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Targeted Flora and Fauna Survey Report

Birdwood Downs Station

15 June 2023

Prepared for:

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C/- Kimberley Boab Consulting Pty Ltd

Attention: Dr Debra Pearce



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Document Control

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Birdwood Downs Station

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Appendices

Appendix A

CPS9318/1 DWER Request for Information

Appendix B

Conservation Codes for Western Australian Flora and Fauna

1 Introduction

Ecosystem Solutions were contracted by Kimberley Boab Consulting Pty Ltd to undertake a targeted survey for three flora species and one fauna species for a portion of land at Birdwood Downs Station on Derby-Gibb River Road, Derby (hereafter called the “Site”).

A clearing application (CPS 9318-1) has been lodged to the Department of Water and Environmental Regulation (DWER) by the landowners to clear 404.77 ha of native vegetation within a portion of Birdwood Downs Station for the purpose of pasture improvement. A Flora and Vegetation Survey was submitted with the clearing application (Docherty, 2022). A targeted survey has been subsequently requested by DWER for the following species (Appendix A):

- *Macrotis lagotis*, Greater Bilby (Vulnerable under state and commonwealth legislation);
- *Euploca calvariavis* (Priority 1);
- *Eriochloa fatmensis* (Priority 3); and
- *Goodenia sepalosa* var. *glandulosa* (Priority 3).

A map of the larger trees to be retained within the proposed parkland clearing was also requested.

The purpose of this report is to provide the survey results of the targeted flora and fauna survey to support the clearing application.

2 Site Details

The Site is 404.77 ha in total comprising of two portions, 327.2 ha and 77.7 ha, consisting of native vegetation that has previously been cleared. The station is categorised as rural, located on Derby-Gibb River Road with Derby town site located approximately 18 km north west of the Site (Figure 1).

The surrounding area consists of pastoral and rural lots consisting predominately of native vegetation. Small landholdings are located immediately north of the Site with bare coastal mudflats located west of the Site.

The topography is an undulating sand dune system, 45 m Australian Height Datum (AHD) to the south east, sloping north west to 14 m AHD.

Docherty (2022) identified two vegetation types, both classified as Very Good condition according to the Vegetation Condition scale for the Eramean and Northern Botanical Provinces (adapted from Keighery 1994 & Trudgen, 1988), within the proposed clearing area:

- Open woodland of *Eucalyptus miniata* with *Ethrophleum chlorostachys*, or *Planchonia careya* over scattered tussock grassland on sand dune ridges.
- Pindan shrubland with isolated trees including *Corymbia greeniana* and *Petalostigma pubescens* over a dense shrubland of predominately *Calytrix exstipulata* and *Dodonea hispidulus* in sand dunes interdunes and flats.

A bushfire occurred in November 2021 impacting approximately 50% of the northern section of the site. The 2022 surveys occurred following the fire, in February where at the time the Site had and a lower-than-average wet season rainfall resulting in limited flowering and ability to identify species. A follow up survey occurred in March 2022 by Docherty after further rainfall. *Euploca calcvariavis*, *Eriochloa fatmensis* and *Goodenia sepalosa* var. *glandulosa* were identified as having a medium likelihood of occurrence within the Site however the presence of these species was not identified.

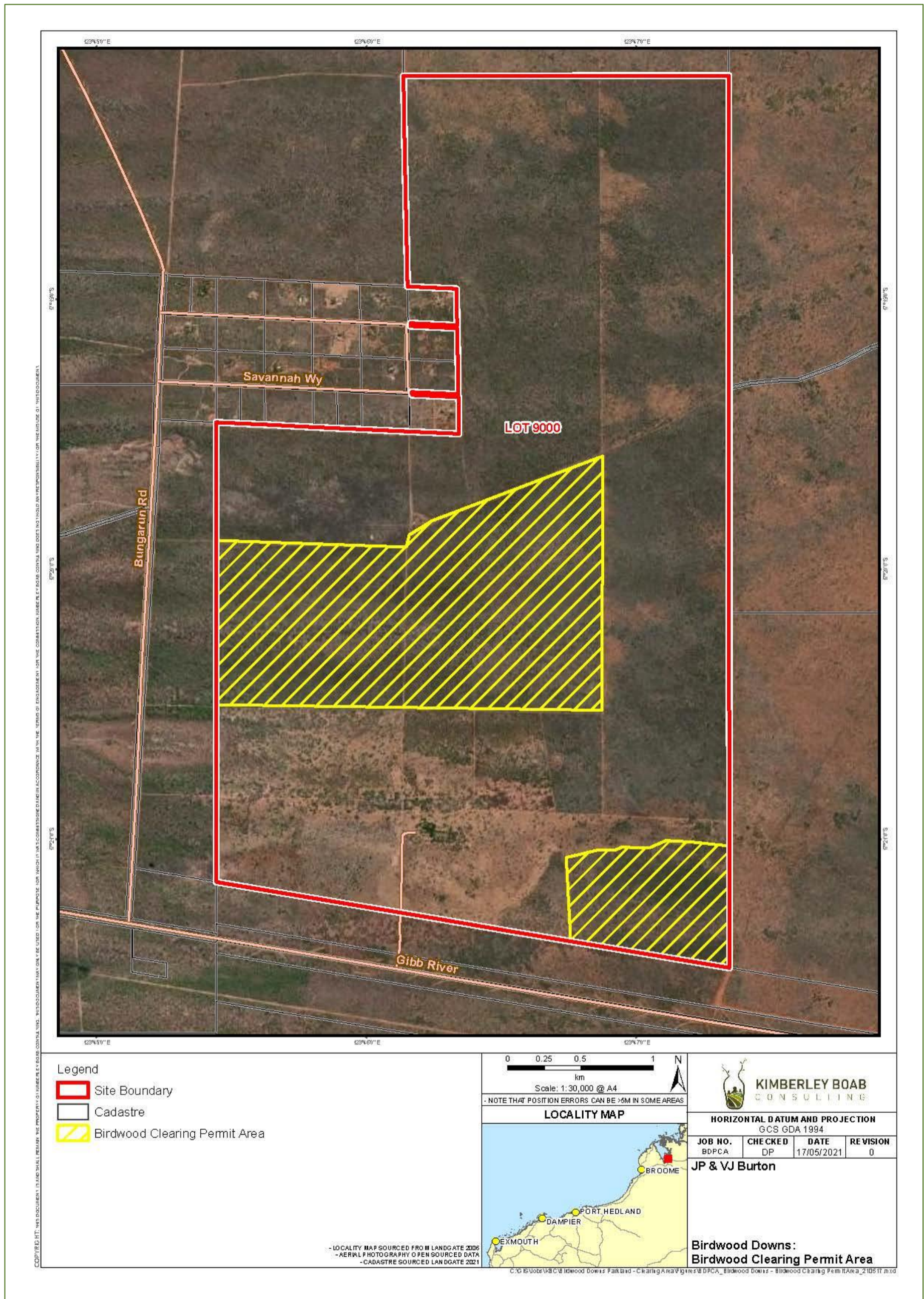


Figure 1 Survey area at Birdwood Downs Station

3 Flora Survey

3.1 Desktop Analysis

3.1.1 Landscape, Soils and Vegetation

Soil-Landscape systems are areas with recurring patterns of landforms, soils and vegetation and are used by the Department of Agriculture to maintain a consistent approach to land resource surveys (Map 2).

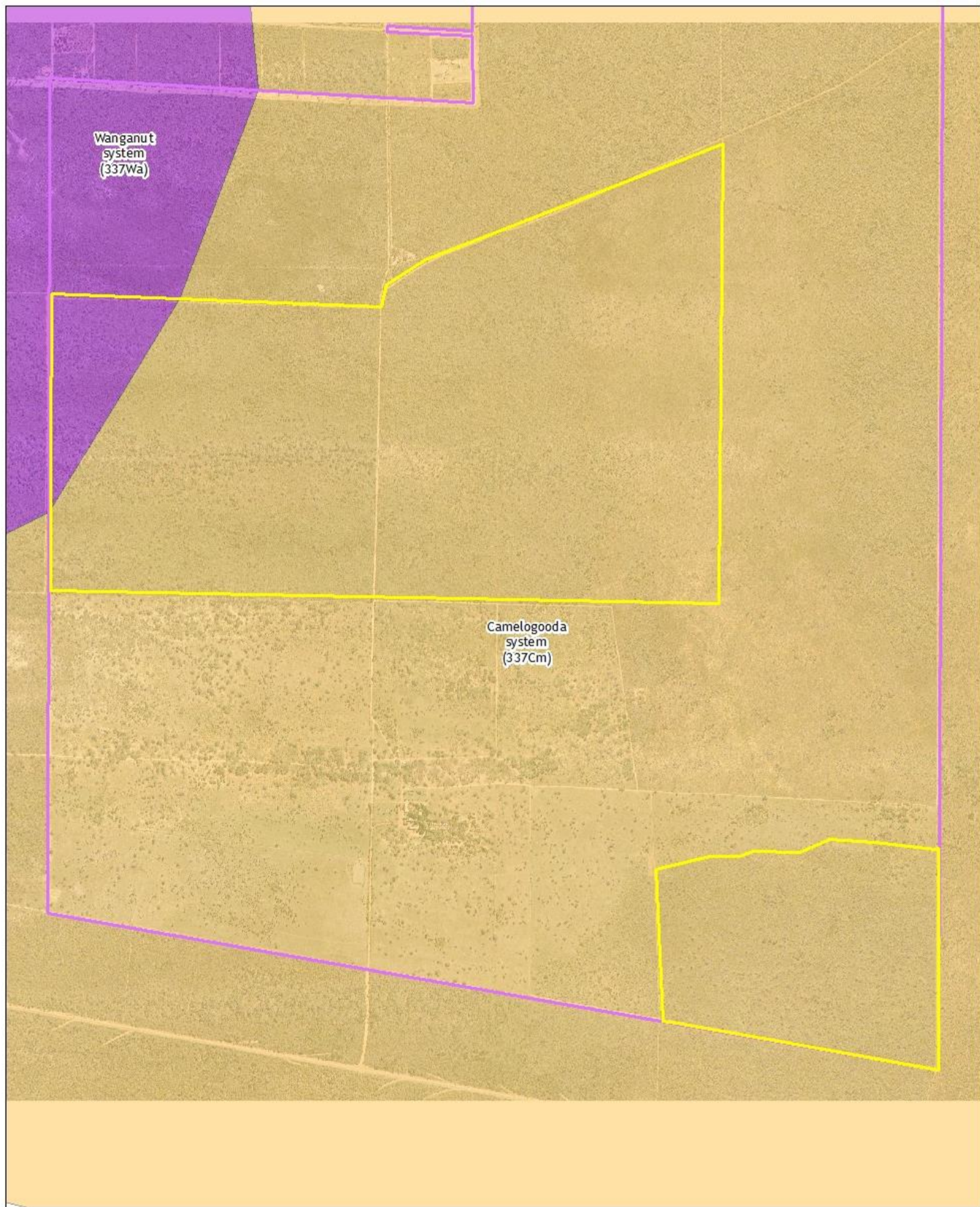
The Site is within the Derby Sandplain Zone (337) located on the Canning Basin. This zone consists of sandplains and dunes (With some sandy plateaux and coastal mudflats) on sedimentary rocks. Red deep sands with some yellow sandy earths and tidal soils (DPIRD, 2021).

The Site is located within two soil landscape systems, defined as (Figure 2);

- Camelgooda system (337Cm) - consisting of sandplains, swales and linear sand dunes supporting low pindan woodlands of acacias and low woodlands of bauhinia and bloodwood with curly spinifex and ribbon grass. Located across majority of the Site.
- Wanganut system (337Wa) - consisting of sandplains and linear dunes supporting pindan woodlands with acacias and bloodwoods and curly spinifex- ribbon grass, and broad low-lying swales supporting bloodwood-grey box woodlands with curly spinifex-ribbon grass. Located in the north west portion of the Site.

The vegetation mapping of Beard *et al.* (2013) indicates there to be two vegetation systems on the Site with the same description (Figure 3):

- Fitzroy Sandplains (764) - consisting of Pindan with low trees. Acacia thicket with scattered low trees over spinifex, *Acacia eripoda*, *Corymbia dichromophloia*, *Triodia pungens*, *T. bitextura*. Located across majority of the Site.
- Fitzroy Sandplains (755) - consisting of Pindan with low trees. Acacia thicket with scattered low trees over spinifex, *Acacia eripoda*, *Corymbia dichromophloia*, *Triodia pungens*, *T. bitextura*. Located in the north east portion of the Site only.




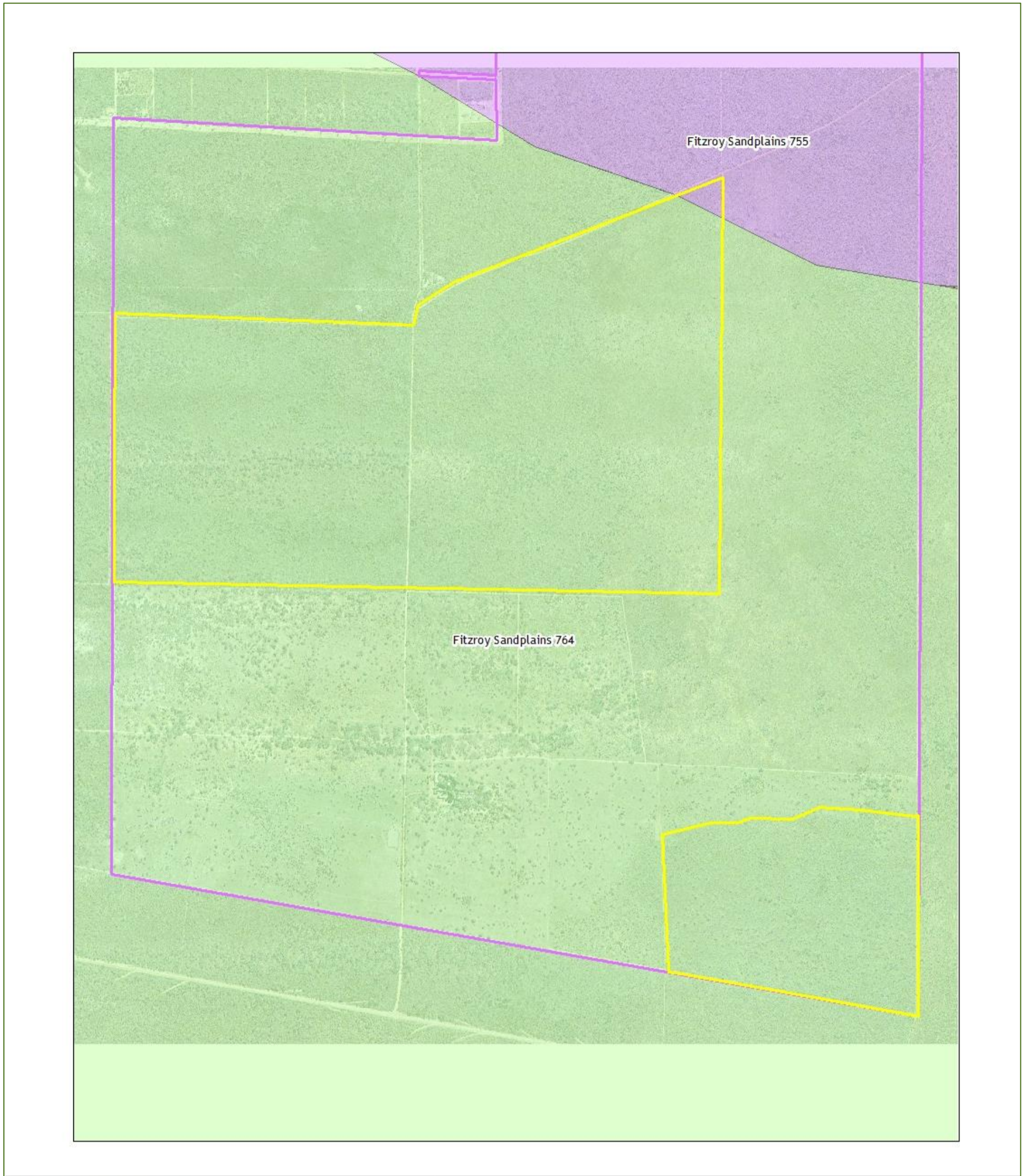
<p>Soil Landscape Birdwood Downs Station Derby-Gibb River Rd, Derby</p>		<p>Legend</p> <ul style="list-style-type: none"> Clearing Permit Area Lot Boundary <p>Soil Landscape (DPIRD, 2021)</p> <ul style="list-style-type: none"> Camelooda system (337Cm) Wanganut system (337Wa)
<p>Project: 231475 Report: Targeted F&F Assessment date: 15/05/2023 Prepared by: G.McMahon Aerial photo date: July 2017 Projection: GDA94 z50</p>	<p style="text-align: center;">N</p> <p style="text-align: center;">Meters</p> <p style="text-align: center;">0 65 130 260 390 520</p> <p style="text-align: center;">  www.ecosystemsolutions.com.au (08) 9759 1960 </p>	

Figure 2 Soil Landscape of Birdwood Downs Station, Derby




<p>Vegetation System Birdwood Downs Station Derby-Gibb River Rd, Derby</p>		<p>Legend</p> <ul style="list-style-type: none"> Clearing Permit Area Lot Boundary <p>Native Vegetation extent (Beard et al, 2013)</p> <ul style="list-style-type: none"> Fitzroy Sandplains 755 Fitzroy Sandplains 764
<p>Project: 231475 Report: Targeted F&F Assessment date: 15/05/2023 Prepared by: G.McMahon Aerial photo date: July 2017 Projection: GDA94 z50</p>	<p style="text-align: center;">N</p> <p style="text-align: center;">0 70 140 280 420 560 Meters</p> <p style="text-align: center;">  www.ecosystemsolutions.com.au (08) 9759 1960 </p>	

Figure 3 Vegetation System of Birdwood Downs Station, Derby

3.1.2 Conservation Significant Flora

Species of flora are protected as defined in Appendix B, these have been determined as their populations are restricted geographically or threatened by local processes. DBCA recognizes these threats of extinction and consequently applies regulations towards population and species protection. Protected species are gazetted under the *Biodiversity Conservation Act 2016* (W.A.) and therefore it is an offence to “take” or damage rare flora without Ministerial approval. The act defines “to take” as “... to gather, pick, cut, pull up, destroy, dig up, remove or injure the flora or to cause or permit the same to be done by any means” (Government of Western Australia, 2016).

As part of the clearing application DWER specified that a target flora survey was required for the Site based on advice provided by the Department of Biodiversity, Conservation and Attractions (DBCA) (Appendix A). They identified that there is potential for the proposed clearing to impact on the regional extent of three priority flora species that may be present within the Site. These species are described below.

3.1.2.1 *Euploca calvariavis*

Euploca calvariavis, previously known as *Heliotropium calvariavis*, is a subshrub in the Boraginaceae family, located in the Interim Biogeographic Regionalisation for Australia (IBRA, v7) of Central Kimberley and Dampierland (Western Australian Herbarium, 1998).

It is listed as Priority 1 under the *Biodiversity Conservation Act 2016* (W.A.).

The species is known to occur in an open grassy habitat with *Adansonia*, *Lysophyllum* and *Eucalyptus* (bloodwoods) on grey-brown sandy soil and in stony ground between granite boulders (Western Australian Herbarium, 1998).

E. calvariavis is identified by the corolla, which is whitish with a yellow throat, with flowers appearing in May. It has a woody and perennial base, extensively branched, and erect to 50 cm high. Stems and leaves are grey - green.

E. calvariavis differs from *E. tenuifolia*, which has a broader distribution. *E. tenuifolia* has differing hairs on its mericarps, fine calyx indumentum and it also has a wider flowering period.

3.1.2.2 *Eriochloa fatmensis*

Eriochloa fatmensis is a grass in the Poaceae family, located in the IBRA regions of Dampierland and Pilbara (Western Australian Herbarium, 1998).

It is listed as Priority 3 under the *Biodiversity Conservation Act 2016* (W.A.).

The species does not have a defined habitat; however, one specimen was found in a regularly flooded area (Western Australian Herbarium, 1998).

E. fatmensis is 10 to 120 cm tall, upright with leaf blades 3-30 cm long and 2-10 mm wide. The leaf blade surface is smooth. Flowers occur sporadically appear throughout the year but mostly between January to May.

E. fatmensis is morphologically similar to *E. procera*, which has a broader distribution. *E. procera* has acute spikelets, shortly awned upper glume, and erect habit.

3.1.2.3 *Goodenia sepalosa* var. *glandulosa*

Goodenia sepalosa var. *glandulosa* is a subshrub in the Goodeniaceae family, located in the IBRA regions of Dampierland, Northern Kimberley and Victoria Bonaparte (Western Australian Herbarium, 1998).

It is listed as Priority 3 under the *Biodiversity Conservation Act 2016* (W.A).

The species grows in mixed acacia woodlands on red sandy loam, sand, or loam (Western Australian Herbarium, 1998).

G. sepalosa var. *glandulosa* is a perennial, prostrate to spreading subshrub to 30 cm tall. Flowers are yellow, 5 cm long, mainly flowering between April and July. Stems are prostrate 6-8 cm.

G. sepalosa var. *glandulosa* has small glandular hairs on the stem and flowers. *G. sepalosa* var. *sepalosa* has simple coarse hairs, which are longer than the *G. sepalosa* var. *glandulosa* variant and visible with the naked eye.

3.2 Survey Method

A targeted flora survey for *Euploca calvariavis*, *Eriochloa fatmensis* and *Goodenia sepalosa* var. *glandulosa* was undertaken in accordance with EPA Technical Guidance, “Flora and Vegetation Surveys for Environmental Impact Assessment” (EPA, 2016).

The Site was traversed walking in transects across the Site in a systematic manner to search for the required flora species and record trees that will be retained. The survey occurred in May as this is the known flowering time for all three target species.

The team consisted of four people with relevant experience and licences to collect priority flora for identification (Table 1). The Project Manager has extensive experience (>10 years) in conducting flora and vegetation surveys across Western Australia, including in the north-west. Field team members have previous experience (>5 years) in assisting with flora and vegetation surveys across Western Australia, including in the north-west.

Table 1 Flora Project Team and Licencing

Team member	Role	Qualifications / Experience	Flora Licence Number
Kelly Paterson	Project Manager / Plant identifications	B.Sc. Hons. Nat Rs Mgmt.	FB62000182 TFL 54-2021
Danae Plowman	Team member	B.Sc. Post Grad Dip. Energy & Env	FB62000342
Dani Cuthbert	Team member	Dip Bus & Dip TM	N/A
Gary McMahon	Team member	B.Sc. M. Env Mgmt., PG Dip Bushfire CEnvP	N/A

3.3 Results and Discussion

The Site was surveyed 16 to 18 May 2023 with transects walked approximately 100 m apart to assess the entire proposed clearing area. Some transects were unable to maintain 100 m separation due to site constraints such as dense vegetation (shown in Figures 5 & 6) and fence lines. The vegetation within the site experienced rapid growth following high rainfall in January 2023, receiving 497 mm, which is almost twice the monthly mean of 211.2 mm, as shown in Figure 4 (Australian Bureau of Meteorology, 2023). This rapid growth of the understorey limited the ability to observe some areas, however searches were focused on areas where species were likely, to ensure any conservation significant flora populations were observed. Completed survey tracks are depicted in Figure 6.

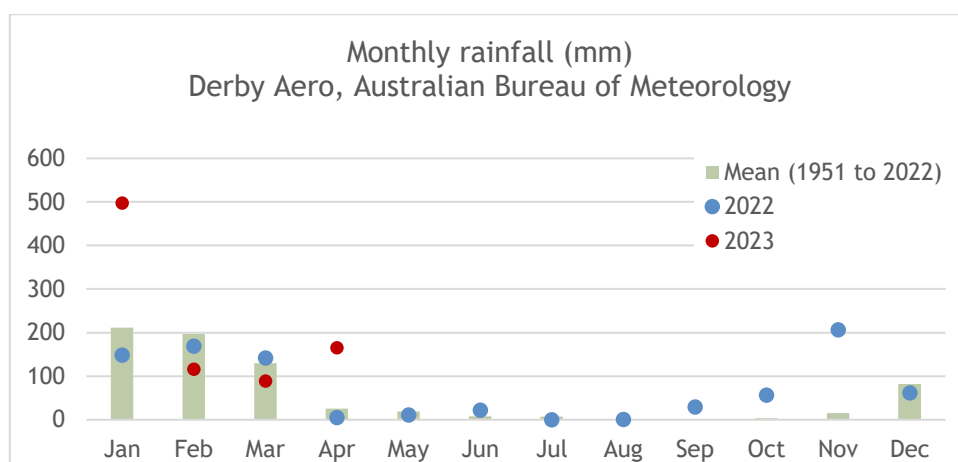


Figure 4 Monthly rainfall (mm) for Derby Aero provided by Australian Bureau of Meteorology (2023)



Figure 5 Vegetation within the proposed clearing area showing density and height

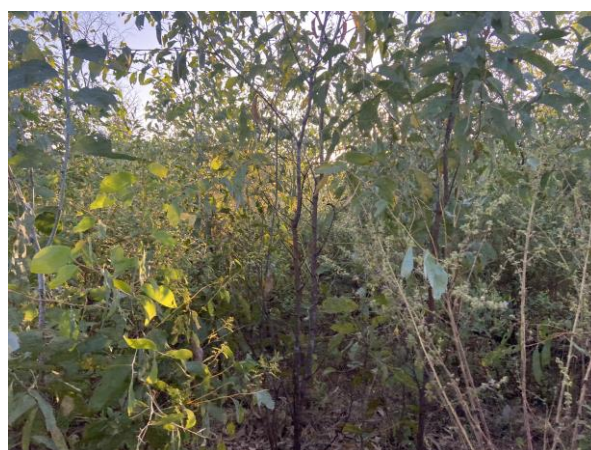


Figure 6 Vegetation within the proposed clearing area showing density following high rainfall




<p>Survey Tracks Birdwood Downs Station Derby-Gibb River Rd, Derby</p>		<p>Legend</p> <ul style="list-style-type: none"> Lot Boundary Clearing Permit Area Survey tracks
<p>Project: 231475 Report: Targeted F&F Assessment date: 15/05/2023 Prepared by: G. McMahon Aerial photo date: July 2017 Projection: GDA94 z50</p>	<p style="text-align: center;">N</p> <p style="text-align: center;">0 70 140 280 420 560 Meters</p> <p style="text-align: center;">  www.ecosystemsolutions.com.au (08) 9759 1960 </p>	

Figure 7 Survey tracks for Birdwood Downs Station proposed clearing area

3.3.1 *Euploca calvariavis* Results

Euploca calvariavis was not identified within the Site. There were two *Euploca* species identified being *E. diversifolia* and *E. leptalea.*, with identification confirmed by the West Australian Herbarium, collection ID BW02 & BW11 respectively (ACC/10199/E) (Figures 8 & 9).



Figure 8 *Euploca diversifolia* (BW02)



Figure 9 *Euploca leptalea* (BW11)

3.3.2 *Eriochloa fatmensis* Results

Eriochloa fatmensis was not observed within the Site.

A number of other native grasses were observed within the survey area, including *Eriachne obtusa* and *E. melicacea*, which had formed a dominant grass layer across extensive areas post fire and heavy rainfall.

3.3.3 *Goodenia sepalosa* var. *glandulosa* Results

Goodenia sepalosa var. *glandulosa* was not observed in the Site.

The more common variant, *Goodenia sepalosa* var. *sepalosa* was abundant across much of the survey area. The identification of this species confirmed by the West Australian Herbarium, collection ID BW01 & BW09 (ACC/10199/E).



Figure 10 *Goodenia sepalosa* var. *sepalosa*
(BW01)



Figure 11 *Goodenia sepalosa* var. *sepalosa*
(BW09)

3.3.4 Tree Assessment

An assessment of trees was requested, to indicate the larger trees that will be retained within the proposed clearing area. Large trees are present throughout the proposed clearing area including the sand dune ridges, interdunes and flats were recorded, with points in Figure 12 including both individual trees and patches of trees. Due to the large area of assessment and constraints associated with the high density of the vegetation, only those trees that were accessible along the survey transects were recorded. Therefore, the actual number of trees across the entire Site is significantly greater than the number recorded during this survey.




<p>Trees observed Birdwood Downs Station Derby-Gibb River Rd, Derby</p>		<p>Legend</p> <ul style="list-style-type: none"> Lot Boundary Clearing Permit Area ● Trees observed
<p>Project: 231475 Report: Targeted F&F Assessment date: 15/05/2023 Prepared by: G. McMahon Aerial photo date: July 2017 Projection: GDA94 z50</p>	<p style="text-align: center;">N</p> <p style="text-align: center;">0 70 140 280 420 560 Meters</p> <p style="text-align: center;"> www.ecosystemsolutions.com.au (08) 9759 1960</p>	

Figure 12 Trees observed along survey transects at Birdwood Downs Station

4 Fauna Survey

4.1 Conservation Significant Fauna

The conservation status of fauna within Western Australia is determined by criteria outlined within two acts of legislation: Commonwealth EPBC Act 1999 and the State-based Western Australian *Biodiversity Conservation Act 2016*. The conservation codes for fauna under the *Biodiversity Conservation Act (2016)* which was previously the *Wildlife Conservation Act 1950* are presented in Appendix A. These categories are consistent with the International Union for Conservation of Nature (IUCN) classifications and therefore link into a global ranking system for taxa at risk of extinction.

As part of the clearing application DWER specified a target fauna survey was required for the Site based on advice provided by the Department of Biodiversity, Conservation and Attractions (DBCA) (Appendix A). They identified that the Site may provide suitable habitat for *Macrotis lagotis*, Greater Bilby, and that the proposed clearing may significantly impact on the species if they are actively using the Site. *Macrotis lagotis* has been described below.

4.1.1 *Macrotis lagotis*, Greater Bilby

The Greater Bilby, *Macrotis lagotis*, is a burrowing marsupial characterised by long, silky blue-grey fur and long pinkish ears (Australian Museum, 2022). The snout is pointed with a long tongue which aids in feeding on insects such as termite larvae, seeds, fungi, and fruit. Sand is also consumed which can be observed within the scats along with insect exoskeletons. Feeding grounds and diggings are characterised by 10 - 25 cm deep holes.

Burrows are made with their strong forelimbs and claws to shelter within during the heat of the day (Australian Museum, 2022). Burrows are spiral shaped, up to 3 m long and up to 2 m deep. Burrows can be reused over many years by males, females and young. The species is highly mobile and may occupy up to 18 burrows concurrently, with some used by other individuals and some being used more frequently (Liddle, 2016). However, unclear tracks, burrows and diggings can be used to detect potential or past presence but may not verify current presence.

Greater Bilbies are found in a range of habitats including residual landforms, loamy or sandy soils associated with paleodrainage lines, perched drainage lines, sandplains and dunefields, habitat where shrubs contain root dwelling larvae and recently burnt habitat such as within 1-3 years (Department of Biodiversity, Conservation and Attractions, 2017).

The Greater Bilby is listed Vulnerable under Environmental Protection and Biodiversity Conservation Act 1999 (Commonwealth) and Biodiversity Conservation Act 2016 (W.A).

4.2 Survey Method

A targeted fauna survey for *Macrotis lagotis*, Greater Bilby, was undertaken in accordance with the Guidelines for surveys to detect the presence of bilbies and assess the importance of habitat in Western Australia (Department of Biodiversity, Conservation and Attractions, 2017) and Technical Guidance: Terrestrial vertebrate fauna surveys for environmental impact assessment (Environmental Protection Authority, 2020).

The Site was traversed walking transects across the Site in a systematic manner to search for evidence of Greater Bilbies, specifically tracks, scats, diggings and burrows which is the recommended method (Department of Biodiversity, Conservation and Attractions, 2017). The survey occurred from Tuesday 16 May to Thursday 18 May.

The team consisted of four people with relevant experience (Table 2). The Project Manager and Field team leader both have extensive experience (>10 years and >20 years respectively) in conducting fauna surveys across Western Australia, including in the north-west. The Field team members have previous experience (>5 years) in assisting with fauna surveys across Western Australia, including in the north-west.

Camera traps were setup from Tuesday 16 May to Friday 18 May to detect fauna movement and presence within the Site. Baits were not used. Remote cameras are best placed to detect and confirm the presence of bilbies in habitats where their sign is not easily detected.

It was determined that a buffer zone outside the proposed clearing area would be surveyed on confirmation of Greater Bilby presence within the survey area.

Table 2 Fauna Project Team

Team member	Role	Qualifications
Kelly Paterson	Project Manager	B.Sc. Hons. Nat Rs Mgmt.
Gary McMahon	Team leader	B.Sc. M. Env Mgmt., PG Dip Bushfire CEnvP
Danae Plowman	Team member	B.Sc. Post Grad Dip. Energy & Env
Dani Cuthbert	Team member	Dip Bus & Dip TM

4.3 Results and Discussion

The Site contains suitable habitat for the Greater Bilby, being sandy soils associated with dunefields. Acacia species were present in the age range of 3 to 9 years, these are known to have root larvae which Greater Bilbies forage upon (Department of Biodiversity, Conservation and Attractions, 2017).

The site was walked systematically to search for burrows, diggings and scats as shown in Figure 6. Burrows were observed within the survey area however the characteristics of the burrows and the surrounding scats was confirmed to not be suitable for a Bilby. Burrows were consistent with goannas, with majority of burrows observed having leaf litter within the entrance, indicating the burrow is not currently in use. Diggings observed were square and lacked the rounded edge formed by Bilbies conical snout. The diggings were sporadic throughout the site and lacked the high concentration around burrows that would be evident of a residing Bilby. As there was no evidence of Bilbies observed, a buffer zone around the proposed clearing area was not surveyed.

Three camera traps were installed 12 pm on 16 May and were removed 6 am 18 May. The locations, shown in Figure 18, were determined as open areas where animals are likely to walk and be easily observed and identifiable. Camera A observed a feral cat (Figure 13) on one occasion and a wallaby (Figure 14) on two occurrences and (Table 3). Camera B and C did not observe any fauna.

Agile Wallabies were also observed throughout the lot and are the likely source of scats observed near burrows within the survey area. This species is listed as least concern under IUCN red list.

Burrows and diggings throughout the survey area were found to be consistent with Goannas (Figures 15 & 16).

A single Rainbow Bee-eater, *Merops ornatus*, was observed within the survey area on 18 May 2023 at 11 am. This species is listed as marine under declaration s248 of the EPBC Act and migratory under declaration s209 of the EPBC Act (Department of the Environment, 2023). The species is distributed across much of mainland Australia and eastern Indonesia, with the majority of the global population breeding in Australia. They inhabit a variety of habitats including forests, woodlands, shrublands and semi disturbed areas. The movement patterns of Rainbow Bee-eaters are complex, with some populations migrating from southern Australia to the north with the northern population being more residential. There is a potential that Rainbow Bee-eaters are present within the survey area throughout the year. Rainbow Bee-eaters also nest in burrows, more circular and smaller than goannas. There were two burrows observed in the southern section that appeared to be consistent for a Rainbow Bee-eater (Figure 17), due to the size.

Fauna observations and camera locations are depicted spatially in Figure 18.

Table 3 Fauna observed on camera traps within Birdwood Down Station

Method	Observation date	Species	Status
Camera A	17 May 2023 5:10 am	Cat, <i>Felius catus</i>	Introduced
Camera A	18 May 2023 2:28 am	Agile Wallaby, <i>Notamacropus agilis</i>	Least Concern
Camera A	19 May 2023 1:50 pm	Agile Wallaby, <i>Notamacropus agilis</i>	Least Concern



Figure 13 Cat observed 17 May on Camera A



Figure 14 Agile Wallaby observed 18 & 19 May on Camera A



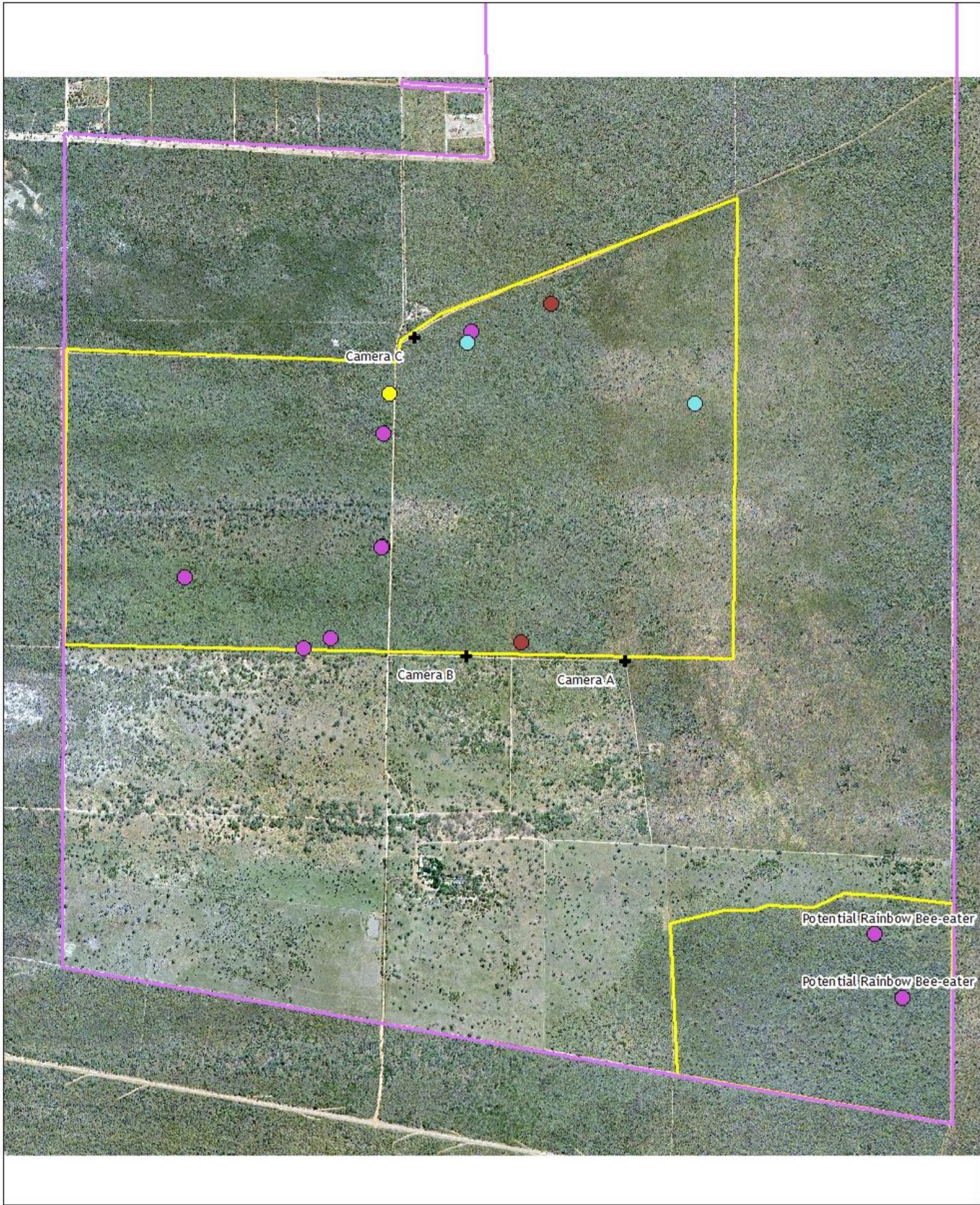
Figure 15 Example of potential goanna burrow with leaf litter built up



Figure 16 Digging consistent with a goanna due to the square nature

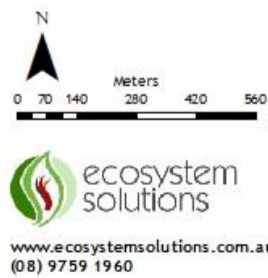


Figure 17 Potential burrow of Rainbow Bee-eater



Fauna Observations
Birdwood Downs Station
Derby-Gibb River Rd, Derby

Project: 231475
 Report: Targeted F&F
 Assessment date: 15/05/2023
 Prepared by: G.McMahon
 Aerial photo date: July 2017
 Projection: GDA94 z50



Legend

- Lot Boundary
- Clearing Permit Area
- Rainbow Bee-eater sighting
- Burrow/s
- Diggings
- Scats
- + Camera Traps

Figure 18 Fauna observations at Birdwood Downs Station, Derby

5 Summary and Recommendations

- A targeted flora and fauna survey of the entire Site was conducted from 16 to 18 May 2023.
- Flora species targeted were *Euploca calvariavis* (Priority 1), *Eriochloa fatmensis* (Priority 3) and *Goodenia sepalosa* var. *glandulosa* (Priority 3). These species were not observed within the Site.
- Trees that will be retained were recorded along the survey transects (Figure 12).
- Fauna species targeted was *Macrotis lagotis*, The Greater Bilby, which is listed as Vulnerable under both State and Federal legislation. No evidence of The Greater Bilby was found within the survey area.
- An opportunistic sighting of *Merops ornatus*, Rainbow Bee-eater, was recorded, along with a potential burrow of this species. The Rainbow Bee-eater is listed as marine under declaration s248 of the EPBC Act and migratory under declaration s209 of the EPBC Act.

6 References

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Appendix A CPS9318/1 DWER Request for Information



Government of Western Australia
Department of Water and Environmental Regulation

Our ref: CPS 9318/1
Enquiries: Ray Carvalho
Phone: 6364 7350
Email: info@dwer.wa.gov.au

Mr Jack Burton
PO Box 3343
BROOME WA 6725

via email: jack@kilto.com.au, deb@kimberleyboab.com

Dear Mr Burton

APPLICATION TO CLEAR NATIVE VEGETATION UNDER THE ENVIRONMENTAL PROTECTION ACT 1986 – REQUEST FOR INFORMATION

I refer to your application for an Area Permit under section 51E(1) of the *Environmental Protection Act 1986* (the EP Act), to clear 404.77 hectares (ha) of native vegetation within Lot 9000 on Deposited Plan 66307, Derby for pasture quality improvement for cattle grazing and hay production. The application was received by the Department of Water and Environmental Regulation (DWER) on 9 June 2021.

DWER's preliminary assessment of the application has identified that additional information is required to undertake an environmental impact assessment (see Schedule 1 attached). Please indicate to DWER whether you would like to progress with the information set out in Schedule 1, by 20 September 2021. If so, an extension can be granted to ensure that the flora survey is undertaken at a suitable time of year. Until this information is received, DWER has halted the assessment timeframe for your application ('stop the clock'). This timeframe will recommence upon receiving the required survey information.

In addition to the information requested in Schedule 1, it would also be appreciated if you could provide greater detail around the commitment to retain larger trees on site (such as species names and size/ likely DBH of trees that will be retained) as indicated within the application form.

If the required information is not received by the above date (or other date as agreed), the assessment process will recommence, and a decision will be made based on the information available. This may result in the refusal of your application.

If you have any queries regarding the above information, please contact Ray Carvalho, as listed above.

Yours sincerely

Meenu Vitarana
A/MANAGER
NATIVE VEGETATION REGULATION

*Officer delegated under Section 20
of the Environmental Protection Act 1986*

20 August 2021

Att: Schedule 1

Prime House, 8 Davidson Terrace Joondalup Western Australia 6027
Locked Bag 10 Joondalup DC WA 6919
Telephone: 08 6364 7000 Facsimile: 08 6364 7001
www.dwer.wa.gov.au

NV-L31 v3.0

Schedule 1:

Item	Information requirements	Specifications	Rationale
1.	<p>A flora survey is required for the application area.</p> <p>If priority flora are identified, additional surveys of surrounding areas will also be required to determine the species' local population size and distribution.</p>	<p>Survey methodology must be consistent with the Environmental Protection Authority's (EPA) <i>Technical Guidance: Flora and Vegetation Surveys for Environmental Impact Assessment</i> (December 2016), copies of which are available at the EPA's website.</p> <p>Surveys must be submitted in accordance with the Environmental Protection Authority's (EPA) <i>Instructions for the preparation of data packages for the Index of Biodiversity Surveys for Assessments (BSA)</i> and be accompanied by a completed <i>Metadata and Licensing Statement</i>.</p> <p>Applications will remain in 'stop the clock' where surveys are not submitted in line with the EPA's BSA.</p>	<p>Based on advice provided by the Department of Biodiversity, Conservation and Attractions (DBCA), there is potential for the proposed clearing to impact on the regional extent of three priority flora species, should they occur within the application area. These species are known from limited records and have been recorded on similar habitat types to that mapped within the application area. These species are:</p> <ul style="list-style-type: none"> • <i>Heliotropium calvaria</i> (Priority 1) • <i>Eriochloa fatmensis</i> (Priority 3) • <i>Goodenia sepalosa</i> var. <i>glandulosa</i> (Priority 3) <p>Noting the above, a flora survey is required to determine if these species occur within the application area, and if so, the extent of impact to each. Please ensure that the flora survey is undertaken at a suitable time of year to identify these species.</p>
2.	<p>A fauna survey is required to determine whether greater bilby (<i>Macrotis lagotis</i>) is using the application area.</p> <p>Should this species be identified, additional surveys of surrounding areas will also be required to determine the species' local population size and distribution.</p>	<p>Survey methodology must be consistent with the Environmental Protection Authority's (EPA) <i>Technical Guidance: Terrestrial Fauna Surveys</i> (December 2016), available at the EPA's website.</p> <p>The survey should also be undertaken in accordance with DBCA's 'Guidelines for surveys to detect the presence of bilbies, and assess the importance of habitat in Western Australia, 2017' available here https://www.dpaw.wa.gov.au/images/documents/plantsanimals/threatened-species/guidelines_for_surveys_to_detect_the_presence_of_bilbies.pdf</p> <p>All surveys must be submitted in accordance with the EPA's <i>BSA</i> and be accompanied by a completed <i>Metadata and Licensing Statement</i>.</p> <p>Applications will remain in 'stop the clock' where surveys are not submitted in line with the EPA's BSA.</p> <p>DBCA requests that sightings (including secondary signs/evidence) of threatened, specially protected, and priority listed fauna are reported to Species and Communities Program. Reporting can be by inclusion in a data return (if a section 40 authorisation has been given) or by email/fauna report form (fauna@dbca.wa.gov.au).</p>	<p>DBCA has advised that the application area may provide suitable habitat for the greater bilby (<i>Macrotis lagotis</i>) (state and federally listed as Vulnerable).</p> <p>Should greater bilbies be actively using the application area, the proposed clearing may significantly impact on the local extent of this species.</p>

Appendix B Conservation Codes for Western Australian Flora and Fauna

CONSERVATION CODE	CATEGORY
<u>Threatened species (T)</u>	<p>Listed by order of the Minister as Threatened in the category of critically endangered, endangered, or vulnerable under Section 19(1), or is a rediscovered species to be regarded as threatened species under section 26(2) of the <i>Biodiversity Conservation Act 2016</i> (BC Act).</p> <p>Threatened fauna is that subset of ‘Specially Protected Fauna’ listed under Schedules 1 to 3 of the <i>Wildlife Conservation (Specially Protected Fauna) Notice 2018</i> for Threatened Fauna.</p> <p>Threatened flora is that subset of ‘Rare Flora’ listed under schedules 1 to 3 of the <i>Wildlife Conservation (Rare Flora) Notice 2018</i> for Threatened Flora.</p> <p>The Assessment of the conservation status of these species is based on their national extent and ranked according to their level of threat using IUCN Red List categories and criteria as detailed below</p>
Critically endangered species (CR)	<p>Threatened species considered to be “<i>facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the criteria set out in the ministerial guidelines</i>”.</p> <p>Listed as critically endangered under section 19(1)(a) of the BC Act in accordance with the criteria set out in section 20 and the ministerial guidelines. Published under schedule 1 of the <i>Wildlife Conservation (Specially Protected Fauna) Notice 2018</i> for critically endangered fauna or the <i>Wildlife Conservation (Rare Flora) Notice 2018</i> for critically endangered flora.</p>
Endangered species (EN)	<p>Threatened species considered to be “<i>facing a very high risk of extinction in the wild in the near future, as determined in accordance with criteria set out in the ministerial guidelines</i>”.</p> <p>Listed as endangered under Section 19(1)(b) of the BC Act in accordance with the criteria set out in section 21 and the ministerial guidelines. Published under schedule 2 of the <i>Wildlife Conservation (Specially Protected Fauna) Notice 2018</i> for endangered fauna or the <i>Wildlife Conservation (Rare Flora) Notice 2018</i> for endangered flora.</p>

CONSERVATION CODE	CATEGORY
Vulnerable species (VU)	<p>Threatened species considered to be <i>“facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with criteria set out in the ministerial guidelines”</i>.</p> <p>Listed as endangered under section 19(1)(c) of the BC Act in accordance with the criteria set out in section 22 and the ministerial guidelines. Published under schedule 3 of the <i>Wildlife Conservation (Specially Protected Fauna) Notice 2018</i> for vulnerable fauna or the <i>Wildlife Conservation (Rare Flora) Notice 2018</i> for vulnerable flora.</p>
Extinct species (EX)	<p>Species where <i>“there is no reasonable doubt that the last member of the species has died”</i>, and listing is otherwise in accordance with the ministerial guidelines (section 24 of the BC Act).</p> <p>Published as presumed extinct under schedule 4 of the <i>Wildlife Conservation (Specially Protected Fauna) Notice 2018</i> for extinct fauna or the <i>Wildlife Conservation (Rare Flora) Notice 2018</i> for extinct flora.</p>
Extinct in the wild species (EW)	<p>Species that <i>“is known only to survive in cultivation, captivity or as a naturalised population well outside its part range; and it has not been recorded in its known habitat or expected habitat, at appropriate seasons, anywhere in its past range, despite surveys over a time frame appropriate to its life cycle and form”</i>, and listing is otherwise in accordance with the ministerial guidelines (section 25 of the BC Act).</p> <p>Currently there are no threatened fauna or flora species listed as extinct in the wild. If listing of a species as extinct in the wild occurs, then a schedule will be added to the applicable notice.</p>
<u>Specially protected species</u>	<p>Listed by order of the Minister as specially protected under section 13(1) of the BC Act. Meeting one or more of the following categories: species of special conservation interest; migratory species; cetaceans; species subject to international agreement; or species otherwise in need of special protection.</p> <p>Species that are listed as threatened species (critically endangered, endangered, or vulnerable) or extinct species under the BC Act cannot also be listed as Specially Protected species.</p>

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Migratory species (MI)	<p>Fauna that periodically or occasionally visit Australia or an external Territory or the exclusive economic zone; or the species is subject of an international agreement that relates to the protection of migratory species and that binds the Commonwealth; and listing is otherwise in accordance with the ministerial guidelines (Section 15 of the BC Act).</p> <p>Includes birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and the Republic of Korea (ROKAMBA), and fauna subject to the <i>Convention on the Conservation of Migratory Species of Wild Animals</i> (Bonn Convention), an environmental treaty under the United Nations Environment Program. Migratory species listed under the BC Act are a subset of the migratory animals, that are known to visit Western Australia, protected under the international agreements of treaties, excluding species that are listed as Threatened species.</p> <p>Published as migratory birds protected under an international agreement under schedule 5 of the <i>Wildlife Conservation (Specially Protected Fauna) Notice 2018</i>.</p>
Species of special conservation interest (conservation dependent fauna) (CD)	<p>Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened, and listing is otherwise in accordance with the ministerial guidelines (section 14 of the BC Act).</p> <p>Published as conservation dependent fauna under schedule 6 of the <i>Wildlife Conservation (Specially Protected Fauna) Notice 2018</i>.</p>
Other specially protected species (OS)	<p>Fauna otherwise in need of special protection to ensure their conservation, and listing is otherwise in accordance with the ministerial guidelines (section 18 of the BC Act).</p> <p>Published as other specially protected fauna under schedule 7 of the <i>Wildlife Conservation (Specially Protected Fauna) Notice 2018</i>.</p>

CONSERVATION CODE	CATEGORY
<p><u>Priority species (P)</u></p>	<p>Possibly threatened species that do not meet survey criteria, or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened fauna or flora.</p> <p>Species that are adequately known, are rare but not threatened, or meet criteria for near threatened, or that have been recently removed from the threatened species or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring.</p> <p>Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.</p>
<p>Priority 1 Poorly-known species</p>	<p>- Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g., agricultural, or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases, or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.</p>
<p>Priority 2 Poorly-known species</p>	<p>- Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g., national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.</p>

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<p>Priority 3 Poorly-known species</p>	<p>- Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.</p>
<p>Priority 4 Rare, Near Threatened and other species in need of monitoring</p>	<p>- (a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection but could be if present circumstances change. These species are usually represented on conservation lands.</p> <p>(b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for vulnerable but are not listed as Conservation Dependent.</p> <p>(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.</p>