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Flora and Fauna Assessment




Goulburn Waste Management Facility, Sinclair Street, Goulburn, NSW

Proposed Reuse Goulburn Facility

Prepared for: Cardno

14 April 2020

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Glossary and abbreviations

Abbreviation	Description
BC Act	NSW *Biodiversity Conservation Act 2016*
BGW	Box Gum Woodland
CEEC	Critically Endangered Ecological Community
DoEE	Commonwealth Department of the Environment and Energy
EEC	Endangered Ecological Community
EP&A Act	NSW *Environmental Planning and Assessment Act 1979*
EPBC Act	Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*
GMLEP	Goulburn Mulwaree Local Environmental Plan 2009
HBT	Hollow Bearing Tree
LEP	Local Environmental Plan
LGA	Local Government Area
mm/cm/m/km	Millimetres/centimetres/metres/kilometres
masl	Metres above sea level
MNES	Matters of National Environmental Significance
PCT	Plant Community Type
TEC	Threatened Ecological Community, listed as vulnerable, endangered or critically endangered under either the BC Act and/or EPBC Act
*	Denotes exotic species

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1 Introduction

1.1 Purpose of report

Ecoplanning was commissioned to undertake a flora and fauna assessment of the proposed development of new Re-use Goulburn (RUG) facilities at the Goulburn Waste Management Centre in Sinclair Street, Goulburn. The proposed development is to be located within primarily cleared land in the western portion of the existing Waste Services Facility. The proposal will be assessed under Part 5 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act). The purpose of this report is to identify and assess the flora and fauna within the study area and the likely impacts of the proposed development. This report addresses the legislative context provided in **Table 1.1** and **Table 1.2**.

Table 1.1: Legislative framework reviewed in this report (Commonwealth and State)

Instrument	Considerations	Context
Commonwealth		
Environment Protection and Biodiversity Conservation (EPBC) *Act 1999*	Matters of National Environmental Significance	An action will require approval from the Minister if the action has, will have, or is likely to have, a significant impact on a matter of national environmental significance.
State (New South Wales)		
Biodiversity Conservation Act (BC) *Act 2016*	Part 4, Divisions 2 and 5	Lists threatened species, ecological communities and key threatening processes to be considered under s7.3
	Section 7.3	Test for determining whether proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats
Environmental Planning and Assessment (EP&A) *Act 1979*	Part 5	Describes the procedure and context for assessment and consent

Table 1.2: Legislative framework reviewed in this report (Local)

Local Government		
Goulburn – Mulwaree Local Environmental Plan 2009 (GMLEP)	Clause 7.2 – Terrestrial Biodiversity	The objectives of this clause are to protect, maintain or improve the diversity of the native vegetation, including: (a) protecting biological diversity of native flora and fauna, and (b) protecting the ecological processes necessary for their continued existence, and (c) encouraging the recovery of threatened species, communities or populations and their habitats. This clause applies to development on land that is identified as "Biodiversity" on the Terrestrial Biodiversity Map. The site does not appear to be mapped as 'Biodiversity' although it is surround to the north, south and east by land mapped as 'Biodiversity.'

1.2 Site description

1.2.1 Subject site and study area

Following the *Threatened Species Test of Significance Guidelines* (OEH 2018a) the ***subject site*** is defined as the area 'directly affected by the proposal', and includes all vegetation proposed to be removed. The site has been defined by the area included within the survey plan provided by Cardno.

The **study area** is defined as the subject site and all areas that are indirectly impacted upon by the proposal, and includes a buffered area of approximately 30 m surrounding the subject site **(Figure 1.1**)

The study area is situated in Goulburn Mulwaree (LGA).

1.2.2 Locality

Very little native vegetation occurs within 10 km of the study area (**Figure 1.2**) and mostly consists of fragmented patches of bushland with minimal connectivity to surrounding vegetation. Under the GMLEP (2009) the study area is zoned SP2 Infrastructure (Waste Management Facility). The surrounding lands are zoned E2 – Environmental Conservation, B6 Enterprise corridor and RE 1 Public recreation (**Figure 1.3**).

The study area comprises approximately 6.73 ha of primarily cleared land with a small amount of remnant vegetation present on the western and northern boundary of the study area (**Figure 1.1**). The proposal has been designed to minimise native vegetation clearance by locating the proposal largely within previously cleared land.

1.3 Description of the proposal

The study area is located within Lot 265 // DP750050 and Lot 1 // DP1064103. The proposed development includes the establishment of new Re-use Goulburn (RUG) facilities (**Figure 1.1**). Current operations include the collection and recycling of bulky goods, comingled recyclables, batteries and oils, general landfill and organics composting. The proposal involves alterations and additions to the existing site including a new resource recovery shed, a re-use hub/education centre, and replacement of existing truck wash. The proposal is situated in the primarily cleared land in the western part of the current waste management facility.

Proposed facilities include:

- A new exit weighbridge
- Offices
- An education centre
- Resource recovery shed
- Bus and car parks
- CRC area
- Large items area
- Skips and tip wells
- Push pit area
- Truck wash bay

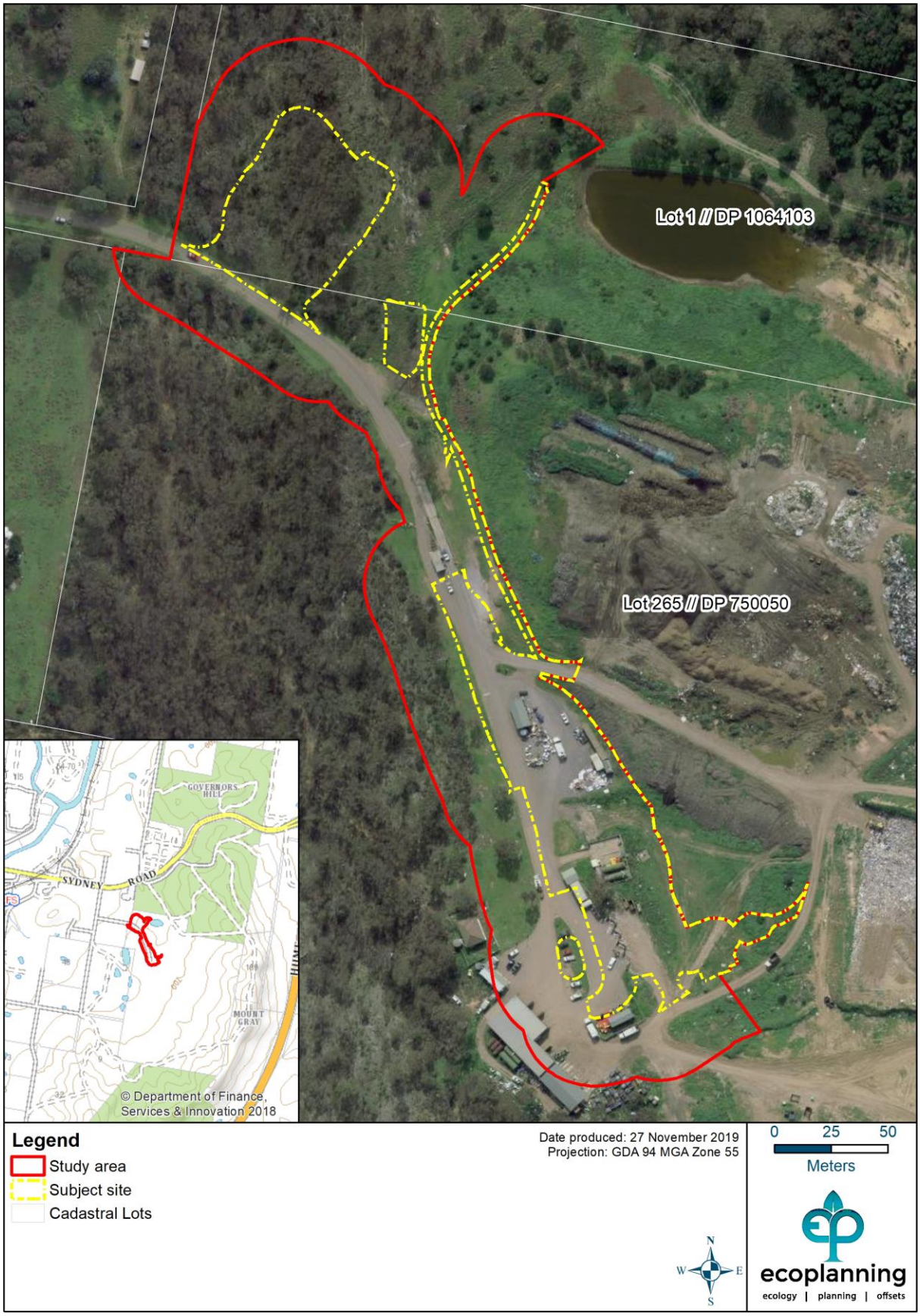

Figure 1.1: Study area and subject site, Goulburn Waste Management Facility, Sinclair Street, Goulburn

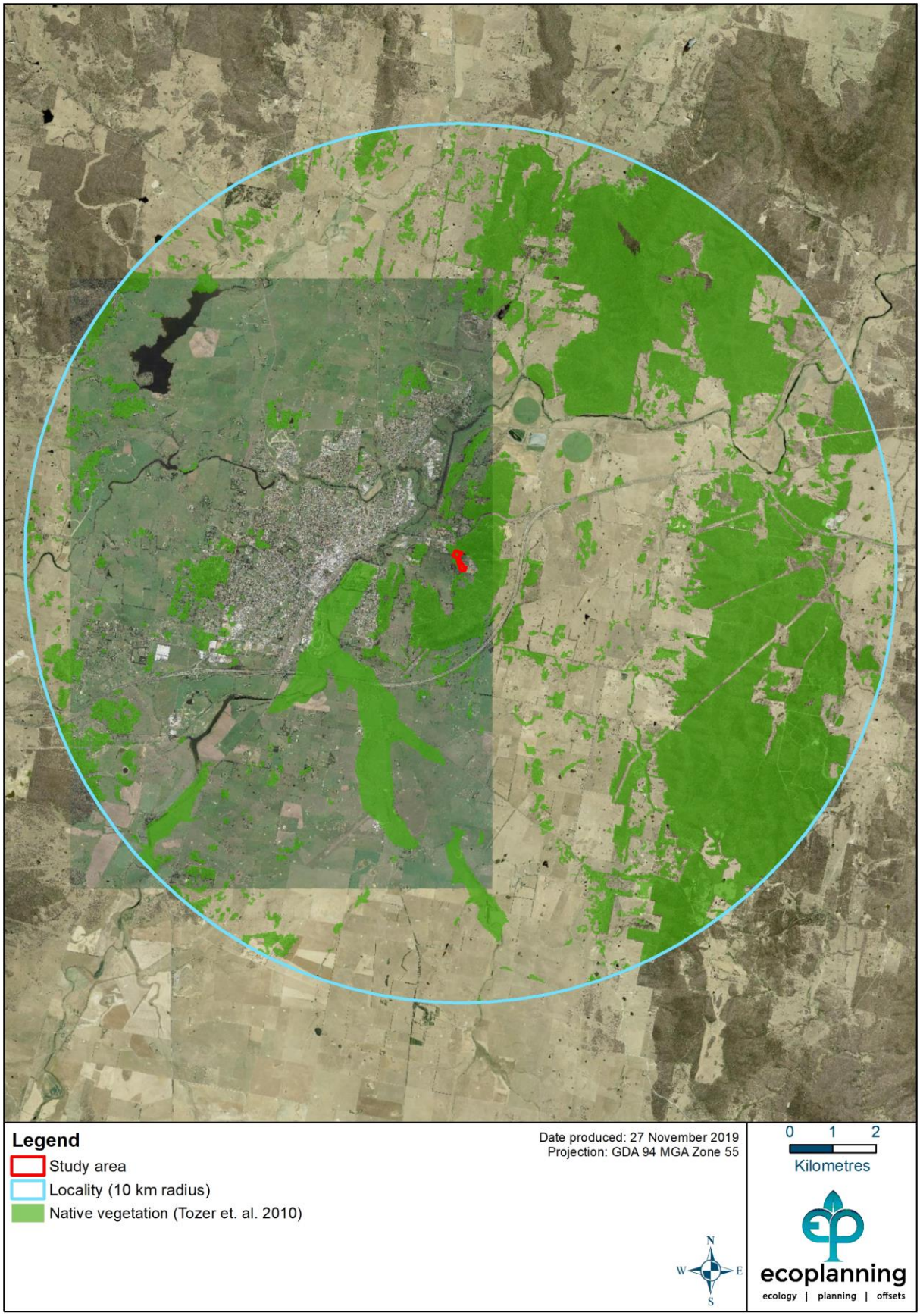

Figure 1.2: Mapped native vegetation within 10 km of the study area (Tozer et al 2010)

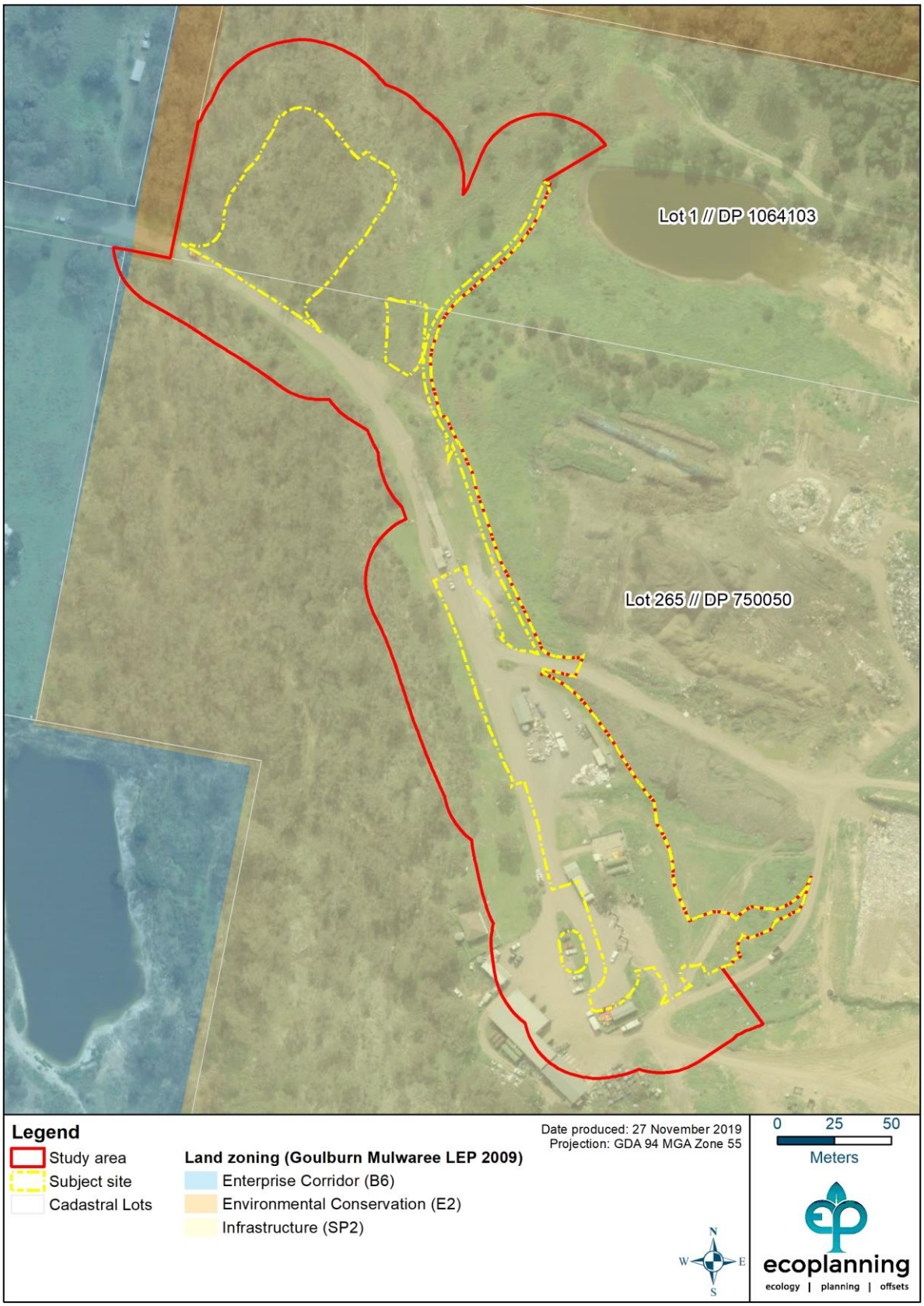

Figure 1.3: Land zoning (Goulburn Mulwaree LEP 2009)

2 Methods

2.1 Literature and database review

A site-specific literature and database review were undertaken prior to the field survey and the preparation of this report. This included desktop analysis of aerial photography and review of regional scale information from the following sources:

- NSW Planning Viewer (NSW Dept. of Planning and Environment 2018)
- BioNet Atlas of NSW Wildlife (NSW Office of Environment and Heritage (OEH) 2018a)
- Protected Matters Search Tool (Commonwealth Department of the Environment and Energy (DotEE) 2018)
- SIX Maps (Land and Property Information (LPI) 2018)
- Native Vegetation of South East NSW (Tozer et al. 2010)
- NSW Vegetation Information System (VIS) (OEH 2018b)
- Soil Landscape Mapping (Hird 1991, DECCW 2009)

The following policies and guidelines were considered in the preparation of this report:

- The EPBC Act Matters of National Environmental Significance: Significant Impact Guidelines (Dept. of Environment, Water, Heritage and the Arts (DEWHA) 2013)
- Threatened Species Test of Significance Guidelines (OEH 2018c)

Threatened species, populations and migratory species that were recorded within 10 km of the study area in the Atlas of NSW Wildlife (OEH 2018a) and listed in the EPBC Protected Matters Search Tool (DotEE 2018) were consolidated and their likelihood of occurrence was assessed by:

- reviewing the location and date of recent (<5 years) and historical (>5-20 years) records
- reviewing available habitat within the study and surrounding areas
- reviewing the scientific literature pertaining to each species and population
- applying expert knowledge of each species

The potential for each threatened species, population and/or migratory species to occur was then considered and the necessity for targeted field surveys was determined. Following field surveys and review of available habitat within the study area, the potential for species or populations to use the study area and to be affected directly or indirectly by the proposal were identified as either:

- “Recent record” = species has been recorded in the study area within the past 5 years
- “High” = species has previously been recorded in the study area (>5 years ago) or in proximity to (for mobile species), and/or habitat is present that is likely to be used by a local population

- "Moderate" = suitable habitat for a species is present onsite but no evidence of a species detected and relatively *high* number of recent records (5-20 years) in the locality or species is highly mobile
- "Low" = suitable habitat for a species is present onsite but limited or highly degraded, no evidence of a species detected and relatively *low* number of recent records in the locality
- "Not present" – suitable habitat for the species is not present onsite or adequate survey has determined species does not occur in the study area

2.2 Field survey

A general site survey (CSIRO and NCST 2009) was undertaken by Elizabeth Norris (Senior Botanist) on 18 October 2018. The survey assessed the vegetation and fauna habitat features on site and validated the vegetation communities occurring within the study area.

Weather conditions on the day were cool and clear. There was 0.2 mm of rain recorded 24 hours prior to the survey (**Table 2.1**).

Table 2.1: Daily weather observation at Goulburn TAFE (Station Number 070263).

Date	Temp (°C)		Rainfall (mm)	Max wind	
	Min	Max		Direction	Speed (km/h)
18/10/2018	9.3	22.8	12.4	NNW	37

2.2.1 Vegetation communities and flora

Field survey involved traversing the study area whilst recording native and exotic flora species, with a focus on identifying potential habitat for threatened flora species. Parts of the study area containing native vegetation were surveyed more extensively than cleared areas of the site. Nomenclature follows the Flora of NSW (Harden 1990-2002) and updates provided in PlantNET (RBGDT 2017).

Field survey was undertaken to check the regional vegetation mapping of Tozer et. al. 2010 (**Figure 3.3**) and to describe the vegetation on the site based on site-specific information. Vegetation communities were also checked against described Threatened Ecological Communities (TECs) listed under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the *Biodiversity Conservation Act 2016* (BC Act).

2.2.2 Fauna and fauna habitat

Incidental fauna survey was undertaken for birds, amphibians, reptiles and mammals, which included opportunistic observations of fauna along with observation of signs of direct and indirect occupancy (i.e. scats, owl pellets, fur, bones, tracks, bark scratches, foliage chew marks and chewed cones of *Pinus* spp. as well as some of the other cultivars known to be used by fauna).

Fauna habitat searches were conducted for potential foraging, roosting, breeding or nesting habitats of nocturnal and diurnal species. This included inspections to determine the presence of any tree hollows, stags, bird nests, possum dreys, decorticating bark, rock shelters, rock outcrops / crevices, mature / old growth trees, food trees (*Banksia* spp., *Allocasuarina* spp., and winter-flowering eucalypts), culverts, dens, dams, riparian areas and refuge habitats of man-made structures.

Primary sources of literature accessed for species nomenclature include:

- Birds - Christidis and Boles (2008)
- Bats – Churchill (2008)
- Mammals - Van Dyck and Strahan (2008)
- Reptiles and amphibians – Robinson (1998), Cogger (2014)
- Terrestrial invertebrates - Australian Faunal Directory (ABRS 2009)

2.2.3 Survey limitations

The flora survey aimed to record as many species as possible. However, a definitive list of the flora within the study area cannot be gathered without systematic traverses and survey across a number of seasons. Given the highly disturbed nature of the vegetation on the site and the site history, this level of survey effort was not deemed necessary for this assessment. While additional species would be recorded during a longer survey over various seasons, the techniques used in this investigation are considered to be adequate to gather the data necessary to validate the vegetation communities and vegetation condition in the study area, and to detect any threatened flora.

A full fauna survey following *Threatened Species Survey and Assessment Guidelines* (OEH 2013) was not undertaken as sufficient detail to determine the likelihood of occurrence of threatened and migratory species for the purpose of this report was achieved through habitat assessment during the field survey.

3 Results

3.1 Literature and database review

3.1.1 Topography, drainage, soils and biodiversity layer

The study area is approximately 694 masl, and is of undulating terrain with a general westward slope towards the centre of Goulburn township. The study area did not support any watercourses on or adjacent to the site although there is a large dam in the northern part of the study area.

The study area is located on land mapped as 'disturbed terrain' and on the Bullamalita soil landscape (**Figure 3.1**). The Bullamalita soil landscape covers an area of 160 km² near the city of Goulburn and is associated with Upper Silurian and Lower Devonian sediments wherever they occur in conjunction with footslopes and valley floors or on landform patterns with slope gradients generally <10%. Soils are generally acid to neutral yellow duplex soils on sideslopes, footslopes and drainage lines. The soil landscape includes undulating to rolling hills at elevations between 650 – 800 m, with local relief between 10 – 50 m. Native vegetation commonly found on this soil landscape includes Savannah woodland of Yellow Box and Red Gum.

The study area is not mapped as "Natural resource sensitivity – biodiversity" on the Natural Resources Sensitivity – Biodiversity Map under the Goulburn Mulwaree Local Environmental Plan (2009).

3.1.2 Threatened species, populations and migratory species

Nineteen (19) threatened species have been previously recorded within a 10 km radius of the study area, including 15 fauna and four flora species (**Appendix A** and **Figure 3.2**).

No threatened flora or fauna species listed under the BC Act or the EPBC Act were recorded during the site inspections, and searches of relevant databases (Atlas of NSW Wildlife, OEH 2018) did not identify any previous records of threatened flora or fauna species within the study area.

There are four records of threatened flora species within the locality. The closest threatened flora species is *Leucochrysum albicans* var. *tricolor* (Hoary Sunray), previously recorded approximately 2.61 km from the study area. All other records of threatened flora species are situated >4.9 km from the study area. The four threatened species recorded in the locality were assessed as 'not present' in the study area, based on the degraded condition of the study area and flora surveys conducted on 18 October 2018.

Threatened fauna species that have recently been recorded or were assessed to have a 'moderate' likelihood of occurring in the study area (**Appendix A**) were assessed in accordance with the relevant components of the Significant Impact Guidelines Commonwealth Department of the Environment (DotE) (2013) and/or Part 7.3 of the BC Act. These species were:

- Dusky Woodswallow (*Artamus cyanopterus cyanopterus*)
- Varied Sittella (*Daphoenositta chrysoptera*)

3.1.3 Vegetation and threatened ecological communities

Desktop assessment identified two native vegetation communities mapped to the west of the site, with a small amount of Tableland Low Woodland (DSF p9) and Western Tablelands Dry Forest (DSF p14) mapped on the northern and southern fringes of the study area (Tozer 2010). Two small patches of Western Tablelands Dry Forest (DSF p14) are also mapped within the middle western edge of the study area (**Figure 3.3**). The remainder of the study area is unmapped (**Figure 3.3**).

These two vegetation communities share several co-occurring species and both communities are found in undulating terrain on the tablelands (Tozer et al 2010). Generally, Tableland Low Woodland (DSF p9) occurs on low ridges on sandy loam soils whilst Western Tableland Dry Forest (DSF p14) is widely distributed on dry ridges.

Neither of these two communities are listed TECs under the EPBC Act or BC Act.

Table 3.1: Vegetation community nomenclature

Vegetation communities (Tozer 2010)	Corresponding Plant Community Types	TECs	BC Act	EPBC Act
Tableland Low Woodland (DSF p9)	PCT 888 - Inland Scribbly Gum – Brittle Gum – low woodland of the eastern tablelands, South East Highlands	No	No	No
Western Tableland Dry Forest (DSF p14)	PCT 1093 - Red Stringybark – Brittle Gum – Inland Scribbly Gum dry open forest on skeletal hills of the tablelands, South East Highlands	No	No	No

3.1.4 Biodiversity (Terrestrial)

The study area does not occur on land identified on the Terrestrial Biodiversity Map (DPE 2018).

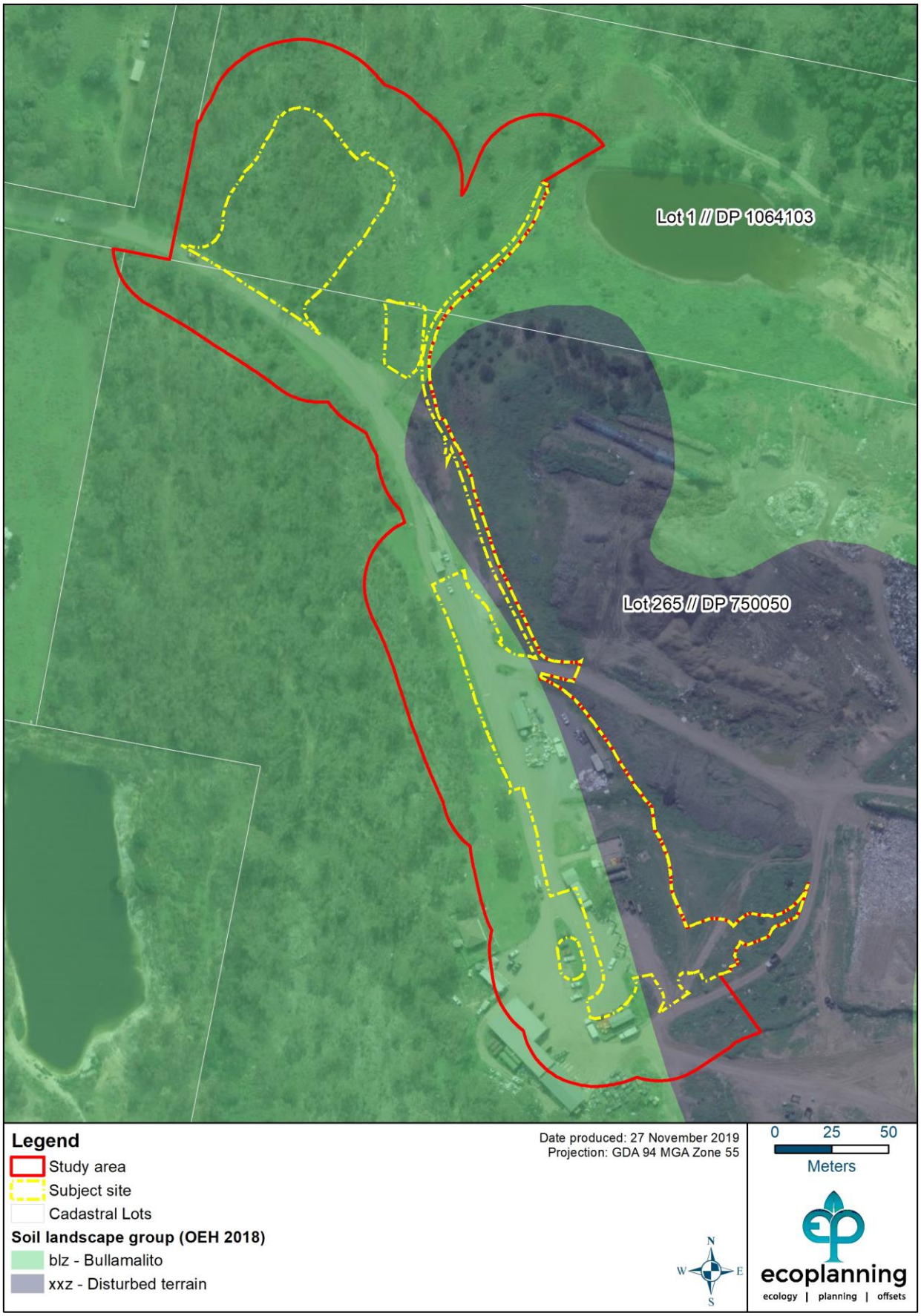

Figure 3.1: Soil landscapes in the study area (Hird 1991).

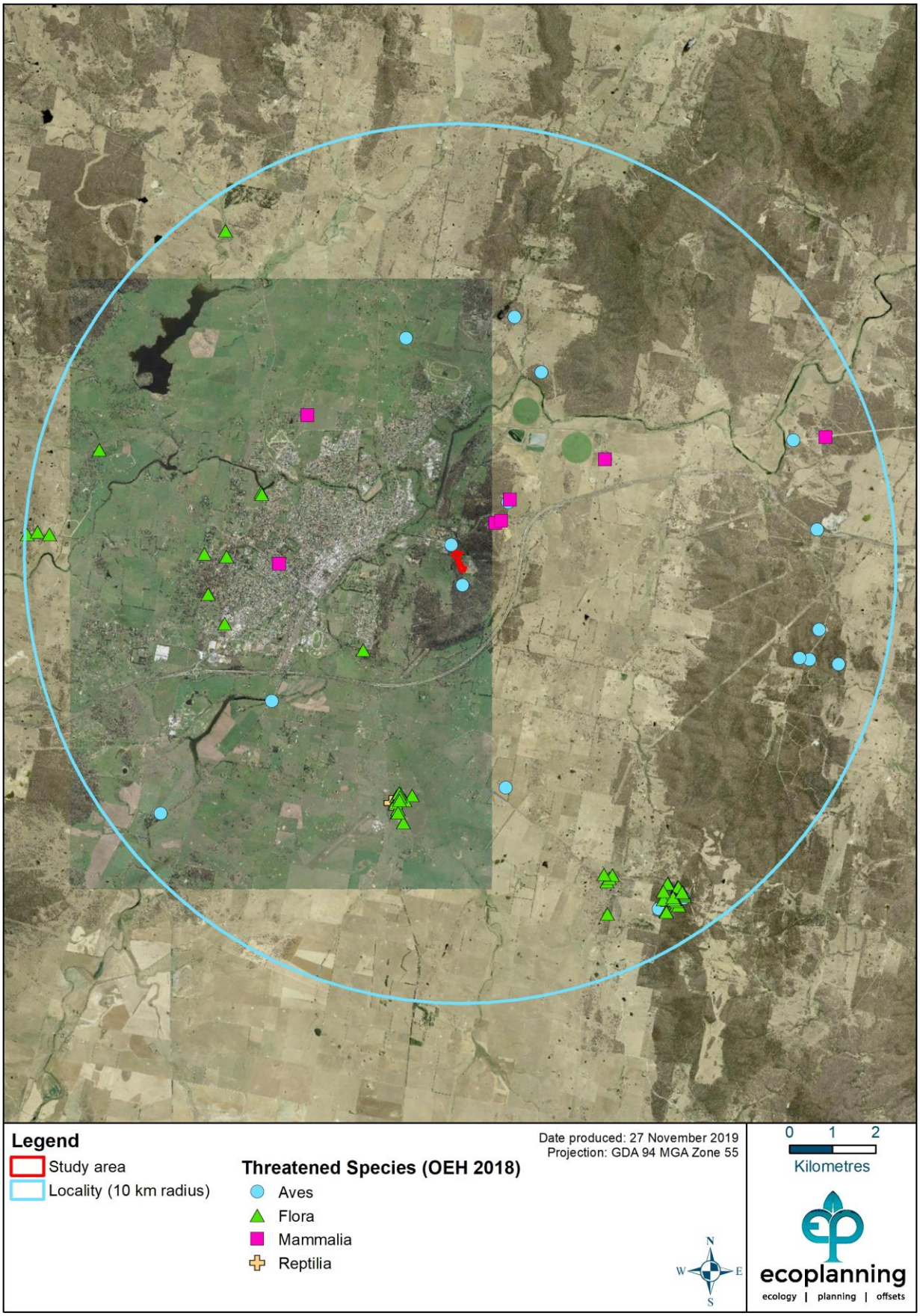

Figure 3.2: Threatened species record within the locality

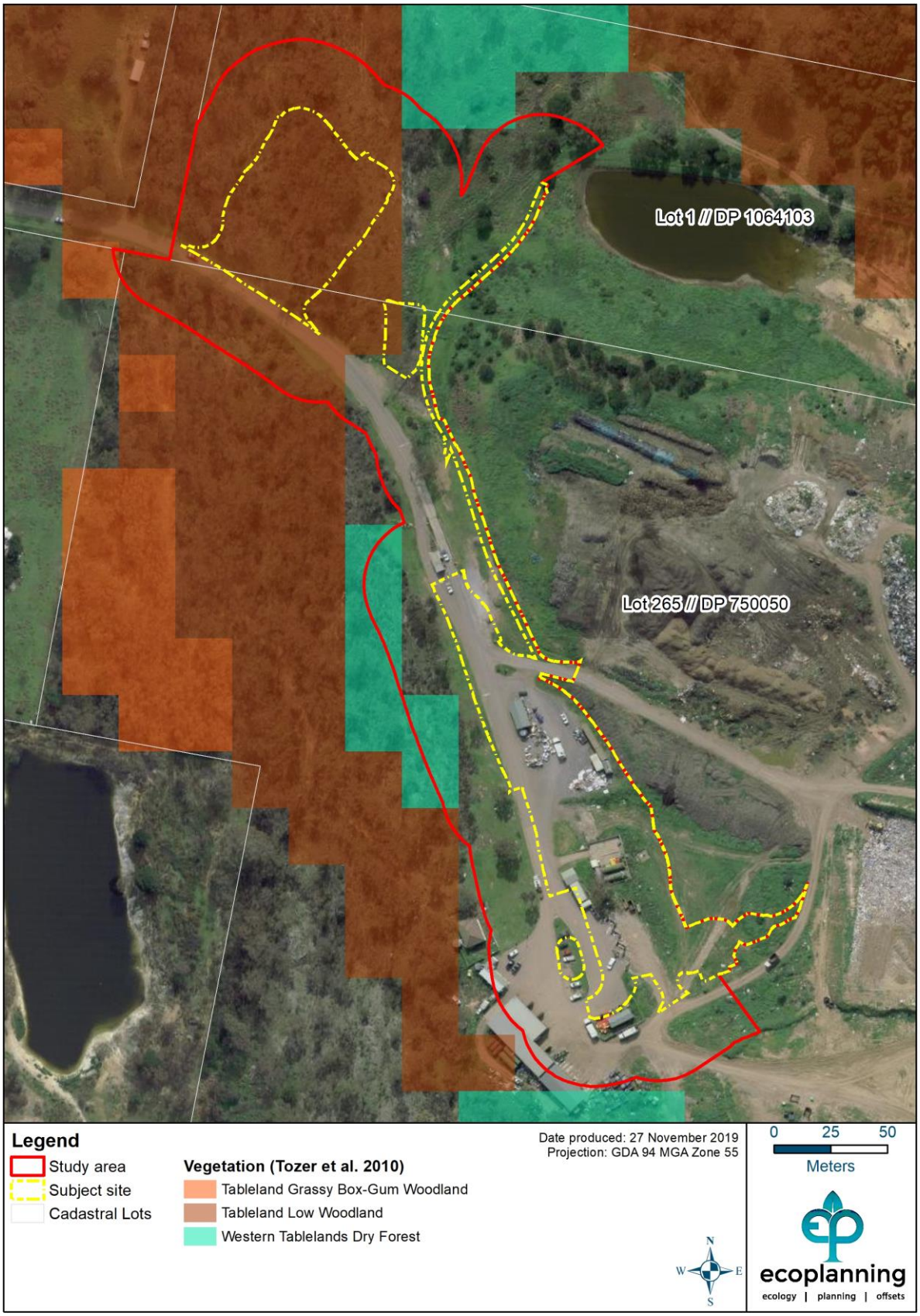

Figure 3.3: Native vegetation within the study area (Tozer et al. 2010)

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3.2 Field survey

3.2.1 Vegetation communities and flora species

The study site had undergone extensive clearing through the development the Goulburn Waste Management Facility, and most of the native vegetation occurred in a disturbed and modified condition through maintenance clearing for overhead transmission lines and mowing of the ground-layer. More intact native vegetation within the study site was present at the northern end, north of the Sinclair Street, although some of this vegetation had also been disturbed to varying degrees.

Following field survey and entering species into the VIS database it was determined that the native vegetation was generally consistent with Western Tablelands Dry Forest (equivalent to PCT 1093 – Red Stringybark – Brittle Gum – Inland Scribbly Gum dry open forest on skeletal hills of the tablelands, South East Highlands (VIS 2018). However, following subsequent feedback from Council and re-running the VIS database it was determined that the native vegetation within the subject site is generally consistent with the Tableland Low Woodland (DSF p9) as mapped by Tozer et al (2010). This community is equivalent to PCT 888 – Inland Scribbly Gum – Brittle Gum low woodland of the tablelands (VIS 2020). Both PCT 1093 and PCT 888 share a number of species in common.

The remaining portions of the study area were mapped as exotic grassland, disturbed land and infrastructure (**Figure 3.4**). Descriptions for each of the vegetation zones mapped at the site is included below.

Tableland Low Woodland (PCT 888 Inland Scribbly Gum – Brittle Gum – low woodland of the eastern tablelands, South East Highlands) – moderate to good

Native vegetation characteristic of PCT 888 – Inland Scribbly Gum – Brittle Gum low woodland was present along the western and northern boundaries of the study area (**Figure 3.5**). The canopy was dominated by *Eucalyptus rossii* (Inland Scribbly Gum) with *Eucalyptus macrorhyncha* occurring less frequently. Smaller trees and shrubs included *Acacia decurrens, Allocasuarina littoralis* and *Persoonia linearis.* A low shrub layer was also present and was dominated by *Calytrix tetragona, Ozothamnus diosmifolius* (Dogwood), *Platysace lanceolata*, *Cassinia arcuata* (Sifton Bush), *Persoonia mollis* subsp. *livens*, and *Grevillea arenaria* subsp. *arenaria* (Sand Grevillea) scattered throughout. The understorey was composed of a mixture of native and exotic species with commonly recorded native species including *Rytidosperma fulvum, Rytidosperma pallidum*, *Pimelea linifolia* subsp. *linifolia* (Slender Rice Flower), *Lepidosperma gunnii*, *Brachyloma daphnoides* (Daphne Heath), and *Einadia nutans* (Climbing Saltbush).

Exotic species were common where areas of the ground layer were more disturbed, such as around existing infrastructure (transmission line easement). Common exotic species included *Ehrharta erecta* (Panic Veldt Grass), *Eragrostis curvula* (African Lovegrass), *Hypochaeris radicata* (Catsear), *Sonchus oleraceus* (Sowthistle), *Cerastium glomeratum* (Mouse-ear Chickweed), *Hirschfeldia incana* (Hairy Brassica) and *Arctotheca calendula* (Cape Weed).

In areas adjacent to the transmission line easement, the canopy of this community was more open and areas of disturbed soil was also present amongst the shrub layer (**Figure 3.6**).

Tableland Low Woodland (*PCT 888 Inland Scribbly Gum – Brittle Gum – low woodland of the eastern tablelands, South East Highlands*) *– scattered trees*

A narrow strip comprising several scattered trees of *Eucalyptus rossii* (Inland Scribbly Gum) with the occasional *Eucalyptus blakelyi* (Blakely's Red Gum) over a maintained and mown exotic grassland occurred adjacent to the western side of the Sinclair Street access road and facilities. A small area of landscaped garden, located adjacent to the weigh bridge, had been developed and decorated with pre-loved toys (**Figure 3.7**).

Exotic grassland

This vegetation type consisted of cleared land dominated by exotic grasses and forbs growing beneath and adjacent to the transmission line easement in the north of the study area, north of Sinclair Street. The dominant ground-layer species were *Eragrostis curvula* (African Lovegrass), with other species including *Echium plantagineum* (Paterson's Curse), *Prunus* species (Cherry) and *Rubus fruiticosus* spp. agg. (Blackberry) occurring less frequently (**Figure 3.8**).

Disturbed land

Disturbed land includes those areas of the modified landforms of buried waste material, located along the eastern portions of the study area. Areas of shrub plantings are also present, and form part of some re-plantings works along the bunds of the waste facility site. These gardens are also decorated with pre-loved toys (**Figure 3.9**).

The remaining areas of the subject site included infrastructure comprising hard surfaces (roads, carparks), office and depots, the weigh bridge and the various waste service recycling areas.

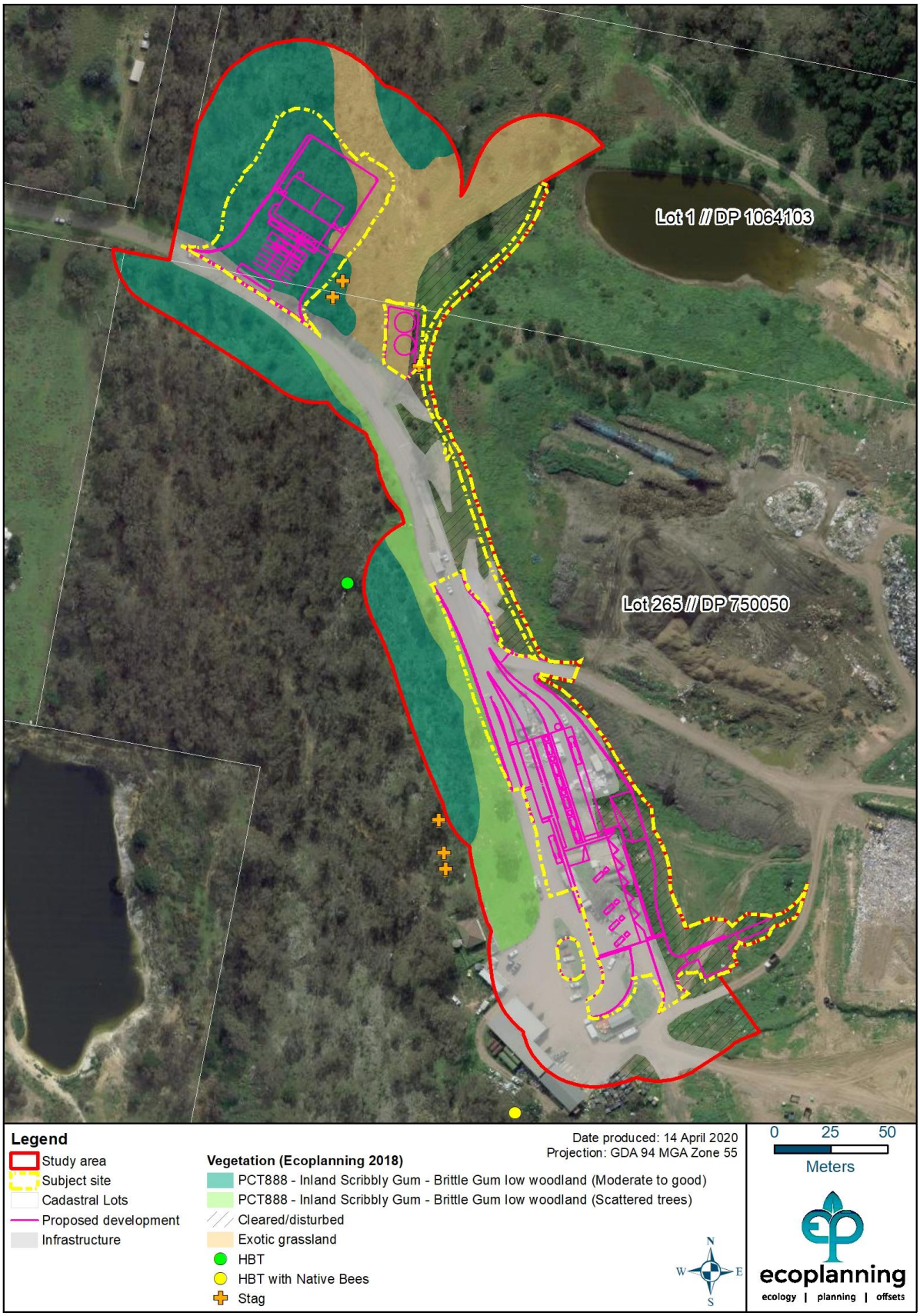

Figure 3.4: Field validated vegetation in the study area (Ecoplanning 2018).

Figure 3.5: Tableland Low Woodland (PCT 888 – Inland Scribbly Gum – Brittle Gum – low woodland) in the study area

Figure 3.6: Tableland Low Woodland (PCT 888 – Inland Scribbly Gum – Brittle Gum – low woodland) in the subject site

Figure 3.7: Tableland Low Woodland (PCT 888 – Inland Scribbly Gum – Brittle Gum – low woodland (scattered trees) in the subject site

Figure 3.8: Exotic grassland

Figure 3.9: Disturbed Land

Table 3.2: Vegetation types found in the study area showing the condition and area.

Vegetation type	Vegetation zone (condition class)	BC Act	EPBC Act	Study Area (ha)[1]	Subject Site (ha) [1]
Tableland Low Woodland (PCT 888 – Inland Scribbly Gum – Brittle Gum – low woodland)	Moderate to good	-	-	1.24	0..35
	Scattered trees	-	-	0.32	0.01
Total native vegetation				**1.56**	**0.36**
Other vegetation	Exotic grassland	N/A	N/A	0.58	0.10
	Disturbed land	N/A	N/A	0.64	0.33
Total vegetation				**2.78**	**0.79**
Infrastructure	N/A			1.40	0.66

[1] Total area of vegetation subject to rounding errors

3.2.2 Flora species

A total of 69 flora species were identified within the study area, of which 23 are exotic and 46 are native (**Appendix C**).

One weed listed under the NSW *Biosecurity Act 2015* and Local Land Services (2017) is a Weed of National Significance (WoNS) (**Table 3.3**). Four other weed species are also listed under the NSW *Biosecurity Act 2015* and/or Local Land Services Strategic Weeds Management Plan (2017) (**Table 3.3**).

Table 3.3: Priority weeds and Weeds of National Significance (WoNS).

Common name	Scientific name	WoNS	Duty
Blackberry	*Rubus fruiticosus* spp. agg.	Y	**Mandatory Measure** Must not be imported into the State or sold.
African Love Grass	*Eragrostis curvula*	N	**General Biosecurity Duty** *All plants are regulated with a **general biosecurity duty** to prevent, eliminate or minimise any biosecurity risk they may pose. Any person who deals with any plant, who knows (or ought to know) of any biosecurity risk, has a duty to ensure the risk is prevented, eliminated or minimised, so far as is reasonably practicable.*
St John's Wort	*Hypericum perforatum*	N	**General Biosecurity Duty** (As above) **Regional Recommended Measure**** *Whole region: Land managers should mitigate the risk of new weeds being introduced to their land. Plant should not be bought, sold, grown, carried or released into the environment. Exclusion zone: The plant should be eradicated from the land and the land kept free of the plant.*
Paterson's Curse	*Echium plantagineum*	N	**General Biosecurity Duty** (As above)

Common name	Scientific name	WoNS	Duty
Viper's Bugloss	*Echium vulgare*	N	**General Biosecurity Duty** (As above)

** South East Local Land Services South East Regional Strategic Weed Management Plan

No individuals or populations of threatened flora species under the BC Act or EPBC Act were recorded in the study area.

3.2.3 Fauna Habitat

A range of fauna habitat features were present in the study area:

- Woodland
- Hollow-bearing trees
- Stag trees
- Large woody debris
- Rocky outcrop

Habitat within the study area provided potential foraging, roosting and nesting resources. The habitat features relevant to each fauna group are shown in **Table 3.4**. One hollow bearing tree and six stag trees were recorded within the study area. No hollow bearing trees or stags were recorded within the subject site (**Figure 3.4**).

Table 3.4: Key fauna habitat features of relevance to fauna in the study area.

Habitat features	Fauna species
Woodland	Diurnal and nocturnal birds and arboreal mammals, bats, reptiles, frogs
Stag tree	Diurnal and nocturnal birds and arboreal mammals, bats, reptiles
Hollow-bearing tree	Diurnal and nocturnal birds, arboreal mammals, microchiropteran bats and reptiles
Large woody debris	Reptiles, birds, terrestrial mammals
Rocky outcrop	Reptiles, terrestrial mammals

3.2.4 Fauna species

Field surveys recorded a total of seven fauna species, six of which were birds, and one mammal (**Appendix D**). No threatened fauna species were recorded during the field survey. The low incidence of fauna sightings may be attributable to the size of the study area and its proximity to the Waste Services facilities.

State Environmental Planning Policy No.44 (SEPP 44) – Koala Habitat Protection

State Environmental Planning Policy applies to land that is listed in Schedule 1 of SEPP 44, and that has:

- *Has an area of more than 1 ha, or*
- *Has, together with any adjoining land in the same ownership, an area of more than 1 ha, whether or not the development application applies to the whole, or only part, of the land.*

The study area is in Goulburn Mulwaree Local Government Area, which is listed in Schedule 1 of SEPP 44 and is >1 ha, hence the SEPP 44 applies to the study area.

To determine if a development consent can be granted using SEPP 44, a two-step assessment is required:

Step 1: Is the land potential koala habitat (where potential koala habitat means areas of native vegetation where the trees of the types listed in Schedule 2 constitute at least 15% of the total number of trees in the upper or lower strata of the tree component)?

The canopy species recorded in the study area included *Eucalyptus rossii*, *Eucalyptus blakelyi, Eucalyptus blakelyi X dealbata* and *Eucalyptus macrorhyncha*. These canopy species are not listed feed trees under Schedule 2 of SEPP 44. As such, the study area does not constitute potential Koala habitat.

Step 2: Is the land core koala habitat (where core koala habitat means an area of land with a resident population of koalas, evidenced by attributes such as breeding females (that is, females with young) and recent sightings of and historical records of a population)?

No signs of Koala were recorded within the study area, such as scratch marks or scats during field assessment. The study area does not support potential feed trees for the Koala and there are no known resident populations. Therefore, the site would not to constitute core Koala habitat.

4 Impact assessment

This section outlines the anticipated direct and indirect impacts of the development on the ecological values of the study area.

4.1 Direct impacts

4.1.1 Vegetation clearing

Up to 0.36 ha of Tableland Low Woodland (PCT 888) vegetation in the study site would be directly impacted by the proposal comprising 0.35 ha in a moderate to good condition and 0.01 ha of scattered trees. The remainder of the impact area consists of exotic grassland (0.10 ha) and disturbed land (0.33 ha) within the subject site (**Table 4.1** and **Figure 4.1**). As such, the direct impacts in the study area would predominantly include removal of disturbed land and exotic vegetation, which is 54 % of the vegetation within the subject site. The exotic grassland and disturbed land have minimal ecological value and provide marginal foraging habitat for native fauna.

Table 4.1: Area of impact on vegetation in the subject site.

Vegetation type	Vegetation zone (condition class)	Study Area (ha)[1]	Subject Site (ha) [1]
Tableland Low Woodland (PCT 888 - Inland Scribbly Gum – Brittle Gum – low woodland)	Moderate to good	1.24	0.35
	Scattered trees	0.32	0.01
Total native vegetation		**1.56**	**0.36**
Other vegetation	Exotic grassland	0.58	0.10
	Disturbed land	0.64	0.33
Total exotic vegetation and disturbed land		**1.22**	**0.43**
Total vegetation		**2.78**	**0.79**

[1] Subject to rounding errors

4.1.2 Loss of fauna habitat

The proposal will remove a small amount of potential foraging habitat (0.36 ha) of Tableland Low Woodland (PCT 888) in a moderate to good and scattered trees condition). This impact is considered relatively minor given the very small amount of habitat present and that threatened fauna in locality are generally highly mobile (birds, microbats). Large areas of more intact habitat will remain connected to the subject site on other surrounding properties. The habitat in the study area is of relatively low importance to native fauna species and adjacent consolidated patches of remnant vegetation retain fauna habitat of higher conservation significance.

4.2 Indirect impacts

It is difficult to quantify indirect impacts of the proposed development, but these may include impacts such as erosion and water quality impacts that may be associated with the construction phase of the project. These impacts will be managed through the development of a Construction Environmental Management Plan. Given the already highly modified nature and present land use of the study area, and the implementation of appropriate controls, indirect impacts from the proposal are likely to be relatively minor (**Figure 4.1**).

4.3 Avoidance and mitigation

4.3.1 Vegetation clearing

The majority of the study area consists of cleared and disturbed land and exotic vegetation and the proposal has been designed to avoid and minimise the removal of native vegetation. Access roads have been placed around current stands of vegetation and the facility has been placed in a cleared area. As the majority of vegetation to be removed is exotic vegetation, avoidance of impacts to the extent practicable has been implemented.

4.3.2 Construction Environmental Management Plan

To avoid potential indirect offsite impacts during construction, an appropriate erosion and sedimentation control plan should be in place following best practice protocols such as that detailed in Landcom (2004).

4.4 Legislative context

4.4.1 State considerations

Environmental Planning and Assessment (EP&A) Act 1979

Habitat for the following threatened species listed under the BC Act have the potential to be impacted by the proposal:

- Dusky Woodswallow (*Artamus cyanopterus cyanopterus*)
- Varied Sittella (*Daphoenositta chrysoptera*)

Impact assessments in accordance with s7.3 of the BC Act (i.e. 'test of significance') and the associated guidelines (OEH 2018b) have been undertaken. The assessments concluded that there will be no significant impacts to threatened fauna species in accordance with s7.3 of the BC Act (**Appendix B**).

4.4.2 Local considerations

The proposal is not mapped on the terrestrial biodiversity map under the GMLEP (2009).

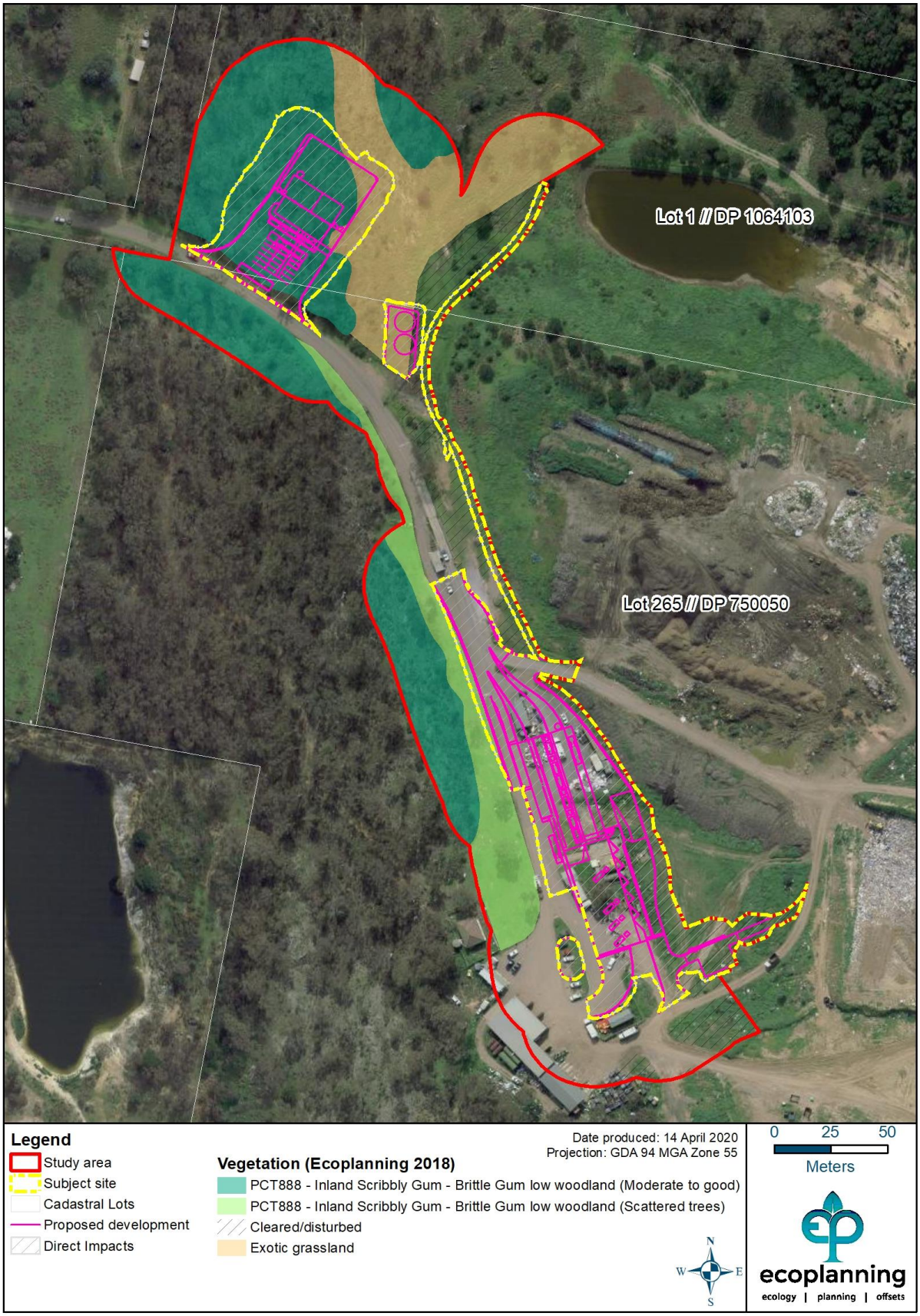

Figure 4.1: Direct impacts of the proposal.

5 Conclusion

The proposal will directly impact up to 0.79 ha of vegetated land, of which 0.36 ha consists of native vegetation. This includes impacts to 0.35 ha of Tableland Low Woodland in a moderate to good condition and 0.01 ha occurring as scattered trees. The remaining vegetation comprises exotic grassland (0.1 ha) and disturbed land (0.33 ha). Tableland Low Woodland conforms to PCT 888 Inland Scribbly Gum – Brittle Gum – low woodland and is not listed as a TEC under the EPBC Act or BC Act. Within the subject site Tableland Low Woodland was found in a moderate to good condition. It is also found as scattered trees over mown grassland areas. Approximately 1.2 ha (77 %) of Tableland Low Woodland will remain within the study area and more extensive stands occur within the locality.

No threatened flora or fauna species listed under the EPBC Act or BC Act were identified in the study area during field assessment. Whilst the Dusky Woodswallow and Varied Sittella have the potential to utilise the site for foraging, the current proposal requires the removal of a relatively small area of Tableland Low Woodland in a modified condition (0.54 ha). The results of the test of significance under the BC Act indicated that the proposal is not likely have a significant impact on any threatened fauna.

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Appendix A: Species likelihood of occurrence

As outline in **Section 2.1**, the potential for each threatened species, population and/or migratory species to occur was considered and the necessity for targeted field surveys was determined. Following field surveys and review of available habitat within the subject site and study area, the potential for species to use the site and be affected directly or indirectly by the proposed action were considered as either:

- "Recent record" = species has been recorded in the study area within the past 5 years
- "High" = species has previously been recorded in the study area (>5 years ago) or in proximity to (for mobile species), and/or habitat is present that is likely to be used by a local population
- "Moderate" = suitable habitat for a species is present onsite but no evidence of a species detected and relatively high number of recent records (5-20 years) in the locality or species is highly mobile
- "Low" = suitable habitat for a species is present onsite but limited or highly degraded, no evidence of a species detected and relatively low number of recent records in the locality
- "Not present" = suitable habitat for the species is not present onsite or adequate survey has determined species does not occur in the study area

Scientific Name Common Name	Legal Status	Number of records	Closest record and date	Most recent and proximity	Likelihood of occurrence	
					Prior to field assessment	Post field assessment
KINGDOM: Animalia; CLASS: Amphibia						
Litoria aurea Green and Golden Bell Frog	TSC Act: E1 EPBC Act: V	NA	NA	NA	Low	Not present
Litoria littlejohni Little John's Tree Frog	TSC Act: V EPBC Act: V	NA	NA	NA	Not Present	Not present
KINGDOM: Animalia; CLASS: Aves						
Anthochaera phrygia Regent Honeyeater	TSC Act: CE EPBC Act: CE	2	0.23 km (21/09/2006	0.23 km (21/09/2006	Low	Low
Artamus cyanopterus cyanopterus Dusky Woodswallow	TSC Act: V	2	4.2 km (29/01/2008)	25/11/2014 (6.1 km)	Moderate	Moderate
Botaurus poiciloptilus Australasian Bittern	TSC Act: E1 EPBC Act: E	NA	NA	NA	Low	Not present
Callocephalon fimbriatum Gang-gang Cockatoo	TSC Act: V	11	5.2 km (08/10/2004)	12/03/2013 (8.7 km)	Low	Low
Calyptorhynchus lathami Glossy Black-Cockatoo	TSC Act: V	2	7.9 km (17/11/2009)	17/11/2009 (7.9 km)	Moderate	Low
Chthonicola sagittata Speckled Warbler	TSC Act: V	1	4.6 km (25/03/2013	25/03/2013 (4.6 km)	Low	Low
Daphoenositta chrysoptera Varied Sittella	TSC Act: V	4	0.2 km (21/09/2016)	21/09/2016 (0.2 km)	Moderate	Moderate
Ephippiorhynchus asiaticus Black-necked Stork	TSC Act: E	1	8.6 km (26/04/1998)	26/04/1998 (8.6 km)	Low	Not present
Falco subniger Black Falcon	TSC Act: V	1	0.3 km (30/06/1996)	30/06/1996 (0.3 km)	Low	Low
Hieraaetus morphnoides Little Eagle	TSC Act: V	3	4.0 km (29/01/2008)	05/08/2015 (8.2 km)	Low	Low

Scientific Name Common Name	Legal Status	Number of records	Closest record and date	Most recent and proximity	Likelihood of occurrence	
					Prior to field assessment	Post field assessment
Lathamus discolor Swift Parrot	EPBC Act: CE TSC Act: E1	NA	NA	NA	Low	Low
Petroica boodang Scarlet Robin	TSC Act: V	2	4.6 km (25/03/2013)	25/03/2013 (4.6 km)	Low	Low
Polytelis swainsonii Superb Parrot	TSC Act: V EPBC Act: V	NA	NA	NA	Low	Low
KINGDOM: Animalia; CLASS: Mammalia						
Dasyurus maculatus maculatus *Spotted-tail Quoll*	TSC Act: V EPBC Act: E	NA	NA	NA	Low	Low
Chalinolobus dwyeri Large-eared Pied Bat	TSC Act: V EPBC Act: V	NA	NA	NA	Low	Low
Falsistrellus tasmaniensis Eastern False Pipistrelle	TSC Act: V	2	1.1 km (16/11/2009)	16/11/2009 (1.1 km)	Moderate	Low
Miniopterus schreibersii oceanensis Eastern Bentwing-bat	TSC Act: V	5	1.3 km (16/11/2009)	7/10/2017 (4.5 km)	Moderate	Low
Petauroides volans Greater Glider	EPBC Act: V	NA	NA	NA	Low	Low
Petrogale penicillata Brush-tailed Rock Wallaby	TSC Act: E EPBC Act: V	NA	NA	NA	Low	Low
Phascolarctos cinereus Koala	TSC Act: V EPBC Act: V	NA	N/A	N/A	Low	Not present
Pseudomys novaehollandiae New Holland Mouse	EPBC Act: V	NA	N/A	N/A	Low	Not present
Pteropus poliocephalus Grey-headed Flying-fox	TSC Act: V EPBC Act: V	10	4.1 km (26/01/2017)	26/01/2017 (4.1 km)	Moderate	Low

Scientific Name Common Name	Legal Status	Number of records	Closest record and date	Most recent and proximity	Likelihood of occurrence	
					Prior to field assessment	Post field assessment
Saccolaimus flaviventris Yellow-bellied Sheathtail-bat	TSC Act: V	1	4.1 (29/01/2008)	29/01/2008 (4.1 km)	Moderate	Low
KINGDOM: Animalia; CLASS: Reptilia						
Aprasia parapulchella Pink-tailed Worm-lizard	TSC Act: V EPBC Act: V	NA	NA	NA	Low	Low
Delma impar Striped Legless Lizard	TSC Act: V EPBC Act: V	1	5.2 km (21/10/1997)	21/10/1997 5.2 km	Low	Low
KINGDOM: Plantae						
Acacia bynoeana Bynoe's Wattle	TSC Act: V EPBC Act: E1	NA	NA	NA	Low	Low
Caladenia tessellata Thick-lipped Spider Orchid	TSC Act: E EPBC Act: V	NA	NA	NA	Low	Low
Dodonaea procumbens Trailing Hop-bush	TSC Act: V EPBC Act: V	NA	NA	NA	Low	Low
Diuris aequalis Buttercup Doubletail	TSC Act: E EPBC Act: V	1	5.7 km (01/01/1998)	01/01/1998 (5.7 km)	Low	Low
Eucalyptus aggregata Black Gum	TSC Act: V EPBC Act: V	NA	NA	NA	Low	Low
Lepidium hyssopifolium Aromatic Peppercress	TSC Act: E EPBC Act: E	NA	NA	NA	Low	Low
Leucochrysum albicans var. *tricolor* Hoary Sunray	EPBC Act: E	375	2.6 km (08/04/2009)	03/12/2016 (5.4 km)	Low	Low
Pelargonium sp. *Striatellum* Omeo Stork's-bill	TSC Act: E EPBC Act: E	NA	NA	NA	Low	Low
Pomaderris delicata Delicate Pomaderris	TSC Act: E EPBC Act: V	126	8.3 km (07/05/2010)	26/09/2017 (8.8 km)	Not present	Not present

Scientific Name Common Name	Legal Status	Number of records	Closest record and date	Most recent and proximity	Likelihood of occurrence	
					Prior to field assessment	Post field assessment
Prasophyllum petilum Tarengo Leek Orchid	TSC Act: E EPBC Act: E	NA	N/A	N/A	Not present	Not present
Rutidosis leptorrhynchoides Button Wrinklewort	TSC Act: E EPBC Act: E	20	4.7 km (03/11/2009)	03/12/2016 (4.9 km)	Not present	Not present
Swainsona recta Small Purple-pea	TSC Act: E EPBC Act: E	NA	N/A	N/A	Not present	Not present
Thesium australe Austral Toadflax	TSC Act: V EPBC Act: V	NA	N/A	N/A	Not present	Not present

Unless other stated, text is taken from the OEH Threatened Species (http://www.environment.nsw.gov.au/threatenedspecies/); Legal Status codes from the Atlas of NSW Wildlife: V = Vulnerable, E = Endangered, E2 = Endangered Population, C = China and Australia Migratory Bird Agreement (CAMBA), J = Japan and Australia Migratory Bird Agreement (JAMBA); K = Republic of Korea Migratory Bird Agreement (ROKAMBA), BC Act = *Biodiversity Conservation Act 2016,* EPBC Act = Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*

Appendix B: Assessments of Significance

State listings under the BC Act

Varied Sittella *(Daphoenositta chrysoptera)*

The Varied Sittella is sedentary species inhabiting most of mainland Australia. It is found in eucalypt forests and woodlands, especially those containing rough-barked species and mature smooth-barked gums with dead branches, mallee and *Acacia* woodland. The species feeds on arthropods gleaned from crevices in rough or decorticating bark, dead branches, standing dead trees and small branches and twigs in the tree canopy.

a. *in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.*

The closest record to the study area (200 m) is also the most recent record (2016). Otherwise, there are few documented records for this species in the area (four in total). It is possible that a viable local population of the species could use the resources in the study area, given there is suitable foraging habitat. However, this species is not likely to use the study area for breeding given that minimal suitable habitat for breeding is not available in the subject area.

The proposed development is not likely to place a viable local population at risk of extinction as breeding habitat would be removed and other foraging habitat would remain within the locality.

b. *in the case of an endangered ecological community or critically endangered ecological community whether the action proposed:*
   i. *is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction,*
   ii. *is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.*

The local occurrence of an ecological community is defined by (OEH (2018b) as that which: occurs within the study area… including any adjacent areas if the ecological community on the study area forms part of a larger contiguous area of that ecological community and the movement of individuals and exchange of genetic material across the boundary of the study area can be clearly demonstrated.

This component is not applicable.

c. *in relation to the habitat of a threatened species or ecological community:*
   i. *the extent to which habitat is likely to be removed or modified as a result of the action proposed,*
   ii. *whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed action, and*
   iii. *the importance of the habitat to be removed, modified, fragmented or isolated to the long term survival of the species or ecological community in the locality.*

The proposed development will result in the removal of 0.36 ha of Tableland Low Woodland (PCT 888) in modified condition and as scattered trees. The proposal will not result in the fragmentation or isolation of other areas of habitat as the vegetation in the study area consists of scattered trees. The importance of the vegetation proposed for removal to the long-term survival of the Varied Sittella is low, given that a relatively small amount of vegetation in a modified condition is proposed for removal.

d. whether the action proposed is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly).

The proposal will not have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly) as no such declared areas are present within or adjacent to the subject area. The subject site is not identified on the Biodiversity Values Map, as defined by the Biodiversity Conservation Regulation 2017. The study area has been subject to an ongoing operational waste management facility.

e. whether the development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.

There is one key threatening process of relevance to the Varied Sittella:

- Clearing of native vegetation

The proposed action will result in the removal of 0.36 ha of Western Tableland Dry Forest in a modified and scattered trees condition class.

Conclusion of s.7.3 assessment of significance for Varied Sittella

The proposed development is not likely to have a significant impact on the Varied Sittella given:

- the low likelihood of a viable local population being reliant on the habitat components in the study area,
- the availability of suitable foraging habitat surrounding the study area that will not be impacted.

Dusky Woodswallow *(Artamus cyanopterus cyanopterus)*

The Dusky Woodswallow typically inhabits dry open eucalypt forests and woodlands with an open or sparse understorey of eucalypt saplings, acacias and other shrubs, and a ground cover of grasses or sedges and fallen woody debris. They have also been recorded in shrublands, heathlands very occasionally in moist forest or rainforest. The Dusky Woodswallow can also be found in farmland usually at the edges of forest and woodland, similar to the habitat within the subject area and adjacent areas. Dusky Woodswallow nest colonially in 'neighbourhoods', although are nomadic and migrate north during autumn (specifically the eastern population). The main source of food for Dusky Woodswallow is insects, which are taken on the wing, from foliage and on the ground, however, they also consume small amount of nectar from *Eucalyptus* spp.

a) in the case of a threatened species, whether the proposed development or activity is likely to an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

The most recent record was in 2014 at a distance of 4.2 m from the subject site. Otherwise, there are few documented records for this species in the area (two in total). It is possible that a viable local population of the species could use the resources in the study area, given there is suitable foraging habitat. However, this species is not likely to use the study area for breeding given that minimal suitable habitat for breeding is not available in the subject area.

The proposed development is not likely to place a viable local population at risk of extinction as breeding habitat would be removed and other foraging habitat would remain within the locality.

b) in the case of an endangered ecological community or critically endangered ecological community whether the proposed development or activity:

i. is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

ii. is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.

Not applicable

c) in relation to the habitat of a threatened species, population or ecological community:

i. the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and

ii. whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and

iii. the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality.

The proposal will remove 0.36 ha of potentially suitable foraging habitat. However, given the suitability of surrounding vegetation in the area, the importance of the habitat in the study area is not deemed to be important for the long-term survival of the Dusky Woodswallow. The vegetation in the study area is situated adjacent to a larger expanse of vegetation containing potential habitat to the east of the study area. The habitat is likely to be of limited importance to the long-term survival of the Dusky Woodswallow as other areas of potential foraging habitat remain in the area.

d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly).

The proposal will not have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly) as no such declared areas are present within or adjacent to the subject area. The subject site is not identified on the Biodiversity Values Map, as defined by the Biodiversity Conservation Regulation 2017. The study area has been subject to an ongoing operational waste management facility.

e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.

There is one key threatening process of relevance to the Dusky Woodswallow:

- Clearing of native vegetation

The proposal will result in the removal of approximately 0.36 ha of potential foraging habitat for Dusky Woodswallow.

Conclusion of s7.3 Assessment of significance for the Dusky Woodswallow

The proposed development is unlikely to significantly impact the Dusky Woodswallow, as:

- a relatively small amount of modified native vegetation being impacted under the current proposal (0.36 ha),
- the low likelihood of a viable local population being reliant on the habitat components in the study area,
- the availability of suitable foraging habitat surrounding the study area and in adjacent areas of extensive intact vegetation in the locality that will not be impacted.

Appendix C: Flora species inventory

Flora species list

Family	Genus	Species	Common name	Native/ Exotic
Alliaceae	*Agapanthus*	*praecox*	African Lily	Exotic
Apiaceae	*Platysace*	*lanceolata*	Shrubby Platysace	Native
Asteraceae	*Arctotheca*	*calendula*	Capeweed	Exotic
	Cassinia	*arcuata*	Sifton Bush	Native
	Cassinia	sp.		Native
	Gamochaeta	*calviceps*	Cudweed	Exotic
	Hypochaeris	*radicata*	Flatweed	Exotic
	Ozothamnus	*diosmifolius*	White Dogwood	Native
	Senecio	*prenanthoides*		Native
	Senecio	*quadridentatus*	Cotton Fireweed	Native
	Sigesbeckia	sp.		Native
	Sonchus	*oleraceus*	Common Sowthistle	Exotic
	Xerochrysum	*bracteata*	Golden Everlasting	Native
Boraginaceae	*Echium*	*plantagineum*	Paterson's Curse	Exotic
	Echium	*vulgare*	Vipers Bugloss	Exotic
Brassicaceae	*Hirschfeldia*	*incana*	Hairy Brassica	Exotic
Campanulaceae	*Wahlenbergia*	*stricta* subsp. *stricta*	Tall Bluebell	Native
Caryophyllaceae	*Cerastium*	*glomeratum*	Mouse-ear Chickweed	Exotic
Casuarinaceae	*Allocasuarina*	*littoralis*	Forest Oak	Native
Chenopodiaceae	*Chenopodium*	*album*	Fat Hen	Exotic
	Einadia	*hastata*	Berry Saltbush	Native
	Einadia	*nutans*	Climbing Saltbush	Native
Clusiaceae	*Hypericum*	*perforatum*	St. John's Wort	Exotic
Crassulaceae	*Crassula*	*decumbens*		Native
Cyperaceae	*Lepidosperma*	*gunnii*		Native
Ericaceae – Epacridoideae	*Brachyloma*	*daphnoides*	Daphne Heath	Native
	Leucopogon	*muticus*	Blunt Beard Heath	Native
	Leucopogon	*virgatus*		Native
Fabaceae - Faboideae	*Daviesia*	*genistifolia*	Broom Bitter Pea	Native
	Daviesia	*latifolia*		Native
	Mirbelia	*pungens*		Native
Fabaceae - Mimosoideae	*Acacia*	*baileyana*	Cootamundra Wattle	Native**

Family	Genus	Species	Common name	Native/ Exotic
	Acacia	*decurrens*	Black Wattle	Native
	Acacia	sp.		Native
	Acacia	*paradoxa*	Kangaroo Thorn	Native
Lauraceae	*Cassytha*	*glabella*		Native
Myrtaceae	*Eucalyptus*	*blakelyi*	Blakey's Red Gum	Native
	Eucalyptus	*macrorhyncha*	Red Stringybark	Native
	Eucalyptus	*rossii*	Inland Scribbly Gum	Native
Orchidaceae	Diuris	*pardina*	Leopard Orchid	Native
Oxalidaceae	*Oxalis*	*perennans*		Native
Papaveraceae	*Fumaria*	*muralis* subsp. *muralis*	Wall Fumitory	Exotic
Phormiaceae	*Dianella*	*revoluta* var. *revoluta*	Blue Flax-lily	Native
	Stypandra	*glauca*	Nodding Blue Lily	Native
Plantaginaceae	*Plantago*	*lanceolata*	Lamb's Tongue	Exotic
Poaceae	*Aira*	*cupaniana*	Silvery Grass	Exotic
	Austrostipa	*scabra*	Speargrass	Native
	Austrostipa	sp.		Native
	Briza	*maxima*	Quaking Grass	Exotic
	Bromus	*diandrus*	Great Brome	Exotic
	Echinopogon	*caespitosus*	Bushy Hedgehog-grass	Native
	Ehrharta	*erecta*	Panic Veldtgras	Exotic
	Eragrostis	*curvula*	African Lovegrass	Exotic RPW
	Lolium	sp.	Rye Grass	Exotic
	Rhytidosperma	*fulvum*		Native
	Rhytidosperma	*pallidum*	Red Anther Wallaby Grass	Native
	Rhytidosperma	sp.		Native
	Vulpia	sp.		Exotic
Polygonaceae	*Acetosella*	*vulgaris*	Sorrel	Exotic
Portulacaceae	*Calandrinia*	*eremaea*		Native
Proteaceae	*Grevillea*	*arenaria* subsp. *arenaria*	Sand Grevillea	Native
	Persoonia	*linearis*	Narrow-leaved Geebung	Native
	Persoonia	*mollis* subsp. *livens*		Native
Pteridaceae	*Cheilanthes*	*sieberi*		Native
Rosaceae	*Prunus*	sp.	Peach /Cherry Tree	Exotic

Family	Genus	Species	Common name	Native/ Exotic
Rosaceae	*Rubus*	*fruticosus*	Blackberry	Exotic, WONS, SPW
Santalaceae	*Exocarpos*	*strictus*		Native
Thymelaeaceae	*Pimelea*	*linifolia* subsp. *linifolia*	Slender Rice Flower	Native

++ = Garden Escape; WONS – Weed of National Significance; SPW = State Priority Weed, RPW = Regional Priority Weed

Appendix D: Fauna species inventory

Family	Scientific name	Common name	Native/Exotic
Aves			
Corvidae	*Corvus coronoides*	Australian Raven	Native
Laridae	*Larus novaehollandiae*	Silver Gull	Native
Meliphagidae	*Anthochaera chrysoptera*	Little Wattle Bird	Native
Monarchidae	*Grallina cyanoleuca*	Magpie-lark	Native
Sturnidae	*Acridotheres tristis*	Common Myna	Exotic
Threskiornithidae	*Threskiornis molucca*	Australian White Ibis	Native
Mammalia			
Leporidae	*Oryctolagus cuniculus*	European Rabbit	Exotic