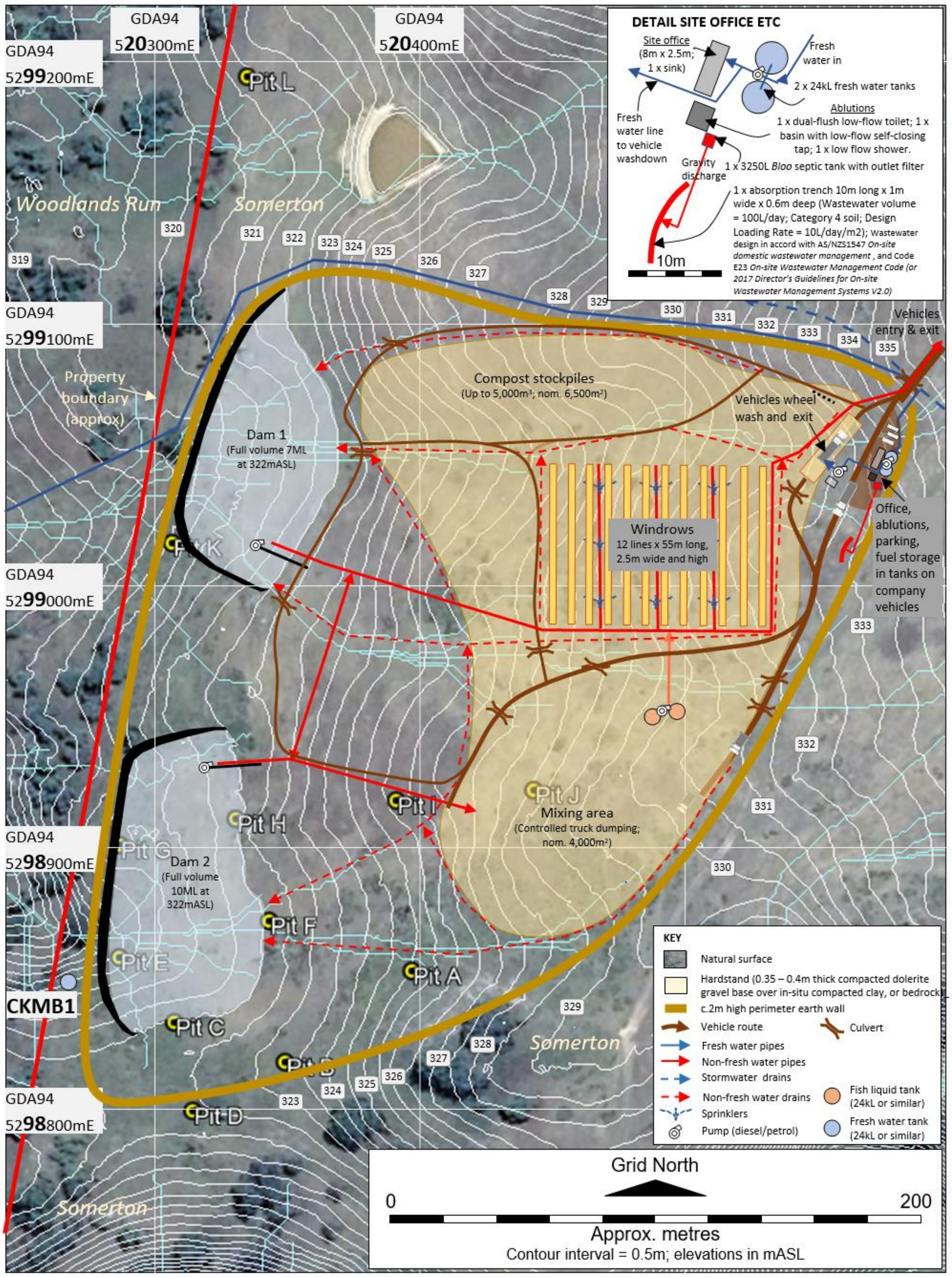
			breeding in permanent freshwater or slightly brackish habitats, generally with emergent vegetation. It has declined significantly (over 20 %) in range and abundance over the last 20 years, having disappeared from the Midlands, Derwent Valley, much of the Hobart region and parts of the north-west coast (although historical records are also less common in that region)		
Oreixenica ptunarra ptunarra brown butterfly	vulnerable / ENDANGERED	0/4	Found within *Poa* tussock grassland, woodland and grassy shrubland, this species is found in small populations above 400 m in the Central Plateau, the Steppes, eastern highlands, southern midlands and north-west plains. *Poa* grass is considered crucial for this species as the food plant for its caterpillar stage.	NONE	Although there is an occasional Poa tussock at the site, tussock grassland does not occur and there is no chance of this species occurring.

Appendix E: Wedge-tailed eagle breeding habitat model



Appendix F: Design from the proponent




DETAIL SITE OFFICE ETC
Site office (8m x 2.5m; 1 x sink)
Fresh water in
2 x 24kL fresh water tanks
Ablutions
1 x dual-flush low-flow toilet; 1 x basin with low-flow self-closing tap; 1 x low flow shower.
Fresh water line to vehicle washdown
Gravity discharge
1 x 3250L Bioo septic tank with outlet filter
1 x absorption trench 10m long x 1m wide x 0.6m deep (Wastewater volume = 100L/day; Category 4 soil; Design Loading Rate = 10L/day/m2); wastewater design in accord with AS/NZS1547 On-site domestic wastewater management, and Code E23 On-site Wastewater Management Code (or 2017 Director's Guidelines for On-site Wastewater Management Systems V2.0)
10m
GDA94 5299200mE
GDA94 5299100mE
GDA94 5299000mE
GDA94 5298900mE
GDA94 5298800mE
GDA94 520300mE
GDA94 520400mE
Woodlands Run
Somerton
Property boundary (approx)
Dam 1 (Full volume 7ML at 322mASL)
Dam 2 (Full volume 10ML at 322mASL)
Compost stockpiles (Up to 5,000m³; nom. 6,500m²)
Vehicles wheel wash and exit
Vehicles entry & exit
Windrows 12 lines x 55m long, 2.5m wide and high
Office, ablutions, parking, fuel storage in tanks on company vehicles
Mixing area (Controlled truck dumping; nom. 4,000m²)
Pit L
Pit K
Pit J
Pit I
Pit H
Pit G
Pit F
Pit E
Pit D
Pit C
Pit A
CKMB1
KEY
Natural surface
Hardstand (0.35 – 0.4m thick compacted dolerite gravel base over in-situ compacted clay, or bedrock)
c.2m high perimeter earth wall
Vehicle route
Culvert
Fresh water pipes
Non-fresh water pipes
Stormwater drains
Non-fresh water drains
Fish liquid tank (24kL or similar)
Sprinklers
Fresh water tank (24kL or similar)
Pump (diesel/petrol)
Grid North
0
200
Approx. metres
Contour interval = 0.5m; elevations in mASL