

# Dampier Power Resilience Project - Flora and Fauna Assessment

30-Aug-2021

# Dampier Power Resilience Project - Flora and Fauna Assessment

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## Table of Contents

Executive Summary		i
1.0	Introduction	1
	1.1 Background	1
	1.2 Location	1
	1.3 Objective and Scope	1
2.0	Existing Environment	3
	2.1 Climate	3
	2.2 IBRA Region	3
	2.3 Land Systems	4
	2.4 Vegetation	6
	2.5 Conservation Reserves and Environmentally Sensitive Areas	6
	2.6 Geology and Soils	9
3.0	Previous Surveys	11
4.0	Methodology	12
	4.1 Desktop Assessment	12
	4.2 Flora and Vegetation Assessment	13
	4.2.1 Mapping	13
	4.2.2 Targeted Flora Searches	13
	4.3 Fauna Habitat Assessment	14
	4.4 Limitations	14
5.0	Desktop Assessment	19
	5.1 Conservation Significant Communities	19
	5.2 Conservation Significant Flora	22
	5.3 Conservation Significant Fauna	24
6.0	Field Survey Results	27
	6.1 Vegetation	27
	6.1.1 Communities	27
	6.1.2 Condition	33
	6.2 Flora	33
	6.2.1 Conservation Significant Flora	33
	6.2.2 Flora Diversity	37
	6.3 Fauna Habitat	37
7.0	Discussion	41
	7.1 Vegetation	41
	7.2 Flora	41
	7.3 Fauna	42
8.0	Clearing Principles	44
	(a) Native vegetation should not be cleared if it comprises a high level of biological diversity	44
	(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.	45
	(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.	45
	(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community.	45
	(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.	46
	(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.	46
	(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.	46
	(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.	47

	(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.	47
	(j) Native vegetation should not be cleared if clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.	47
9.0	Conclusion	48
10.0	References	49
Appendix A	Federal and State Legislation	A
Appendix B	Conservation Significant Flora Desktop Results	B
Appendix C	Conservation Significant Fauna Desktop Results	C
Appendix D	Flora Species by Community Matrix	D
Appendix E	Relevé Data	E
Appendix F	Conservation Significant Flora Locations	F

### List of Tables

Table 1	Pre-European vegetation associations (Beard 1975) extent within the survey area (rounded to whole number) including percentage of pre-European extent remaining (Govt. of WA 2018)	6
Table 2	Geological units that occur within the survey area (Geological Series WA 2001)	9
Table 3	Previous Surveys conducted in the vicinity of the survey area	11
Table 4	Likelihood categories for species and communities	12
Table 5	Limitations of the Ecological Surveys	14
Table 6	Priority Ecological Communities known to occur within 50 km of the survey area (DBCA 2021a; 2021b)	20
Table 7	Priority flora species that are 'known', 'likely to' or 'may occur'	22
Table 8	Conservation significant fauna species considered 'known' or 'likely to occur'	24
Table 9	Vegetation Community Descriptions and Photographs	28
Table 10	Vegetation Condition Extent	33
Table 11	Fauna Habitats of the Survey Area	38

### List of Figures

Figure 1	Survey Area	2
Figure 2	Rainfall Data from Karratha Aero 4083 (BOM 2021)	3
Figure 3	Land Systems	5
Figure 4	Pre-European Vegetation	7
Figure 5	National Heritage and Conservation Estates	8
Figure 6	Geology and Soils	10
Figure 7	Survey Effort	16
Figure 8	for Conservation Significant Flora Desktop Results	23
Figure 9	Conservation Significant Fauna Desktop Results	26
Figure 10	Vegetation Communities	52
Figure 11	Vegetation Condition	68
Figure 12	Fauna Habitats	84

Acronym	Description
AECOM	AECOM Australia Pty Ltd
ALA	Atlas of Living Australia
BC Act	Biodiversity Conservation Act
Biota	Biota Environmental Sciences
BOM	Bureau of Meteorology
CAR	Comprehensive, Adequate and Reserve System
Cons. Status	Conservation Status
DAWE	Department of Agricultural, Water and Environment
DBCA	Department of Biodiversity Conservation and Attractions
DPaW	Department of Parks and Wildlife
DoEE	Department of Environment and Energy (now known as DAWE)
EPA	Environmental Protection Authority
EPBC Act	Environment Protection and Biodiversity Conservation Act
ESA	Environmentally Sensitive Area
GPS	Global Positioning System
Ha	Hectares
IBRA	Interim Biogeographical Region of Australia
Km	Kilometres
M	Metres
NVCP	Native Vegetation Clearing Permit
NVIS	National Vegetation Information System
NHP	National Heritage Place
PEC	Priority Ecological Community
PMST	Protected Matters Search Tool
Rio Tinto	Rio Tinto Group
SRE	Short Range Endemics
sp.	Species
TEC	Threatened Ecological Community
WA	Western Australia
WAH	Western Australian Herbarium

## Executive Summary

Rio Tinto Iron Ore (Rio Tinto) propose to replace the 220kV overhead transmission lines from Yurralyi Maya Power Station to Parker Point, in the City of Karratha. AECOM Australia Pty Ltd (AECOM) was commissioned by Rio Tinto to conduct a reconnaissance flora and vegetation assessment and fauna habitat assessment to support a Native Vegetation Clearing Permit for the Project.

A desktop assessment was undertaken, including a review of historical information and Department of Biodiversity, Conservation and Attractions (DBCA) databases, compiling a comprehensive list of all conservation significant flora and fauna species and vegetation communities that may potentially occur in the survey area. A likelihood of occurrence assessment was completed and used to determine species that required additional targeted searches during the survey.

The survey was supplemented by previous surveys including the Dampier Desalination Project Detailed Flora, Vegetation and Fauna Assessment (AECOM 2021), and the Dampier Resilience Native Vegetation Clearing Permit Supporting Report (Biota 2018).

A summary of the survey results is outlined below:

- A Priority Ecological Community (PEC), the Roebourne Plains gilgai grasslands (P1) was recorded, represented by tussock grasslands on soft clay soils (vegetation community SfEx). The community extends over 45.13 ha (12% of the survey area) and was in 'Very Good' condition.
- Three Priority flora species were recorded:
  - *Eragrostis surreyana* (P3) - approximately 985 individuals, restricted to artificial wetlands and ephemeral creeks.
  - *Rhynchosia bungarensis* (P4) - 27 individuals restricted to edges of rock piles.
  - *Themeda* sp. Hamersley Station (M.E. Trudgen 11431) (P3) - more than 18,000 individuals across the Roebourne Plains PEC.
- Six fauna habitats were mapped, all of which represent suitable or marginal habitat for one or more conservation significant fauna species;
  - Triodia on Rocky Slopes represents suitable habitat for two species listed as Threatened under the EPBC Act and BC Act including Northern Quoll (both denning and foraging) and the Pilbara Olive Python and one Priority 4 species, the Lined Soil-crevice Skink.
  - Artificial Wetlands represents suitable habitat for two bird species listed as Migratory and Marine under the EPBC Act and BC Act including Common Sandpiper and Caspian Tern recorded during previous surveys (AECOM, 2021).
  - Tussock Grassland Plains represents suitable habitat for the threatened Northern Quoll and the Priority 4 Short-tailed Mouse.

An assessment against the ten clearing principles was undertaken. This determined that the Project may be at variance to:

- (a) *Native vegetation should not be cleared if it comprises a high level of biological diversity* – the Burrup Peninsula is recognised for supporting a high level of endemism, fauna habitat for threatened species was mapped, one Priority Ecological Community was mapped, and three Priority flora species were recorded.
- (b) *Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia* – the survey area includes suitable habitat for the threatened Northern Quoll (foraging and denning) and Pilbara Olive Python; Priority 4 species Lined Soil-crevice Skink and Short-tailed Mouse; and two Migratory and Marine listed bird species Common Sandpiper and Caspian Tern.

The field survey and assessment was completed without any significant limitations identified and is considered suitable for meeting the objective of the Project.

## 1.0 Introduction

### 1.1 Background

Rio Tinto Iron Ore (Rio Tinto) currently operates rail and port facilities in Dampier, Western Australia for the transportation of iron ore from its inland operations to coastal ports for export. As a part of ongoing projects, the power generation and infrastructure require upgrading.

Rio Tinto is proposing to replace existing 220kV overhead transmission lines from the Yurralyi Maya Power Station to a new 220kV bulk supply substation and install associated 33kV distribution lines (the Dampier Power Resilience Project). Previous ecological surveys that intersect the survey area include three flora, vegetation and fauna habitat assessments to support clearing permit applications (Biota 2018; Rio Tinto 2011; AECOM 2021).

### 1.2 Location

The Proposal is near the town of Dampier in the City of Karratha in the Pilbara region of Western Australia. The survey area is 385.63 ha, and includes native vegetation, rock piles, disturbed areas (roads, rail, hardstand clearings) (Figure 1).

### 1.3 Objective and Scope

The purpose of the work is to undertake a flora, vegetation and fauna habitat assessment report to support a Native Vegetation Clearing Permit (NVCP) application, including an assessment of the Ten Clearing Principles. The scope includes:

- reconnaissance level flora and vegetation survey; and basic fauna survey
- a single report incorporating desktop information and flora and fauna survey results.





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 APPROVED BY F.DEWIT  
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**LEGEND**  
 Survey Area

Datum: GDA 1994 MGA Zone 50  
 1:85,000  
 (when printed at A4)

Data sources:  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010), Geoscience Australia, Streetpro

**Survey Area**

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 DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT

**Figure**  
**1**

## 2.0 Existing Environment

### 2.1 Climate

The survey area is located in the City of Karratha which experiences a semi-arid climate. The nearest weather station is Karratha Aero (station 4083). Rainfall data from the 12 months preceding the field survey shows higher than average rainfall in December, April and May (Figure 2) (Bureau of Meteorology [BOM] 2021). A total of 432.6 mm of rainfall was recorded in the 12 months preceding the survey (June 2020 to May 2021) which represents a considerable increase from the mean annual rainfall of 290.7 mm. Adequate rainfall in the months preceding the survey was also evident in the presence of annual species, and flowering of perennial species and grasses.

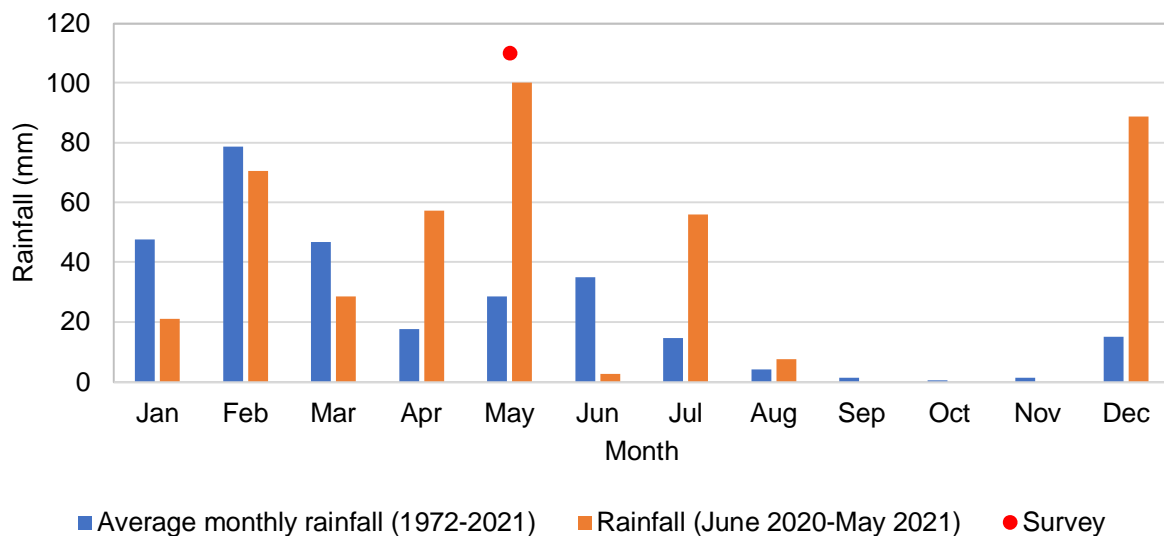


Figure 2 Rainfall Data from Karratha Aero 4083 (BOM 2021)

### 2.2 IBRA Region

There are 89 recognised IBRA regions across Australia that have been defined based on climate, geology, landforms and characteristic vegetation and fauna (DoEE 2012). The Pilbara bioregion is further divided into four subregions, with the survey area located in the Roebourne subregion.

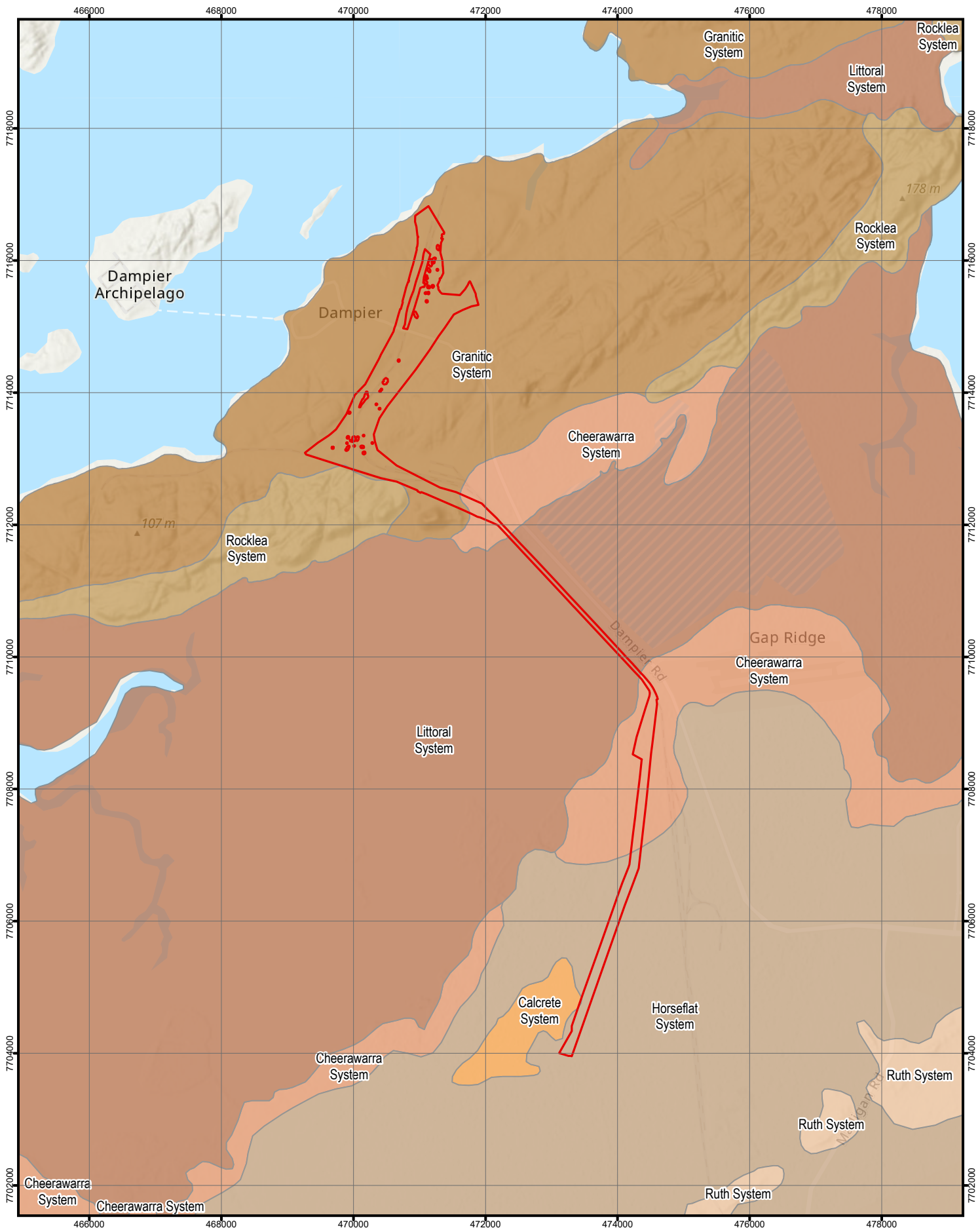
The Roebourne subregion, described by Kendrick & Stanley (2001) is the coastal edge of the Pilbara, characterised by:

“Quaternary alluvial and older colluvial coastal and sub-coastal plains with a grass savannah of mid-bunch and hummock grasses, and dwarf shrub steppe of *Acacia stellaticeps* or *A. pyrifolia* and *A. inaequilatera*. Uplands are dominated by *Triodia* grasslands. Ephemeral drainage lines support *Eucalyptus victrix* or *Corymbia hamersleyana* woodlands. Samphire, *Sporobolus* and mangal occur on marine alluvial flats and river deltas. Resistant linear ranges of basalts occur across the coastal plains, with minor exposures of granite. Islands are either Quaternary sand accumulations, or composed of basalt or limestone, or combinations of any of these three. Climate is arid (semi-desert) tropical with highly variable rainfall, falling mainly in summer. Cyclonic activity is significant, with several systems affecting the coast and hinterland annually.”

## 2.3 Land Systems

Five land system has been mapped within the survey area (van Vreeswyk et al. 2004) (Figure 3):

- Calcrete – low calcrete platforms and plains supporting shrubby hard spinifex grasslands (one sliver at the edge of survey area).
- Cheerawarra – sandy coastal plains and saline clay plains supporting soft and hard spinifex grasslands and minor tussock grasslands.
- Granitic – rugged granitic hills and hill tracts of granitic rocks with pockets of shallow gritty surfaced acidic soils
- Horseflat – gilgai clay plains supporting Roebourne Plains grass grasslands and minor grassy snakewood shrublands.
- Littoral – bare coastal mudflats (unvegetated), samphire flats, sandy islands, coastal dunes and beaches, supporting samphire low shrublands, sparse acacia shrublands and mangrove forests.



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**LEGEND**

- ▬ Survey Area
- Calcrete System, Low calcrete platforms and plains supporting shrubby hard spinifex grasslands.
- Cheerawarra System, Sandy coastal plains and saline clay plains supporting soft and hard spinifex grasslands and minor tussock grasslands.
- Granitic System, Rugged granitic hills supporting shrubby hard and soft spinifex grasslands.
- Horseflat System, Gilgaid clay plains supporting Roebourne Plains grass grasslands and minor grassy snakewood shrublands.
- Littoral System, Bare coastal mudflats (unvegetated), samphire flats, sandy islands, coastal dunes and beaches, supporting samphire low shrublands, sparse acacia shrublands and mangrove forests.
- Rocklea System, Basalt hills, plateaux, lower slopes and minor stony plains supporting hard spinifex and occasionally soft spinifex grasslands with scattered shrubs.
- Ruth System, Hills and ridges of volcanic and other rocks supporting shrubby hard spinifex and occasionally soft spinifex grasslands.

**Land Systems**

**RIO TINTO GROUP**

**DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT**

**Figure 3**

## 2.4 Vegetation

Beard (1975) mapping is used to determine the current extent of remnant vegetation remaining when compared to pre-European vegetation extent (Table 1; Figure 4). There are three pre-European vegetation associations within the survey area, all of which have more than 85% of pre-European native vegetation remaining.

**Table 1 Pre-European vegetation associations (Beard 1975) extent within the survey area (rounded to whole number) including percentage of pre-European extent remaining (Govt. of WA 2018)**

Association Description		State	Pilbara IBRA Region	City of Karratha
117 Hummock grasslands, grass steppe; soft spinifex	Pre-European Extent	919,517 ha	82,705 ha	41,173 ha
	Current Extent	886,005 ha	78,096 ha	31,922 ha
	% Remaining	96.36 %	94.43 %	77.53 %
	Within Survey Area	312.15 ha		
127 Bare areas; mud flats	Pre-European Extent	737,724 ha	177,750 ha	96,204 ha
	Current Extent	697,871 ha	159,595 ha	83,703 ha
	% Remaining	94.60 %	89.79 %	87.01 %
	Within Survey Area	19.77 ha		
589 Mosaic: Short bunch grassland - savanna / grass plain (Pilbara) / Hummock grasslands, grass steppe; soft spinifex	Pre-European Extent	807,699 ha	728,768 ha	312,814 ha
	Current Extent	802,713 ha	724,696 ha	310,512 ha
	% Remaining	99.38 %	99.44 %	99.26 %
	Within Survey Area	103.54 ha		

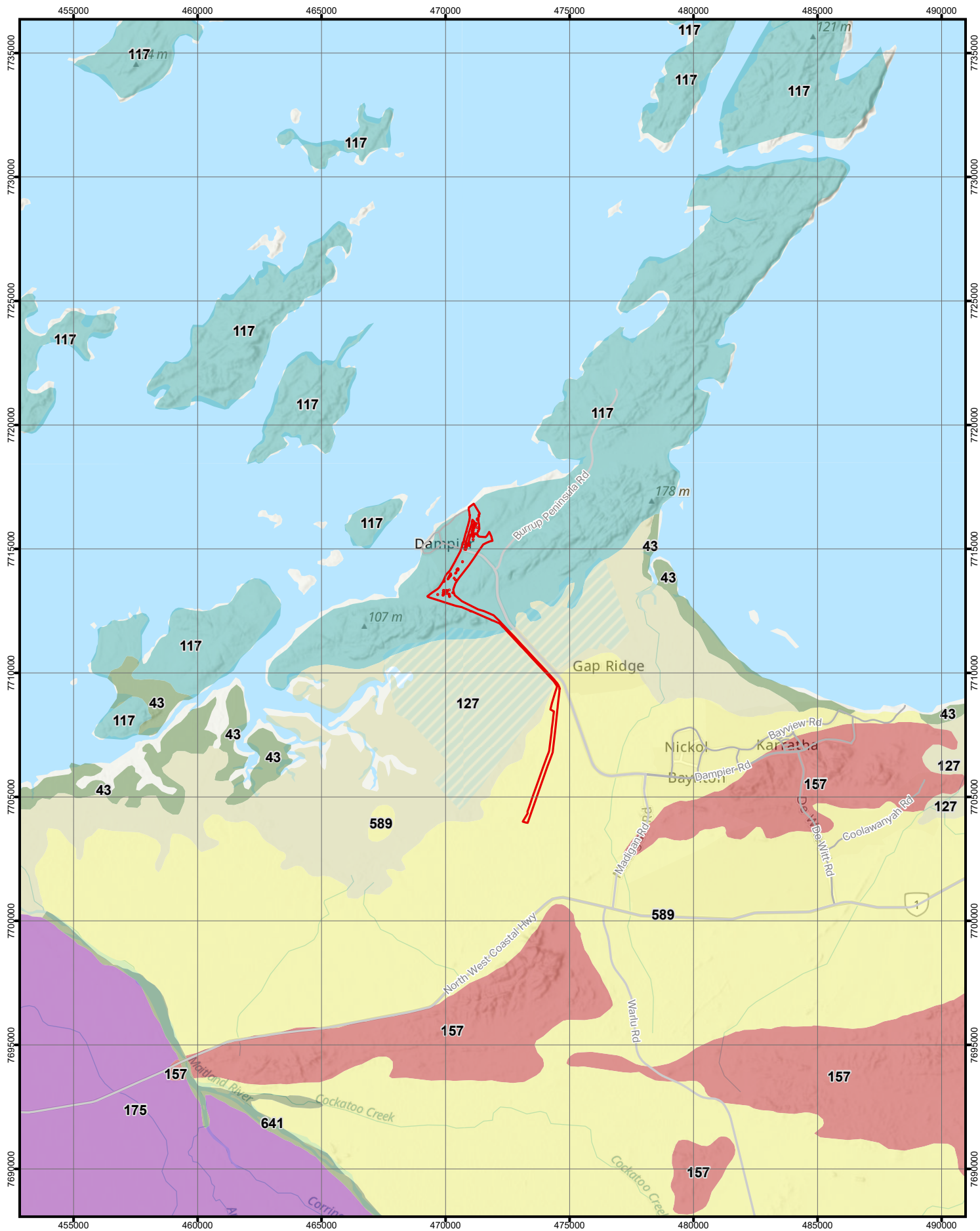
## 2.5 Conservation Reserves and Environmentally Sensitive Areas

The survey area is located approximately 1.6 km west of an Environmentally Sensitive Area (ESA) declared under s51B of the EP Act. This ESA is aligned with Murujuga National Park.

The survey area intersects with the Dampier Archipelago (including Burrup Peninsula) National Heritage Place (Dampier Archipelago NHP). The Dampier Archipelago NHP is listed as a sacred place, home to Indigenous Australians for tens of thousands of years. The rocks are amongst the oldest on earth, formed in the Archaean period more than 2,400 million years ago. Other reasons for listings include:

- petroglyphs such as quarries, middens, fish traps, rock shelters, ceremonial sites, artefact scatters, grinding patches, stone arrangements and engravings
- stone sites including standing stones, complex stone arrangements, fish traps, stone pits, hunting hides and stone cairns
- artistic styles demonstrating connections over vast distances.

These places are shown on Figure 5.



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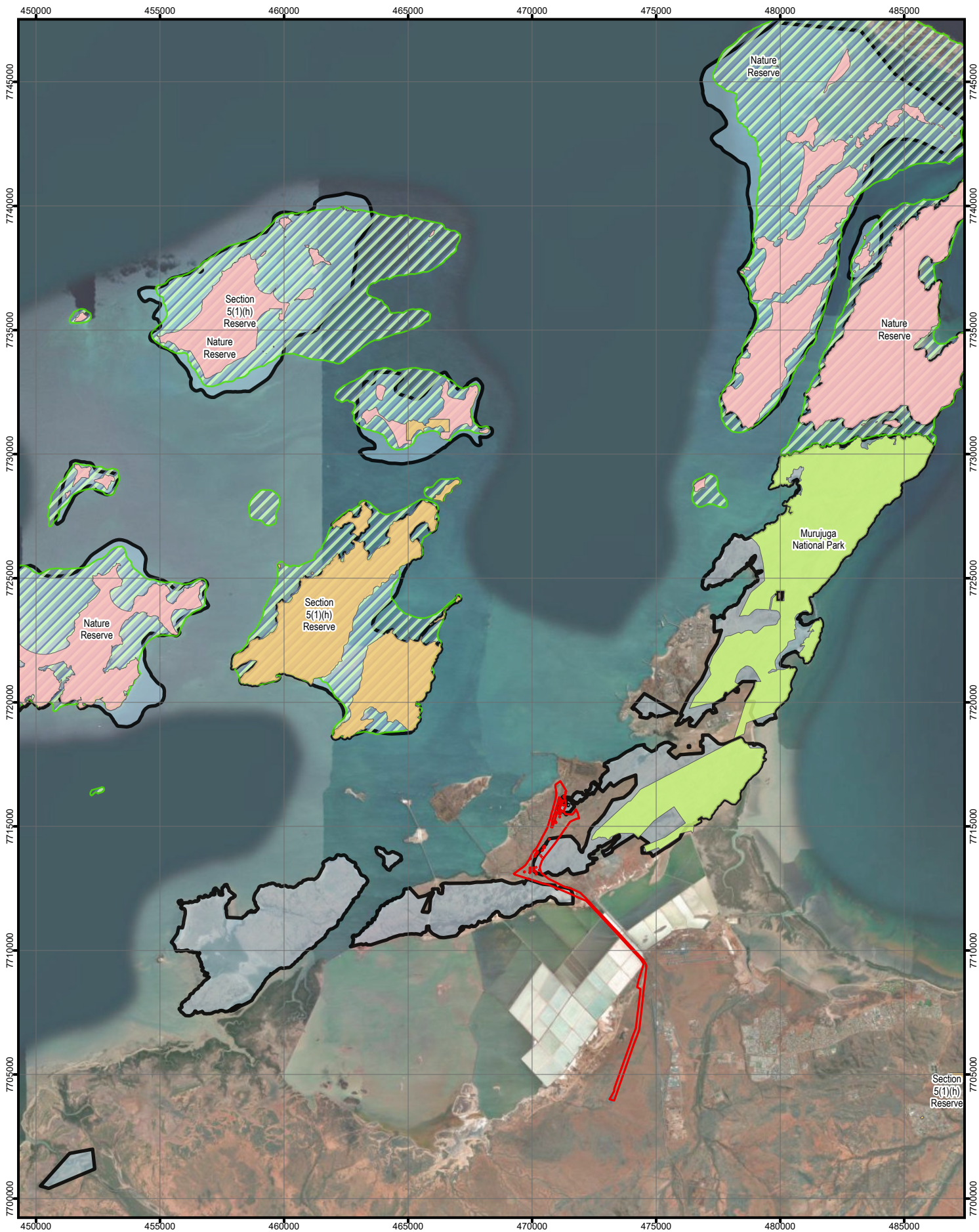
- ▭ Survey Area
- ▭ 43: Mangroves: Low forest (Kimberley) or thicket (Pilbara) mangroves *Avicennia marina*, *Rhizophora stylosa*, *Bruguiera exaristata*.
- ▭ 117: Grass-steppe: Hummock grassland *Triodia* spp.
- ▭ 127: Tidal mud flat
- ▭ 157: Grass-steppe: Hummock grassland *Triodia* spp.
- ▭ 175: Grasslands, short bunch-grass savanna: Annual grasses *Enneapogon* spp. *Aristida* spp. etc on dry plains and salt water grasses *Sporobolus virginicus* on the coast
- ▭ 589: Short bunch-grass savanna / Grass-steppe:
- ▭ 641: Woodland other: Wheatbelt; York gum, salmon gum etc. *Eucalyptus toxophleba*, *E. salmonophloia*. Goldfields: gimlet, redwood etc. *E. salubris*, *E. oleosa*. Riverine; rivergum *E. camaldulensis*. Tropical; messmate, woolyb

**Pre-European Vegetation**

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**Figure 4**



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**LEGEND**

- ▭ Survey Area
- National heritage: Dampier Archipelago (including Burrup Peninsula)
- Clearing Regulations - Environmentally Sensitive Areas (DWER)
- DBCA - Legislated Lands and Waters
- National Park
- Nature Reserve
- Section 5(1)(h) Reserve

**National heritage and Conservation Estates**

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*DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT*

**Figure 5**

## 2.6 Geology and Soils

The survey area lies in the Fortescue Province which is described at a regional level by Tille (2006) as hills and ranges (with stony plains and some alluvial plains and sandplains) on the volcanic granitic and sedimentary rocks of the Pilbara Craton. Soils are stony with red loamy earths and red shallow loams (and some red/brown non-cracking clays, red deep sandy duplexes and red deep sands (Tille, 2006).

Eight geological units and two artificial units intersect with the survey area (Table 2; Figure 6)

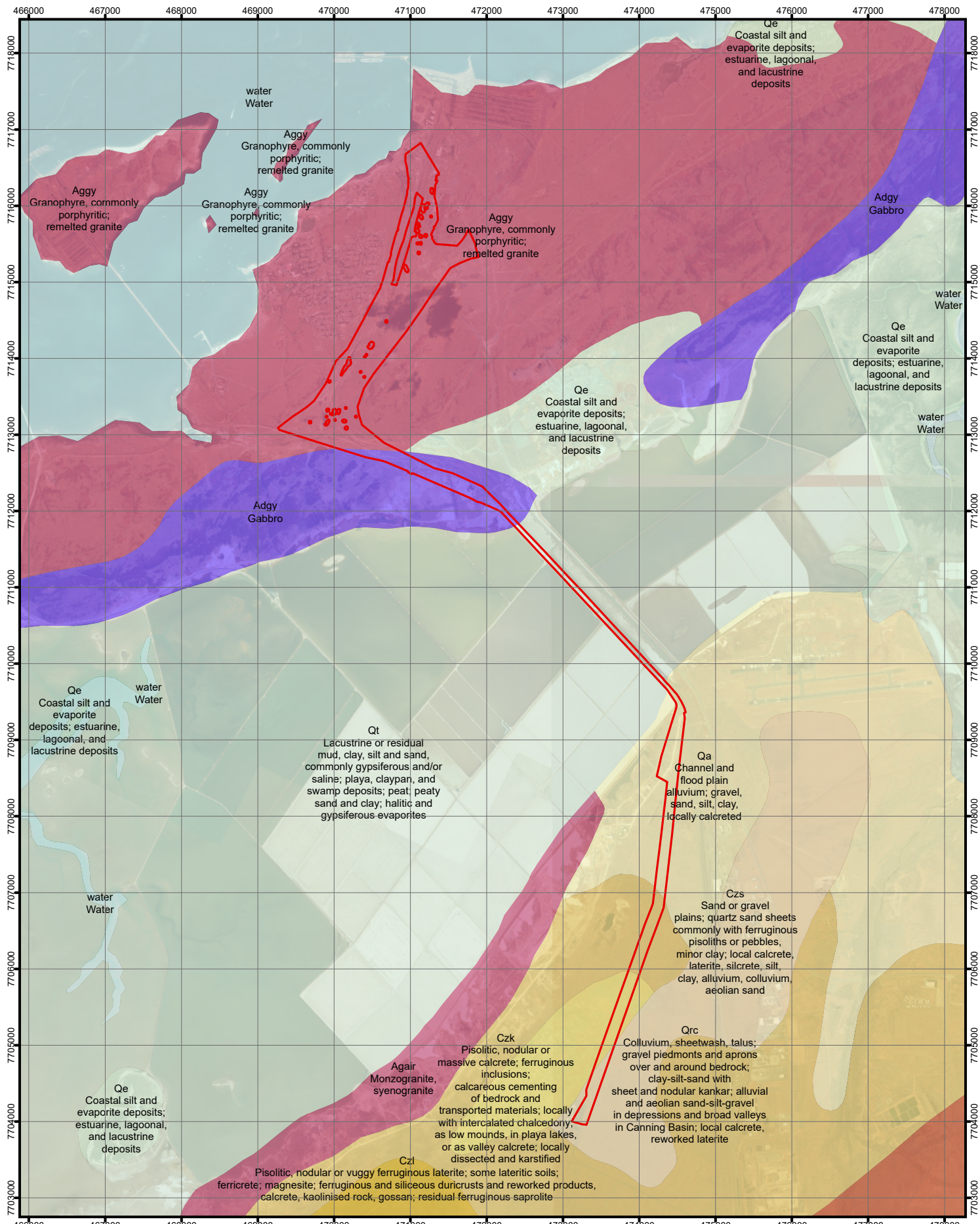
**Table 2 Geological units that occur within the survey area (Geological Series WA 2001)**

Unit Code	Geological Description
AgDm	Granite to granodiorite, locally seriate; includes biotite-rich phases, leucocratic syenogranite, and pegmatite veins; metamorphosed
AyG	AyG Gidley Granophyre: fine- to medium-grained granophyre, commonly porphyritic.
Czrk	Calcrete-massive, nodular and cavernous limestone, variably silicified; residual origin.
Qao	Alluvial sand, silt, and clay on floodplains.
Qc	Colluvium; sand, silt, and gravel in outwash fans and scree.
Qhm	Silt and mud in supratidal to intertidal flats and lagoons.
Qs	Eolian sand; red-yellow wind-blown sand; local sand ridges
Qwb	Sheetwash sand, silt, and clay in distal outwash fans, with gilgai surface in areas of expansive clay.
Made grd	Mining area; made ground.
Salt	Salt evaporation ponds.

The survey area intersects with three soil types (Figure 6):

- Bz15: Rocky hills and offshore islands of acid intrusive rock. Largely bare rock outcrop with pockets of shallow siliceous sands (Uc1.2) and loams (Um1).
- MM17: Alluvial plains with occasional stony residuals of basic and ultrabasic rocks: chief soils are deep cracking clays (Ug5.38) but extensive areas of (Dr2.33) and (Uf6.71) soils occur. (Uc5.32) and (Uc1.22) soils occur as narrow bands along stream channels.
- SV8z: Salt flats, tidal swamps, and coastal dune sands: chief soils are saline loams (Um1.3) and (Um1.4) with shelly sands (Uc1.11, Uc1.13). Small areas of calcareous earths (Gc) and shallow loams (Um) are associated with marls.





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**LEGEND**

Survey Area

WA Surface Geology polygons - 1:1,000,000

**QUATERNARY**

- Qa
- Qe
- Qt

**CENOZOIC**

- Czk
- Czl
- Czs

**ARCHEAN**

- Agair
- Adgy
- Awr
- Aggy

**Geology**

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**Figure 6**

### 3.0 Previous Surveys

Four ecological surveys that are directly relevant to this Project have been undertaken between 2010 and 2021. The author, date, title and significant findings are outlined in Table 3.

**Table 3 Previous Surveys conducted in the vicinity of the survey area**

Author	Title and Short Description	Significant Findings
Biota 2009	Flora, Vegetation and Fauna Survey of two desalination plant sites and seven pipeline options on the Burrup Peninsula. Targeted flora, fauna and vegetation survey. Overlaps with survey area.	Vegetation: Priority 1 PEC Roebourne Plains gilgai grasslands Flora: Priority 3 flora <i>Terminalia supranitifolia</i> ; Priority 4 <i>Rhynchosia bungarensis</i> Fauna: White-bellied Sea-Eagle ( <i>Haliaeetus leucogaster</i> )
Biota 2011	Dampier Salt Native Vegetation Clearing Permit Report – Additional Area ‘Project Charlotte’. Native Vegetation Clearing Permit. Near survey area.	Vegetation: Priority 1 PEC Burrup Peninsula rock pile community Flora: Priority 4 <i>Rhynchosia bungarensis</i> Fauna: nine conservation significant fauna species may occur in study area.
Biota 2018	Dampier Resilience Native Vegetation Clearing Supporting Report. Native Vegetation Clearing Permit. Overlaps majority of survey area.	Vegetation: Priority 1 PEC Roebourne Plains coastal grasslands Flora: None Fauna: suitable habitat for the Priority 4 Short-tailed Mouse ( <i>Leggadina lakedownensis</i> ); Eastern Osprey listed as Migratory observed
Rio Tinto 2011	Botanical Survey of the Dampier Power Station and Sub-station, and 33kV Network Connection at 7 Mile. Native Vegetation Clearing Permit. Overlaps with survey area.	Vegetation: None Flora: None Fauna: None
Rio Tinto 2010	Flora and Vegetation Survey of the 7 Mile Rail Yard Expansion. Native Vegetation Clearing Permit. Adjacent to survey area.	Vegetation: Priority 1 PEC Roebourne Plains gilgai grasslands Flora: None Fauna: None
AECOM 2020	Flora and Vegetation Surveys – Rail and 6 Mile Workshop. Near survey area.	Vegetation: Priority 1 PEC Roebourne Plains gilgai grasslands Flora: Priority 4 <i>Themeda</i> sp. Hamersley Station (M.E. Trudgen 11431) Fauna: None
AECOM 2021	Dampier Desalination Project – Flora, Vegetation and Fauna Assessment. Two-phase detailed survey. Overlaps with survey area.	Vegetation: None Flora: Priority 3 <i>Eragrostis surreyana</i> Fauna: Migratory and Marine Caspian Tern <i>Hydroprogne caspia</i> and Common Sandpiper <i>Actitis hypoleucos</i>

## 4.0 Methodology

### 4.1 Desktop Assessment

A desktop assessment was undertaken to identify significant environmental values that are likely to be present in the survey area including flora, fauna and vegetation communities. Desktop database searches were requested from the following government databases:

- Department of Biodiversity Conservation and Attractions (DBCA) Threatened Species and Communities database including Threatened and Priority flora, fauna and communities (2020a; 2020b; 2021a) with a 50 km buffer
- Western Australian Herbarium (WAH) records
- NatureMap using a 40 km buffer (NatureMap 2021)
- Protected Matters Search Tool (PMST) with a 50 km buffer (DAWE 2021a)
- Atlas of Living Australia (AoLA 2021)
- Rio Tinto Flora and Fauna Database
- Previous surveys outlined in Section 3.0.

All conservation significant matters including flora, fauna and communities were reviewed and a likelihood of occurrence was completed based on the categories (Table 4). Fauna species that are restricted to a marine environment including turtles, dolphins, whales and fish species, were not included in the desktop study.

**Table 4 Likelihood categories for species and communities**

Likelihood Category	Flora	Fauna	Communities
Likely to occur	Habitat is present in the Survey area and the species has been recorded in close proximity to the survey area.	Survey area is within the known distribution of the species, habitat is present in the survey area and the species has been recorded in close proximity to the survey area.	Known occurrences of the community in close proximity to the Survey area. Vegetation looks the same within the known occurrence and survey area based on aerial imagery. Geographic location is similar to the survey area.
May occur	Habitat may be present and/or the species has been recorded in close proximity to the survey area.	Survey area is within the known distribution of the species, marginal habitat may be present and/or the species has been recorded in close proximity to the survey area.	Known occurrence of the community in the local area, and/or vegetation looks the same within known occurrence and survey area based on aerial imagery. Geographic location is similar to the survey area.
Unlikely to occur	No suitable habitat is present and the species has not been recorded in close proximity to the survey area.	Survey area is outside the known distribution for the species, or no suitable habitat is present and the species has not been recorded in close proximity to the survey area.	Known occurrence of the community in close proximity to the Survey area however geographic location does not occur in survey area.

## 4.2 Flora and Vegetation Assessment

A reconnaissance flora and vegetation assessment was undertaken utilising methods outlined in the EPA (2016) Flora Survey Technical Guide. The field survey was undertaken by Floora De Wit (collection permit FB62000137) and Shannon de Melo. Floora has 14 years' experience undertaking flora and vegetation assessments. Floora completed a Bachelor of Science in Environmental Biology (Environmental Restoration) and completed a Postgraduate Diploma in Environmental Management and Impact Assessment. Floora was also the lead botanist in the Dampier Desalination Surveys (AECOM 2021) and the 6 Mile Flora and Vegetation surveys (AECOM 2020).

The field survey was undertaken between 17 and 20 May 2021. Floristic data was collected from relevés including the presence of plant species, their cover abundance, structural composition of vegetation, physical environment, and presence/absence of disturbance. Each site was given a unique site number, and the following parameters recorded:

- date
- location using hand-held GPS (UTM - accuracy of 5 m)
- sample site type and size
- photograph (northwest corner)
- soil details (type, colour, moisture)
- landform
- vegetation condition using the Trudgen (1988) scale and description of disturbance
- fire history
- species list
  - estimated height
  - estimated percentage cover (for trees both percentage within relevé and within community was recorded to enable better description of vegetation community).

### 4.2.1 Mapping

Approximately 15-30 minutes was spent searching at each relevé. The data was supplemented by the Biota (2018) and AECOM (2021) data to verify and refine vegetation community mapping. Vegetation communities were described and mapped based on changes in dominant species composition and landform. Vegetation community descriptions were based on the National Vegetation Information System (NVIS) framework (DotEE 2018).

Vegetation condition was mapped using the Trudgen (1988) condition scale, including excellent, very good, good, poor, degraded and completely degraded.

### 4.2.2 Targeted Flora Searches

Targeted searches were undertaken for conservation significant flora species considered likely to occur. This was informed by the desktop assessment and included:

- *Cucumis* sp. Barrow Island (D.W. Goodall 1264) (P2)
- *Dolichocarpa* sp. Hamersley Station (A.A. Mitchell PRP 1479) (P3) (previously known as *Oldenlandia* sp. Hamersley Station (A.A. Mitchell PRP 1479)
- *Eragrostis surreyana* (P3)
- *Rhynchosia bungarensis* (P4)
- *Terminalia supranitifolia* (P3)
- *Themeda* sp. Hamersley (M.E. Trudgen 11431) (P3)
- *Vigna triodiophila* (P3).

Prior to commencing the field survey, all species were reviewed and field guide booklets made. This included photographs, habitat, and identification details of plant, flower and/or fruit. Linear traverses were walked approximately 20 m apart in areas of likely habitat. Areas of significantly disturbed areas or those that have been traversed during previous surveys were not intensively targeted.

Significant flora species were marked using a hand-held GPS, a collection was made in representative habitats, photographed, and number of individuals counted where the location represented more than one individual. Samples were submitted to Steve Dillon for formal identification at the WA Herbarium. Species that could be mis-identified in the field including *Rhynchosia bungarensis* and *Cucumis* sp. Barrow Island were collected numerous times to ensure correct identification of Priority species.

### 4.3 Fauna Habitat Assessment

A fauna habitat survey was undertaken simultaneously with the flora and vegetation survey. A fauna habitat assessment was completed within each of the defined fauna habitats as informed by on-ground observations and vegetation community mapping. The parameters for assessing fauna habitats include defining the structure, complexity and continuity of the habitat present, and documenting the presence and abundance of habitat features (caves, large mature trees, dense vegetation, rocky hills, open plains, incised creeklines).

The assessment focused on confirming habitat suitability for conservation significant fauna species identified during the desktop assessment, predominantly cave systems and significant landforms.

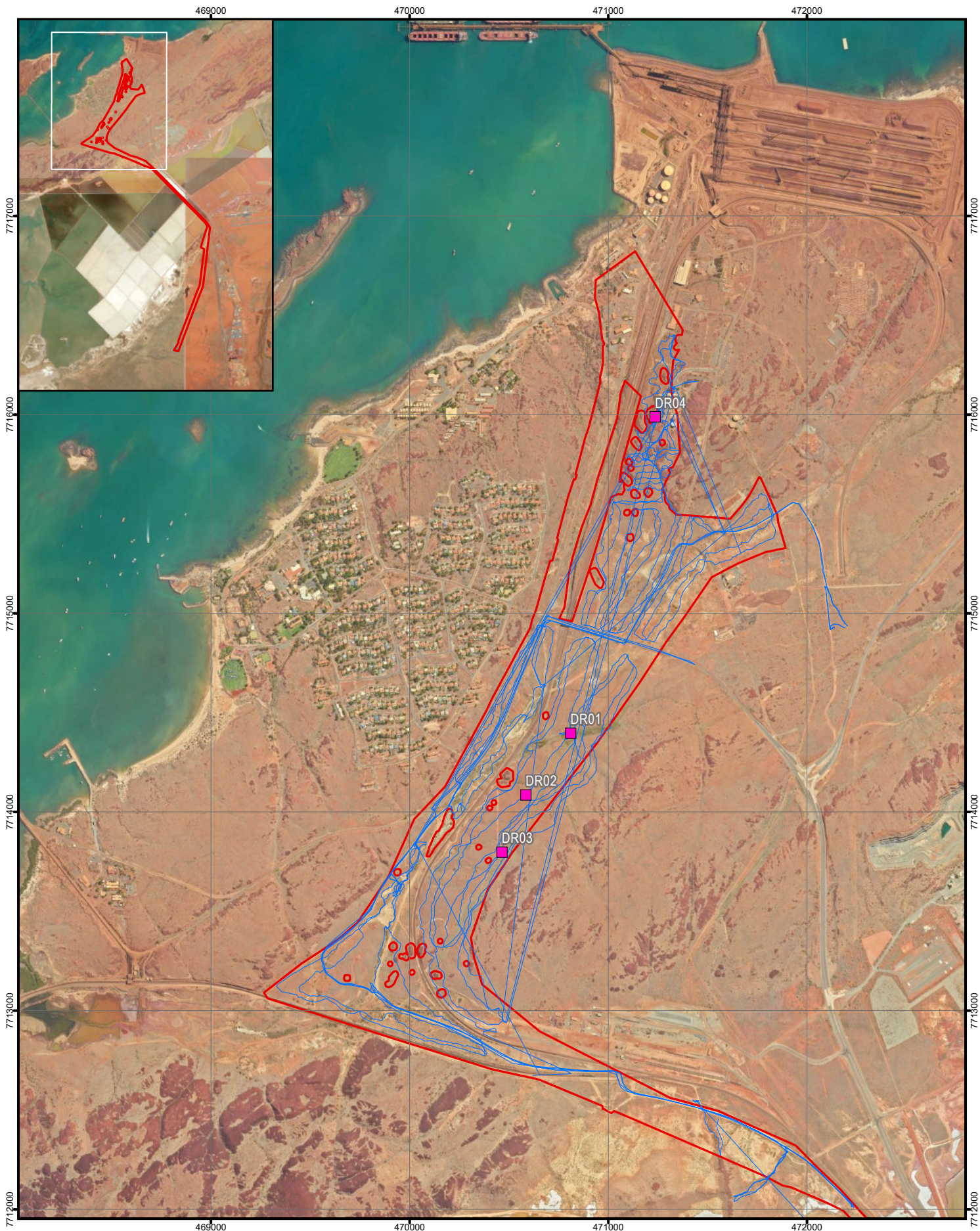
### 4.4 Limitations

Limitations of the survey are discussed in Table 5.

**Table 5** Limitations of the Ecological Surveys

Limitation	Outcome
Availability of contextual information on the region	<b>Not a limitation.</b> Sufficient resources for the Pilbara were available to provide contextual information. These included NatureMap and DBCA search results, WA Herbarium specimens, taxonomic guides, the FloraBase database and previous surveys conducted in the region including Biota (2018) and AECOM (2021) with significant overlap of survey areas.
Competency/experience of consultant conducting survey	<b>Minor.</b> The flora assessment was led by Floora de Wit who has more than 14 years' experience conducting surveys of similar scope including the Dampier Desalination Project (AECOM 2021) on the Burrup Peninsula. The fauna assessment was complete by Floora. Floora has limited knowledge of identifying fauna species from direct or indirect evidence. The survey focussed on identifying unique habitat features and assessing habitat suitability for significant fauna species.
Proportion of flora/fauna identified, recorded and/or collected (based on sampling, timing and intensity)	<b>Not a limitation.</b> The flora, vegetation and fauna assessment for the Dampier Power Resilience Project was supplemented by the Dampier Desalination Project surveys (AECOM 2021) which incorporated a multi-phase detailed flora and vegetation assessment and basic fauna survey. The combination of Project survey effort is considered suitable to meet the objective of this Project.
Completion (is further work needed)	<b>Not a limitation.</b> The area has been surveyed on a number of occasions previously by qualified zoologists and botanists (Biota 2018; Rio Tinto 2011). No further work is recommended to assess the environmental values present in the survey area.
Remoteness and/or access problems	<b>Not a limitation.</b> The entire survey area was accessible.

Limitation	Outcome
Timing, weather, season, cycle	<p><b>Not a limitation.</b></p> <p>The field surveys were undertaken in May 2021 following several significant rainfall events described in Section 2.1 Climate. Grasses, annual species, and Priority flora were in flower at the time of the survey.</p>
Disturbances (e.g. fire flood, accidental human intervention) which affected results of the survey	<p><b>Not a limitation.</b></p> <p>No disturbances occurred that may have influenced the outcome of the flora and fauna assessment. Parts of the survey area have been previously disturbed including clearing, presence of tracks, old borrow pits, and various infrastructure corridors such as powerlines, pipelines and rail. These were identified and mapped accordingly.</p>



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0 150 300 450 600 metres

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**LEGEND**

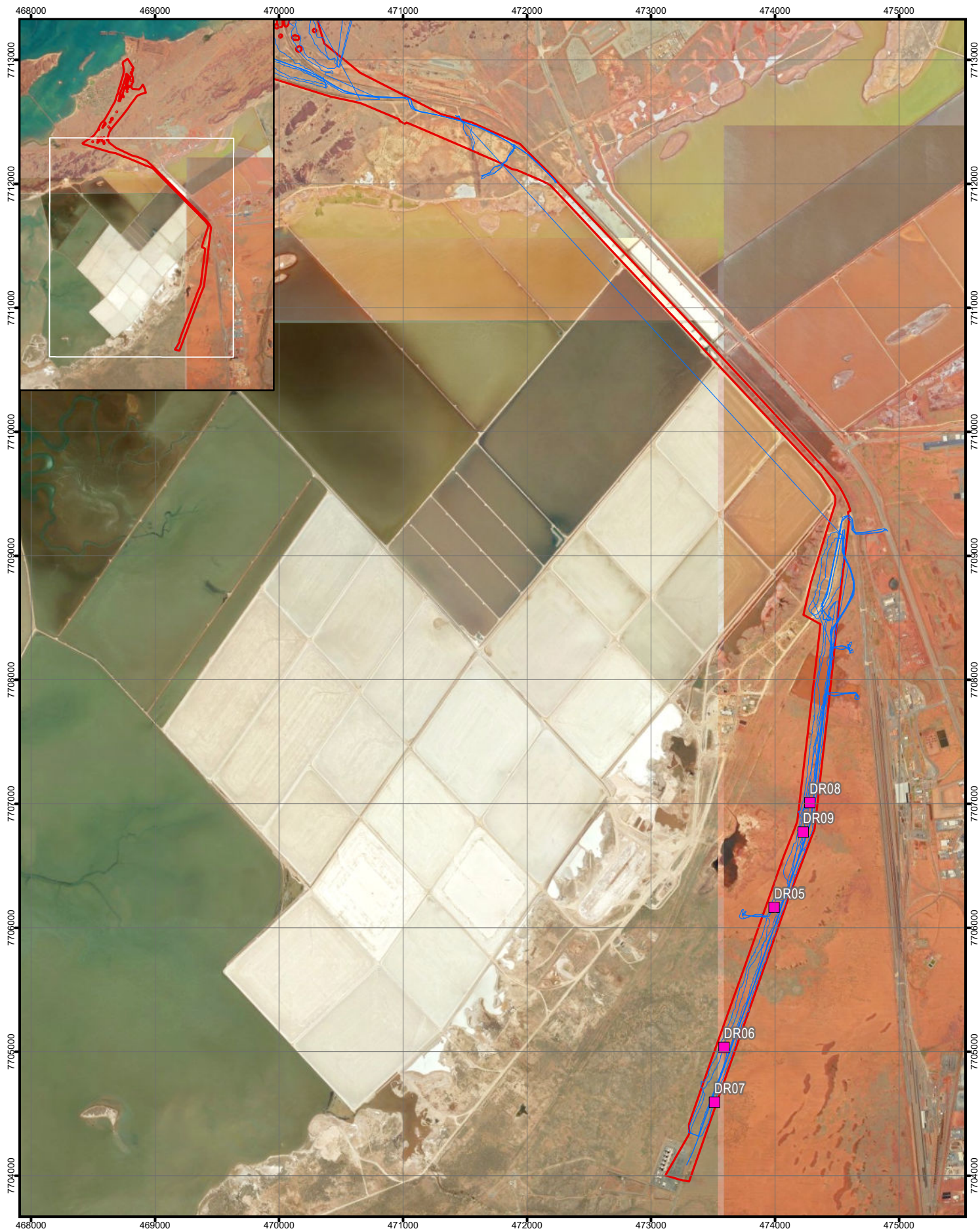
- ▭ Survey Area
- Damper Resilience Power Project: Tracklog
- Damper Resilience Power Project: Field Sites Points
- Releve

**Survey Effort**

**RIO TINTO**

**DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT**

**Figure 7.1**



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**LEGEND**

- ▭ Survey Area
- Dampier Resilience Power Project: Tracklog
- Dampier Resilience Power Project: Field Sites Points
- Releve

**Survey Effort**

**RIO TINTO**

**DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT**

**Figure 7.2**



## 5.0 Desktop Assessment

### 5.1 Conservation Significant Communities

No Threatened Ecological Communities listed under the EPBC Act or BC Act are known to occur within the survey area (DBCA 2021a).

Seven Priority Ecological Communities (PECs) have been mapped within 50 km of the survey area, including one PEC that is known to occur within the survey area. The Priority 1 PEC Roebourne Plains gilgai grasslands has been mapped within the survey area during previous surveys (Biota 2018; Rio Tinto 2011).

The Priority 1 PEC Burrup Peninsula rock pile communities is considered likely to occur as the survey area supports rock piles that may represent this PEC.

All PECs are described in Table 6.

Table 6 Priority Ecological Communities known to occur within 50 km of the survey area (DBCA 2021a; 2021b)

Community Name and Description	Cons. Status	Distance from Survey Area	Likelihood
<p><b>Roebourne Plains coastal grasslands with gilgai microrelief on deep cracking clays (Roebourne Plains gilgai grasslands)</b></p> <p>The Roebourne Plains coastal grasslands with gilgai micro-relief occur on deep cracking clays that are self-mulching and emerge on depositional surfaces. The Roebourne Plains gilgai grasslands occur on microrelief of deep cracking clays, surrounded by clay plains/flats and sandy coastal and alluvial plains. The gilgai depressions supports ephemeral and perennial tussock grasslands dominated by <i>Sorghum</i> sp. and <i>Eragrostis xerophila</i> (Roebourne Plains grass) along with other native species including <i>Astrelba pectinata</i> (Barley Mitchell grass), <i>Eriachne benthamii</i> (swamp wanderrie grass), <i>Chrysopogon fallax</i> (golden beard grass) and <i>Panicum decompositum</i> (native millet). Restricted to the Karratha area, this community differs from the surrounding clay flats of the Horseflat land system which are dominated by <i>Eragrostis xerophila</i> and other perennial tussock grass species (<i>Eragrostis</i> mostly).</p>	P1	0 km	Known / overlapping. Recorded previously, significant overlap with known occurrence.
<p><b>Stony Chenopod association of the Roebourne Plains area</b></p> <p>The community is dominated by <i>Eragrostis xerophila</i> and chenopods (<i>Sclerolaena</i>, <i>Atriplex</i> species) growing in saline clay soils with moderate to dense surface strew of pebbles and cobbles. The association appears to be uncommon and to date has only been located at Roebourne Airport and west of Nickol (Karratha). It is likely some other small areas remain.</p>	P1	40 km	Unlikely. No intact chenopod vegetation in vicinity of survey area.
<p><b>Horseflat Land System of the Roebourne Plains</b></p> <p>The Horseflat Land System of the Roebourne Plains are extensive, weakly gilgaied clay plains dominated by tussock grasslands on mostly alluvial non-gilgaied, red clay loams or heavy clay loams. Perennial tussock grasses include <i>Eragrostis xerophila</i> (Roebourne Plains grass) and other <i>Eragrostis</i> spp., <i>Eriachne</i> spp. and <i>Dichanthium</i> spp. The community also supports a suite of annual grasses including <i>Sorghum</i> spp. and rare <i>Astrebela</i> spp. The community extends from Cape Preston to Balla surrounding the towns of Karratha and Roebourne.</p>	P3	<1 km	May. Not recorded previously, shares many similarities to Roebourne Plains gilgai grassland.
<p><b>Burrup Peninsula rock pile communities</b></p> <p>Pockets of vegetation in rock piles, rock pockets and outcrops. Comprise a mixture of Pilbara and Kimberley species, communities are different from those of the Hamersley and Chichester Ranges. Short-range endemic land snails. Species usually associated with Burrup rock piles include <i>Ficus brachypoda</i>, <i>Brachychiton acuminatus</i>, <i>Terminalia canescens</i>, as well as the Priority species <i>Terminalia supranitifolia</i> (P3) and <i>Rhynchosia bungarensis</i> (P4). Threats: industrial development dust emissions. Weed invasion including Buffel Grass, <i>Passiflora foetida</i>.</p>	P1	4 km	Likely. Rock pile landforms present in survey area.

Community Name and Description	Cons. Status	Distance from Survey Area	Likelihood
<p><b>Four plant assemblages of the Wona Land System (Cracking clays of the Chichester and Mungarooona Range)</b>            Mitchell grass and Roebourne Plain grass (<i>Eragrostis xerophila</i>) plain on gilgai. <i>Astrebla pectinata</i>, <i>A. elymoides</i>, <i>E. xerophila</i>, <i>Aristida latifolia</i>, <i>Eriachne</i> and <i>Sida fibulifera</i>.</p>	P1	43 km	Unlikely. No suitable landform / land system present.
<p><b>Coastal dune tussock grassland dominated by <i>Whiteochloa airoides</i></b>            Tussock grassland of <i>Whiteochloa airoides</i> occurs on the landward side of fore dunes, hind dunes or remnant dunes with white or pinkish white medium sands with marine fragments. There may be occasional <i>Spinifex longifolius</i> tussock or <i>Triodia epactia</i> hummock grasses and scattered low shrubs of <i>Olearia</i> sp. Kennedy Range (<i>Scaevola spinescens</i>, <i>S. cunninghamii</i>, <i>Trianthema turgidifolia</i> and <i>Corchorus</i> species (<i>C. walcottii</i>, <i>C. laniflorus</i>). Occurs on Barrow Island and possibly some unaffected littoral areas in west Pilbara.</p>	P3	13 km	Unlikely. No suitable landform present.
<p><b>Burrup Peninsula rock pool communities</b>            Calcareous tufa deposits. Interesting aquatic snails. Threats: recreational impacts, and potential development; possibly NOX and SOX emissions, weed invasion including <i>Passiflora foetida</i> (stinking passion flower).</p>	P1	6 km	Unlikely. No suitable landform present.

## 5.2 Conservation Significant Flora

No Threatened flora were identified in the desktop assessment. Twenty-four Priority flora species were identified as potentially occurring including:

- one species known to occur from previous surveys
- six species likely to occur
- six species which may occur
- eleven species which are unlikely to occur.

The Priority 3 species *Eragrostis surreyana* has been recorded in the survey area during previous surveys (AECOM 2021) and is therefore known to occur. Other species considered 'likely to' occur are known from close proximity (see Figure 8).

The comprehensive species list of the desktop flora results, including habitat, flowering period, latest count date and likelihood of occurrence is presented in Table 3 includes the Protected Matters Search and NatureMap (2021) results.

**Table 7 Priority flora species that are 'known, 'likely to' or 'may occur'**

Species	WA	Habitat <sup>1</sup>	Count Date
<b>Known</b>			
<i>Eragrostis surreyana</i>	P3	Seasonally wet areas. Shallow soils over rock and deep fine alluvial sands of creeks.	2020
<b>Likely</b>			
<i>Cucumis</i> sp. Barrow Island (D.W. Goodall 1264)	P2	Lower footslope of a basalt hill. Area burnt. Limestone plateau. Swale in a sandplain. Wide, 3m deep wash in a limestone landscape. Gentle calcrete slope. Red, sandy loam.	2011 (Rio Tinto)
<i>Oldenlandia</i> sp. Hamersley Station (A.A. Mitchell PRP 1479)	P3	Cracking clay, basalt. Gently undulating plain with large surface rocks, flat crabholed plain.	2005
<i>Rhynchosia bungarensis</i>	P4	Associated with rocky slopes, rock piles, rock pools and gullies.	2010
<i>Stackhousia clementii</i>	P3	Saline soil over limestone or sandy loam clay flats.	2013
<i>Terminalia supranitifolia</i>	P3	Rocky outcrops, slopes, piles. Among basalt rocks and on sand.	2003
<i>Themeda</i> sp. Hamersley Station (M.E. Trudgen 11431)	P3	Drainage lines, clay flats, crabhole flats and self mulching clays.	2007
<b>May</b>			
<i>Glycine falcata</i>	P3	Stony loam or cracking clays, typically in grassland in low lying areas.	2011
<i>Gomphrena cucullata</i>	P3	Plains, red soils (loam/sand) in grassland. Open floodplains.	2012
<i>Goodenia pallida</i>	P1	Red soils. Annual grassland.	2001
<i>Rostellularia adscendens</i> var. <i>latifolia</i>	P3	Ironstone soils. Near creeks, rocky hills.	2007
<i>Solanum albobellatum</i>	P3	Cracking clay soils on open floodplains in open scrubland over grasses.	2011
<i>Vigna triodiophila</i>	P3	Scree and rock piles.	2009

1. Habitat derived from Florabase (WAH 1998) unless otherwise referenced.



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**LEGEND**

Survey Area  
 PECs

- Priority 1
- Priority 3

WA Herb

- Priority 3
- Priority 4

Threatened and Priority Flora Database

- Priority 3

**Desktop Results – Flora and Communities**

**RIO TINTO**

**DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT**

**Figure 8**

### 5.3 Conservation Significant Fauna

The desktop assessment identified 65 conservation significant fauna species, including 52 bird, 8 mammal and five reptile species. The likelihood assessment determined that:

- two species are 'known to occur' within the survey area, both are bird species listed as Migratory and Marine
- five species are 'likely to occur' within the survey area including three mammal and two reptile species
- 41 species 'may occur' within the survey area including one mammal (bat) and 40 bird species (of which 32 are listed as migratory/marine species)
- 11 species are 'unlikely to occur' within the survey area including one mammal, two reptiles and eight bird species.

Avian species that are associated with marine and/or coastal environments, or where habitat in the survey area does not represent critical habitat for the species, are considered 'vagrant'. These species may fly over the area however do not depend on the habitat in the survey area for survival.

The species known to occur or considered likely to occur are described in Table 8. A full list of species is found in Appendix B.

**Table 8 Conservation significant fauna species considered 'known' or 'likely to occur'**

Taxon	Common Name	Cons. Status <sup>1</sup>		Habitat <sup>2</sup>
		EPBC Act	DBCA / BC Act	
<b>Known to occur</b>				
<i>Actitis hypoleucos</i>	Common Sandpiper	Mi, Ma	MI	The Common Sandpiper is widespread in small numbers utilising a wide range of coastal wetlands and some inland wetlands where it forages in muddy margins or rocky shores and rarely on mudflats. The Common Sandpiper has been recorded in estuaries and deltas of streams, as well as on banks farther upstream; around lakes, pools, billabongs, reservoirs, dams and claypans, and occasionally piers and jetties. Areas of national importance within Western Australia include Nuytsland Nature Reserve and Roebuck Bay (Watkins 1993). This species has been recorded in Artificial Wetlands within the survey area (AECOM 2021).
<i>Hydroprogne caspia</i>	Caspian Tern	Mi, Ma	MI	The largest tern in Australia, the Caspian Tern is widespread in coastal regions, breeding on variable types of sites including low islands, cays, spits, banks, ridges, beaches of sand or shell, terrestrial wetlands and stony or rocky islets or banks. This species has been recorded in Artificial Wetlands within the survey area (AECOM 2021).
<b>Likely to occur</b>				
<i>Dasyurus hallucatus</i>	Northern Quoll	EN	EN	This species occupies a wide range of habitats including, rocky areas, deserts, eucalypt forests and woodlands, hummock grass (Plectrachne spp.), basalt hills, mesas, high and low plateaux, lower slopes, occasional tor fields and stony plains supporting either hard or soft spinifex grasslands (Braithwaite & Griffiths 1994; van Vreeswyk et al. 2004). Northern quolls on the Burrup Peninsula are likely to inhabit complex landforms of rocky outcrops, which can afford greater cover from predators than more open areas (Cardno 2019). There are 38 records within 20 km of the survey area, the nearest is less than 100 m from the survey area.

Taxon	Common Name	Cons. Status <sup>1</sup>		Habitat <sup>2</sup>
		EPBC Act	DBCA / BC Act	
<i>Leggadina lakedownensis</i>	Northern Short-tailed Mouse		P4	Suitable habitat includes cracking clays and adjacent tussock and hummock grasslands, Acacia shrubland and savannah woodland (Biota 2018). There are two records within 20 km of the survey area, the closest is approximately 12 km from the survey area.
<i>Macroderma gigas</i>	Ghost Bat	VU	VU	The Ghost Bat occupy a range of habitats including arid Pilbara to tropical savanna woodlands and rainforests (TSSC 2016). They roost in caves, rock crevices and old mines during the daytime (TSSC 2016). Foraging occurs on average 1.9 km from active roosting areas (TSSC 2016). The species has been recorded from a recent survey in the King Bay-Hearson Cove area of the Burrup Peninsula (Cardno 2019). There are three records within 20 km of the survey area, the closest is approximately 11 km from the survey area.
<i>Liasis olivaceus barroni</i>	Pilbara Olive Python	VU	VU	The Olive Python (Pilbara subspecies) is known from Hammersley Range and Dampier Archipelago (Wilson & Swan 2010) where it is often associated with rock piles around permanent water pools and seasonal creeks (DAWE, 2021b). On the Burrup Peninsula they prefer granophyre rock piles and occasionally are found in neighbouring spinifex grasslands (Cardno 2019). There are 20 records within 20 km of the survey area, the nearest record is approximately 1 km.
<i>Notoscincus butleri</i>	Lined Soil-crevice Skink (Dampier)		P4	Usually found in hummock grasslands on stony or sandy ground. A relatively poorly known species that has been collected in the Hearson Cove - King Bay area of the Burrup Peninsula.

EPBC Act and BC Act: VU Vulnerable, EN Endangered

DBCA: P Priority



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**LEGEND**

Survey Area

**Threatened Fauna**

- ▲ Critically Endangered
- ▲ Endangered
- ▲ Vulnerable
- ▲ Internationally Agreed
- ▲ Priority 1
- ▲ Priority 4

**Desktop Results – Fauna**

**RIO TINTO**

**DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT**

**Figure 9**



## 6.0 Field Survey Results

### 6.1 Vegetation

#### 6.1.1 Communities

A Priority 1 PEC was identified as occurring in the survey area where it intersects with the Roebourne Plains. The PEC “Roebourne Plains coastal grasslands with gilgai microrelief on deep cracking clays (Roebourne Plains gilgai grasslands)” is represented by community SfEx in the survey area and extends 45.13 ha (12% of the survey area). DBCA (2017) describes this PEC as tussock grasslands dominated by *Sorghum* sp. and *Eragrostis xerophila* (Roebourne Plains grass) along with other native species including *Astrelba pectinata* (Barley Mitchell grass), *Eriachne benthamii* (swamp wanderrie grass), *Chrysopogon fallax* (golden beard grass) and *Panicum decompositum* (native millet). SfEx is dominated by *Eragrostis xerophila* and included three other tussock grasses found on soft deep clay soils. For this reason, it is a good representation of the PEC (see Plate 1).



**Plate 1** Community SfEx representing the Roebourne Plains coastal grasslands PEC



The rockpiles within the Hummock Grassland TpAITe were reviewed to determine whether they represent the Burrup Peninsula rock pile community PEC. This PEC is characterised by pockets of vegetation in rock piles and outcrops that provide important fire and evolutionary refuge (Kendick & Stanley 2001). Species usually associated with these include *Ficus brachypoda*, *Brachychiton acuminatus*, *Terminalia canescens*, as well as the Priority species *Terminalia supranitifolia* (P3) and *Rhynchosia bungarensis* (P4). Of these ‘typical’ species, only two were recorded at one location (*Brachychiton acuminatus* and *Rhynchosia bungarensis*). Further, species were largely restricted to the base of rockpiles, rather than in ‘pockets’ amongst rock piles. Rock piles were small and isolated compared to the large extensive rock piles further along the Peninsula. For these reasons, the PEC is not considered to occur in the survey area.



Nine vegetation communities were described and mapped across 379.17ha within the survey area. These included:



- Tussock Grasslands – two tussock grasslands on hard to soft clay plains, and one mixed hummock and tussock grassland
- Hummock Grasslands – three hummock grasslands on rocky slopes and undulating terrain including rock piles
- Wetlands – two ephemeral creeks, one artificial wetland and one saline flats.
- Disturbed Areas include disturbed roadside and cleared.



The vegetation communities recorded in the survey area are described in Table 9 and mapped in Figure 10 at the end of this document.



Table 9 Vegetation Community Descriptions and Photographs

Description	Additional Detail	Photograph
<b>Wetlands</b>		
<p><b>AaAtTw Ephemeral Drainage</b></p> <p><i>Acacia ampliceps</i> tall shrubland over <i>Adriana tomentosa</i>, <i>Streptoglossa decurrens</i> and <i>Sesbania cannabina</i> mid to low mixed shrubs and herbs over <i>Triodia wiseana</i>, *<i>Cenchrus ciliaris</i> and <i>Eragrostis cumingii</i> tall to low mixed hummock and tussock grasslands.</p> <p>Minor ephemeral drainage. Supports population of Priority 3 <i>Eragrostis surreyana</i>.</p>	<p>Survey effort: DR01</p> <p>Extent: 2.04 ha</p> <p>Species richness: 30 native and two weed species</p>	
<p><b>AaEgPr Artificial Ephemeral Wetland</b></p> <p><i>Acacia ampliceps</i> and <i>Sesbania cannabina</i> medium open shrubland over <i>Eleocharis geniculata</i>, <i>Schoenus falcatus</i> and <i>Cyperus vaginatus</i> low open sedgeland over <i>Pluchea rubelliflora</i>, <i>Samolus repens</i> and <i>Stemodia grossa</i> low open herbland.</p> <p>Represents artificial ephemeral wetlands. Wetter areas include <i>Typha domingensis</i>. Supports Priority 3 <i>Eragrostis surreyana</i> population. Presence of water likely to vary throughout the year.</p>	<p>Survey effort: 4, 5, 9, 21, 22</p> <p>Extent: 9.31 ha</p> <p>Species richness: 37 native and six weed species</p>	

Description	Additional Detail	Photograph
<p><b>EcScCc</b> <b>Ephemeral Drainage</b></p> <p><i>Eucalyptus camaldulensis</i> and <i>Melaleuca lasiandra</i> low woodland over <i>Sesbania cannabina</i>, <i>Acacia coriacea</i> and <i>Solanum horridum</i> mid open shrubland over *<i>Cenchrus ciliaris</i> low open tussock grassland.</p> <p>This community includes a layer of herbs including <i>Rhynchosia minima</i>, <i>Pluchea rubelliflora</i>, <i>Cucumis variabilis</i> and 13 more species.</p>	<p>Survey effort: 23, 28</p> <p>Extent: 33.08 ha</p> <p>Species richness: 21 native and one weed species</p>	
<p><b>PaTiEo</b> <b>Tidal Flats</b></p> <p><i>Pittosporum phillyreoides</i> and <i>Acacia coriacea</i> scattered tall trees over <i>Tecticornia indica</i>, <i>Enchylaena tomentosa</i> and <i>Acacia ampliceps</i> low open shrubland over <i>Eriachne obtusa</i> and *<i>Cenchrus ciliaris</i> low open tussock grassland.</p> <p>Associated with tidal flats on clay soils that responds rapidly to rainfall, varying between large barren areas to open herbland. Mapped as Degraded within the survey area.</p>	<p>Description derived from AECOM (2021) Dampier Desalination Flora, Vegetation and Fauna Assessment</p> <p>Extent: 18.27 ha</p> <p>Species richness: Nine native and one weed species</p>	

Description	Additional Detail	Photograph
<b>Hummock Grasslands</b>		
<p><b>AbEtTa Hummock Grassland</b></p> <p><i>Acacia bivenosa</i>, <i>Salsola australis</i> and <i>Corchorus walcottii</i> mid to low open shrubland over <i>Euphorbia tannensis</i> subsp. <i>eremophila</i>, <i>Euphorbia australis</i> and <i>Tribulus hirsutus</i> low open herbland over <i>Triodia angusta</i> and <i>Triodia epactia</i> tall Hummock Grassland</p> <p>Recorded on flat clay soils with some rocks on lower slopes.</p>	<p>Description derived from AECOM (2021) Dampier Desalination Flora, Vegetation and Fauna Assessment</p> <p>Extent: 3.33 ha</p> <p>Species richness: 50 native and one weed species</p>	
<p><b>SdSfTe Hummock Grassland</b></p> <p><i>Solanum diversifolium</i>, <i>Indigofera monophylla</i> and <i>Acacia synchronicia</i> mid to low open shrubland with <i>Swainsona formosa</i>, <i>Boerhavia coccinea</i> and <i>Euphorbia australis</i> mid to low open herbland over <i>Triodia epactia</i> Hummock Grassland.</p> <p>Recorded on skeletal soils on lower slopes.</p>	<p>Description derived from AECOM (2021) Dampier Desalination Flora, Vegetation and Fauna Assessment</p> <p>Extent: 24.03 ha</p> <p>Species richness: 8 native and one weed species</p>	

Description	Additional Detail	Photograph
<p><b>ToAlTe</b> <b>Hummock Grassland</b></p> <p><i>Trachymene oleracea</i> subsp. <i>oleracea</i>, <i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i> and <i>Swainsona formosa</i> mid to tall herbland with <i>Abutilon lepidum</i>, <i>Crotalaria novae-hollandiae</i> and <i>Senna notabilis</i> low shrubland over <i>Triodia epactia</i> tall hummock grassland.</p> <p>Recorded on skeletal soils on flats, slopes and around rock piles. Trees including <i>Terminalia canescens</i> growing from rock piles.</p>	<p>Survey effort: DR02, DR03, DR04 and three relevés from AECOM (2021) Dampier Desalination Flora, Vegetation and Fauna Assessment.</p> <p>Extent: 114.73 ha</p> <p>Species richness: 57 native and five weed species</p>	
<b>Tussock Grasslands</b>		
<p><b>AbHcPo</b> <b>Hummock and Tussock Grassland</b></p> <p><i>Acacia bivenosa</i>, <i>Hibiscus sturtii</i> var. <i>campylochlamys</i> and <i>Sida fibulifera</i> mid to low sparse shrubland over <i>Heteropogon contortus</i>, <i>Triodia epactia</i> and <i>Aristida latifolia</i> low mixed tussock and hummock grassland over <i>Portulaca oleracea</i>, <i>Crotalaria medicaginea</i> and <i>Boerhavia coccinea</i> low sparse herbland.</p> <p>On hard clay with rocky surface.</p>	<p>Survey effort: DR06, DR09</p> <p>Extent: 18.00 ha</p> <p>Species richness: 31 native and one weed species</p>	

Description	Additional Detail	Photograph
<p><b>AxAhPa Tussock Grassland</b></p> <p><i>Acacia xiphophylla</i> isolated low trees over <i>Aristida holathera</i>, <i>Triodia epactia</i> and <i>Heteropogon contortus</i> low sparse mixed tussock and hummock grassland over <i>Ptilotus auriculifolius</i>, <i>Portulaca oleracea</i> and <i>Boerhavia coccinea</i> low sparse herbland</p> <p>On hard clay with rocks on surface.</p>	<p>Survey effort: DR08</p> <p>Extent: 2.01 ha</p> <p>Species richness: 15 native and no weed species</p>	
<p><b>SfEx Tussock Grassland</b></p> <p><i>Sida fibulifera</i>, <i>Crotalaria medicaginea</i> and <i>Neptunia dimorphantha</i> low mixed herb and shrubland with <i>Eragrostis xerophila</i>, <i>Heteropogon contortus</i> and <i>Panicum laevinode</i> low tussock grassland.</p> <p>On soft clay soils. Represents the Priority 1 PEC Roebourne Plains gilgai grasslands.</p>	<p>Survey effort: DR05, DR07</p> <p>Extent: 45.13 ha</p> <p>Species richness: 20 native and no weed species</p>	
<b>Disturbed – significantly altered</b>		
<p><b>CL</b> Cleared – devoid of native vegetation, includes hardstand roads and rail as well as roadside with weeds.</p>	<p>Extent: 115.69 ha</p>	<p>N/A</p>

## 6.1.2 Condition

Vegetation condition ranged between Completely Degraded to Very Good. All native vegetation within the survey area has been affected to some extent from human disturbance, particularly infrastructure corridors and weed invasion. Generally, the vegetation condition improved with distance from the cleared areas including roads and tracks, pipelines, powerlines, railway, buildings and laydown areas.

Vegetation condition extent is presented in Table 10 and mapped in Figure 11 at the end of this document.

**Table 10 Vegetation Condition Extent**

Condition rating	Extent (ha)	Percent of Total Area (%)
Very Good	103.53	27
Good	26.61	7
Poor	42.70	11
Degraded	97.09	25
Completely Degraded/Cleared	115.69	30
<b>Total</b>	<b>385.63</b>	<b>100</b>

## 6.2 Flora

### 6.2.1 Conservation Significant Flora

Three Priority flora species were recorded, described in detail below. Locations of these species are shown on the Vegetation Community mapping in Figure 10 at the end of this document.

#### ***Eragrostis surreyana* (P3)**

*E. surreyana* was recorded at two locations in the survey area, comprising approximately 985 individuals. This species is a tufted annual grass that was considered locally common where it occurs (Plate 2). One population is in an artificial wetland where it grows along the edge of standing fresh water while the other was found in a shallow ephemeral drainage line amongst undulating rocky terrain (Figure 10).

This species has not been recorded in previous surveys and there are no verified records (TPFL database) on the Burrup Peninsula. There are three records held at the WA Herbarium which describe it as 'occasional'. This species is more commonly found in the Hamersley and Fortescue regions (WAH, 1998) and can be abundant where it occurs (DPaW & Rio Tinto 2015).



Plate 2 *Eragrostis surreyana* habit (above) and habitat (below)



***Rhynchosia bungarensis* (P4)**

Two populations of *R. bungarensis* were recorded, comprising 27 individuals amongst rock piles within the survey area (Plate 3; Figure 10). This species was distinguishable from the common *Rhynchosia minima* by the glands on upper leaf surface making the leaves feel sticky to touch. Two collections were made and confirmed as *R. bungarensis* at the WA Herbarium.

This species is known from the Burrup Peninsula and has been recorded in previous surveys (Biota 2009; 2011) and can be considered locally common.



**Plate 3** *Rhynchosia bungarensis* habit

***Themeda* sp. Hamersley Station (M.E. Trudgen 11431) (P3)**

*T. sp.* Hamersley Station was recorded extensively on the plains in the southern portion of the survey area, with one population comprising more than 18,000 individuals (Figure 10). Counts of this species are approximate as clumps are difficult to distinguish and it was often seen in large numbers (Plate 3). This species was in flower/seed at the time of the survey and was collected at one location which was confirmed at the WA Herbarium.

This species is locally common and has been recorded in adjacent survey area (AECOM 2020) and is likely to represent one large population.



Plate 4 *Themeda* sp. Hamersley Station (M.E. Trudgen 11431) habit (left) and habitat (right)

### 6.2.2 Flora Diversity

A total of 107 native plant species were recorded in the survey area, comprising 75 genera and 30 families. The best represented families include Fabaceae (24 native species), Poaceae (16 native species), and Malvaceae (11 native species).

Eight weed species were recorded, with *Cenchrus ciliaris* the most common weed species. No Declared Pest species or Weed of National Significance was recorded.

### 6.3 Fauna Habitat



The field survey confirmed the presence of six fauna habitats comprising:



- Triodia on Rocky Slopes – 142.09 ha including rock piles and skeletal soils on slopes on Burrup Peninsula with moderate vegetation cover.
- Artificial Wetlands – 9.31 ha including standing water for part of the year and sparse to thicket vegetation cover.
- Tussock Grassland Plain – 65.13 ha including clay flats on Roebourne Plains with open grasslands and moderate to minor vegetation cover.
- Minor Creeks – 35.12 ha including ephemeral wetlands with occasional mature trees and thickets
- Saline Flats – 18.27 ha disturbed artificial habitat adjacent to salt ponds largely devoid of vegetation.
- Cleared / Disturbed – 115.69 ha including hardstand cleared.




Fauna habitats are considered well connected to adjacent habitat of similar or better quality.

All habitat types represent suitable or marginal habitat for one or more conservation significant species, outlined in Table 11 and mapped in Figure 12. This includes foraging and denning habitat for the Northern Quoll in the Triodia on Rocky Slopes and potential foraging habitat in the Tussock Grassland, and suitable habitat for the Pilbara Olive Python in the Triodia on Rocky Slopes.

Table 11 Fauna Habitats of the Survey Area

Description	Conservation Significant Fauna Habitat	Photograph
<p><b>Artificial Wetlands – 9.31 ha</b></p> <p>Standing water (seasonal), occasional mature trees, sedges, herbs and low shrubs provide moderate ground cover. It appears that these relatively flat areas were created by earthworks (e.g. excavation of fill material) associated with the construction of nearby rail/road infrastructure.</p> <p>Moderate complexity when water is present providing refuge for wetland species and a fresh water source.</p> <p>This habitat is a result of historical earthworks (likely for sourcing fill). Due to significant rainfall in July 2020, these relatively flat areas contained ponded water. It would be expected that surface water would be temporary, and these areas would be dry for much of the year.</p>	<p>Suitable foraging habitat for the Common Sandpiper and Caspian Tern, which were directly observed within this habitat previously (AECOM 2021).</p> <p>Provide marginal foraging habitat for the Pacific Golden Plover and Crested Tern.</p>	
<p><b>Triodia on Rocky Slopes - 142.09 ha</b></p> <p>Grasslands with moderate ground cover on rocky slopes and flat areas. Includes some tall shrubs over diverse low herbs, shrubs and grasses. Occurs on skeletal rocky slopes and includes isolated rock piles. Varies in complexity from high to low in the absence of rock piles where animals can seek shelter. This habitat was disturbed by linear infrastructure including pipelines and powerlines. This is unlikely to have a significant impact on the ability of fauna to utilise the habitat.</p>	<p>Suitable foraging habitat for the Northern Quoll, Lined Soil-crevice Skink and Pilbara Olive Python. Rock piles provides suitable denning habitat for the Northern Quoll.</p> <p>Marginal habitat for the Western Pebble-mound Mouse, and Ghost Bat.</p>	

Description	Conservation Significant Fauna Habitat	Photograph
		
<p><b>Tussock Grassland Plain</b> - 65.13 ha</p> <p>Grasslands with moderate to low ground cover on hard to soft clays. Includes areas of gilgai microrelief and hardpan clays with scattered rocks on surface. The softer clay soils would provide opportunity for burrowing species.</p> <p>Complexity is moderate to low, lacking mid and upper-storey vegetation, logs, leaf litter, and presence of trees with hollows.</p> <p>This habitat is disturbed by a high voltage powerline and associated access track. This is unlikely to have a significant impact on the ability of fauna to utilise the habitat.</p>	<p>Suitable habitat for the Short-tailed Mouse and Northern Quoll.</p>	

Description	Conservation Significant Fauna Habitat	Photograph
<p><b>Minor Creeks</b> – 35.12 ha</p> <p>Ephemeral creeks that intersect existing railway. Includes mature trees in varying densities (no hollows observed), some logs of moderate size, and moderate density groundcover of tussock grasses, herbs and shrubs. Recorded on skeletal rocky soils.</p> <p>Complexity is moderate to high with the presence of under, mid and upper-storey vegetation. This habitat is disturbed by altered drainage patterns from the existing railway.</p>	<p>Marginal foraging habitat for the North-western Free-tailed Bat.</p>	
<p><b>Saline Flats</b> - 18.27 ha</p> <p>Sparse halophytic shrubs on historically cleared / disturbed land. Shrubs are sparse on clay loam salty soils.</p> <p>Complexity is low with no mid and upper-storey vegetation and low ground cover.</p> <p>This habitat has been previously excavated and altered hydrology has led to ongoing disturbance.</p>	<p>Not suitable habitat for any listed species.</p>	
<p><b>Cleared</b> - 115.69 ha</p> <p>Rail, road and port infrastructure providing minimal habitat. Includes some escarpments of rocks along the rail corridor.</p>	<p>Marginal habitat from man-made rock walls for:</p> <ul style="list-style-type: none"> <li>- Northern Quoll</li> <li>- Pilbara Olive Python</li> </ul>	

## 7.0 Discussion

The survey area includes a wide linear corridor that extends from the Burrup Peninsula onto Roebourne Plain and is characterised by two dominant landforms, including the rocky undulating terrain of the Burrup Peninsula, and the clay flats of Roebourne Plains.

### 7.1 Vegetation

Nine vegetation communities were described in mapped, including hummock grasslands, artificial wetlands, and ephemeral creeks on the Burrup Peninsula, two tussock grasslands and one mixed tussock and hummock grassland on the Roebourne Plains, and mudflats separating the two landforms. This diversity reflects the extent of the corridor, traversing several land systems and three pre-European vegetation associations.

The Priority 1 PEC Roebourne Plains gilgai grassland was recorded, represented by tussock grasslands SfEx. The grasslands on the Roebourne Plains were traversed on foot and notes made to define the extent of the PEC. It occurs intermittently with patches of rocky hard clays supporting mixed tussock and hummock grasslands and sparse tussock grasslands with *Acacia xiphophylla*. The PEC is known to occur at this location and is well represented outside the survey area (DBCA 2021a; Biota 2018). The PEC is intersected by a high voltage powerline and associated access track. \**Cenchrus ciliaris* was recorded consistently growing in moderate numbers adjacent to disturbed areas.

The survey area is intersected by numerous infrastructure corridors including roads and tracks, powerlines, pipelines and rail. This is evident by the large portion of the area mapped as Completely Degraded (115.69 ha, 30%) Degraded (97.09 ha, 25%), and Poor (42.70 ha, 11%). Clearing and weed invasion are the main impacts that have led to the decline in vegetation condition.

Vegetation condition improves with distance from existing infrastructure. Large areas of hummock grasslands on rocky slopes with intermittent rock piles was largely considered in Good or Very Good condition. This community seems more resilient to weed invasion and was recorded in areas with limited human disturbance. Low lying areas including the artificial wetlands and ephemeral creeks are prone to weed invasion, with water the likely vector for weed spread in these areas. The tussock grasslands were surprisingly resilient, with areas of Buffel Grass restricted to disturbed areas directly under the powerline, with no significant spread noted beyond this corridor.

### 7.2 Flora

Flora species diversity was comparable to previous surveys (AECOM 2021; Biota 2018). Flora diversity represents the variety of landforms and vegetation that occurs in the survey area.

Three Priority flora species were recorded, summarised with notes below:

- *Eragrostis surreyana* (P3) was identified during a previous survey (AECOM 2021). This population was revisited for this survey and an accurate population count obtained. It occurs in the Artificial Ephemeral Wetland community which is considered Degraded in condition and has been historically cleared.
- *Rhynchosia bungarensis* (P4), known to occur in the local area and specifically targeted during this survey.
- *Themeda* sp. sp. Hamersley Station (M.E. Trudgen 11431) (P3), known to occur in the local area and specifically targeted during this survey. This species was recorded in areas that were historically cleared and currently represents \**Cenchrus ciliaris* with isolated native shrubs and occurrences of *Themeda* sp. Hamersley Station. Further south this species was recorded in Tussock Grasslands in Very Good condition where populations were noted to extend beyond the survey area both on the east and west side.

Four other Priority flora species were considered 'likely to occur' however were not recorded. *Cucumis* sp. Barrow Island (D.W. Goodall 1264) (P2) is known predominantly from Barrow Island as the name suggests. There is a DBCA record on Roebourne Plains, less than 1 km from the survey area. This location was visited. Only *Cucumis variabilis* was found at this location. Throughout the survey, several collections of *Cucumis* species were made to verify its identification, and all locations were recorded. All samples (four total) were identified as *C. variabilis*. The species *C. sp.* Barrow Island is considered unlikely to occur in the survey area.

A record of *Dolichocarpa* sp. Hamersley Station (A.A. Mitchell PRP 1479) (P3), previously known as *Oldenlandia* sp. Hamersley Station (A.A. Mitchell PRP 1479), and *Stackhousia clementii* (P3) occur within 1 km of the survey area on the Roebourne Plains. The locations of these species were visited but no individuals were recorded. Both species were specifically targeted during the survey. Neither of these species have been recorded during previous surveys (Biota 2009, 2011, 2018; Rio Tinto 2010, 2011; AECOM 2021). They are therefore considered unlikely to occur in the survey area.

*Terminalia supranitifolia* (P3) is known to occur on rocky outcrops, slopes, and piles. There are numerous records of this species near the survey area. This species was targeted during the surveys, specifically on the rocky slopes and rock piles represented by hummock grasslands ToAITe on the Burrup Peninsula. A known occurrence was visited at the beginning of the survey to ensure accurate identification in the field. No individuals were recorded, it is therefore considered unlikely to occur.

### 7.3 Fauna

The desktop assessment identified 65 conservation significant fauna species, including 52 bird, 8 mammal and five reptile species. This large list reflects the diversity of habitat present in the vicinity of the survey area, including the Dampier Archipelago, Burrup Peninsula (including rock piles), and the Roebourne Plains.

Five conservation significant fauna species were considered 'likely to occur' in the survey area, including three threatened species (two mammals and one reptile), and two Priority species (one mammal and one reptile). These are discussed briefly below.

The Northern Quoll (*Dasyurus hallucatus*) occurs in a variety of habitats including hummock grasslands and stony plains of tussock and/or hummock grasslands (Braithwaite & Griffiths 1994; van Vreeswyk et al. 2004) where rocky areas have been described as prime habitat' (Hill & Ward 2010). The Triodia on Rocky Slopes habitat, which includes rock piles and hummock grasslands on the Burrup Peninsula is considered to provide suitable habitat for these species, including potential denning opportunities in the rock piles that provide adequate shelter from predators.

There have been no Northern Quoll sightings during previous surveys (AECOM 2021; Biota 2018) however there are 39 sightings within 20 km of the survey area. This includes several on the Burrup Peninsula, and one at the Yurralyi Maya Power Station in 2017 in Tussock Grassland Plains habitat directly adjacent to the survey area. Based on this information, the Northern Quoll is considered likely to utilise habitat present in the survey area.

No caves or other Ghost Bat (*Macroderma gigas*) roosting habitat was observed in the survey area. It is unlikely that crevices in rock piles would present suitable roosting habitat. This species may forage opportunistically in the survey area but is unlikely to rely on the survey area for survival.

The Pilbara Olive Python (*Liasis olivaceus barroni*) has previously been recorded on the Burrup Peninsula, where they prefer granophyre rock piles and occasionally are found in neighbouring spinifex grasslands (Cardno 2019). The 20 records from within 20 km of the survey area are restricted to existing infrastructure (Parker Point operations) and Dampier townsite (less than 1 km from the survey area). Suitable habitat is present in the form of rock piles and neighbouring spinifex grasslands represented by Triodia on Rocky Slopes.

Triodia on Rocky Slopes represents suitable habitat for a Priority 4 listed species, the Lined Soil-crevice Skink (*Notoscincus butleri*). The Lined Soil-crevice Skink is known from several records from East Intercourse Island where it was recorded on hummock grasslands on stony or sandy ground. No evidence of the species was recorded; however it may utilise this area.



The Tussock Grassland Plain represents suitable habitat for the Priority 4 listed Northern Short-tailed Mouse (*Leggadina lakedownensis*). This fauna habitat was described as 'core habitat' in Biota (2018), described as preferring cracking clay habitat. It is likely that this species occurs in the survey area.

Two bird species listed as Migratory and Marine were recorded during previous surveys (AECOM 2021) including Common Sandpiper (*Actitis hypoleucos*) and Caspian Tern (*Hydroprogne caspia*). These species utilised the Artificial Wetlands fauna habitat.

## 8.0 Clearing Principles

Rio Tinto is proposing to replace existing 220kV overhead transmission lines from the Yurralyi Maya Power Station to a new 220kV bulk supply substation and install associated 33kV distribution lines. The Proposal is anticipated to incorporate a linear corridor within the survey area for this Project. The clearing area has not been defined, as such no assumptions have been made for the extent and location of clearing.

A general assessment of the Proposal on the environmental values of the Dampier Resilience survey area against each of the Ten Clearing Principles, as outlined in Schedule 5 of the WA Environmental Protection Act 1986, is provided below.

### (a) Native vegetation should not be cleared if it comprises a high level of biological diversity

#### Flora and Vegetation

A total of 107 native vascular flora species were recorded from the survey area. No Threatened flora pursuant to the EPBC Act or the BC Act were recorded. Three Priority Flora were recorded, being:

- *Eragrostis surreyana* (P3) was recorded at two locations in the survey area, comprising approximately 985 individuals. One population is in an artificial wetland where it grows along the edge of standing fresh water while the other was found in a shallow ephemeral drainage line amongst undulating rocky terrain. This species has not been recorded in previous surveys and there are no verified records (TPFL database) on the Burrup Peninsula as it is more commonly found in the Hamersley and Fortescue regions (WAH 1998) and can be abundant where it occurs (DPaW & Rio Tinto 2015).
- *Rhynchosia bungarensis* (P4) comprising two populations of 27 individuals amongst rock piles. This species is known from the Burrup Peninsula and has been recorded in previous surveys (Biota 2009; 2011) and can be considered locally common.
- *Themeda* sp. Hamersley Station (M.E. Trudgen 11431) (P3) was recorded extensively on the grasslands of the Roebourne Plains near 7 Mile and 6 Mile Rail Yards. It is considered to represent one population including more than 18,000 individuals recorded within a 0.15 km by 4.4 km corridor. There is one population located 800 m from the survey area, mapped by DBCA (2020a) and verified during previous surveys (AECOM 2020).

The presence of *Rhynchosia bungarensis* and *Themeda* sp. Hamersley Station does not indicate a high level of biodiversity. The presence of *Eragrostis surreyana* may reflect significant habitat, despite this being represented as Artificial Wetlands in the survey area.

Vegetation on the Burrup Peninsula is considered generally distinct from mainland vegetation and portray a high level of flora endemism (Kendrick & Stanley 2001). Nine native vegetation communities were described from the survey area (see Section 6.1). All vegetation communities mapped were represented outside the survey area. One of the units, SfEx, represents the 'Roebourne Plains gilgai grasslands' PEC (P1) which is well represented in the local area.

#### Fauna

Six fauna habitat types occur within the survey area, defined in Section 6.3 and include Triodia on Rocky Slopes (including rock piles), Artificial Wetlands, Tussock Grassland Plains, Minor Creeks, Saline Flats and Cleared / Disturbed habitats.

The survey area supports numerous rock piles which are preferred habitat for the threatened Northern Quoll (*Dasyurus hallucatus*), Pilbara Olive Python (*Liasis olivaceus barroni*) and the Priority 4 Lined Soil-crevice skink (*Notoscincus butleri*). Rock piles provide suitable denning habitat for the Northern Quoll, and ample retreats and microhabitats for other fauna species. These features are considered significant on the Burrup Peninsula.

Suitable habitat for the Priority 4 Northern Short-tailed Mouse (*Leggadina lakedownensis*) was recorded in the survey area. The presence of this species was not verified during this study.

In summary, the survey area is considered to contain a high level of biological diversity and therefore the Project is likely to be at variance to this principle. In particular, the rock piles and vegetation communities on the Burrup Peninsula are regionally significant.

**(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.**

The survey area incorporates 379.17 ha, all of which represents suitable or marginal habitat for one or more conservation significant fauna species, and locally common species. All fauna habitats in the survey area are considered well represented outside the survey area.

The survey area includes foraging and denning habitat for the threatened Northern Quoll. The habitat *Triodia* on Rocky Slopes supports numerous isolated rock piles which provide suitable denning habitat. The adjacent hummock grasslands on rocky slopes that forms part of this habitat represents suitable foraging habitat. There have also been sightings of the Northern Quoll adjacent to the survey area on the Tussock Grassland Plains habitat.

The Northern Quoll does not have highly specific habitat requirements however rocky areas are considered 'prime habitat' (Hill & Ward 2010). The rock piles, and adjacent foraging habitat of the *Triodia* on Rocky Slopes, may be considered significant habitat for this threatened species.

The threatened Pilbara Olive Python prefers granophyre rock piles and neighbouring spinifex grasslands (Cardno 2019). As such, the *Triodia* on Rocky Slopes habitat is also considered suitable habitat for this species. There have been numerous records of this species within 20 km of the survey area, particularly on the Burrup Peninsula. Therefore, the rock piles and adjacent habitat may be considered significant habitat for this species.

The *Triodia* on Rocky slopes also represents suitable habitat for the Priority 4 fauna species Lined Soil-crevice Skink (*Notoscincus butleri*). *Triodia* on Rocky Slopes incorporates 142.09 ha.

The Artificial Wetlands fauna habitat represents suitable habitat for two Migratory and Marine bird species, Common Sandpiper (*Actitis hypoleucos*) and Caspian Tern (*Hydroprogne caspia*). This habitat extends for 9.31 ha.

The survey area intersects with the Roebourne Plains gilgai grasslands PEC. This community considered suitable habitat for the Priority 4 Short-tailed Mouse (*Leggadina lakedownensis*). The survey area incorporates 45.13 ha of this habitat.

The Proposal may be at variance with this principle.

**(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.**

No flora listed as Threatened under the EPBC Act or BC Act were recorded within the survey area, and none are considered likely to occur (see Sections 5.2 and 6.2.1).

Clearing within the survey area will therefore not be at variance with this principle.

**(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community.**

No TECs pursuant to the Commonwealth EPBC Act or the BC Act were recorded within the survey area.

The Proposal would not be at variance with this principle.

**(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.**

The Roebourne Plains area comprises 1.8% of the total Pilbara region. The area has not been extensively cleared. Major threats include weeds, feral herbivores, and mining (van Vreeswyk et al. 2004).

In the vicinity of the survey area vegetation has been cleared for road infrastructure, Dampier Salt, Karratha Airport, Rio Tinto rail and associated rail yards, and powerline and associated access tracks. Despite this clearing, the vegetation in the survey area is considered well represented outside the survey area, and is likely to be in similar, if not better condition.

Samphire vegetation communities (such as vegetation community PaTiEo; see Section 6.1) are one of the more poorly reserved vegetation communities in WA (Kendrick and Stanley 2003). However, the small area of this vegetation in the survey area is negligible in comparison to the extent of samphire vegetation in the locality.

The Proposal is not at variance with this principle.

**(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.**

Wetlands in the survey area are represented by artificial wetlands (vegetation community AaEgPr), and ephemeral creeks (vegetation community EcScCc). The artificial wetlands providing refuge for waterbirds and may be considered a locally significant habitat feature. Further, it provides habitat for the Priority 3 flora *Eragrostis surreyana*. This habitat comprises naturally rehabilitated vegetation following clearing for borrow material. It is uncertain how the value of this artificial environment would be perceived. If the landform of these artificial wetlands are maintained, any small clearing is unlikely to represent a significant impact on the functionality of the wetland.

The ephemeral creeks that intersect the survey area are common throughout the local area, and wider region which are periodically inundated following significant rainfall events. They are not considered to represent a significant wetland function. Clearing within this habitat is unlikely to lead to significant sedimentation and runoff, or lead to significant erosion.

Clearing in the artificial wetlands and ephemeral creeks should be minimised to prevent potential impacts to these attributes. It is unlikely that the Proposal would be considered at variance with this principle.

**(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.**

The survey area is dominated by the Cheerawarra, Granitic, and Horseflat land systems. It crosses the Littoral System where it is devoid of native vegetation and skirts the edge of the Rocklea and Calcrete systems.

The Cheerawarra and Horseflat land systems are highly susceptible to wind erosion if the vegetation cover is reduced by clearing or other disturbance (van Vreeswyk et al. 2004). Vegetation in the survey area is already degraded, with 55% being in a Degraded or Completely Degraded state. Further to this, the survey area follows existing infrastructure corridors across these systems. Small localised areas of clearing are unlikely to exacerbate the current disturbances present on these land systems. Additional management including revegetation of the cleared areas should occur as soon as practicable after clearing to aid in stabilising the soil and minimise the risk of erosion developing.

The Rocklea and Calcrete systems have a low susceptibility to erosion, as do the land units in the Littoral land system with the exception of coastal dunes, which are absent from the survey area.

Eight weed species were recorded in the survey area, with notable incursion of *\*Cenchrus ciliaris* and *\*Aerva javanica*. These species are already present on site, directly associated with historical clearing and disturbance. Weed spread is not expected to be exacerbated far beyond the localised clearing areas. Weed management measures will be used to mitigate significant spread of weeds and establishment of new infestations.

It is unlikely that the proposed clearing would contribute substantially to the land degradation that has already occurred in the vicinity.

**(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.**

The Murujuga National Park is approximately 1.7 km east of the survey area. It is unlikely that the Project would have any impact on this park.

The survey area intersects with the Dampier Archipelago National Heritage Place. The place is listed to protect the sacred heritage of Indigenous Australians including the petroglyphs, stone sites and representation of artistic styles that connect this area to other significant sites across the Pilbara. The survey area excludes all locations of known heritage significance. This is represented by the numerous small pockets that were removed from the survey. No clearing will occur in areas known to represent significant heritage.

The Project can avoid all areas of significant heritage and clearing nearby is unlikely to represent a significant impact on values of these conservation estates.

**(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.**

The survey area does not support any permanent surface water features, or communities that are likely to be considered groundwater dependent ecosystems. Artificial wetlands represent the largest surface water feature, represented by degraded vegetation in a low landform that has been historically used as a source of borrow material. The water is an expression of surface water flow and rainfall. The vegetation in this community (AaEgPr) is considered degraded, representing a naturally revegetated community. Erosion is prevalent along some of the steeper banks as a result of natural water flow. It is unlikely that localised clearing in the artificial wetlands would exacerbate the current condition of this surface water feature.

The ephemeral creeks that intersect the survey area are seasonally inundated following a significant rainfall event. The limited clearing of this vegetation community proposed is unlikely to result in impacts to water quality. The Proposal is unlikely to be at variance with this principle.

**(j) Native vegetation should not be cleared if clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.**

No permanent surface water sources or wetlands occur in the survey area. Surface water flows through ephemeral creeks and forms the artificial wetlands following significant rainfall events. This surface water flow in the survey area is not expected to change as a result of the Project. The Project is therefore not at variance with this principle.

## 9.0 Conclusion

AECOM was commissioned by Rio Tinto to conduct a reconnaissance flora and vegetation and fauna habitat assessment for a corridor extending from Yurralyi Maya Power Station across 15 km to a new 220kV bulk supply substation near Dampier.

The assessment included a desktop study, field survey, and mapping component. Previous ecological assessments that overlap the survey area were used to supplement this dataset to provide a comprehensive overview of environmental values present.

The survey area is largely comprised of hummock grasslands on rocky slopes dissected by ephemeral creeks on the Burrup Peninsula. This area also includes artificial wetlands and several significantly disturbed areas associated with the salt ponds. The plains were dominated by tussock grasslands on soft clay interspersed with pockets of hummock grasslands on rocky plains.

Several conservation significant environmental values were identified in the survey area:

- the Priority 1 PEC Roebourne Plains gilgai grasslands was mapped for 45.13 ha (12% of the survey area) restricted to the Roebourne Plains flats near the Yurralyi Maya Power Station
- three Priority flora were recorded including *Eragrostis surreyana* (P3), *Rhynchosia bungarensis* (P4) and *Themeda* sp. Hamersley Station (M.E. Trudgen 11431) (P3)
- Six fauna habitats were mapped, all of which represent suitable habitat for two species listed as Threatened under the EPBC Act and BC Act including the Northern Quoll and Pilbara Olive Python, two Priority 4 species including the Lined Soil-crevice Skink and the Short-tailed Mouse, and two bird species listed as Migratory and Marine under the EPBC Act and BC Act including the Common Sandpiper and Caspian Tern.
- Two bird species listed as Migratory and Marine under the EPBC Act and BC Act are known to occur in the Artificial Wetlands as identified by AECOM (2021) during previous surveys.

The surveys were completed with no significant limitations identified.

The Project may be at variance to two clearing principles as the survey area supports vegetation that may be considered as comprising a high level of biological diversity, and, is part of or necessary for the maintenance of significant habitat for fauna indigenous to Western Australia.

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# Figures



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 CREATED BY KALDU  
 APPROVED BY F.DEWIT  
 LAST MODIFIED 25 AUG 2021

**AECOM**  
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Data sources:  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010), Geoscience Australia, Streetpro

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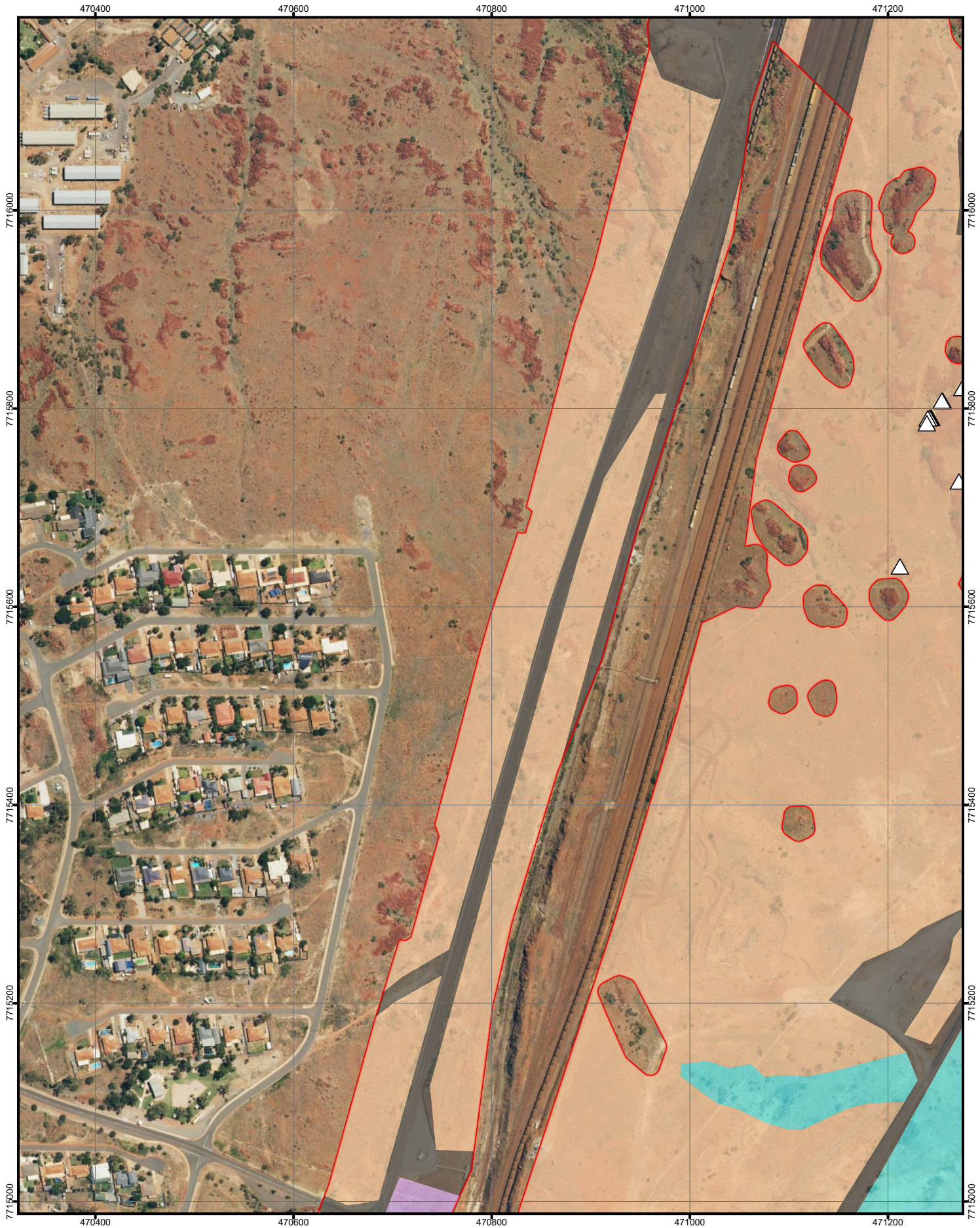
- Survey Area
- Vegetation Communities**
- SdSfTe
- ToAIte
- Cleared

**Vegetation Communities**

**RIO TINTO**

**DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT**

**Figure 10.1**



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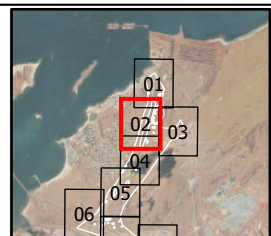
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- ToAItE
- Cleared
- Priority Flora
- EcScCc
- SdSfTe
- Rhynchosia bungarensis*, P4

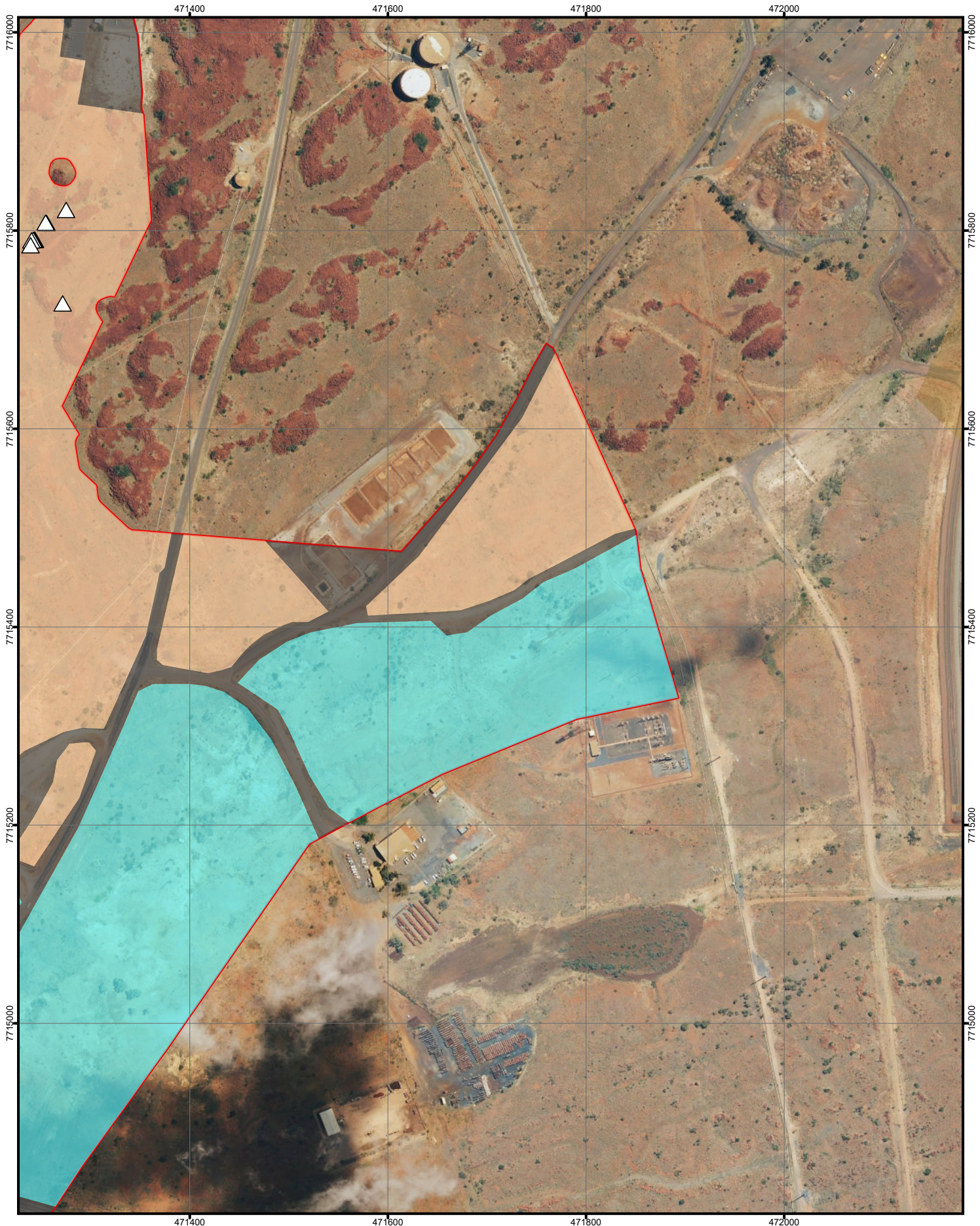


**Vegetation Communities**

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**DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT**

**Figure 10.2**



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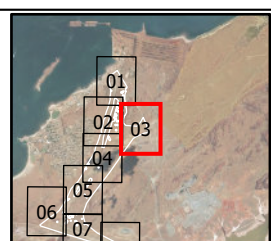
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**LEGEND**

- Survey Area
- Vegetation Communities**
- EcScCc
- ToAlTe
- Cleared
- Priority Flora**
- Rhynchosia bungarensis*, P4

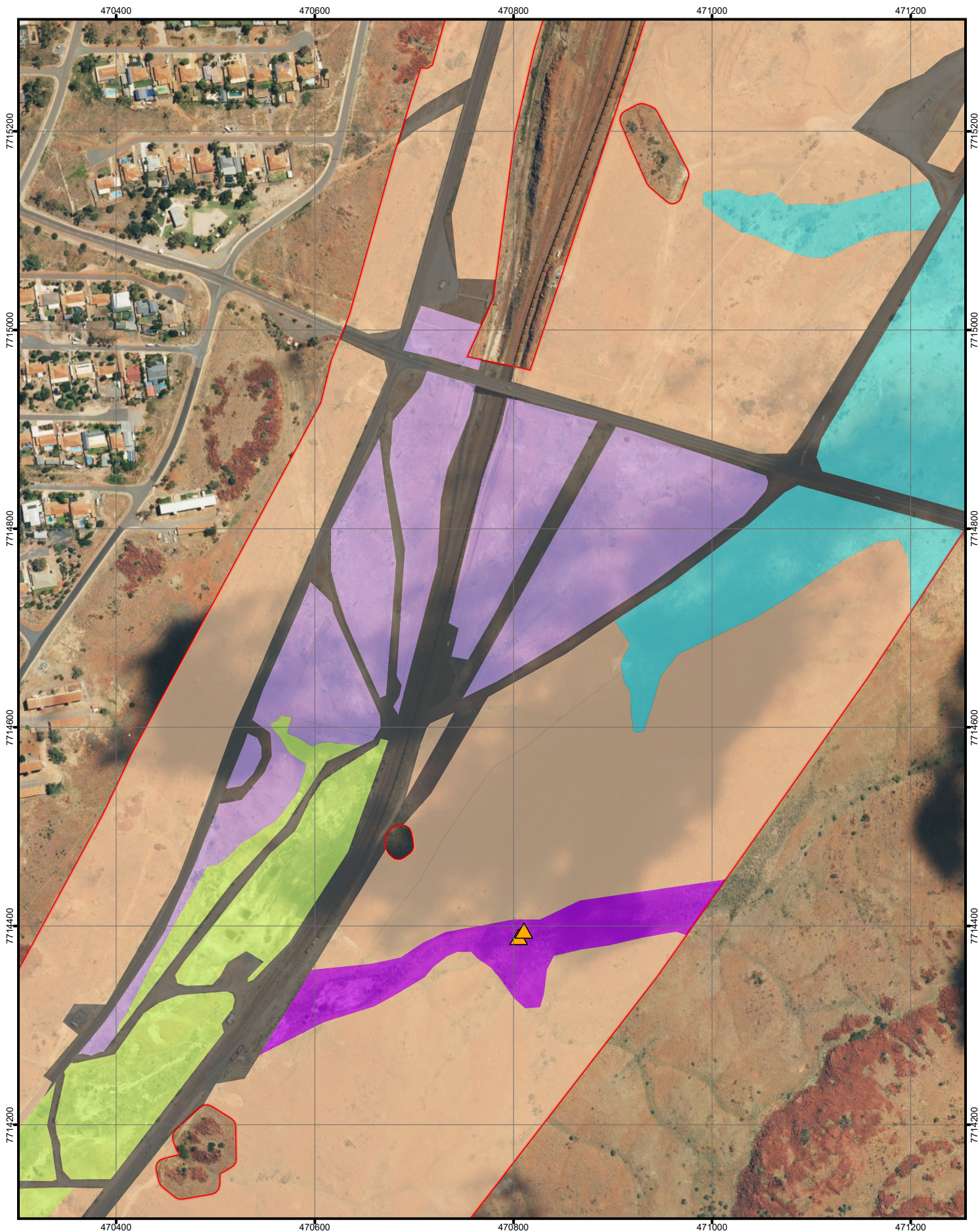


**Vegetation Communities**

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**DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT**

**Figure 10.3**



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Survey Area

Vegetation Communities

AaAtTw

AaEgPr

EcScCc

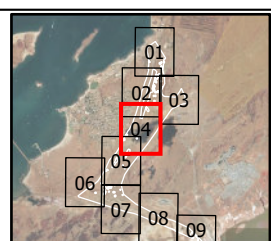
SdSfTe

ToAtTe

Cleared

Priority Flora

*Eragrostis surreyana*, P3

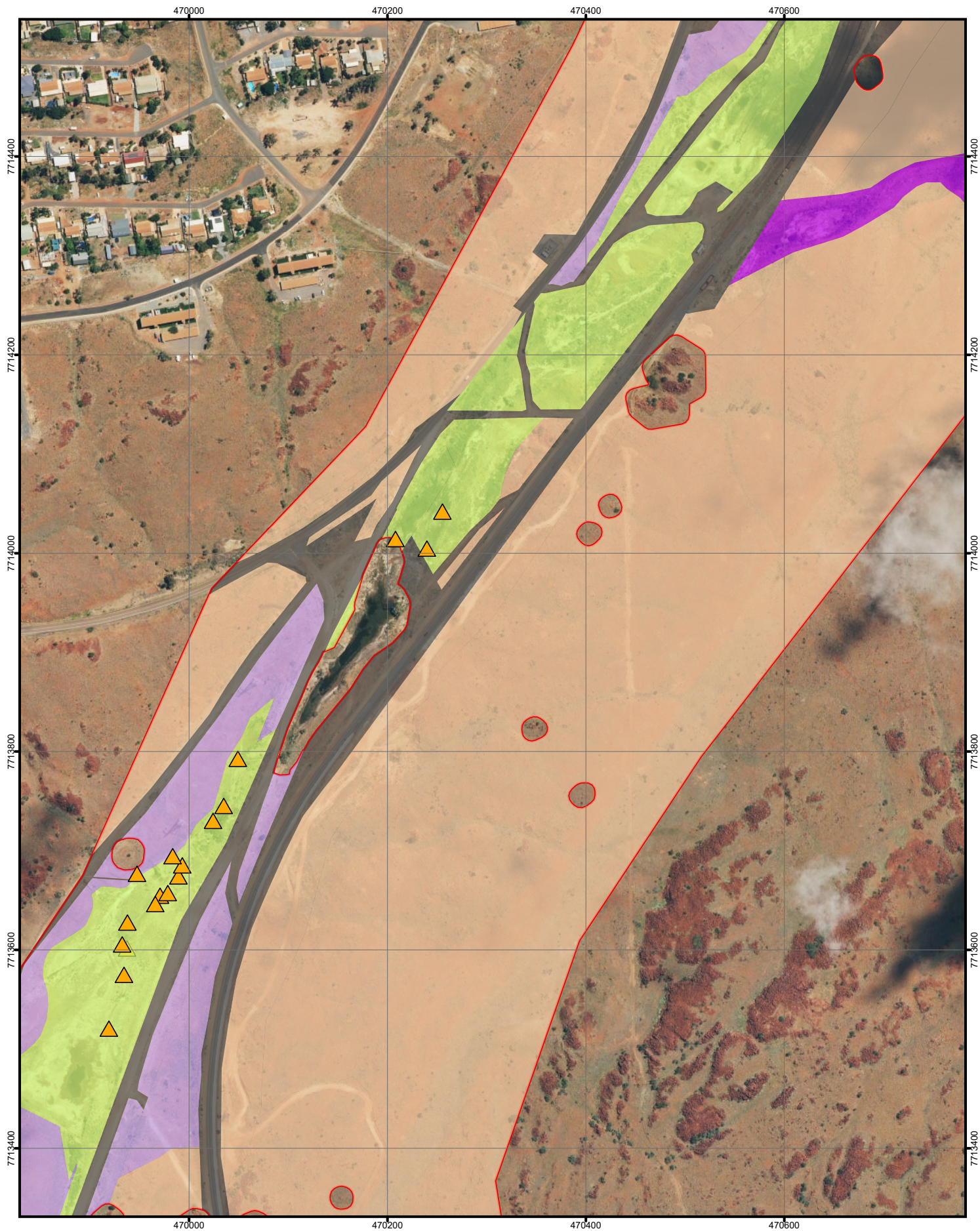


**Vegetation Communities**

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**DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT**

**Figure 10.4**



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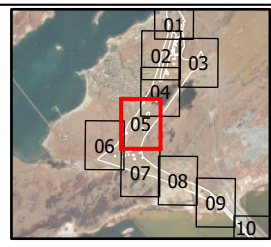
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**LEGEND**

- Survey Area
- ToAtTe
- Cleared
- Vegetation Communities
- AaAtTw
- Priority Flora
- AaEgPr
- Eragrostis surreyana*, P3
- SdSfTe

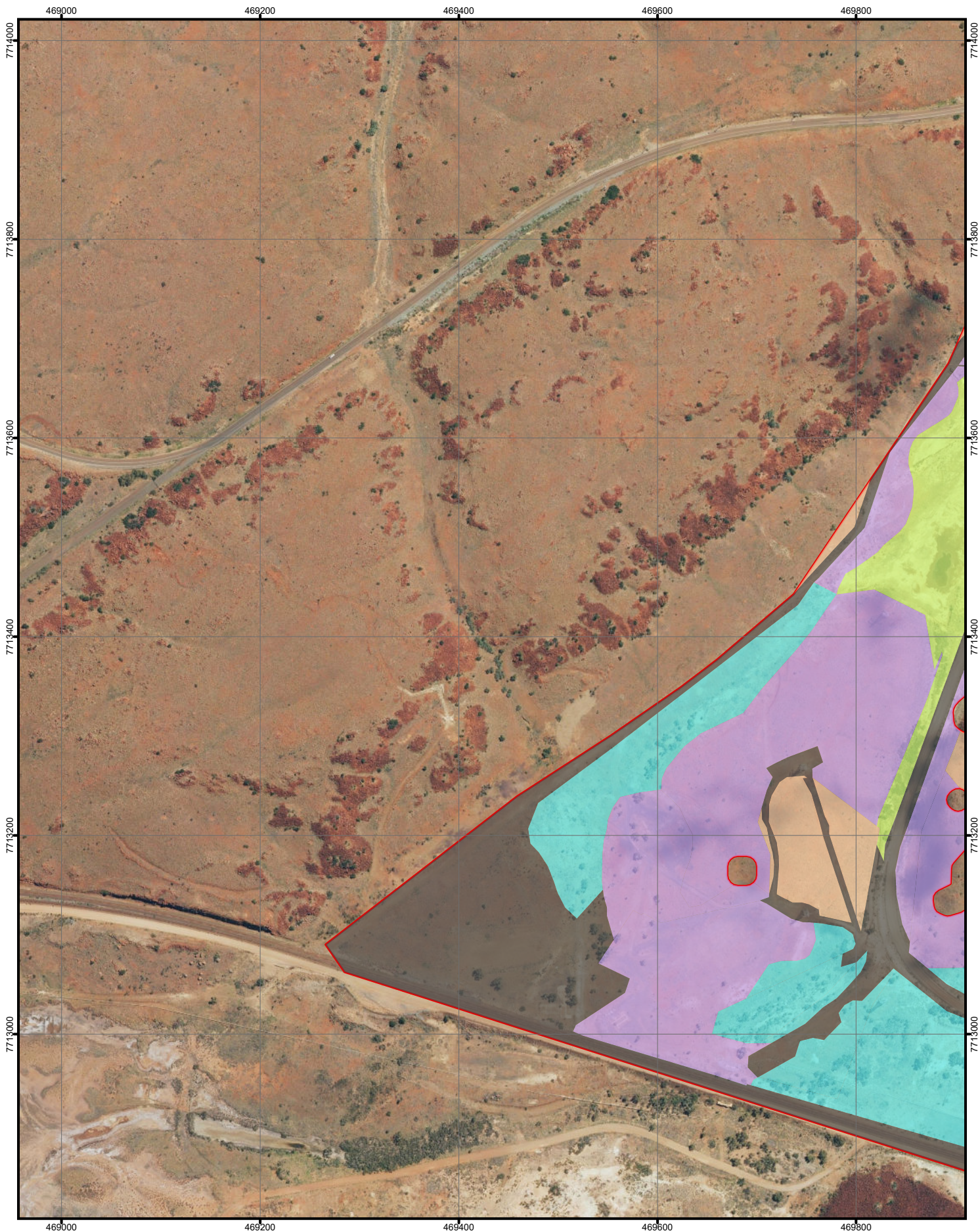


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**DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT**

**Figure 10.5**



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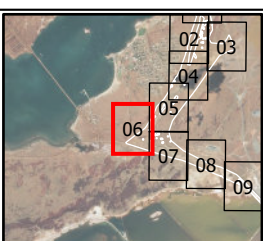
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Survey Area

**Vegetation Communities**

- AaEgPr
- EcScCc
- SdSfTe
- ToAlTe
- Cleared

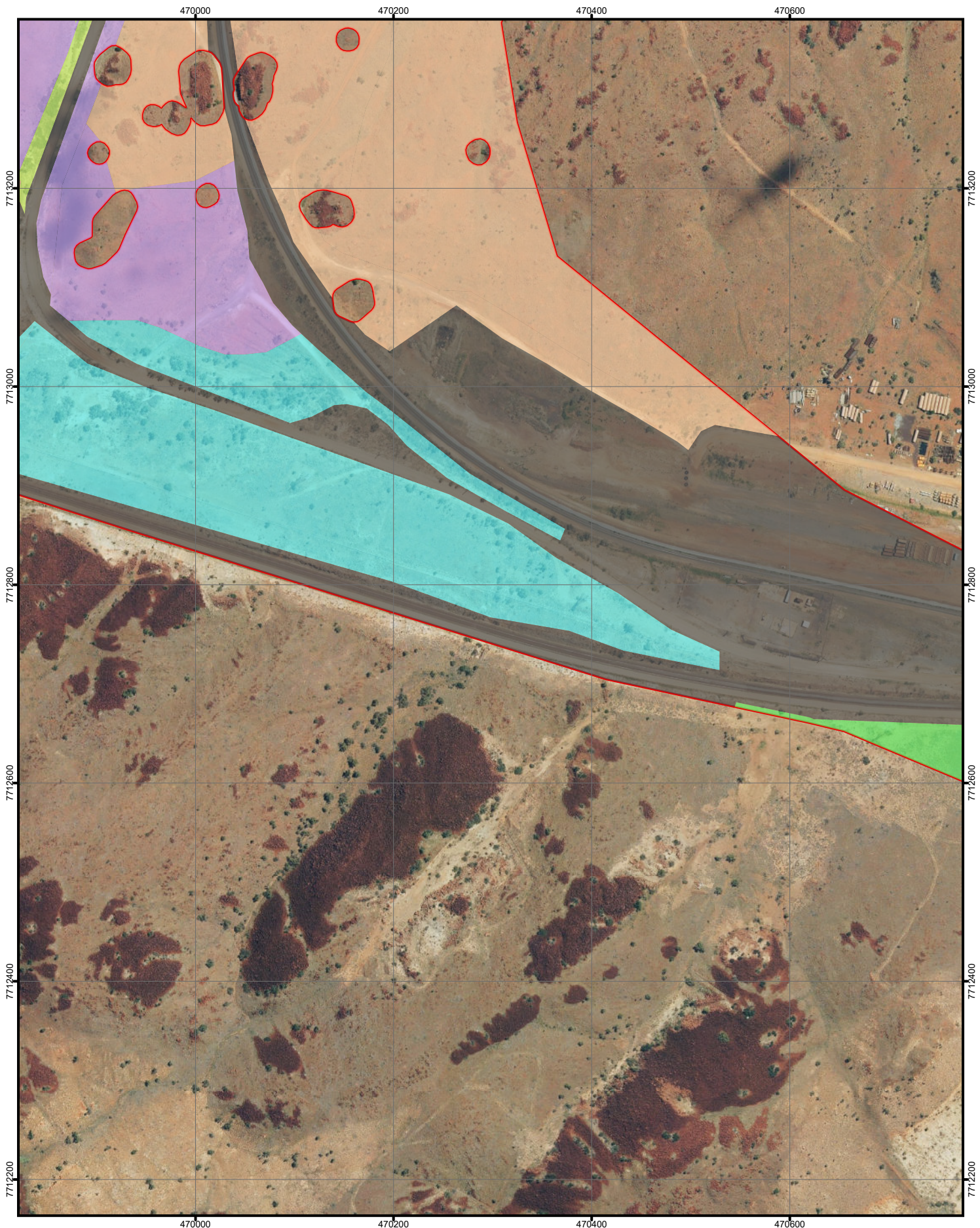


**Vegetation Communities**

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**DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT**

**Figure 10.6**



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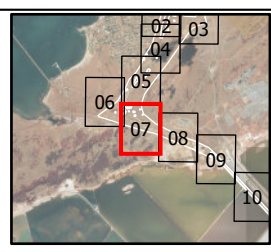
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**LEGEND**

- Survey Area
- EcScCc
- SdStTe
- ToAIte
- Cleared
- AaEgPr
- AbEtTa



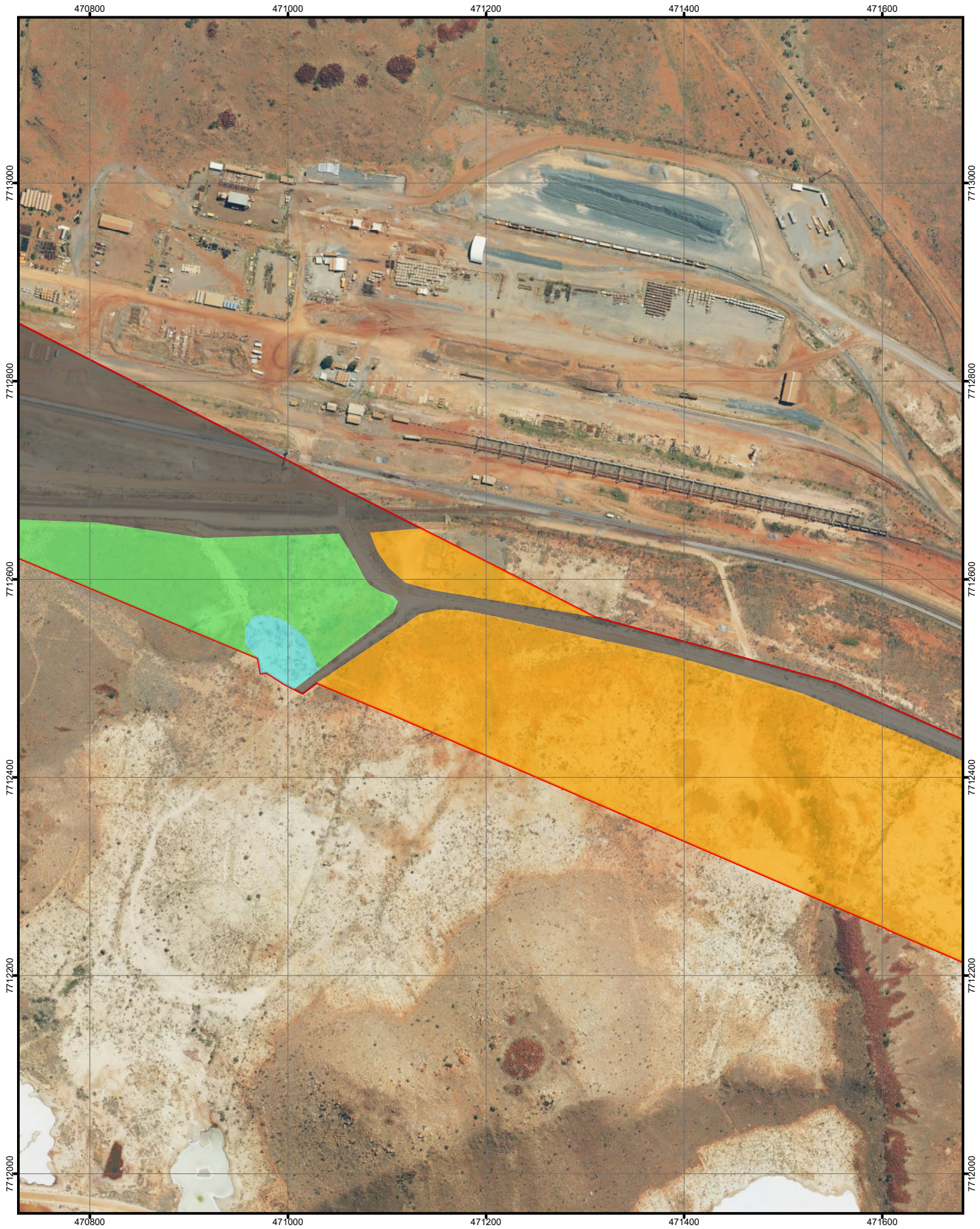
**Vegetation Communities**

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**DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT**

**Figure 10.7**





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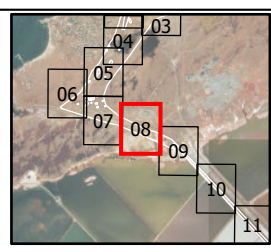
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**LEGEND**

Survey Area

Vegetation Communities

- AbEtTa
- EcScCc
- PaTiEo
- Cleared



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**DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT**

**Figure 10.8**



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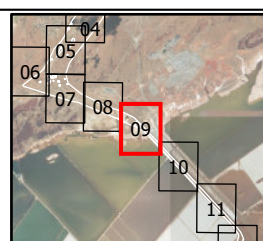
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**LEGEND**

- Survey Area
- Vegetation Communities**
- PaTiEo
- Cleared

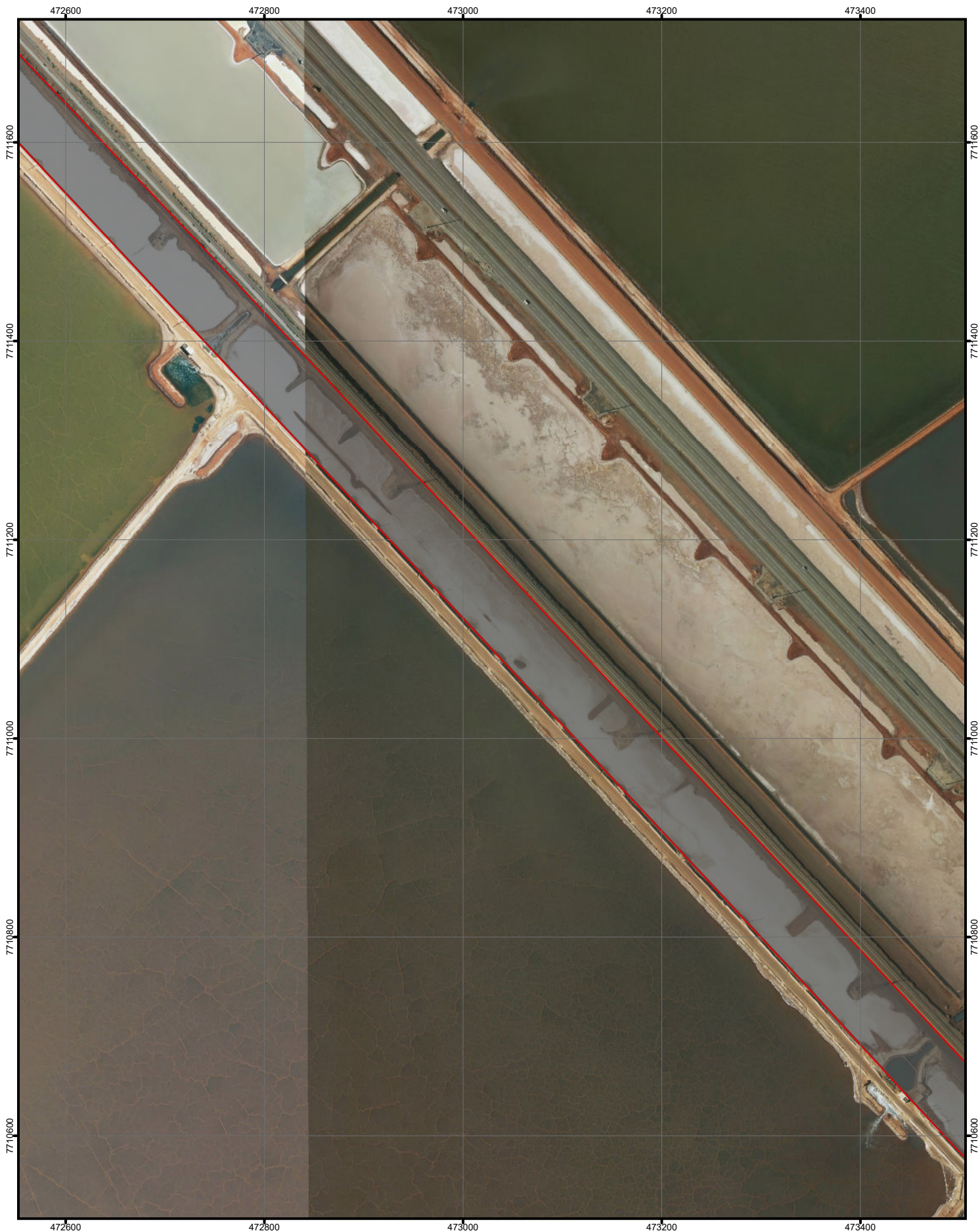


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**DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT**

**Figure 10.9**



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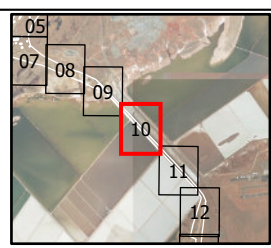
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- Survey Area
- Vegetation Communities
- Cleared

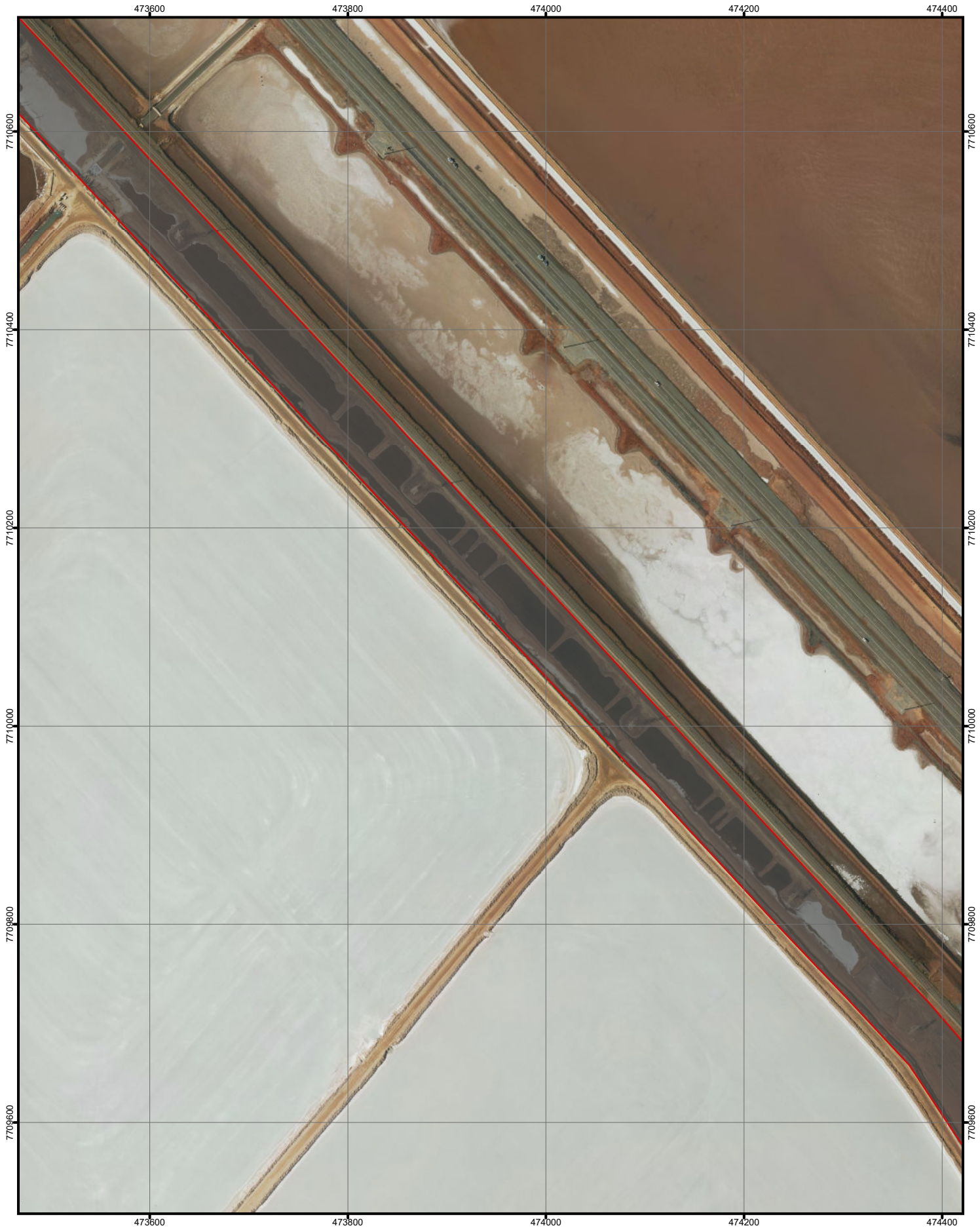


**Vegetation Communities**

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*DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT*

**Figure 10.10**



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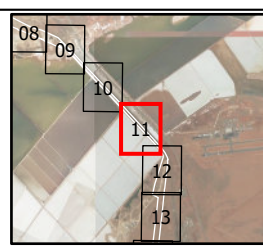
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**LEGEND**

- Survey Area
- Vegetation Communities
- Cleared

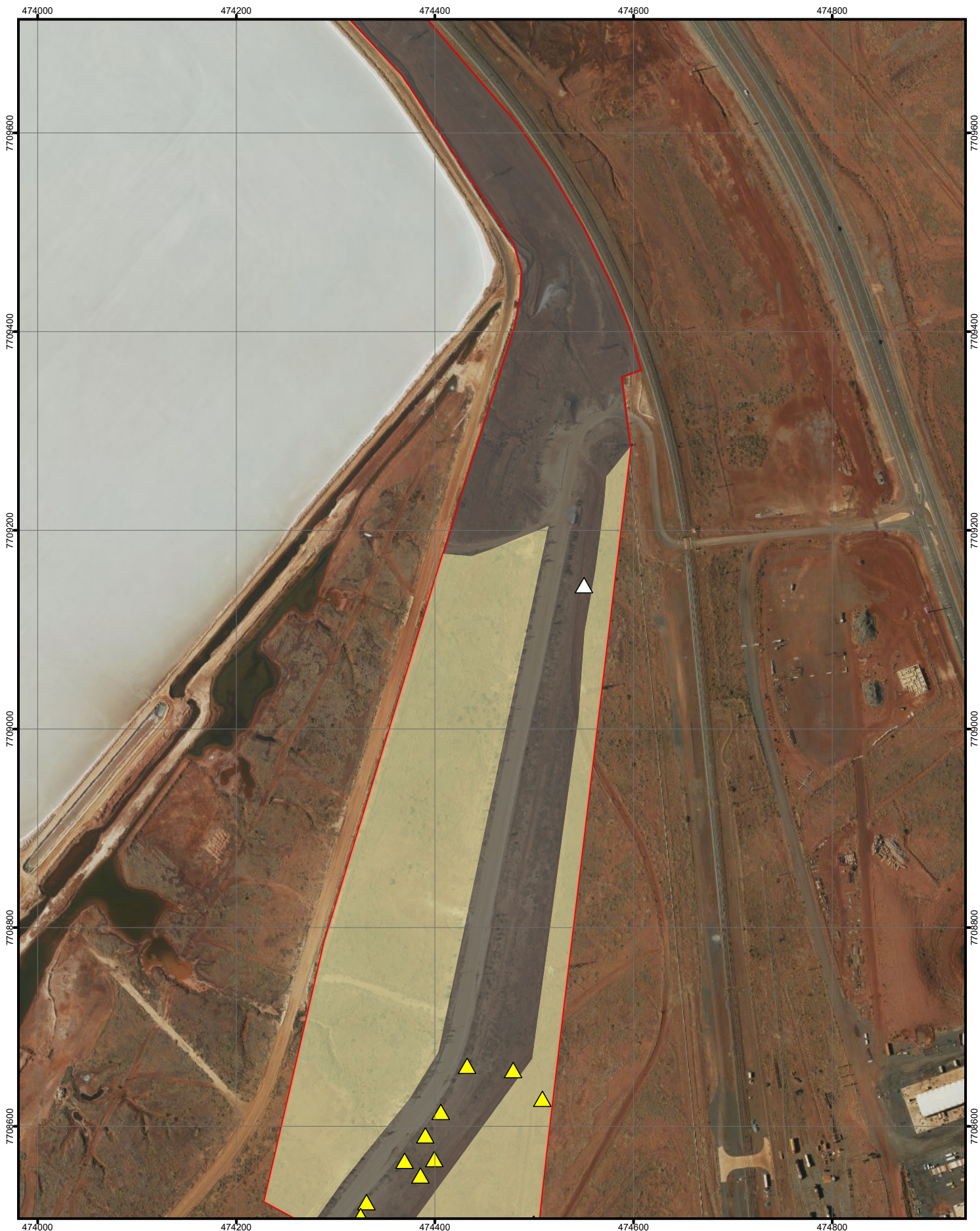


**Vegetation Communities**

**RIO TINTO**

*DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT*

**Figure 10.11**



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**LEGEND**

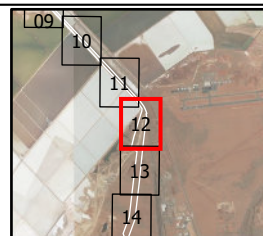
Survey Area

**Vegetation Communities**

- SfEx
- Cleared

**Priority Flora**

- Themeda sp. Hamersley Station (M.E. Trudgen 11431), P3
- Rhynchosia bungarensis, P4

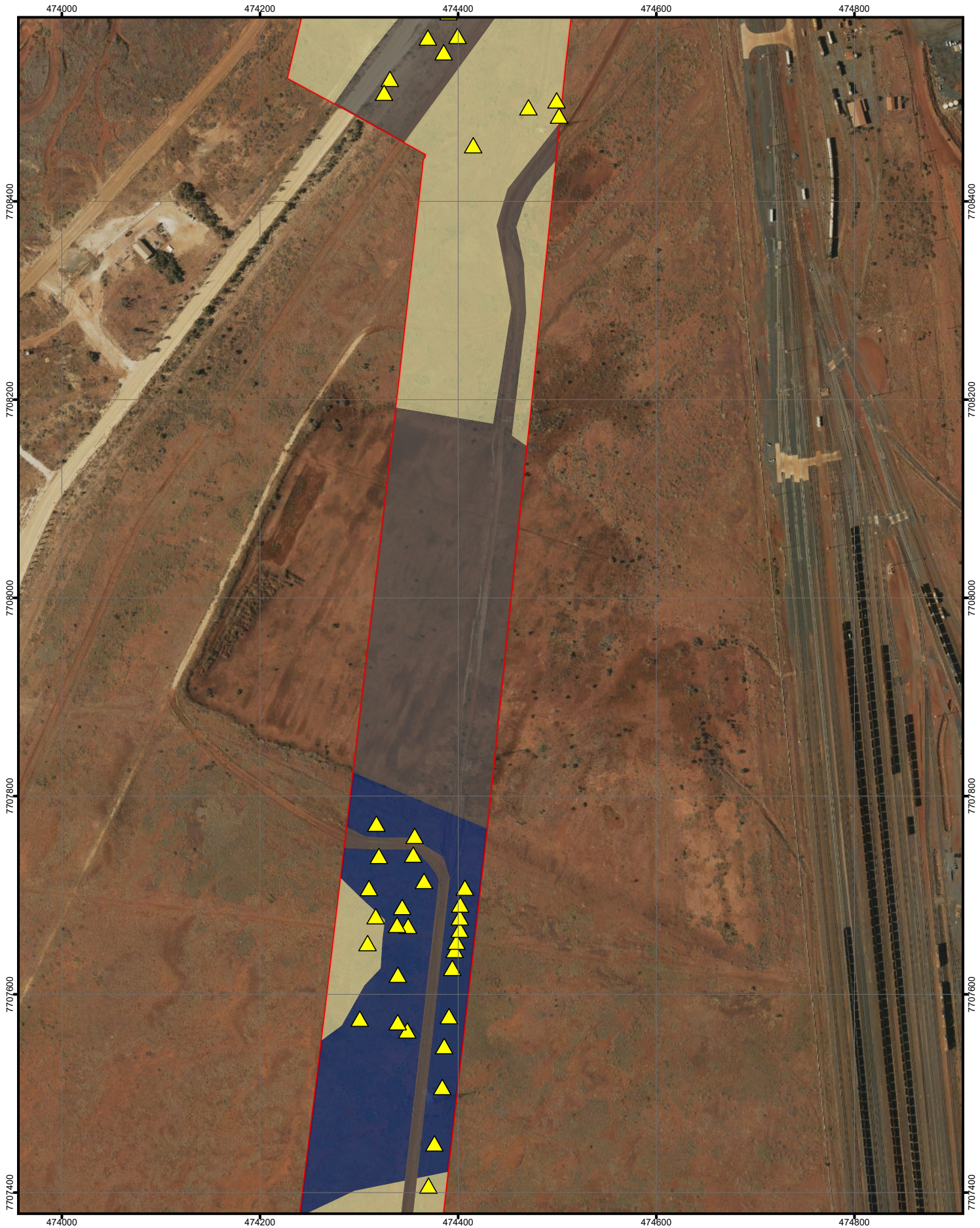


**Vegetation Communities**

**RIO TINTO**

**DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT**

**Figure 10.12**



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Datum: GDA 1994 MGA Zone 50

1:5,000  
 (when printed at A4)

0 25 50 75 100 metres

Data sources:  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010), Geoscience Australia, Streetpro

**LEGEND**

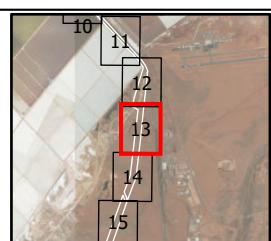
Survey Area

**Vegetation Communities**

- AbHcPo
- SfEx
- Cleared

**Priority Flora**

- Themeda sp.
- Hamersley Station (M.E. Trudgen 11431), P3

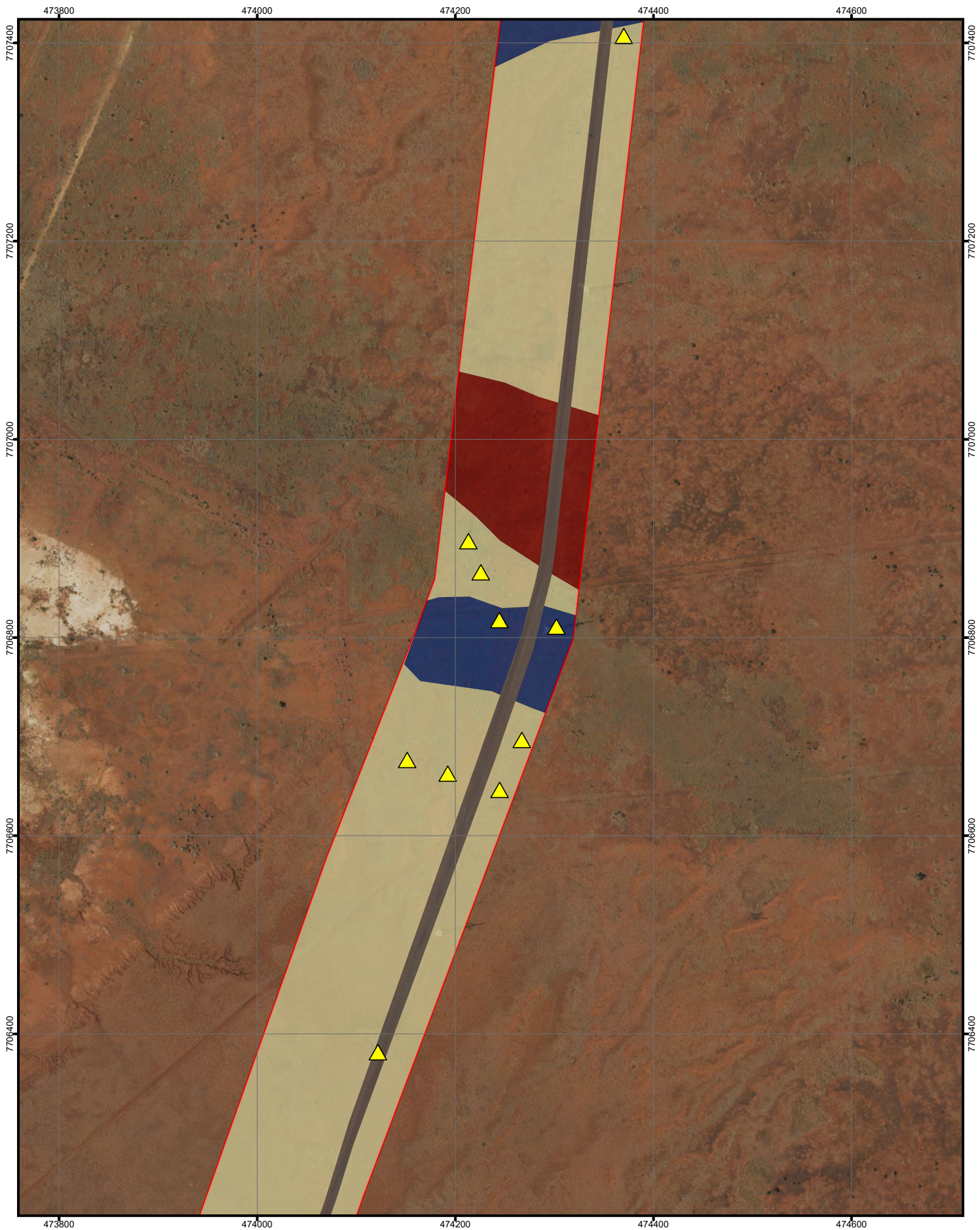


**Vegetation Communities**

**RIO TINTO**

**DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT**

**Figure 10.13**



PROJECT ID 60657149  
 CREATED BY KALDU  
 APPROVED BY F.DEWIT  
 LAST MODIFIED 25 AUG 2021

**AECOM**  
 www.aecom.com

Datum: GDA 1994 MGA Zone 50  
 0 25 50 75 100 metres  
 1:5,000 (when printed at A4)

Data sources:  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010), Geoscience Australia, Streetpro

**LEGEND**

Survey Area

Cleared

Priority Flora

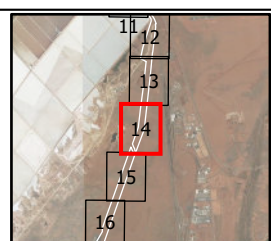
*Themeda* sp. Hamersley Station (M.E. Trudgen 11431), P3

**Vegetation Communities**

AbHcPo

AxAhPa

SfEx

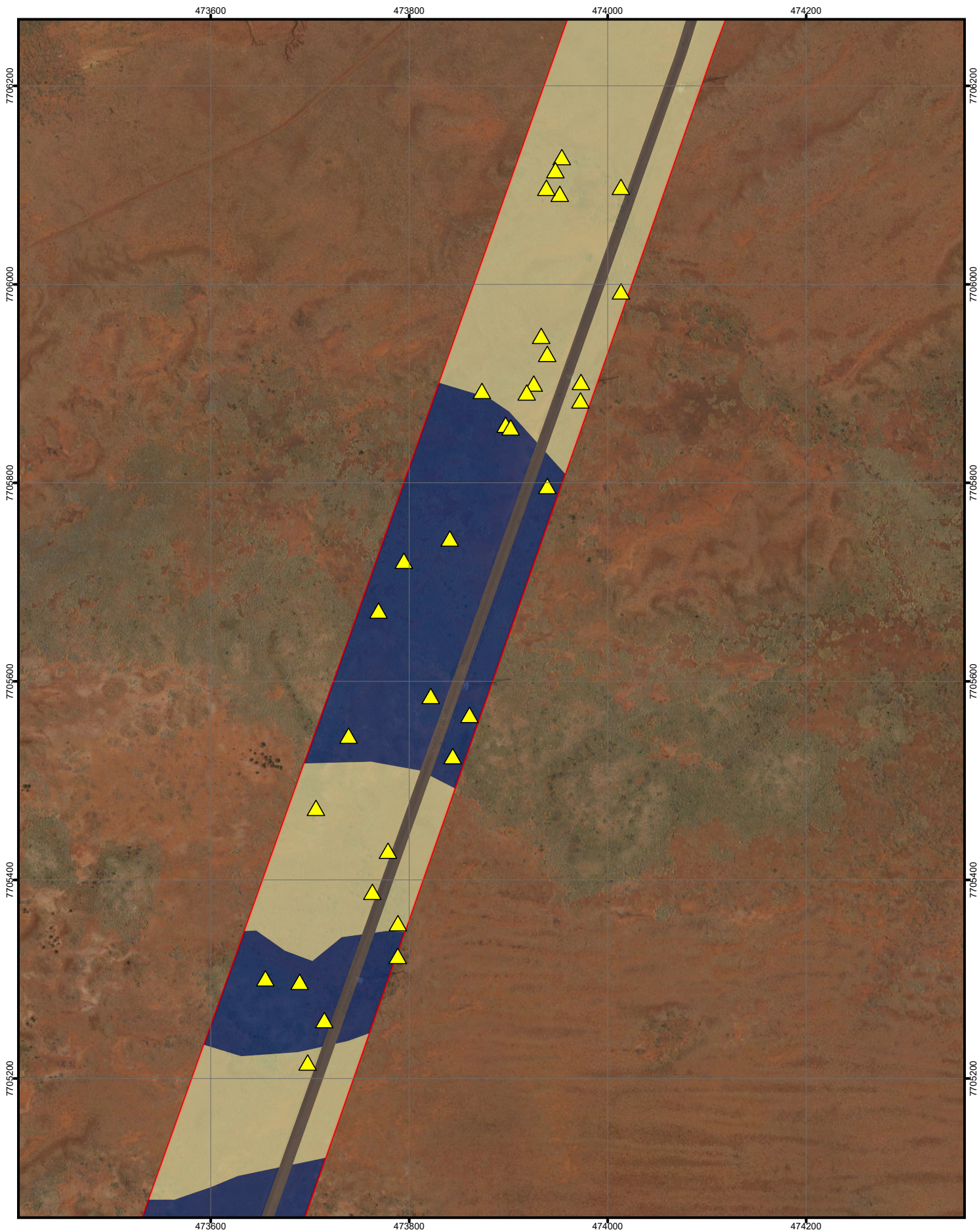


**Vegetation Communities**

**RIO TINTO**

DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT

**Figure 10.14**



PROJECT ID 60657149  
 CREATED BY KALDU  
 APPROVED BY F.DEWIT  
 LAST MODIFIED 25 AUG 2021

**AECOM**  
 www.aecom.com

Datum: GDA 1994 MGA Zone 50

1:5,000  
 (when printed at A4)

0 25 50 75 100 metres

Data sources:  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010), Geoscience Australia, Streetpro

**LEGEND**

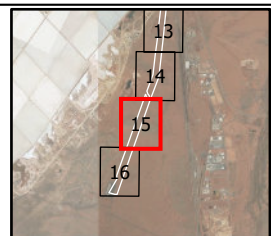
Survey Area

**Vegetation Communities**

- AbHcPo
- SfEx
- Cleared

**Priority Flora**

- Themeda sp. Hamersley Station (M.E. Trudgen 11431), P3



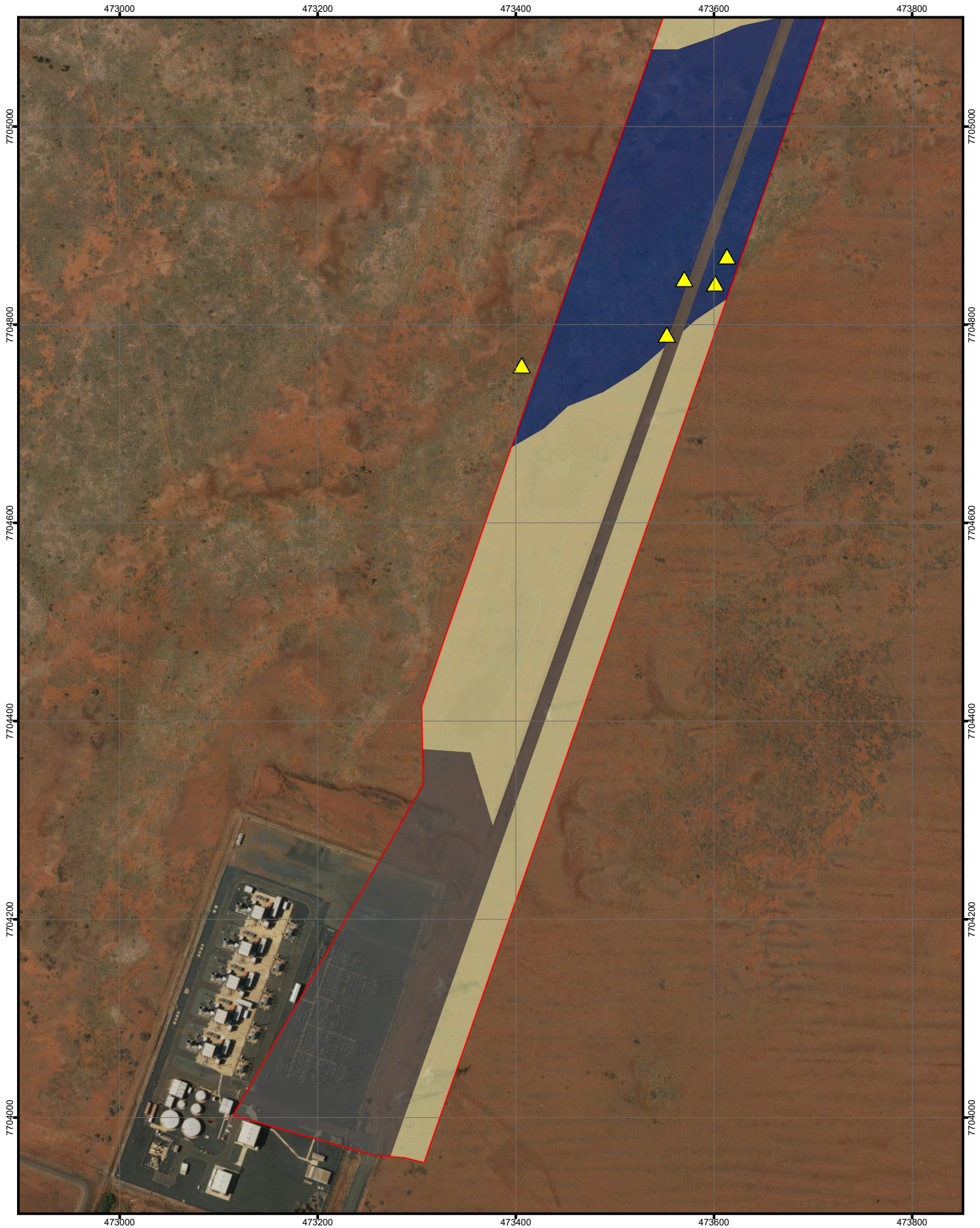
**Vegetation Communities**

**RIO TINTO**

DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT

**Figure 10.15**





PROJECT ID 60657149  
 CREATED BY KALDU  
 APPROVED BY F.DEWIT  
 LAST MODIFIED 25 AUG 2021

**AECOM**  
 www.aecom.com

Datum: GDA 1994 MGA Zone 50

1:5,000  
 (when printed at A4)

0 25 50 75 100 metres

Data sources:  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010), Geoscience Australia, Streetpro

**LEGEND**

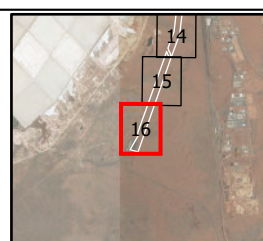
Survey Area

**Vegetation Communities**

- AbHcPo
- SfEx
- Cleared

**Priority Flora**

- Thameda sp. Hamersley Station (M.E. Trudgen 11431), P3

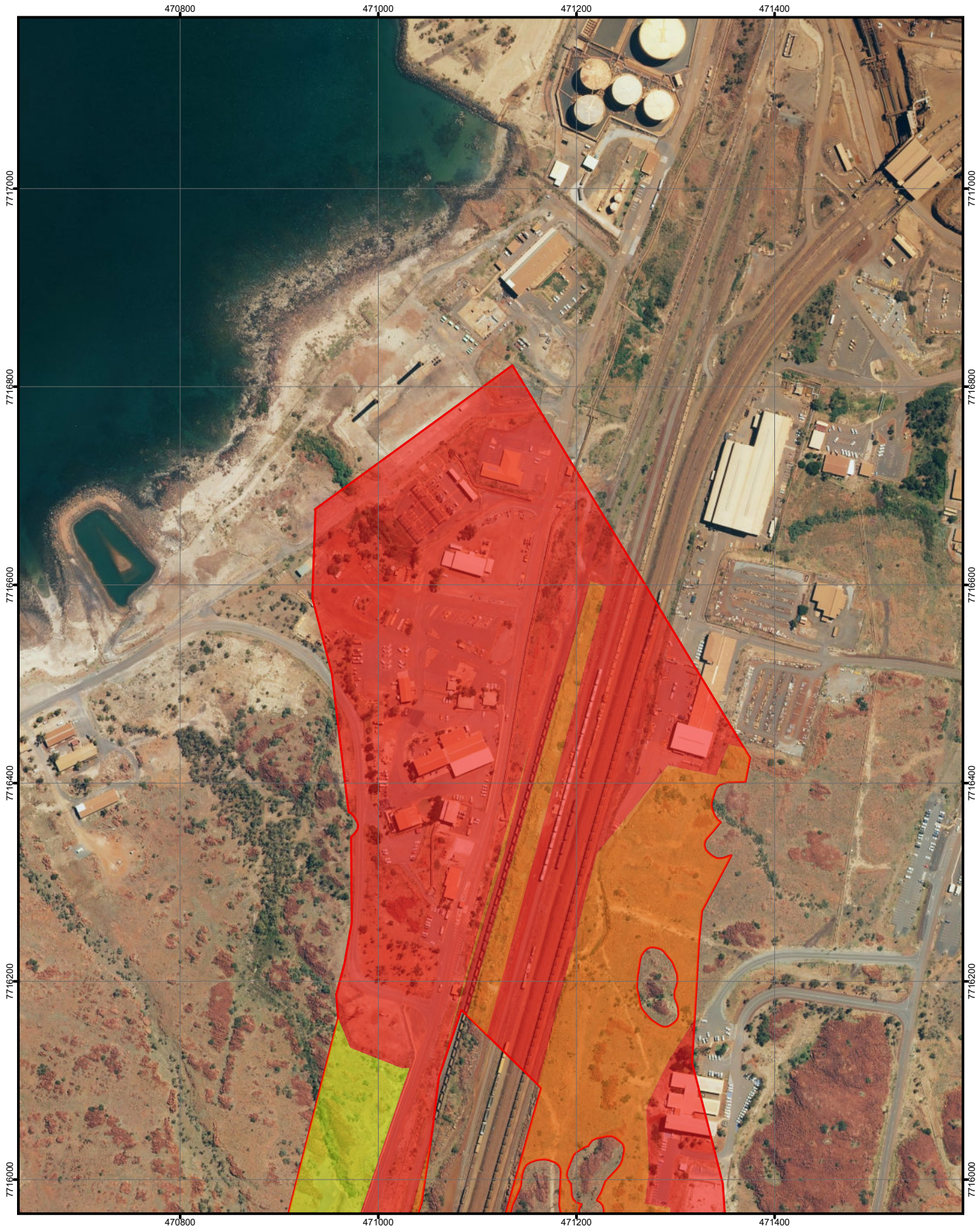


**Vegetation Communities**

**RIO TINTO**

DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT

**Figure 10.16**



PROJECT ID 60657149  
 CREATED BY KALDU  
 APPROVED BY F.DEWIT  
 LAST MODIFIED 25 AUG 2021

**AECOM**  
 www.aecom.com

Datum: GDA 1994 MGA Zone 50

1:5,000  
 (when printed at A4)

0 25 50 75 100 metres

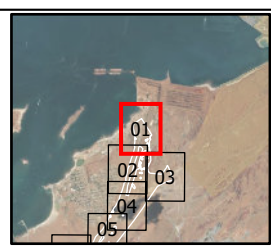
Data sources:  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010), Geoscience Australia, Streetpro

**LEGEND**

Survey Area

**Vegetation Condition**

- 0.1 - Completely Degraded
- 0.2 - Degraded
- 0.6 - Good

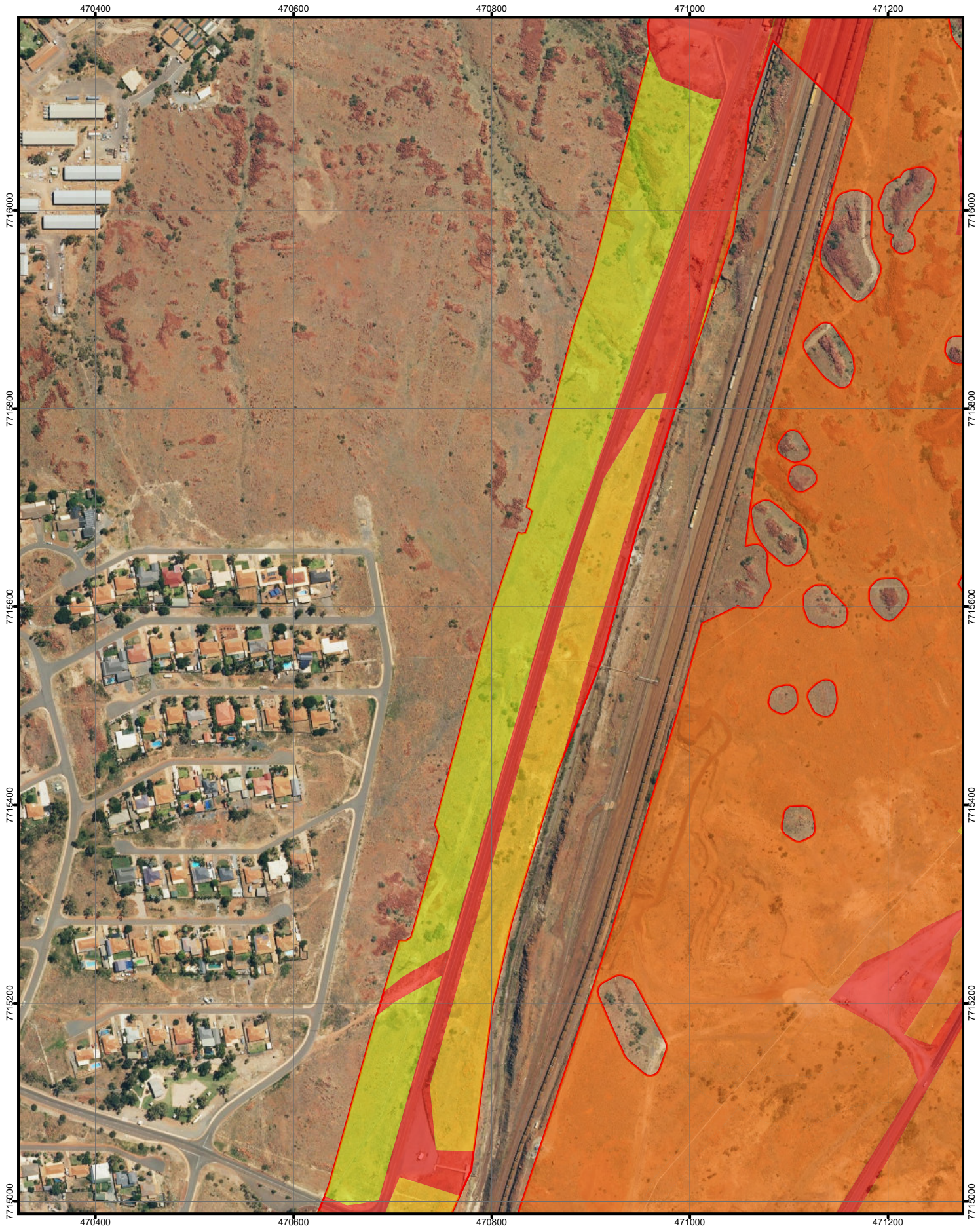


**Vegetation Condition**

**RIO TINTO**

**DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT**

**Figure 11.1**



PROJECT ID 60657149  
 CREATED BY KALDU  
 APPROVED BY F.DEWIT  
 LAST MODIFIED 25 AUG 2021

**AECOM**  
 www.aecom.com

Datum: GDA 1994 MGA Zone 50  
 0 25 50 75 100 metres  
 1:5,000 (when printed at A4)

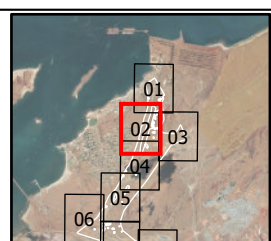
Data sources:  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010), Geoscience Australia, Streetpro

**LEGEND**

Survey Area

**Vegetation Condition**

- 0.1 - Completely Degraded
- 0.2 - Degraded
- 0.4 - Poor
- 0.6 - Good
- 0.8 - Very Good

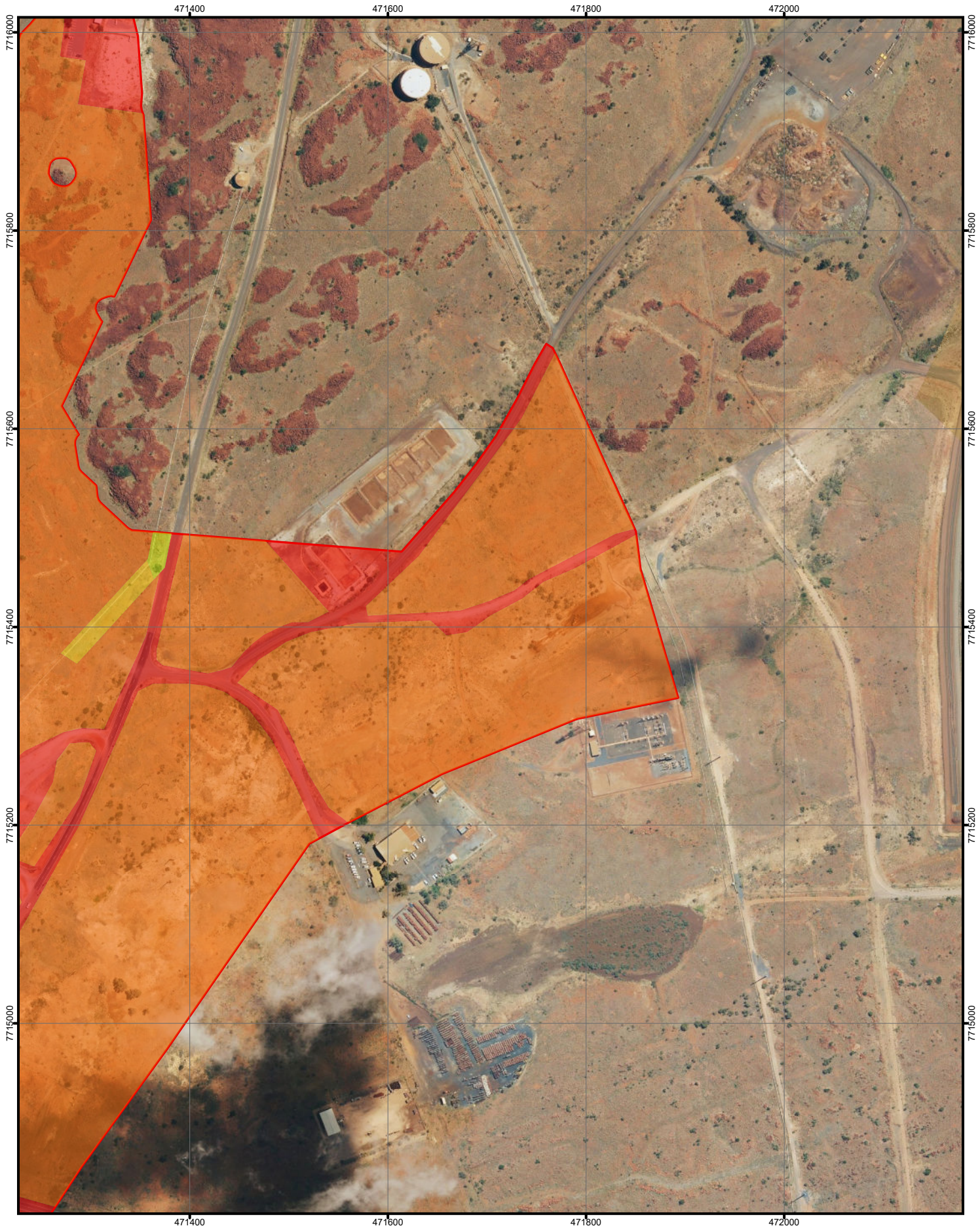


**Vegetation Condition**

**RIO TINTO**

**DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT**

**Figure 11.2**



PROJECT ID 60657149  
 CREATED BY KALDU  
 APPROVED BY F.DEWIT  
 LAST MODIFIED 25 AUG 2021

**AECOM**  
 www.aecom.com

Datum: GDA 1994 MGA Zone 50  
 0 25 50 75 100 metres  
 1:5,000  
 (when printed at A4)

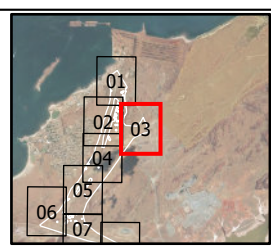
Data sources:  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010), Geoscience Australia, Streetpro

**LEGEND**

Survey Area

**Vegetation Condition**

- 0.1 - Completely Degraded
- 0.2 - Degraded
- 0.4 - Poor
- 0.6 - Good

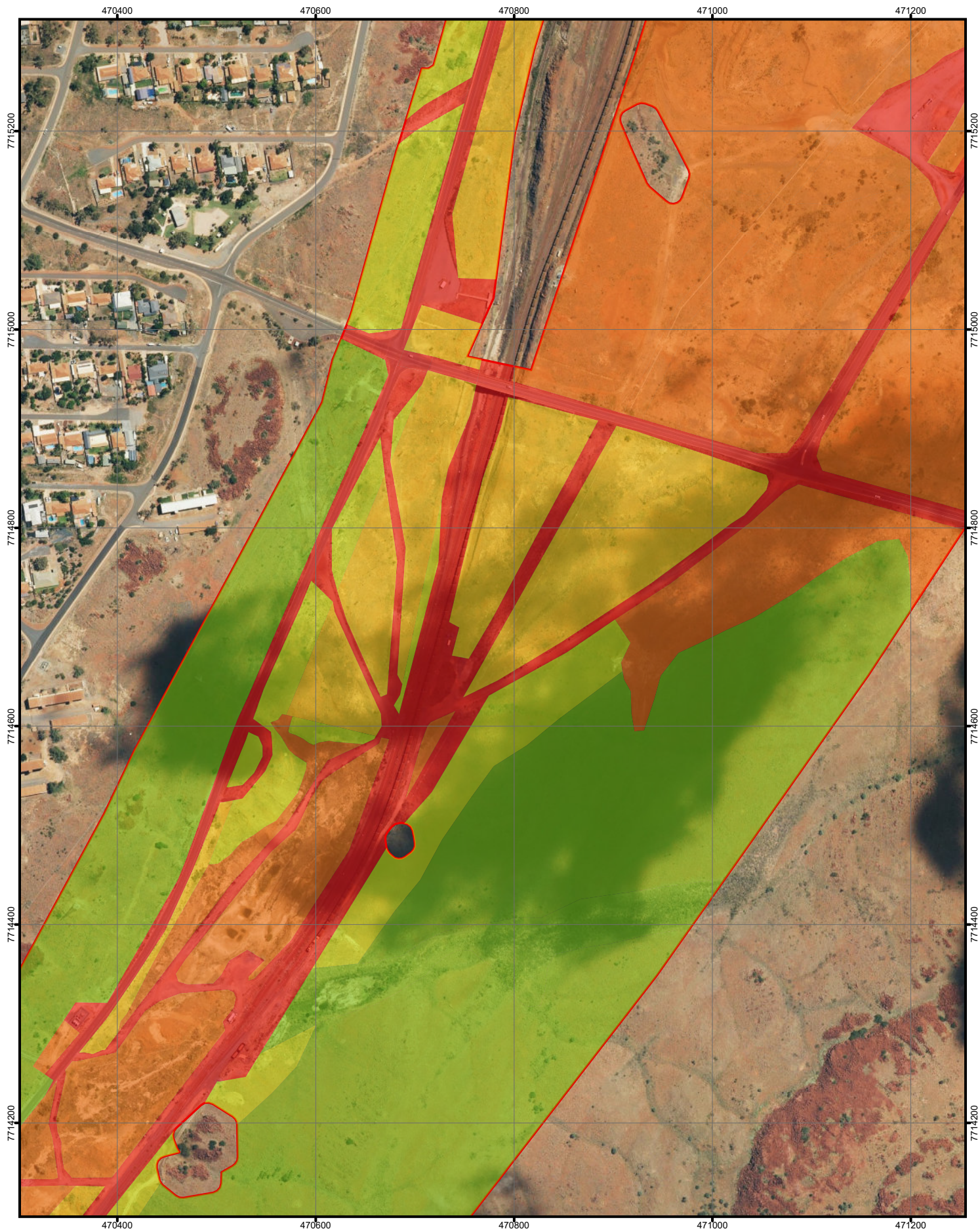


**Vegetation Condition**

**RIO TINTO**

**DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT**

**Figure 11.3**



PROJECT ID 60657149  
 CREATED BY KALDU  
 APPROVED BY F.DEWIT  
 LAST MODIFIED 25 AUG 2021

**AECOM**  
 www.aecom.com

Datum: GDA 1994 MGA Zone 50

1:5,000  
 (when printed at A4)

0 25 50 75 100 metres

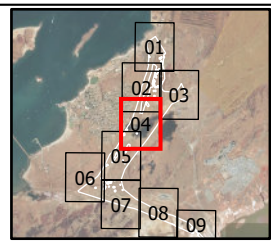
Data sources:  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010), Geoscience Australia, Streetpro

**LEGEND**

Survey Area

**Vegetation Condition**

- 0.1 - Completely Degraded
- 0.2 - Degraded
- 0.4 - Poor
- 0.6 - Good
- 0.8 - Very Good

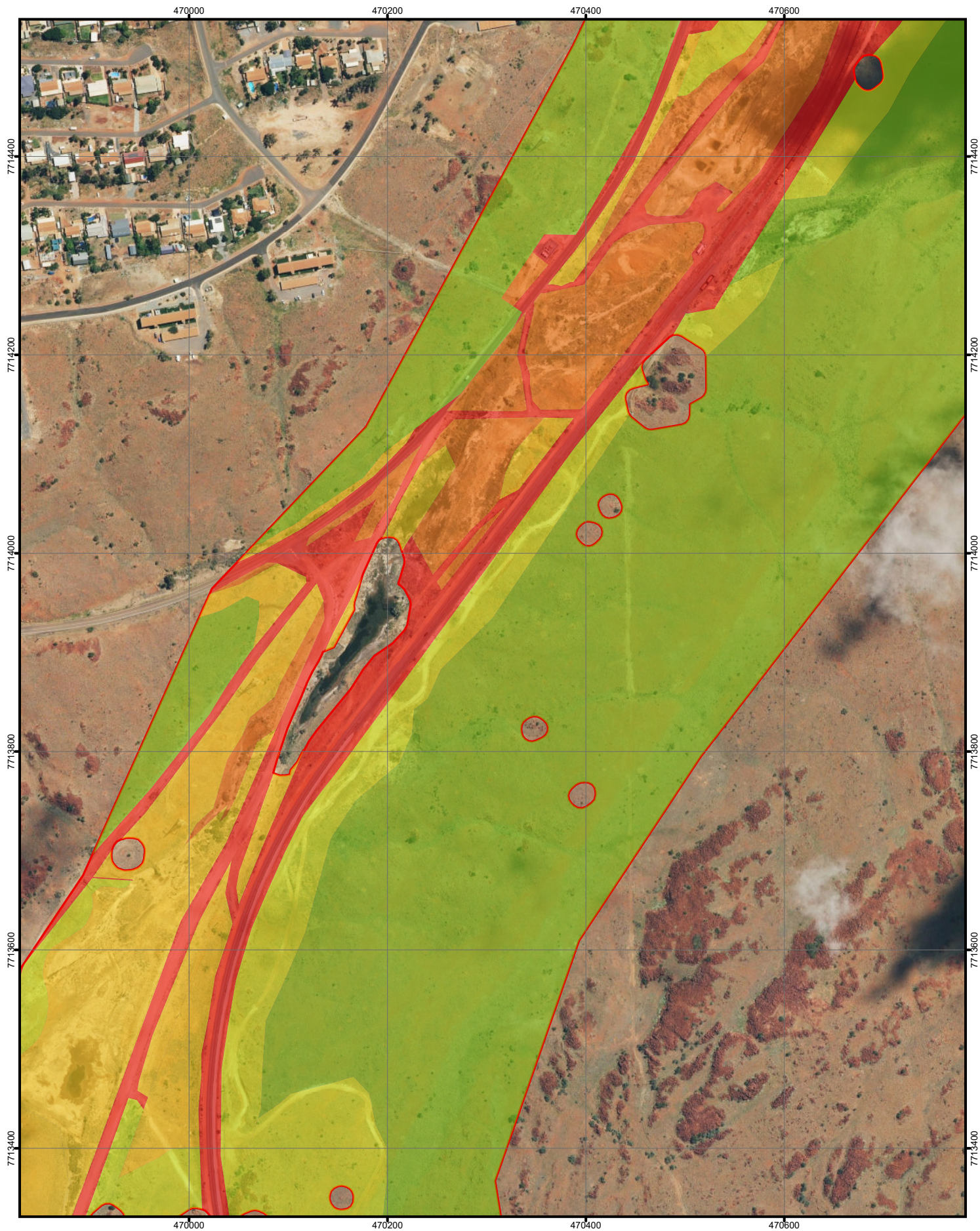


**Vegetation Condition**

**RIO TINTO**

**DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT**

**Figure 11.4**



PROJECT ID 60657149  
 CREATED BY KALDU  
 APPROVED BY F.DEWIT  
 LAST MODIFIED 25 AUG 2021

**AECOM**  
 www.aecom.com

Datum: GDA 1994 MGA Zone 50

1:5,000  
 (when printed at A4)

0 25 50 75 100 metres

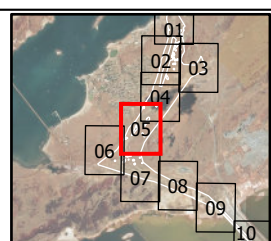
Data sources:  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010), Geoscience Australia, Streetpro

**LEGEND**

Survey Area

**Vegetation Condition**

- 0.1 - Completely Degraded
- 0.2 - Degraded
- 0.4 - Poor
- 0.6 - Good
- 0.8 - Very Good

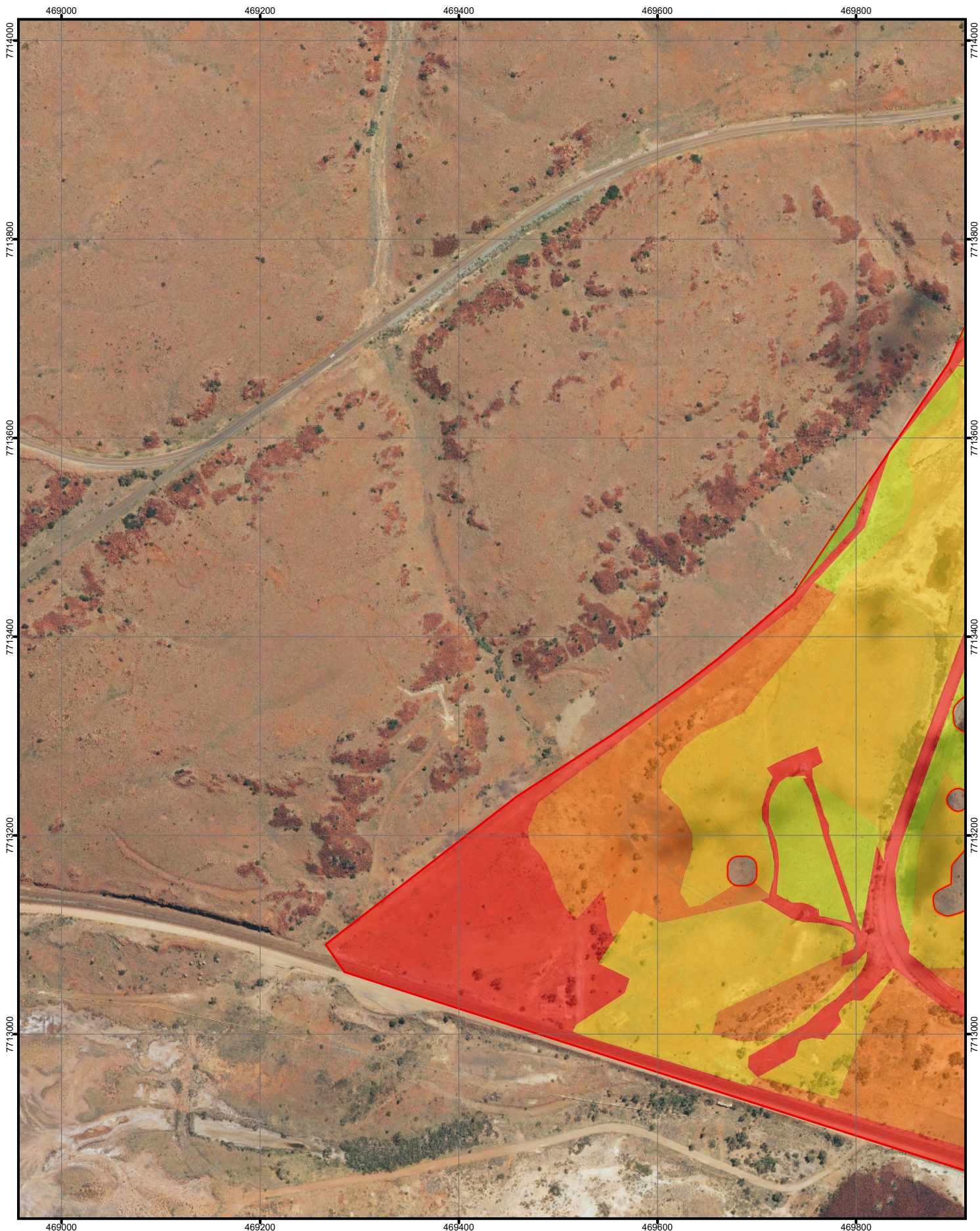


**Vegetation Condition**

**RIO TINTO**

**DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT**

**Figure 11.5**



PROJECT ID 60657149  
 CREATED BY KALDU  
 APPROVED BY F.DEWIT  
 LAST MODIFIED 25 AUG 2021

**AECOM**  
 www.aecom.com

Datum: GDA 1994 MGA Zone 50

1:5,000  
 (when printed at A4)

0 25 50 75 100 metres

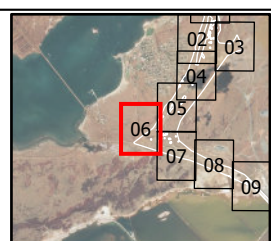
Data sources:  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010), Geoscience Australia, Streetpro

**LEGEND**

Survey Area

**Vegetation Condition**

- 0.1 - Completely Degraded
- 0.2 - Degraded
- 0.4 - Poor
- 0.6 - Good
- 0.8 - Very Good

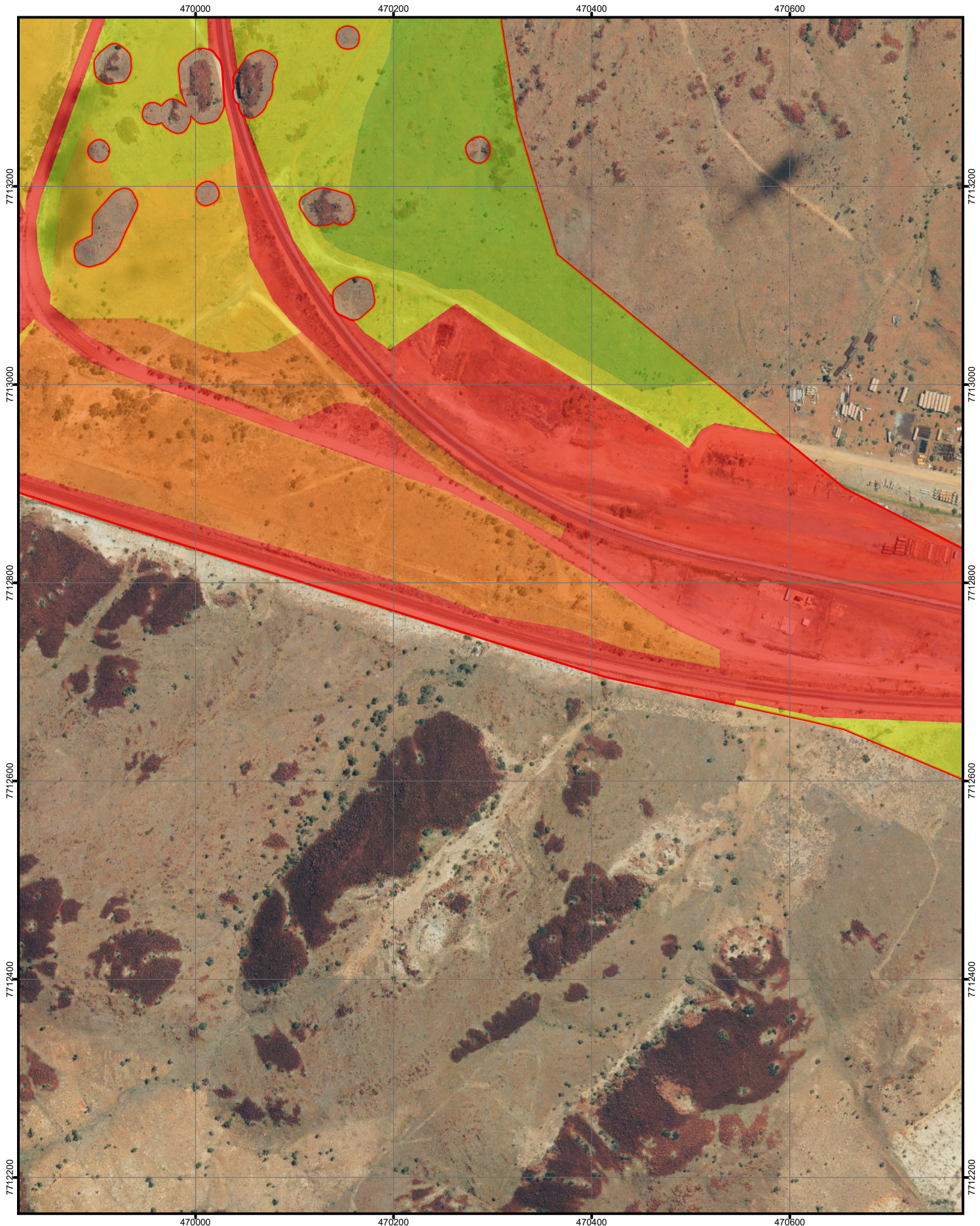


**Vegetation Condition**

**RIO TINTO**

**DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT**

**Figure 11.6**



PROJECT ID 60657149  
 CREATED BY KALDU  
 APPROVED BY F.DEWIT  
 LAST MODIFIED 25 AUG 2021

**AECOM**  
 www.aecom.com

Datum: GDA 1994 MGA Zone 50

1:5,000  
 (when printed at A4)

0 25 50 75 100 metres

Data sources:  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010), Geoscience Australia, Streetpro

**LEGEND**

Survey Area

**Vegetation Condition**

- 0.1 - Completely Degraded
- 0.2 - Degraded
- 0.4 - Poor
- 0.6 - Good
- 0.8 - Very Good

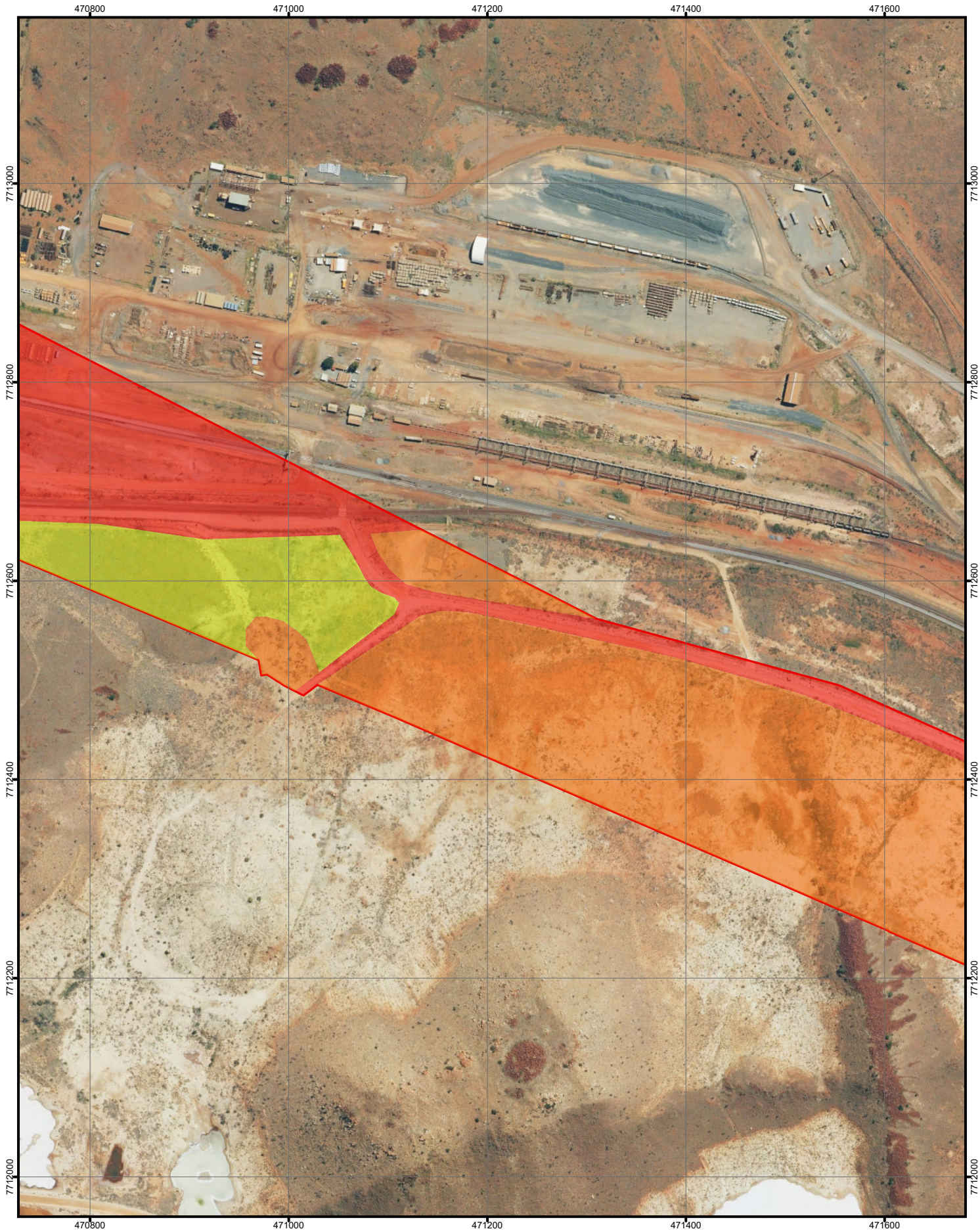
**Vegetation Condition**

**RIO TINTO**

**DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT**

**Figure 11.7**





PROJECT ID 60657149  
 CREATED BY KALDU  
 APPROVED BY F.DEWIT  
 LAST MODIFIED 25 AUG 2021

**AECOM**  
 www.aecom.com

Datum: GDA 1994 MGA Zone 50

1:5,000  
 (when printed at A4)

0 25 50 75 100 metres

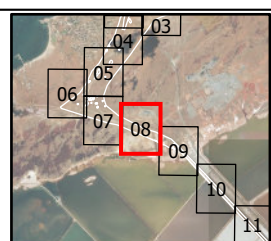
Data sources:  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010), Geoscience Australia, Streetpro

**LEGEND**

Survey Area

**Vegetation Condition**

- 0.1 - Completely Degraded
- 0.2 - Degraded
- 0.6 - Good



**Vegetation Condition**

**RIO TINTO**

**DAMPIER RESILIENCE POWER PROJECT - FLORA AND FAUNA ASSESSMENT**

**Figure 11.8**



PROJECT ID 60657149  
 CREATED BY KALDU  
 APPROVED BY F.DEWIT  
 LAST MODIFIED 25 AUG 2021

**AECOM**  
 www.aecom.com

Datum: GDA 1994 MGA Zone 50

1:5,000  
 (when printed at A4)

0 25 50 75 100 metres

Data sources:  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010), Geoscience Australia, Streetpro

**LEGEND**

Survey Area

**Vegetation Condition**

0.1 - Completely Degraded

0.2 - Degraded

**Vegetation Condition**

**RIO TINTO**

**DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT**

**Figure 11.9**



PROJECT ID 60657149  
 CREATED BY KALDU  
 APPROVED BY F.DEWIT  
 LAST MODIFIED 25 AUG 2021

**AECOM**  
 www.aecom.com

Datum: GDA 1994 MGA Zone 50

1:5,000  
 (when printed at A4)

0 25 50 75 100 metres

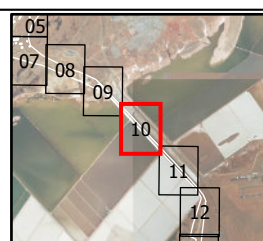
Data sources:  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010), Geoscience Australia, Streetpro

**LEGEND**

Survey Area

Vegetation Condition

0.1 - Completely Degraded

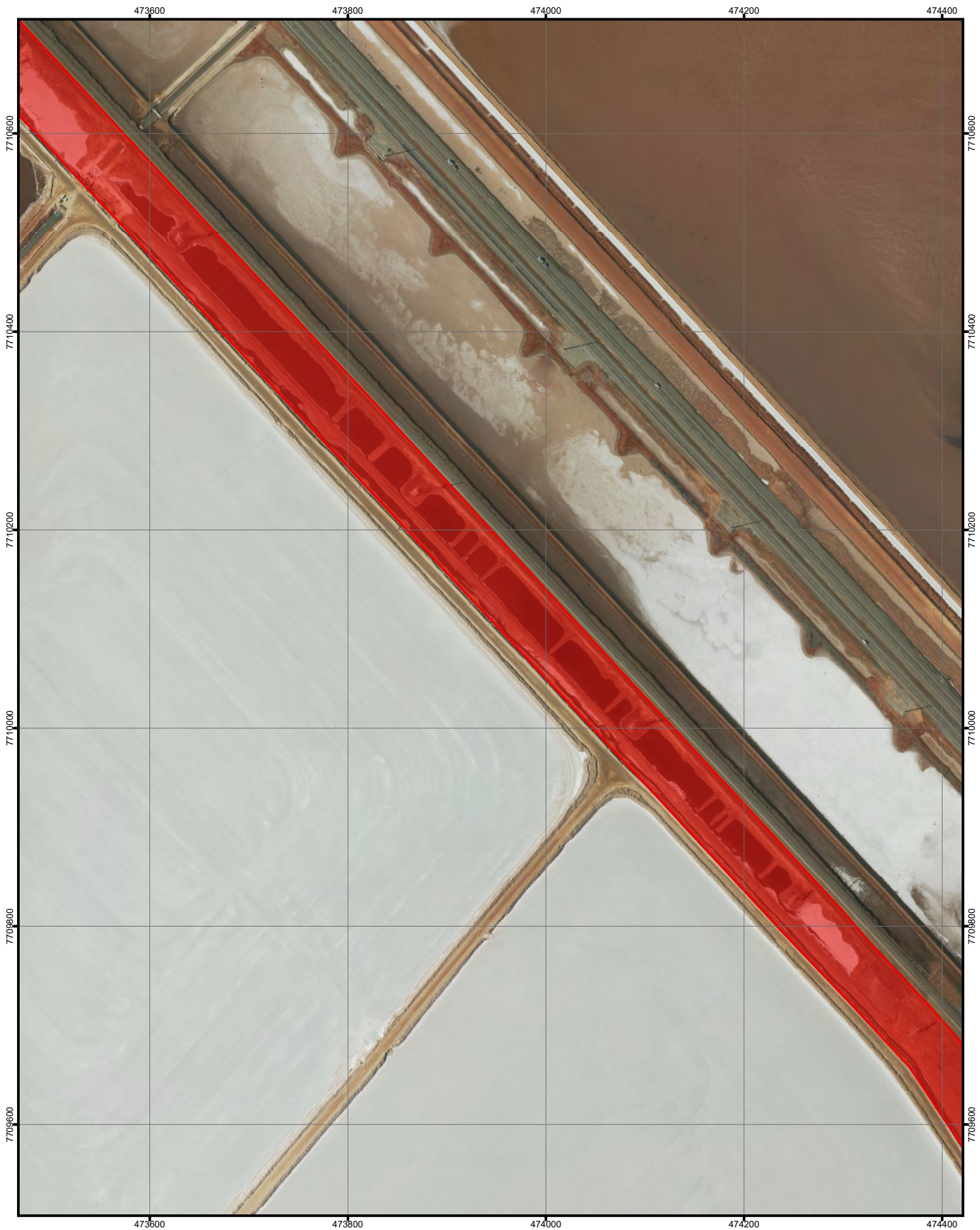


**Vegetation Condition**

**RIO TINTO**

*DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT*

**Figure 11.10**



PROJECT ID 60657149  
 CREATED BY KALDU  
 APPROVED BY F.DEWIT  
 LAST MODIFIED 25 AUG 2021

**AECOM**  
 www.aecom.com

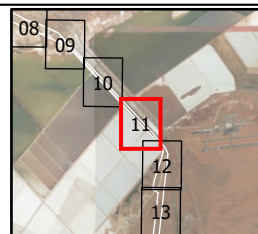
Datum: GDA 1994 MGA Zone 50

1:5,000  
 (when printed at A4)

0 25 50 75 100 metres

Data sources:  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010), Geoscience Australia, Streetpro

**LEGEND**  
 Survey Area  
**Vegetation Condition**  
 0.1 - Completely Degraded

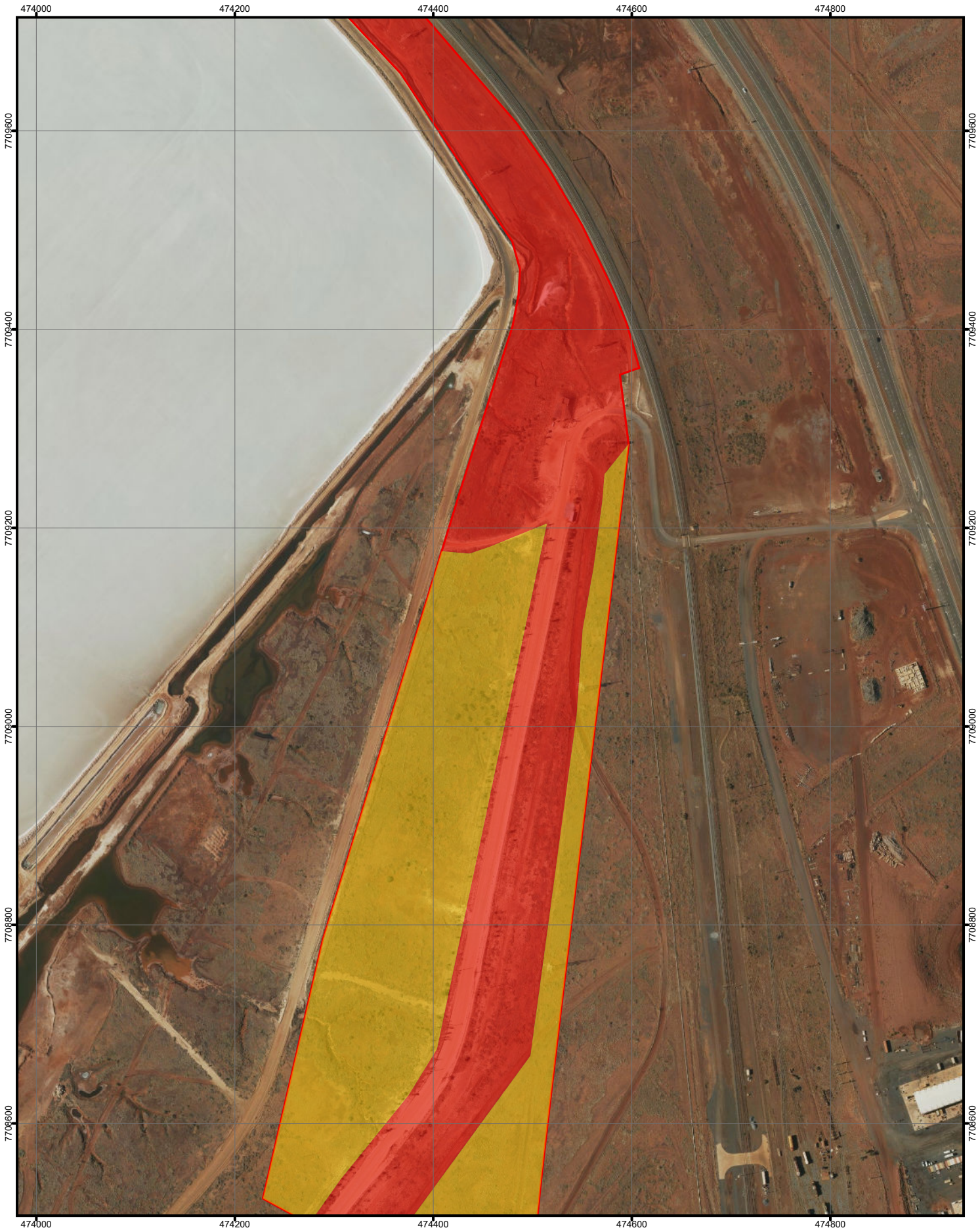


**Vegetation Condition**

**RIO TINTO**

*DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT*

**Figure 11.11**



PROJECT ID 60657149  
 CREATED BY KALDU  
 APPROVED BY F.DEWIT  
 LAST MODIFIED 25 AUG 2021

**AECOM**  
 www.aecom.com

Datum: GDA 1994 MGA Zone 50

1:5,000  
 (when printed at A4)

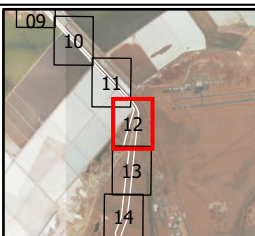
Data sources:  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010), Geoscience Australia, Streetpro

**LEGEND**

Survey Area

**Vegetation Condition**

- 0.1 - Completely Degraded
- 0.4 - Poor

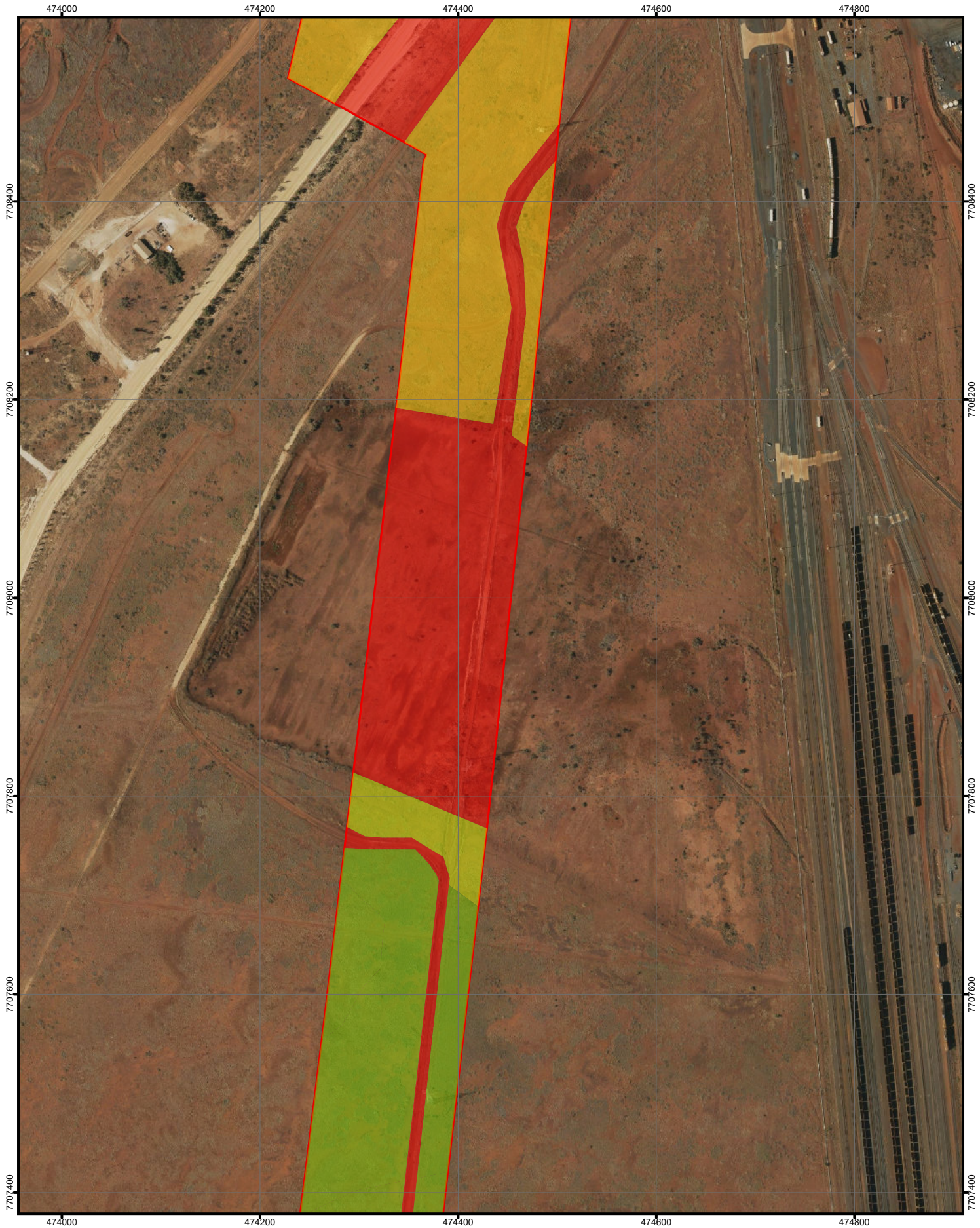


**Vegetation Condition**

**RIO TINTO**

*DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT*

**Figure 11.12**



PROJECT ID 60657149  
 CREATED BY KALDU  
 APPROVED BY F.DEWIT  
 LAST MODIFIED 25 AUG 2021

**AECOM**  
 www.aecom.com

Datum: GDA 1994 MGA Zone 50

1:5,000  
 (when printed at A4)

0 25 50 75 100 metres

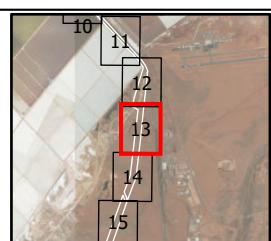
Data sources:  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010), Geoscience Australia, Streetpro

**LEGEND**

Survey Area

**Vegetation Condition**

- 0.1 - Completely Degraded
- 0.4 - Poor
- 0.6 - Good
- 0.8 - Very Good

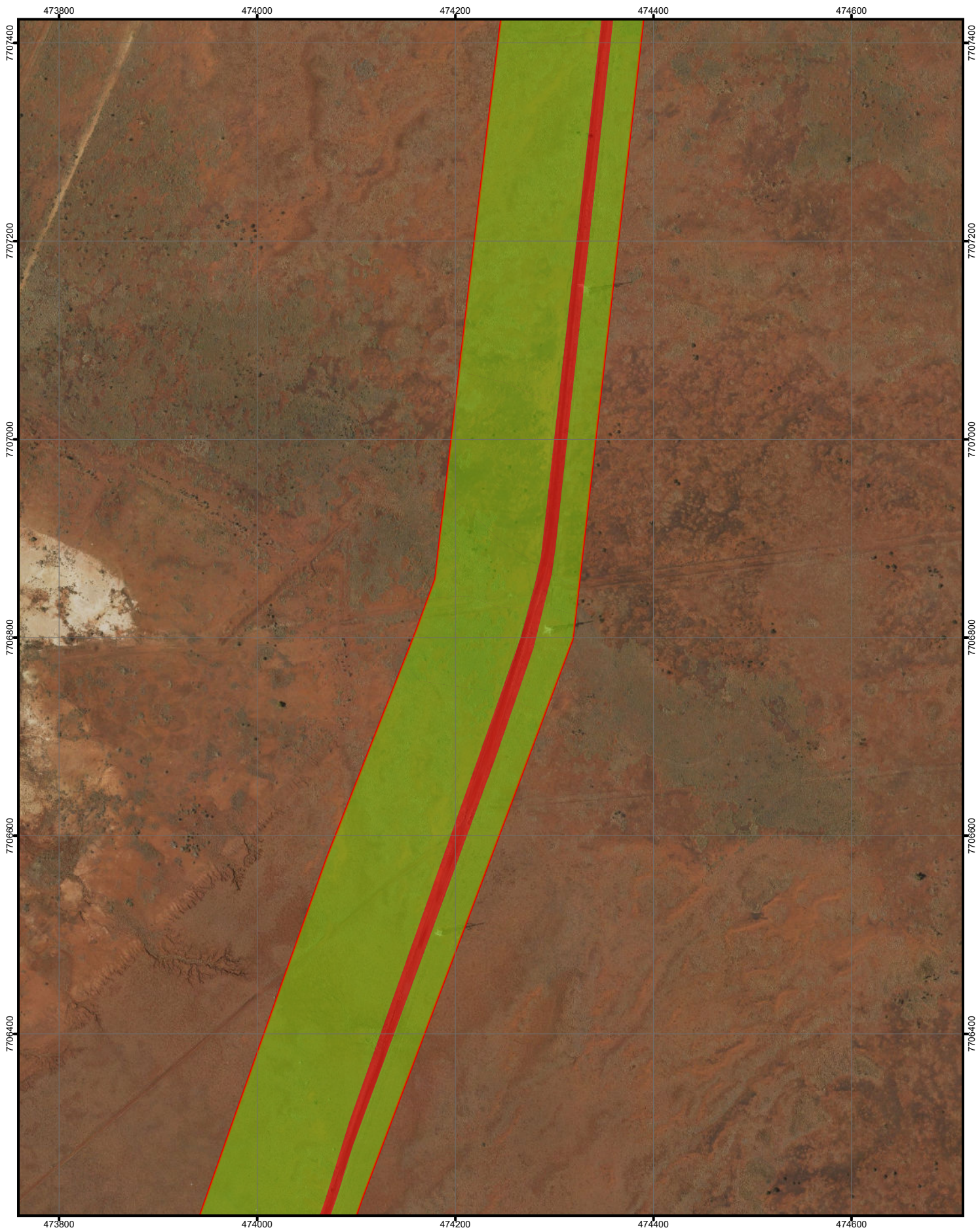


**Vegetation Condition**

**RIO TINTO**

*DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT*

**Figure 11.13**



PROJECT ID 60657149  
 CREATED BY KALDU  
 APPROVED BY F.DEWIT  
 LAST MODIFIED 25 AUG 2021

**AECOM**  
 www.aecom.com

Datum: GDA 1994 MGA Zone 50

1:5,000  
 (when printed at A4)

0 25 50 75 100 metres

Data sources:  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010), Geoscience Australia, Streetpro

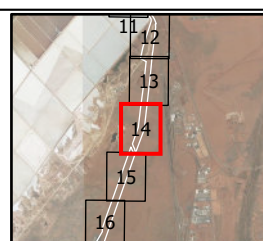
**LEGEND**

Survey Area

**Vegetation Condition**

0.1 - Completely Degraded

0.8 - Very Good

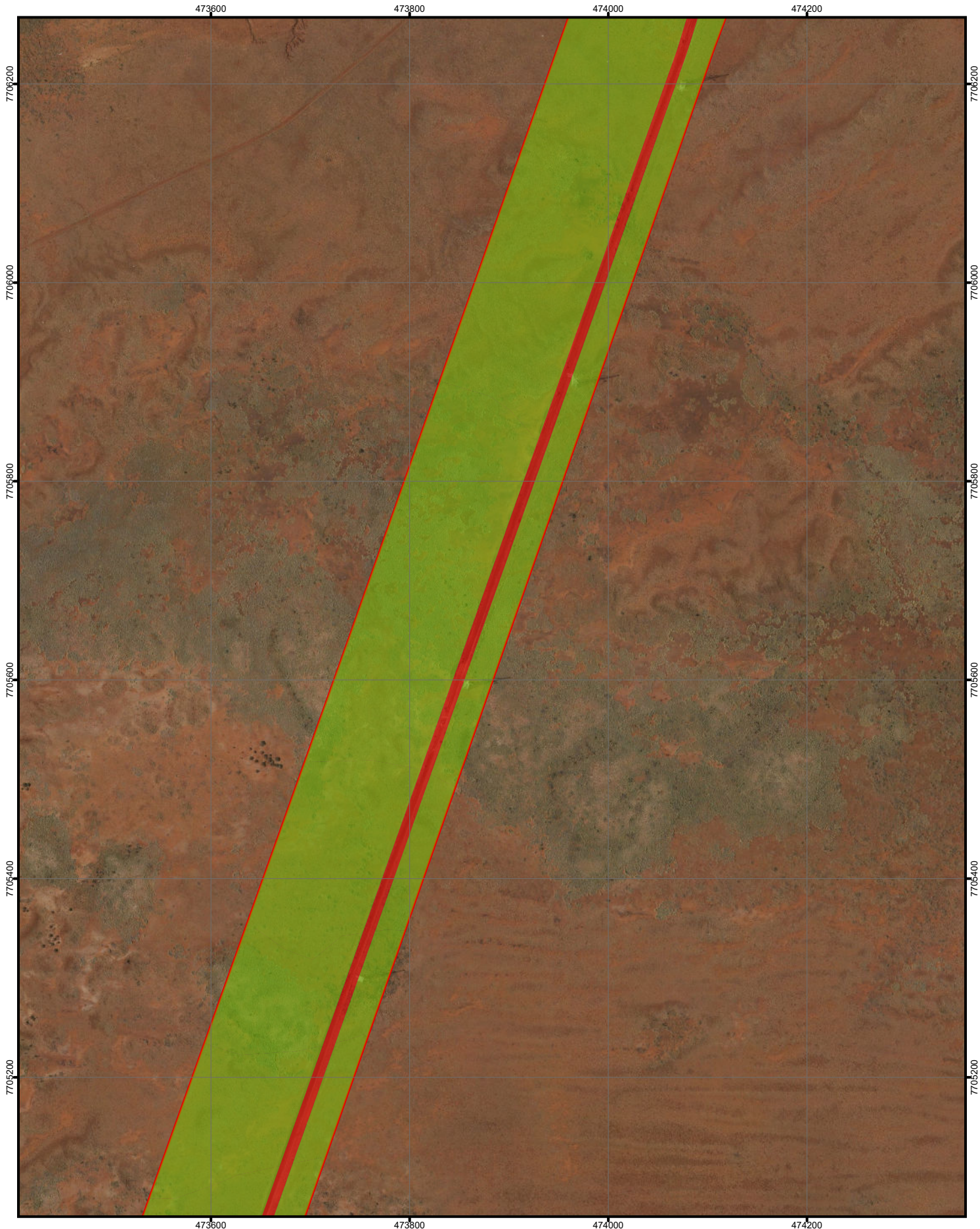


**Vegetation Condition**

**RIO TINTO**

DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT

**Figure 11.14**



PROJECT ID 60657149  
 CREATED BY KALDU  
 APPROVED BY F.DEWIT  
 LAST MODIFIED 25 AUG 2021

**AECOM**  
 www.aecom.com

Datum: GDA 1994 MGA Zone 50

1:5,000  
 (when printed at A4)

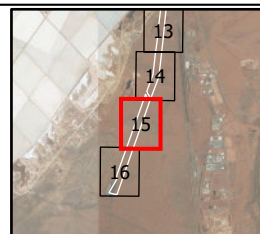
Data sources:  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010), Geoscience Australia, Streetpro

**LEGEND**

Survey Area

Vegetation Condition

- 0.1 - Completely Degraded
- 0.8 - Very Good



**Vegetation Condition**

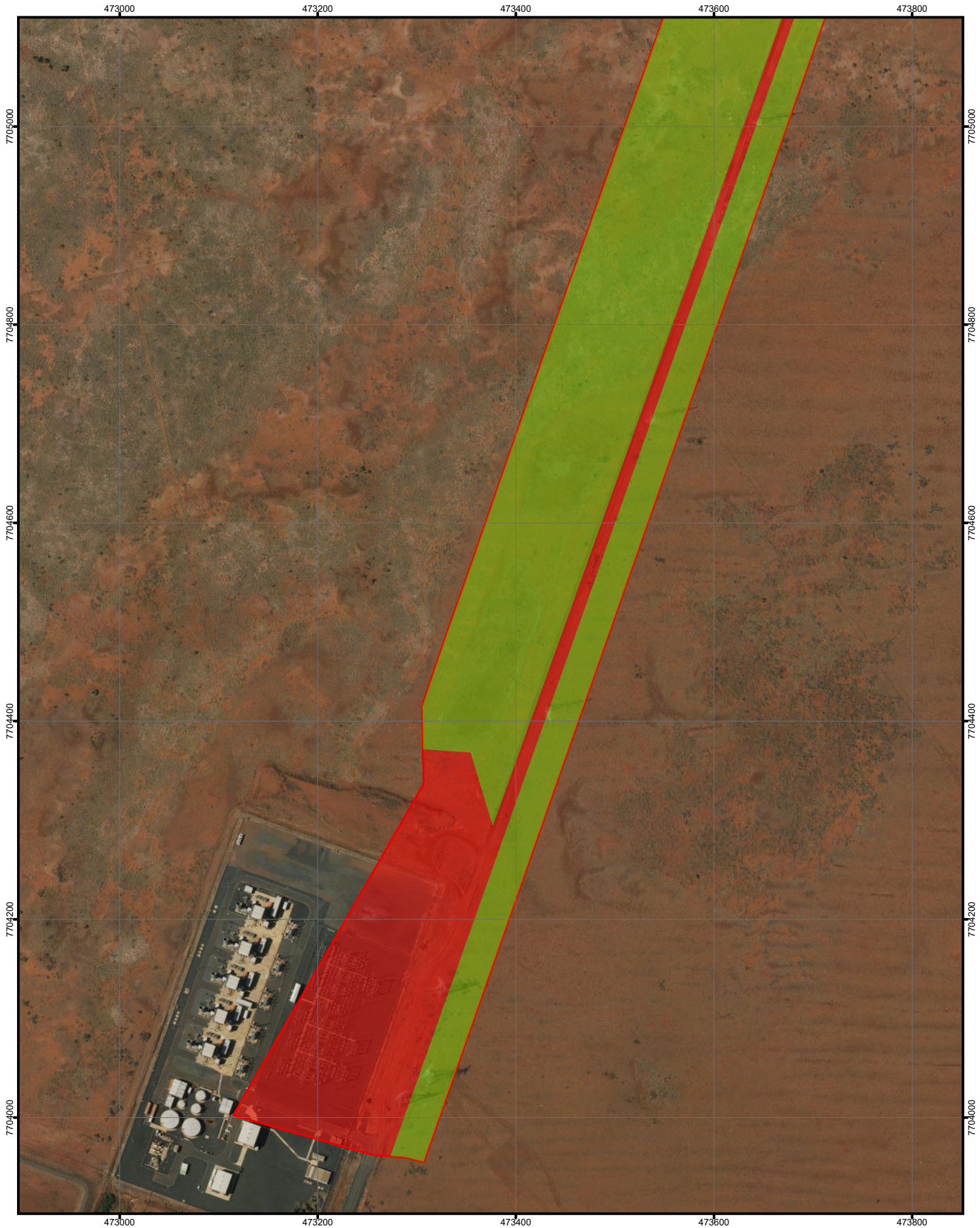
---

**RIO TINTO**

DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT

**Figure 11.15**





PROJECT ID 60657149  
 CREATED BY KALDU  
 APPROVED BY F.DEWIT  
 LAST MODIFIED 25 AUG 2021

**AECOM**  
 www.aecom.com

Datum: GDA 1994 MGA Zone 50

1:5,000  
 (when printed at A4)

0 25 50 75 100 metres

Data sources:  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010), Geoscience Australia, Streetpro

**LEGEND**

Survey Area

**Vegetation Condition**

0.1 - Completely Degraded

0.8 - Very Good

**Vegetation Condition**

**RIO TINTO**

DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT

**Figure 11.16**



PROJECT ID 60657149  
 CREATED BY KALDU  
 APPROVED BY F.DEWIT  
 LAST MODIFIED 25 AUG 2021

**AECOM**  
 www.aecom.com

Datum: GDA 1994 MGA Zone 50

1:5,000  
 (when printed at A4)

0 25 50 75 100 metres

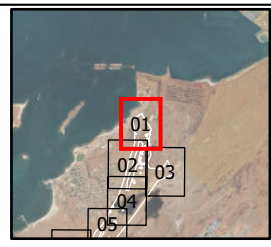
Data sources:  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010), Geoscience Australia, Streetpro

**LEGEND**

Survey Area

Fauna Habitat

- Cleared
- Triodia on Rocky Slopes



**Fauna Habitats**

**RIO TINTO**

**DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT**

**Figure 12.1**



PROJECT ID 60657149  
 CREATED BY KALDU  
 APPROVED BY F.DEWIT  
 LAST MODIFIED 25 AUG 2021

**AECOM**  
 www.aecom.com

Datum: GDA 1994 MGA Zone 50

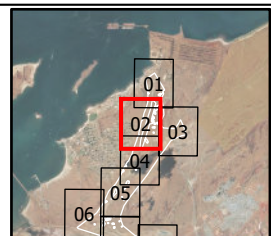
1:5,000  
 (when printed at A4)

0 25 50 75 100 metres

Data sources:  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010), Geoscience Australia, Streetpro

**LEGEND**

- Survey Area
- Fauna Habitat**
- Cleared
- Minor Creeks
- Triodia* on Rocky Slopes

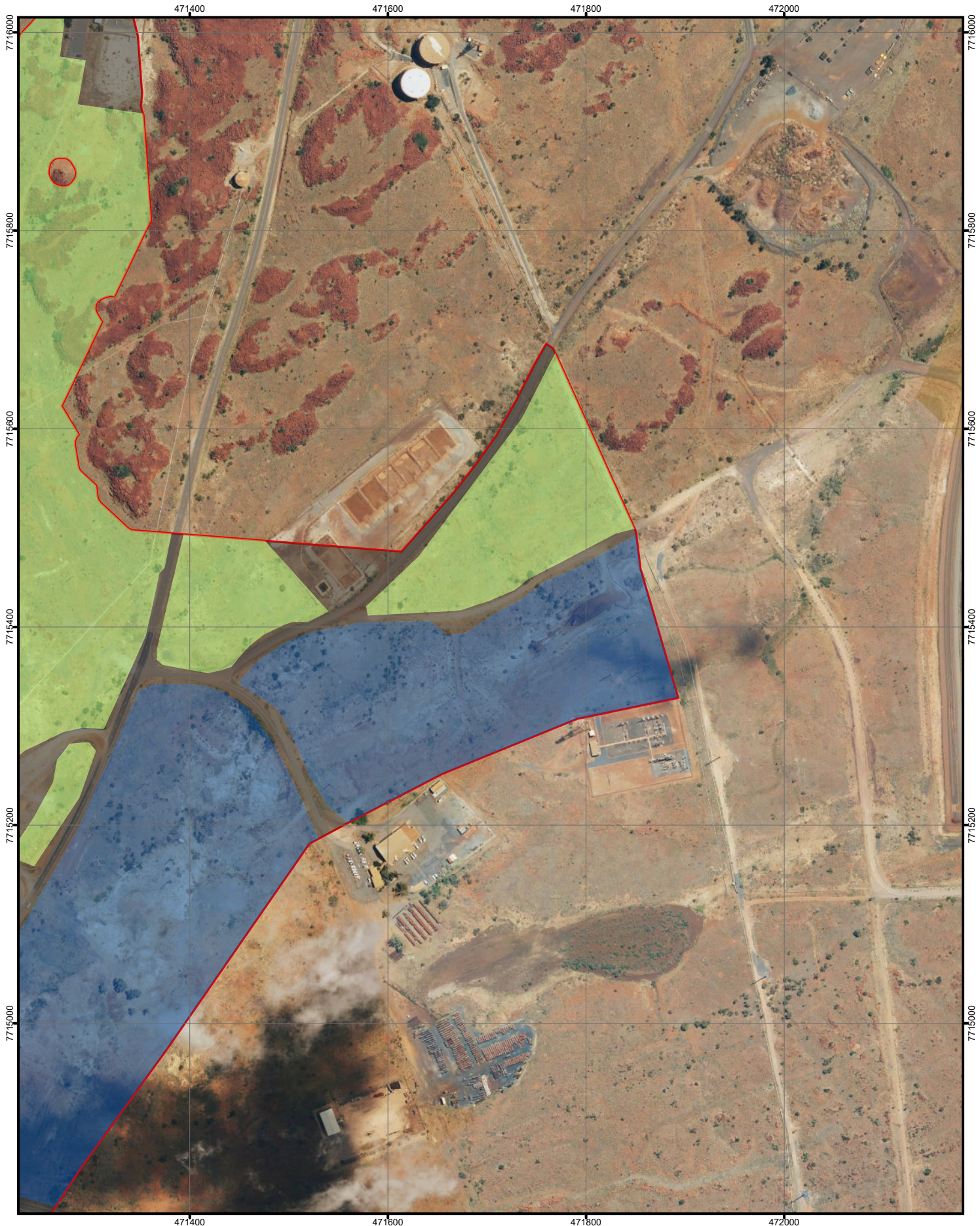


**Fauna Habitats**

**RIO TINTO**

**DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT**

**Figure 12.2**



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Datum: GDA 1994 MGA Zone 50

1:5,000  
 (when printed at A4)

0 25 50 75 100 metres

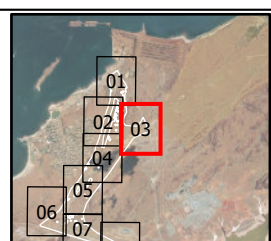
Data sources:  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010), Geoscience Australia, Streetpro

**LEGEND**

Survey Area

Fauna Habitat

- Cleared
- Minor Creeks
- Triodia on Rocky Slopes

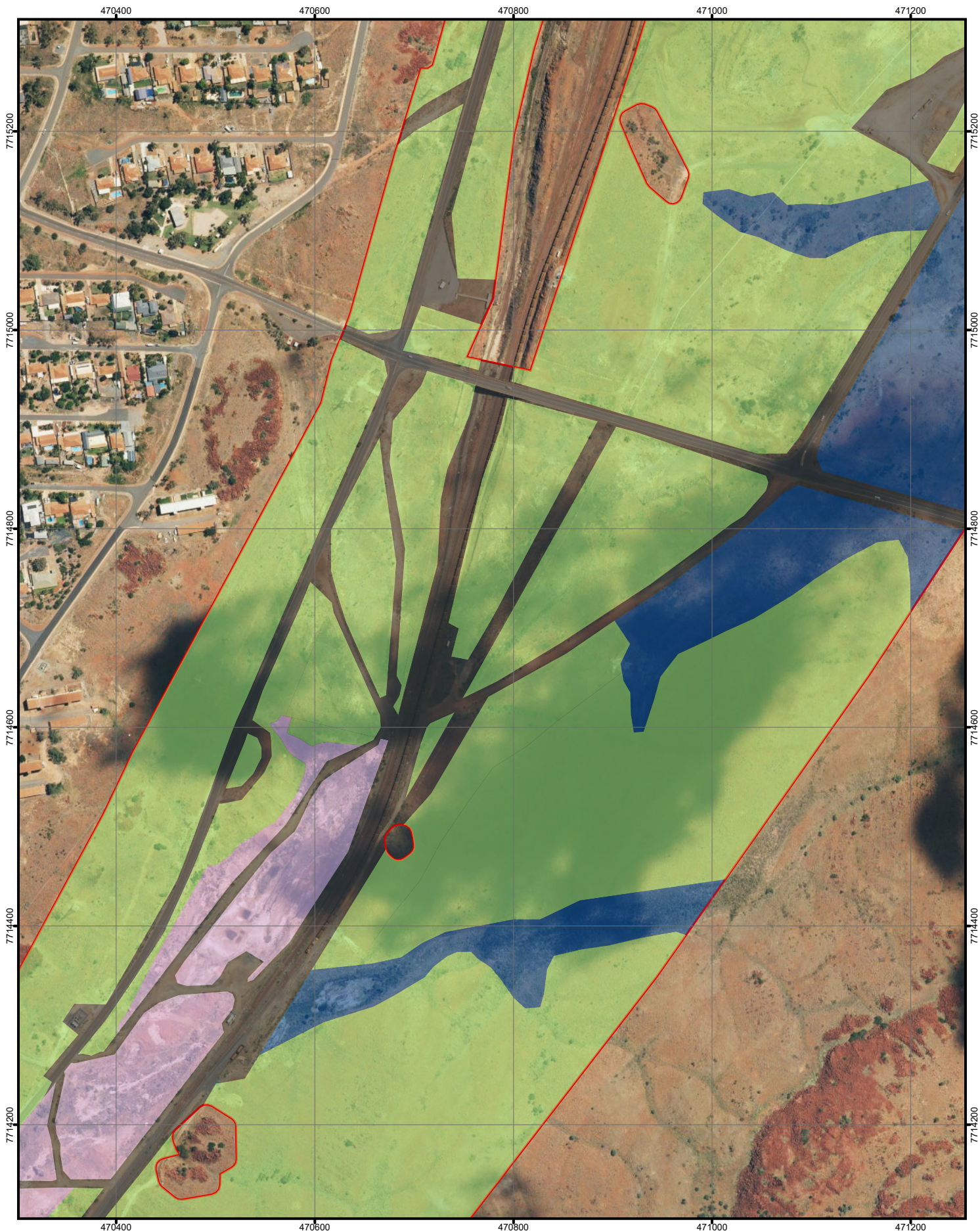


**Fauna Habitats**

**RIO TINTO**

**DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT**

**Figure 12.3**



PROJECT ID 60657149  
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 LAST MODIFIED 25 AUG 2021

**AECOM**  
 www.aecom.com

Datum: GDA 1994 MGA Zone 50

1:5,000  
 (when printed at A4)

0 25 50 75 100 metres

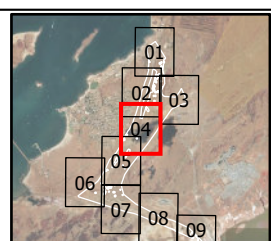
Data sources:  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010), Geoscience Australia, Streetpro

**LEGEND**

Survey Area

Fauna Habitat

- Cleared
- Disturbed - Artificial Wetland
- Minor Creeks
- Triodia on Rocky Slopes

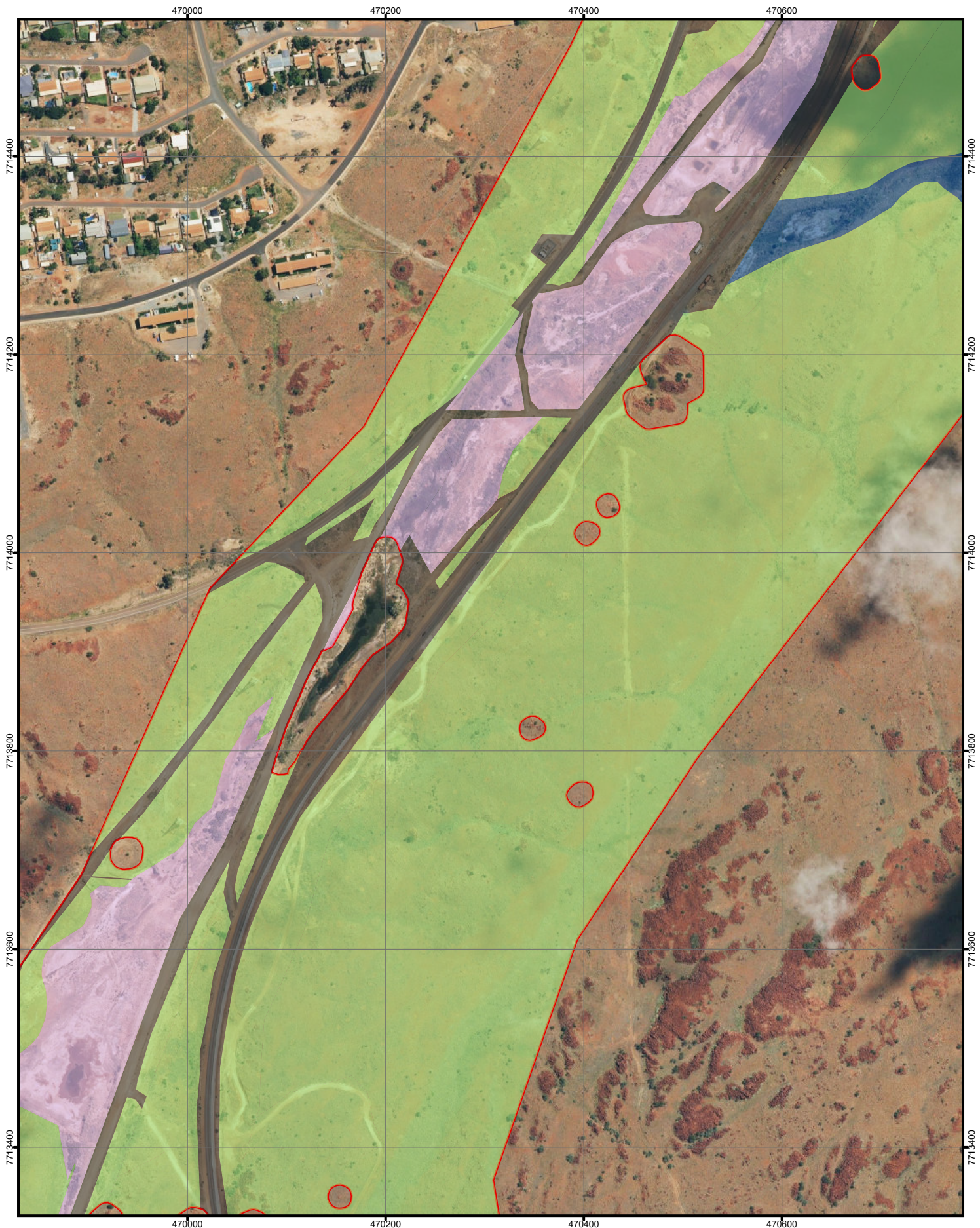


**Fauna Habitats**

**RIO TINTO**

**DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT**

**Figure 12.4**



PROJECT ID 60657149  
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**AECOM**  
 www.aecom.com

Datum: GDA 1994 MGA Zone 50

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0 25 50 75 100 metres

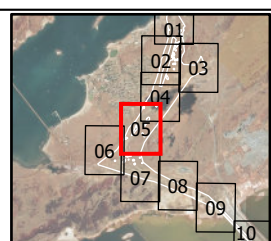
Data sources:  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010), Geoscience Australia, Streetpro

**LEGEND**

Survey Area

**Fauna Habitat**

- Cleared
- Disturbed - Artificial Wetland
- Minor Creeks
- Triodia on Rocky Slopes

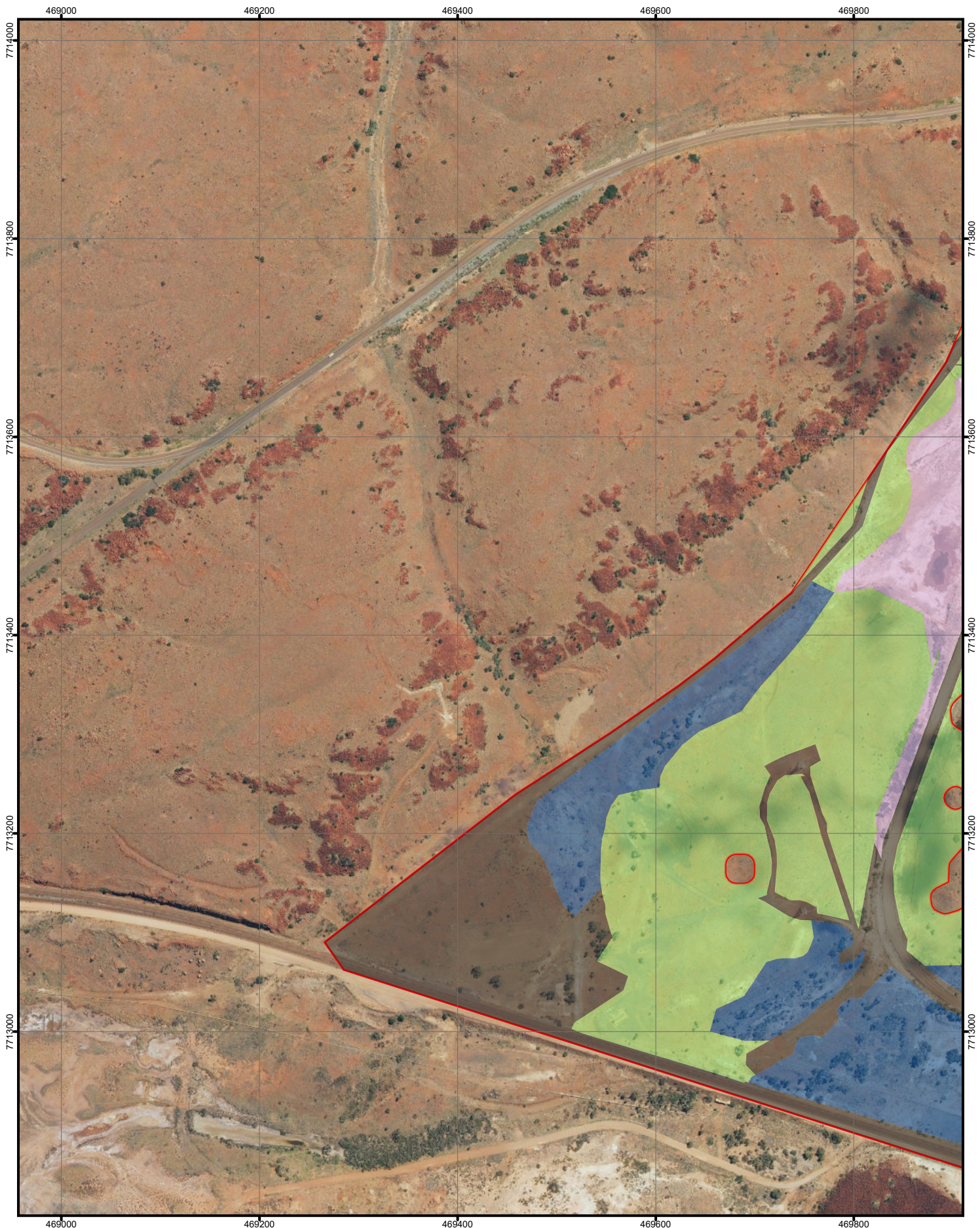


**Fauna Habitats**

**RIO TINTO**

**DAMPIER RESILIENCE POWER PROJECT - FLORA AND FAUNA ASSESSMENT**

**Figure 12.5**



PROJECT ID 60657149  
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**AECOM**  
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Datum: GDA 1994 MGA Zone 50

1:5,000  
 (when printed at A4)

0 25 50 75 100 metres

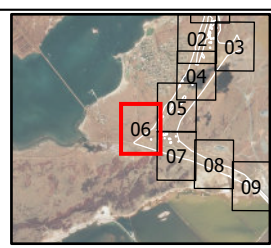
Data sources:  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010), Geoscience Australia, Streetpro

**LEGEND**

Survey Area

Fauna Habitat

- Cleared
- Disturbed - Artificial Wetland
- Minor Creeks
- Triodia on Rocky Slopes

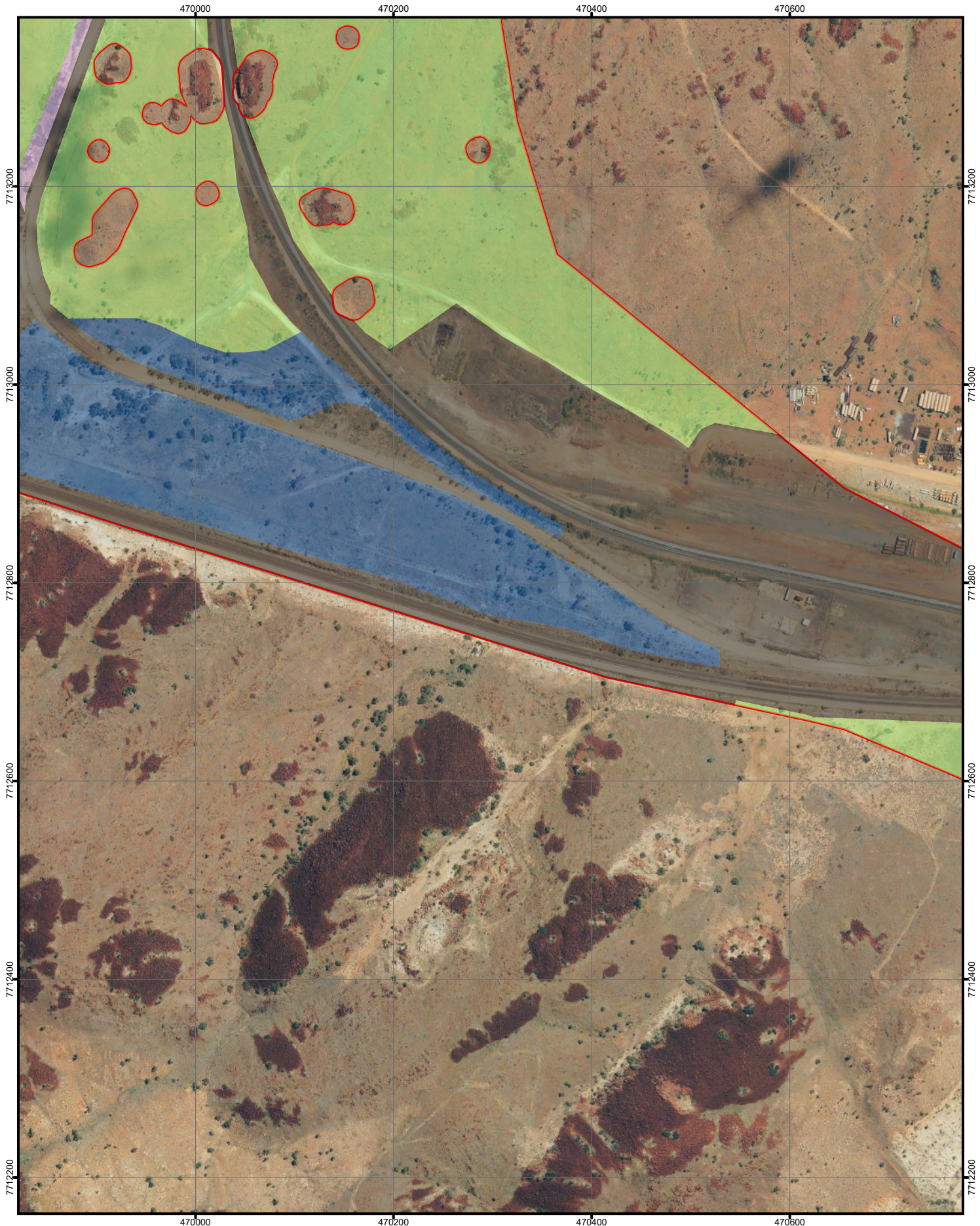


**Fauna Habitats**

**RIO TINTO**

**DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT**

**Figure 12.6**



PROJECT ID 60657149  
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**AECOM**  
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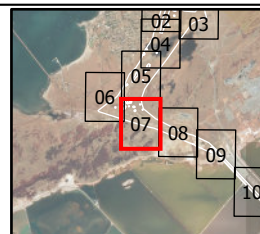
Datum: GDA 1994 MGA Zone 50

1:5,000  
 (when printed at A4)

0 25 50 75 100 metres

Data sources:  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010), Geoscience Australia, Streetpro

- LEGEND**
- Survey Area
  - Fauna Habitat**
  - Cleared
  - Disturbed - Artificial Wetland
  - Minor Creeks
  - Triodia* on Rocky Slopes



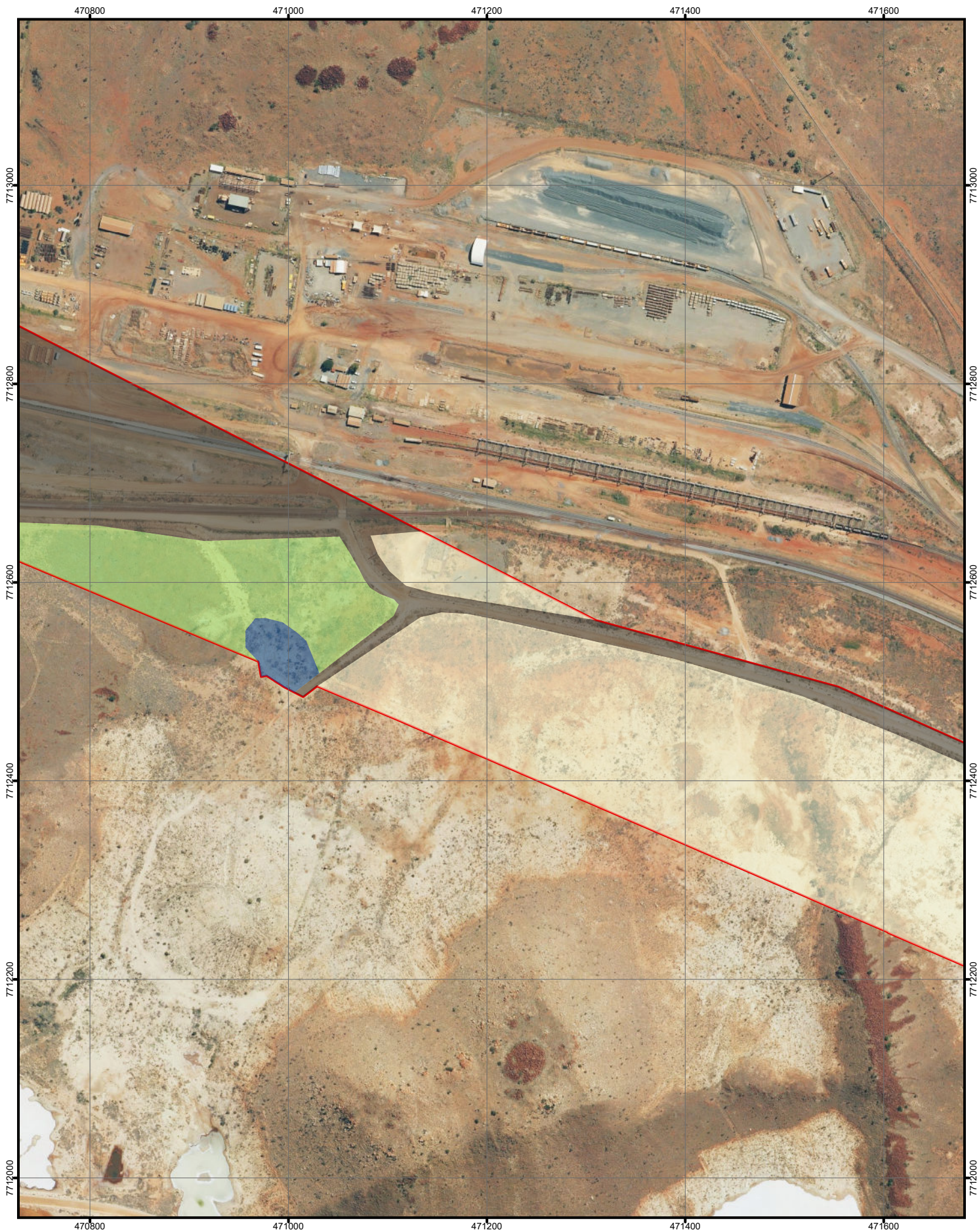
**Fauna Habitats**

**RIO TINTO**

**DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT**

**Figure 12.7**





PROJECT ID 60657149  
 CREATED BY KALDU  
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 LAST MODIFIED 25 AUG 2021

**AECOM**  
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Datum: GDA 1994 MGA Zone 50

1:5,000  
 (when printed at A4)

0 25 50 75 100 metres

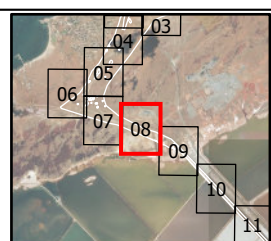
Data sources:  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010), Geoscience Australia, Streetpro

**LEGEND**

Survey Area

Fauna Habitat

- █ Cleared
- █ Minor Creeks
- █ Saline Flats
- █ *Triodia* on Rocky Slopes



**Fauna Habitats**

**RIO TINTO**

**DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT**

**Figure 12.8**



PROJECT ID 60657149  
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**AECOM**  
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Datum: GDA 1994 MGA Zone 50

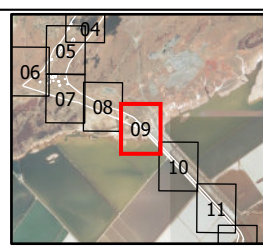
1:5,000  
 (when printed at A4)

0 25 50 75 100 metres

Data sources:  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010), Geoscience Australia, Streetpro

**LEGEND**

- Survey Area
- Fauna Habitat**
- Cleared
- Saline Flats

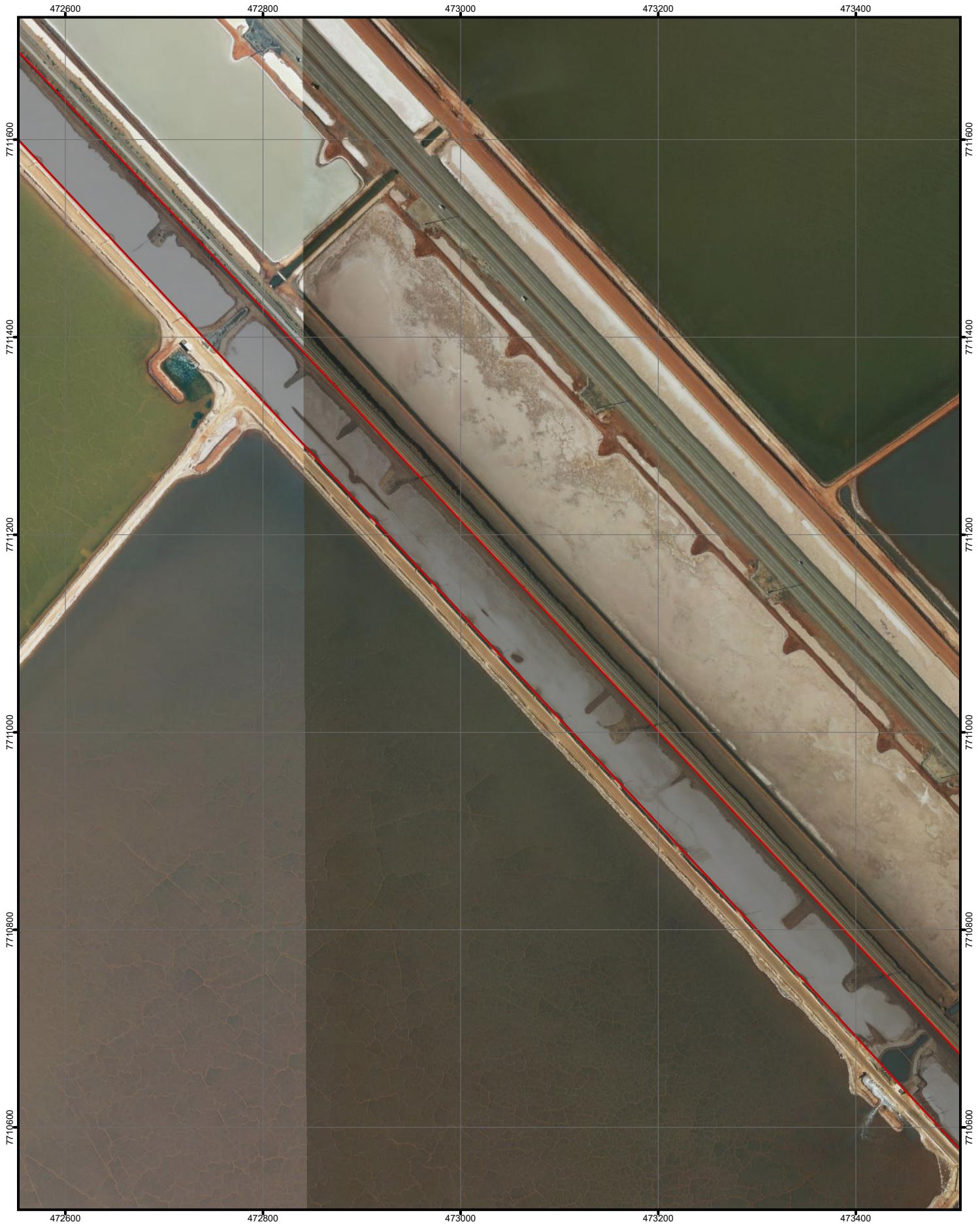


**Fauna Habitats**

**RIO TINTO**

**DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT**

**Figure 12.9**



PROJECT ID 60657149  
 CREATED BY KALDU  
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 LAST MODIFIED 25 AUG 2021

**AECOM**  
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Datum: GDA 1994 MGA Zone 50

1:5,000  
 (when printed at A4)

0 25 50 75 100 metres

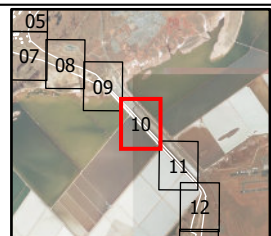
Data sources:  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010), Geoscience Australia, Streetpro

**LEGEND**

Survey Area

Fauna Habitat

Cleared

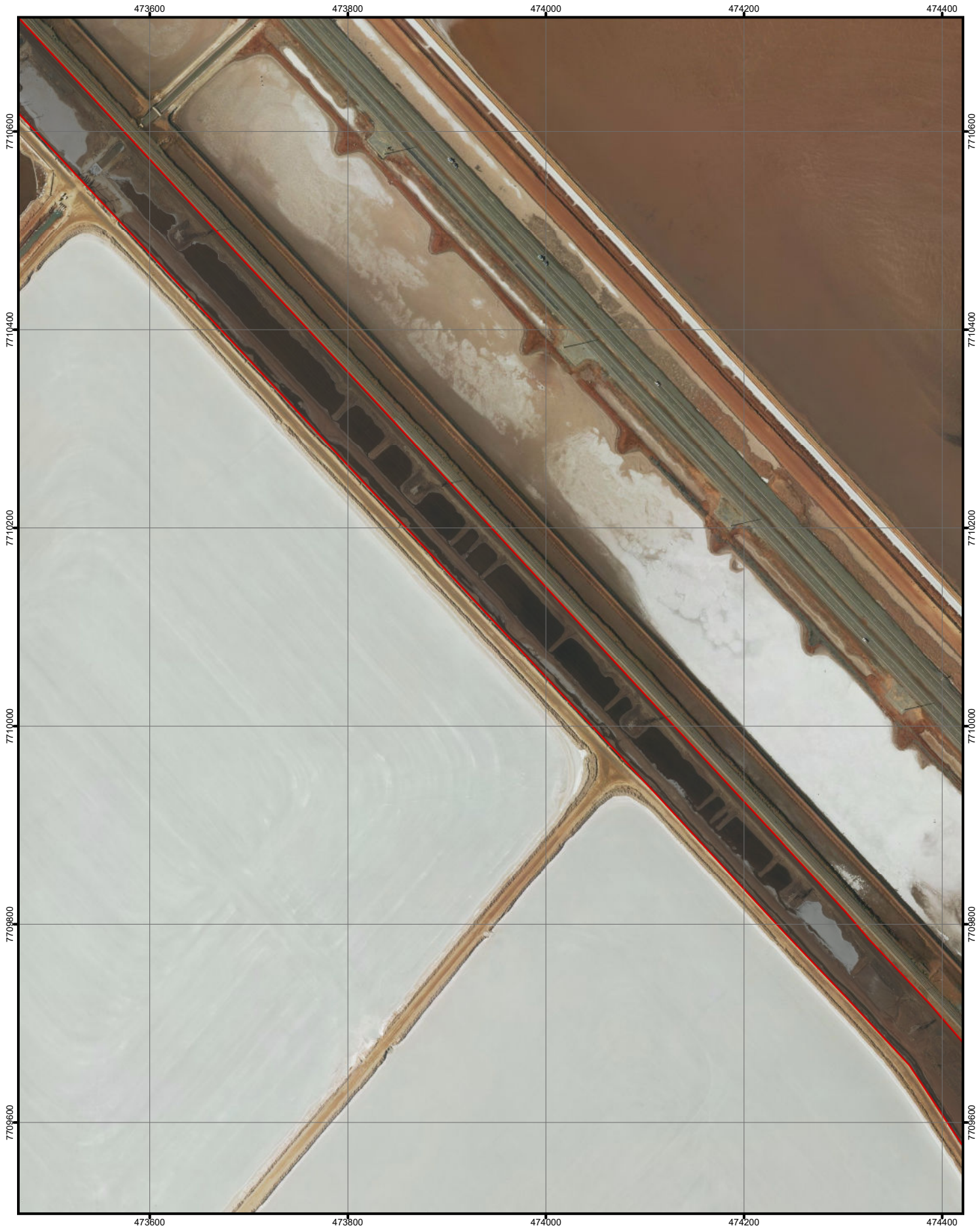


**Fauna Habitats**

**RIO TINTO**

**DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT**

**Figure 12.10**



PROJECT ID 60657149  
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 LAST MODIFIED 25 AUG 2021

**AECOM**  
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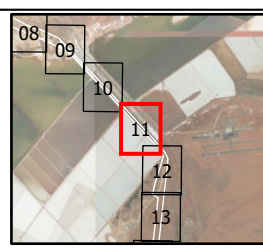
Datum: GDA 1994 MGA Zone 50

1:5,000  
 (when printed at A4)

Data sources:  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010), Geoscience Australia, Streetpro

**LEGEND**

- Survey Area
- Fauna Habitat
- Cleared

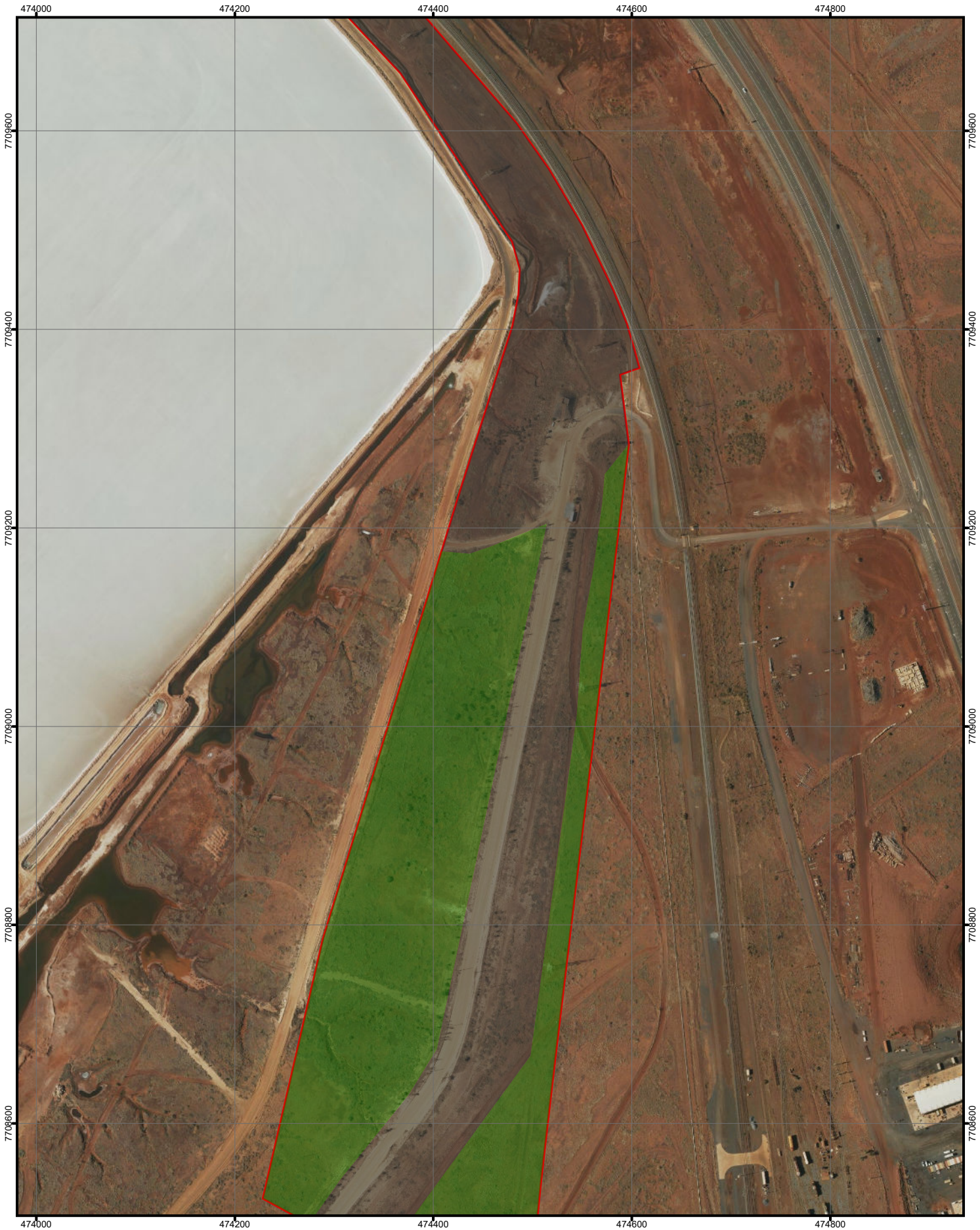


**Fauna Habitats**

**RIO TINTO**

*DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT*

**Figure 12.11**



PROJECT ID 60657149  
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**AECOM**  
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Datum: GDA 1994 MGA Zone 50

1:5,000  
 (when printed at A4)

0 25 50 75 100 metres

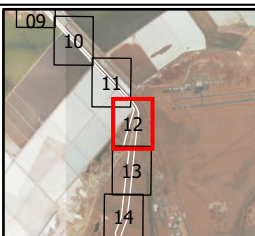
Data sources:  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010), Geoscience Australia, Streetpro

**LEGEND**

Survey Area

Fauna Habitat

- Cleared
- Tussock
- Grassland Plain

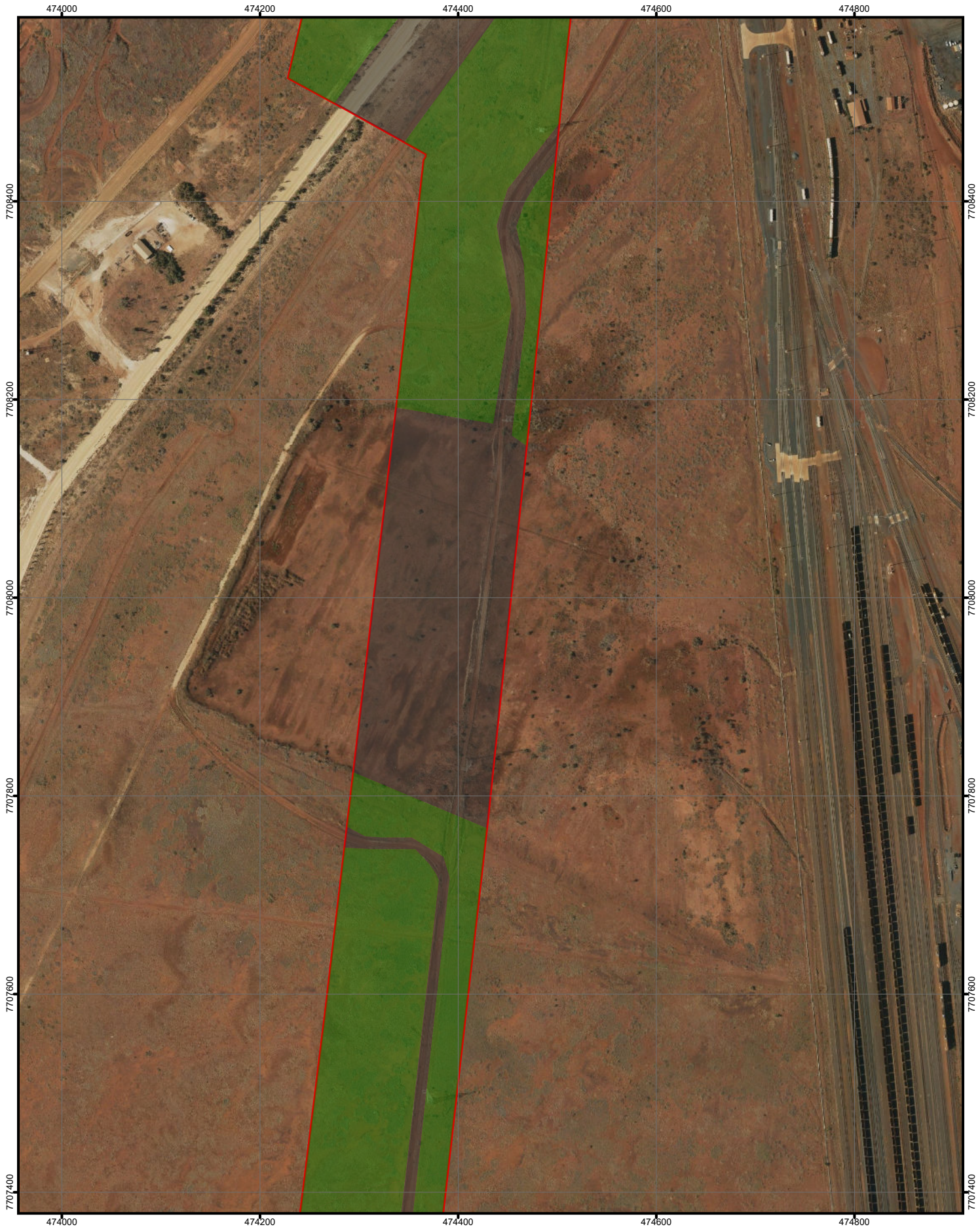


**Fauna Habitats**

**RIO TINTO**

**DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT**

**Figure 12.12**



PROJECT ID 60657149  
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 LAST MODIFIED 25 AUG 2021

**AECOM**  
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Datum: GDA 1994 MGA Zone 50

1:5,000  
 (when printed at A4)

0 25 50 75 100 metres

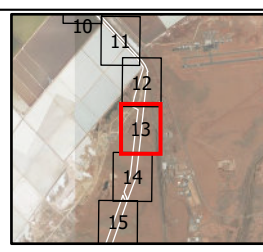
Data sources:  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010), Geoscience Australia, Streetpro

**LEGEND**

Survey Area

Fauna Habitat

- Cleared
- Tussock
- Grassland Plain

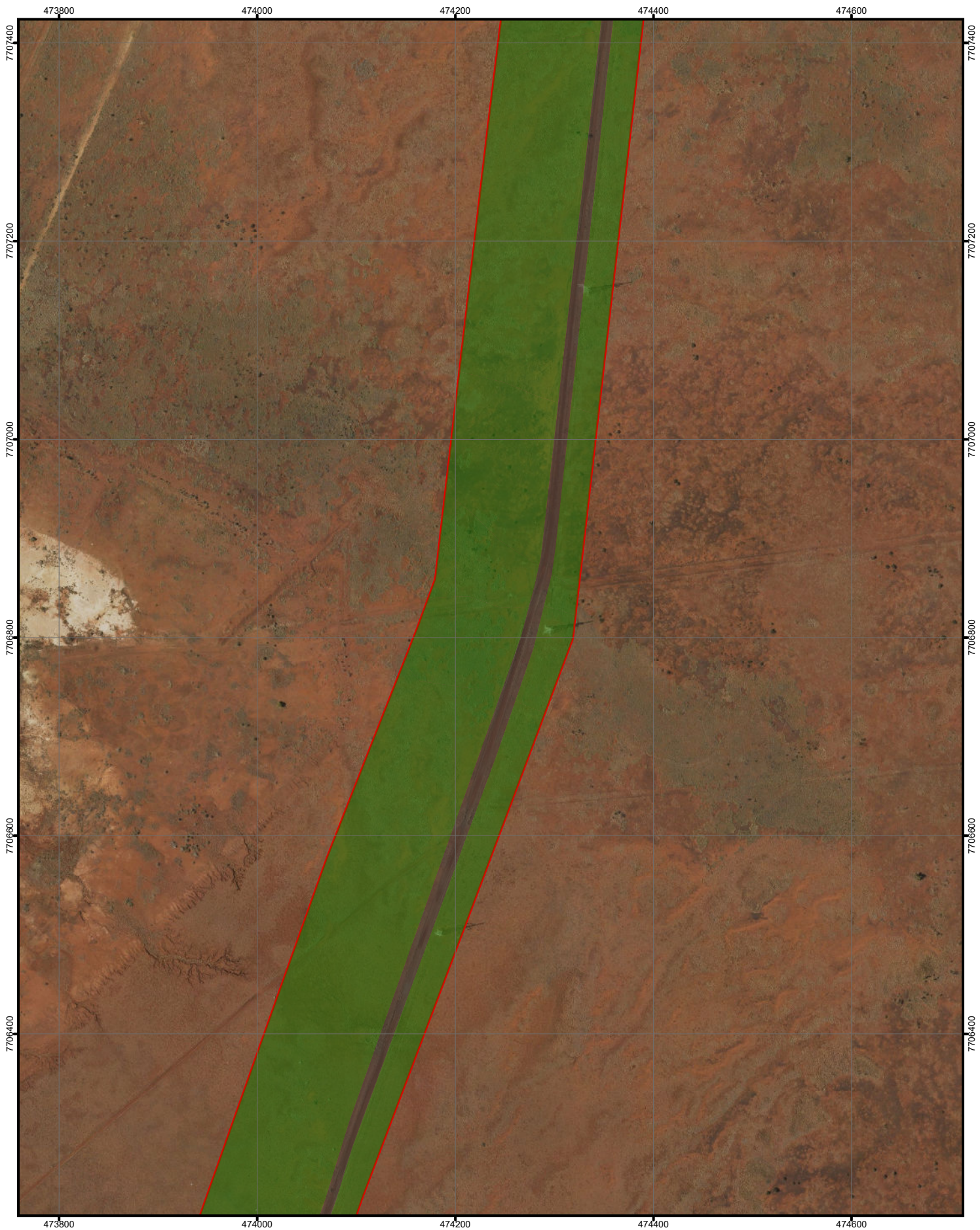


**Fauna Habitats**

**RIO TINTO**

*DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT*

**Figure 12.13**



PROJECT ID 60657149  
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**AECOM**  
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Datum: GDA 1994 MGA Zone 50

1:5,000  
 (when printed at A4)

0 25 50 75 100 metres

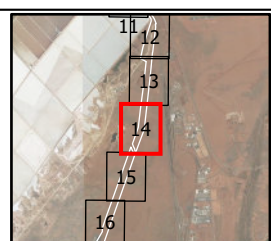
Data sources:  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010), Geoscience Australia, Streetpro

**LEGEND**

Survey Area

Fauna Habitat

- █ Cleared
- █ Tussock
- █ Grassland Plain

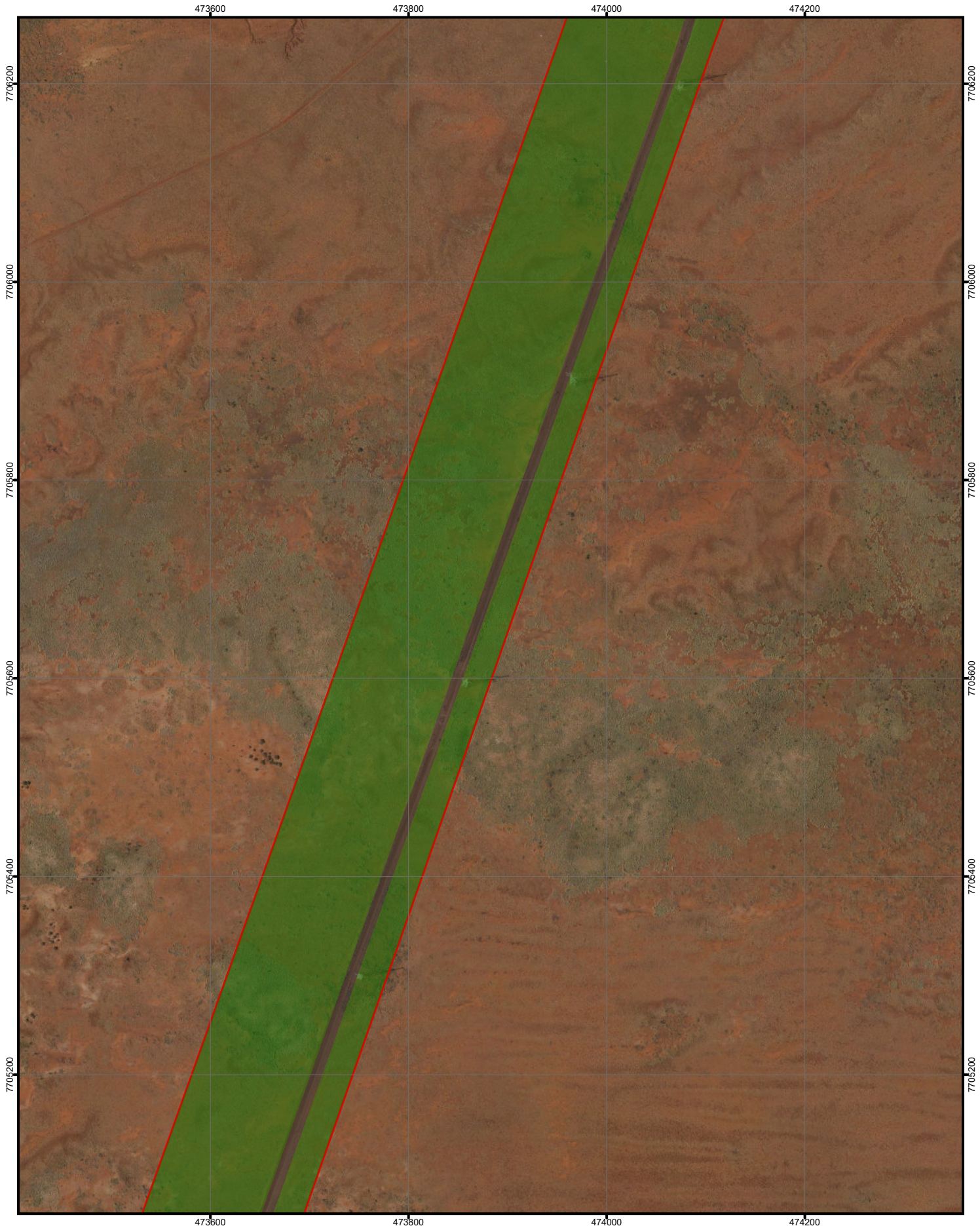


**Fauna Habitats**

**RIO TINTO**

*DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT*

**Figure 12.14**



PROJECT ID 60657149  
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**AECOM**  
 www.aecom.com

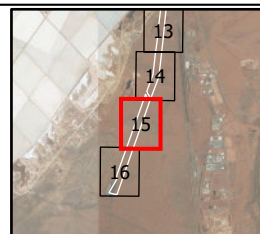
Datum: GDA 1994 MGA Zone 50

1:5,000  
 (when printed at A4)

0 25 50 75 100 metres

Data sources:  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010), Geoscience Australia, Streetpro

- LEGEND**
- Survey Area
  - Fauna Habitat**
  - Cleared
  - Tussock
  - Grassland Plain



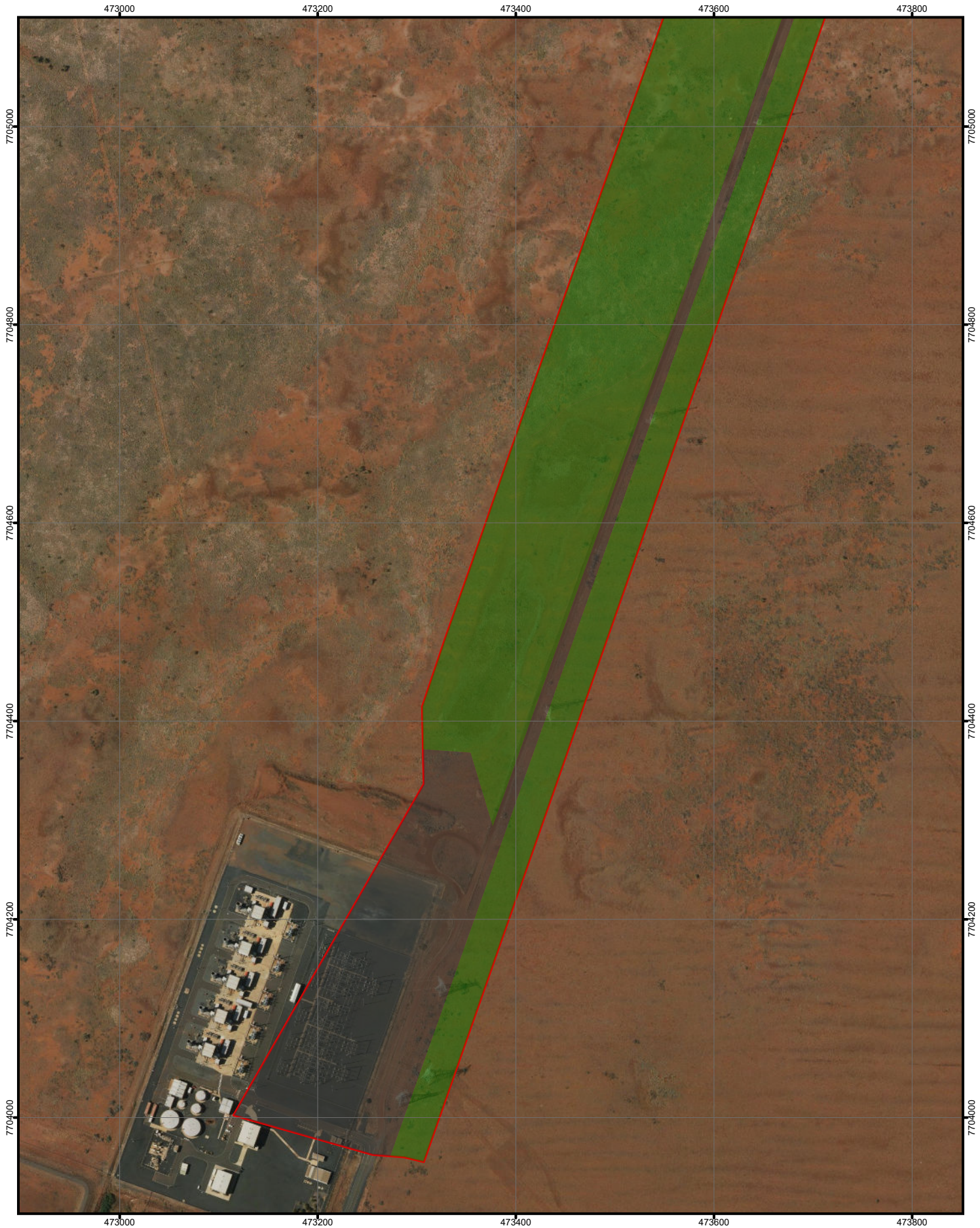
**Fauna Habitats**

**RIO TINTO**

DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT

**Figure 12.15**





PROJECT ID 60657149  
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**AECOM**  
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Datum: GDA 1994 MGA Zone 50

1:5,000  
 (when printed at A4)

0 25 50 75 100 metres

Data sources:  
 Base Data: (c) Based on information provided by and with the permission of the Western Australian Land Information Authority trading as Landgate (2010), Geoscience Australia, Streetpro

**LEGEND**

- Survey Area
- Fauna Habitat**
- Cleared
- Tussock
- Grassland Plain



**Fauna Habitats**

**RIO TINTO**

*DAMPIER RESILIENCE POWER PROJECT – FLORA AND FAUNA ASSESSMENT*

**Figure 12.16**

# Appendix A

## Federal and State Legislation

## Appendix A Federal and State Legislation

### 1.0 Legislative Framework

#### 1.1 Overview

Table 1 summarises the key legislation governing the protection and management of Western Australia's conservation significant species and communities, which are further discussed below.

**Table 1 Relevant legislation, regulations and guidance**

Legislation	Purpose
<b>Commonwealth of Australia</b>	
<i>Environment Protection and Biodiversity Conservation Act 1999</i> (EPBC Act)	Provides for the protection of the environment and the conservation of biodiversity.
<b>Western Australia</b>	
<i>Biodiversity Conservation Act 2016</i> (BC Act)	Provides for the conservation and protection of Western Australia's biodiversity and biodiversity components.
<i>Environmental Protection Act 1986</i> (EP Act)	Preventing, controlling and abating environmental harm and conserving, preserving, protecting, enhancing and managing the environment.
<i>Biosecurity and Agriculture Management Act 2007</i> (BAM Act)	Provides for the management, control and prevention of certain plants and animals, and for the protection of agriculture and related resources generally.
<i>EPA Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment, 2016</i>	Provides guidance to ensure adequate flora and vegetation data of an appropriate standard are obtained and used in EIA.

#### 1.2 Commonwealth

The EPBC Act is the main piece of Federal legislation protecting biodiversity in Australia. Flora species at risk of extinction are recognised at a Commonwealth level and are categorised in one of six categories as outlined in Table 2.

**Table 2 Categories of species listed under Schedule 179 of the EPBC Act**

Code	Conservation Category
Ex	Extinct Taxa
ExW	Extinct in the Wild
CE	Critically Endangered
E	Endangered
V	Vulnerable
CD	Conservation Dependent

Communities can be classified as Threatened Ecological Communities (TECs) under the EPBC Act. The EPBC Act protects Australia’s ecological communities by providing for:

- identification and listing of ecological communities as threatened
- development of conservation advice and recovery plans for listed ecological communities
- recognition of key threatening processes
- reduction of the impact of these processes through threat abatement plans.

Categories of federally listed TECs are described in Table 3.

**Table 3 Categories of TECs that are listed under the EPBC Act**

Code	Conservation Category
CE	Critically Endangered If, at that time, it is facing an extremely high risk of extinction in the wild in the immediate future.
E	Endangered If, at that time, it is not critically endangered and is facing a very high risk of extinction in the wild in the near future.
V	Vulnerable If, at that time, it is not critically endangered or endangered, and is facing a high risk of extinction in the wild in the medium-term future.

### 1.3 Western Australia

The *Biodiversity Conservation Act 2016* (BC ACT) Provides for the conservation and protection of Western Australia’s biodiversity and biodiversity components.

Threatened flora are plants which have been assessed as being at risk of extinction (DPaW, 2019). Plants that are considered Threatened and need to be specially protected because they are under identifiable threat of extinction are listed under Part 2 of the BC Act. These categories are defined in Table 4.

**Table 4 Conservation codes for flora and fauna listed under the *Biodiversity Conservation Act 2016* (Jan 2019)**

Code	Conservation Category
CR	Critically Endangered Species Threatened species considered to be facing an extremely high risk of extinction in the wild in the immediate future.
EN	Endangered Species Threatened species considered to be facing a very high risk of extinction in the wild in the near future.
VU	Vulnerable Species Threatened species considered to be facing a high risk of extinction in the wild in the medium-term future.
EX	Extinct Species Species where there is no reasonable doubt that the last member of species has died.

Species that have not yet been adequately surveyed to warrant being listed under the BC Act, or are otherwise data deficient, are added to a Priority Lists under Priorities 1, 2 or 3 by the State Minister for Environment. 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. Categories and definitions of Priority flora species are summarised in Table 5.

**Table 5 Conservation codes for WA flora and fauna listed by DBCA and endorsed by the Minister for Environment**

Code	Conservation Category
<b>P1</b>	Priority One – Poorly Known Species 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.
<b>P2</b>	Priority Two – Poorly Known Species 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.
<b>P3</b>	Priority Three – Poorly Known Species Species that are known from several locations, and the species does not appear to be under imminent threat.
<b>P4</b>	Priority Four – Rare, Near Threatened and other species in need of monitoring Includes rare species and near threatened species.

Threatened Ecological Communities (TECs) are naturally occurring biological assemblages that occur in a particular type of habitat and that may be subject to processes that threaten to destroy or significantly modify the assemblage across its range. TECs are listed by both state and commonwealth legislation.

Vegetation communities in Western Australia are described as TECs if they have been endorsed by the Western Australian Minister for Environment following recommendations made by the Threatened Species Scientific Committee. A TEC is one which is found to fit into one of four categories, summarised in Table 6 (DEC, 2013).

**Table 6 Conservation codes for Threatened Ecological Communities**

Conservation Code	Category
<b>PD</b>	Presumed Totally Destroyed Adequately searched for but no representative occurrence have been located.
<b>CR</b>	Critically Endangered Adequately surveyed, subject to major contraction, in danger of significant modification in the immediate future.
<b>EN</b>	Endangered Adequately surveyed, subject to major contraction, in danger of significant modification in the near future.
<b>VU</b>	Vulnerable Adequately surveyed, declining in distribution and/or condition, security not yet assured and may move into a category of higher threat in near future.

Possible TECs that do not meet survey criteria or are not adequately defined are listed as Priority Ecological Communities (PECs) and listed in one of five categories, summarised in Table 7.

**Table 7 Conservation categories for Priority Ecological Communities**

<b>Code</b>	<b>Conservation Category</b>
<b>P1</b>	Priority One: poorly-known ecological communities
<b>P2</b>	Priority Two: poorly-known ecological communities
<b>P3</b>	Priority Three: poorly known ecological communities
<b>P4</b>	Priority Four: ecological communities that are adequately known, rare but not threatened or meet criteria for Near Threatened, or that have been recently removed from the threatened list.
<b>P5</b>	Priority Five: conservation dependent ecological communities

# Appendix B

## Conservation Significant Flora Desktop Results

## Appendix B Conservation Significant Flora Desktop Results

Species	Cons.Stat. (WA)	Habitat <sup>1</sup>	Count Date	Likelihood	Justification
<i>Abutilon</i> sp. Pritzelianum (S. van Leeuwen 5095)	P3	Coastal to near coastal sand dunes, margins of estuaries, coastal plains in open scrubby vegetation (DPaW & Rio Tinto, 2015).	1982	Unlikely	No suitable habitat.
<i>Atriplex lindleyi</i> subsp. <i>conduplicata</i>	P3	Edge of crabhole plain. Sprase tussock grassland of <i>Eragrostis xerophila</i> .	1996	Unlikely	No suitable habitat.
<i>Corchorus congener</i>	P3	Sand, red sandy loam with limestone. Sand dunes, plains.	-	Unlikely	No suitable habitat, no records nearby.
<i>Cucumis</i> sp. Barrow Island (D.W. Goodall 1264)	P2	Lower footslope of a basalt hill. Area burnt. Limestone plateau. Swale in a sandplain. Wide, 3m deep wash in a limestone landscape. Gentle calcrete slope. Red, sandy loam.	2011	Likely	Record nearby (Biota 2018), habitat potentially present.
<i>Dolichocarpa</i> sp. Hamersley Station (A.A. Mitchell PRP 1479) Previously known as <i>Oldenlandia</i> sp. Hamersley Station (A.A. Mitchell PRP 1479)	P3	Cracking clay, basalt. Gently undulating plain with large surface rocks, flat crabholed plain.	2005	Likely	Record nearby (DBCA 2020a), suitable habitat present.
<i>Eragrostis surreyana</i>	P3	Seasonally wet areas. Shallow soils over rock and deep fine alluvial sands of creeks.	2020	Known	Species recorded in survey area (AECOM 2021).
<i>Euphorbia australis</i> var. <i>glabra</i>	P2	Floodplains or edge of dry creek.	-	Unlikely	No suitable habitat, no records nearby.
<i>Glycine falcata</i>	P3	Stony loam or cracking clays, typically in grassland in low lying areas.	2011	May	Marginal habitat, one known record in vicinity.
<i>Gomphrena cucullata</i>	P3	Plains, red soils (loam/sand) in grassland. Open floodplains.	2012	May	Marginal habitat, two records in vicinity.
<i>Gomphrena leptophylla</i>	P3	Sandy open flats in <i>Acacia</i> low open woodland with <i>Eremophila</i> spp. and grasses, sandy creek beds and floodplains with <i>E. camaldulensis</i> , sandy or clayey loam with <i>Melaleuca</i> spp. and <i>Triodia</i> spp., on edges of salt pans and marshes or in low scrub and spinifex (DPaW & Rio Tinto, 2015).	2004	Unlikely	No suitable habitat.
<i>Goodenia pallida</i>	P1	Red soils. Annual grassland.	2001	May	Marginal habitat, one known record in vicinity.
<i>Gymnanthera cunninghamii</i>	P3	Known from areas surrounding permanent or semi-permanent water-courses in sandy soils.	1987	Unlikely	No suitable habitat.
<i>Nicotiana umbratica</i>	P3	Shallow soils, rocky outcrops.	-	Unlikely	Known from East Pilbara. No known occurrences on Burrup Peninsula or surrounding region.



60659382 Dampier Power Resilience Project - Flora and Fauna Assessment  
Rio Tinto Group

Species	Cons.Stat. (WA)	Habitat <sup>1</sup>	Count Date	Likelihood	Justification
<i>Rhynchosia bungarensis</i>	P4	Associated with rocky slopes, rockpiles, rock pools and gullies.	2010	Likely	Numerous records nearby associated with linear rock formation. Suitable habitat in survey area.
<i>Rostellularia adscendens</i> var. <i>latifolia</i>	P3	Ironstone soils. Near creeks, rocky hills.	2007	May	One record (Rio Tinto 2007), suitable habitat may be present.
<i>Schoenus punctatus</i>	P3	Mud. Watercourses.	1999	Unlikely	No suitable habitat.
<i>Solanum albotellatum</i>	P3	Cracking clay soils on open floodplains in open scrubland over grasses.	2011	May	Marginal habitat, one record in vicinity.
<i>Stackhousia clementii</i>	P3	Saline soil over limestone or sandy loam clay flats.	2013	Likely	Record nearby (DBCA 2020a) from 2013. Habitat present.
<i>Stackhousia umbellata</i>	P3	Sandy soils on limestone.		Unlikely	One record (Naturemap 2021). Restricted to North West Cape.
<i>Tephrosia rosea</i> var. Port Hedland (A.S. George 1114)	P1	Coastal ridge, pale orange dune sands.	2012	Unlikely	No suitable habitat.
<i>Terminalia supranitifolia</i>	P3	Rocky outcrops, slopes, piles. Among basalt rocks and on sand.	2003	Likely	Numerous records nearby associated with linear rock formation. Suitable habitat may be present in survey area.
<i>Themeda</i> sp. Hamersley Station (M.E. Trudgen 11431)	P3	Drainage lines, clay flats, crabhole flats and self mulching clays.	2007	Likely	Numerous records nearby (AECOM 2021; DBCA 2020a), suitable habitat present.
<i>Trianthema</i> sp. Python Pool (G.R. Guerin & M.E. Trudgen GG 1023)	P2	Floodplain, undulating hills, low-lying sandy areas and gibber plains.	2004	Unlikely	No suitable habitat.
<i>Vigna triodiophila</i>	P3	Scree and rockpiles.	2009	May	Records nearby, not recorded during previous surveys (AECOM 2021; Biota 2018; Rio Tinto 2011).

# Appendix C

## Conservation Significant Fauna Desktop Results

**Appendix C Conservation Significant Fauna Desktop Results**

Likelihood Category	Fauna
Likely to occur	Survey area is within the known distribution of the species, habitat is present in the survey area and the species has been recorded in close proximity to the survey area.
May occur	Survey area is within the known distribution of the species, marginal habitat may be present and/or the species has been recorded in close proximity to the survey area.
Unlikely to occur	Survey area is outside the known distribution for the species, or no suitable habitat is present and the species has not been recorded in close proximity to the survey area.

Scientific Name	Common Name	Cons. Status		Last Record	Count	Distance from Survey	Ecology <sup>1</sup>	Likelihood	Justification
		EPBC Act	DBCA / BC Act						
<b>Birds</b>									
<i>Actitis hypoleucos</i>	Common Sandpiper	Mi, Ma	MI	2017	24	1 km	The Common Sandpiper is widespread in small numbers utilising a wide range of coastal wetlands and some inland wetlands where it forages in muddy margins or rocky shores and rarely on mudflats. The Common Sandpiper has been recorded in estuaries and deltas of streams, as well as on banks farther upstream; around lakes, pools, billabongs, reservoirs, dams and claypans, and occasionally piers and jetties. Areas of national importance within Western Australia include Nuytsland Nature Reserve and Roebuck Bay (Watkins 1993).	Known	Species recorded during previous surveys associated with the Artificial Wetlands (AECOM 2021).
<i>Anous stolidus</i>	Common Noddy (Brown Noddy)	Mi, Ma	MI	1988	2	9 km	The Common Noddy occupies blue-water seas, usually far from the mainland and is distributed in Western Australia from northern seas south to Lancelin Island (Johnstone & Storr 1998).	Unlikely	The survey area lacks the preferred habitat for this species.

Scientific Name	Common Name	Cons. Status		Last Record	Count	Distance from Survey	Ecology <sup>1</sup>	Likelihood	Justification
		EPBC Act	DBCA / BC Act						
<i>Apus pacificus</i>	Pacific Swift (Fork-tailed Swift)	Mi, Ma	MI	-		-	The Fork-tailed Swift is widespread in coastal and subcoastal areas between Augusta and Carnarvon and sparsely scattered inland and along the coast from Augusta to Carnarvon and south-west Pilbara to the north and east Kimberley region. It is almost exclusively aerial, and a non-breeding visitor to Australia. They mostly occur over inland plains over dry or open habitats, including riparian woodland and tea-tree swamps, low scrub, heathland or saltmarsh but sometimes above foothills or in coastal areas.	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Ardenna pacifica</i>	Wedge-tailed Shearwater	Mi, Ma	MI	1981	4	7 km	The Wedge-tailed Shearwater is a pelagic, marine bird known from tropical and subtropical waters. In Australia, the species breeds on offshore islands and both the east and west coast.	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Arenaria interpres</i>	Ruddy Turnstone	Mi, Ma	MI	2017	28	1 km	The Ruddy Turnstone are mainly found on exposed rocks or reefs, often with shallow pools, and on beaches. In the north, they are found in a wider range of habitats, including mudflats.	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	Mi, Ma	MI	2017	15	5 km	The Sharp-tailed Sandpiper are widespread in Western Australia from the Pilbara region to the south-west. They prefer muddy edges of shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation.	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Calidris alba</i>	Sanderling	Mi, Ma	MI	2017	7	5 km	The Sanderling is almost always found on the coast where they forage in the wave-wash zone and in rotting seaweed. This species occurs from the coast near Eyre to Derby, however is more common on the southern and south-west coasts.	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Calidris canutus</i>	Red Knot	EN, Mi, Ma	EN	2016	3	5 km	The Red Knot mainly inhabits intertidal mudflats, sand flats, in estuaries, bays and lagoons. They are occasionally seen on inland salt lakes and wetlands but hardly ever use freshwater swamps.	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Calidris ferruginea</i>	Curlew Sandpiper	CE, Ma, Mi	CE	2017	21	5 km	Curlew Sandpipers mainly occur on intertidal mudflats in sheltered coastal areas and less often recorded inland around ephemeral and permanent lakes, dams, waterholes and bore drains, usually with bare edges of mud or sand.	Unlikely	The survey area lacks the preferred habitat for this species.

Scientific Name	Common Name	Cons. Status		Last Record	Count	Distance from Survey	Ecology <sup>1</sup>	Likelihood	Justification
		EPBC Act	DBCAs / BC Act						
<i>Calidris melanotos</i>	Pectoral sandpiper	Mi, Ma	MI	-		-	The Pectoral Sandpiper occupies shallow, fresh waters often containing low grass or other small herbs. It is also observed in swamp margins, flooded pastures and saltmarshes. This species breeds in the northern hemisphere and is a regular though uncommon summer visitor to Australia (Pizzey & Knight, 2007). Rarely recorded in Western Australia .	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Calidris ruficollis</i>	Red-necked Stint	Mi, Ma	MI	2017	19	3 km	The Red-necked Stint is found in coastal areas including sheltered inlets, bays, lagoons and estuaries with intertidal mudflats.	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Calidris subminuta</i>	Long-toed Stint	Mi, Ma	MI	2016	5	7 km	The Long-toed Stint occurs in terrestrial wetlands. They prefer shallow freshwater or brackish wetlands. It has also been found on muddy shorelines, growths of short grass, weeds, sedges, low or floating aquatic vegetation, reeds, rushes and occasionally stunted samphire.	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Calidris tenuirostris</i>	Great Knot	CE, Ma, Mi	CE	2017	8	7 km	Restricted to coastal habitats around Australia utilising sheltered coastal habitats with large intertidal mudflats or sandflats (inlets, bays, harbours, estuaries, lagoons) .	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Calonectris leucomelas</i>	Streaked Shearwater	Mi, Ma	MI	-		-	Common and widespread around much of the northern coast of Australia the Streaked Shearwater rarely ventures inland (Knight & Pizzey 2007)	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Charadrius leschenaultii</i>	Large Sand Plover	V, Mi, Ma	VU	2017	22	1 km	It inhabits littoral and estuarine habitats, sheltered sandy shelly or muddy beaches with large intertidal mudflats or sandbanks, and sandy estuarine lagoons, inshore reefs, rock platforms, small rocky islands or sand cays on coral reefs . Important areas of habitat in WA include Eighty Mile Beach, Roebuck Bay and Ashmore Reef (DAWE, 2021b).	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Charadrius mongolus</i>	Lesser Sand Plover	E, Mi, Ma	EN	2017	8	7 km	It occurs in littoral and estuarine environments, large intertidal sandflats or mudflats, sandy ocean beaches, coral reefs, wave-cut rock platforms and rocky outcrops . Important WA sites include Eighty Mile Beach, Roebuck Bay, Broome and Port Hedland Saltworks .	Unlikely	The survey area lacks the preferred habitat for this species.

Scientific Name	Common Name	Cons. Status		Last Record	Count	Distance from Survey	Ecology <sup>1</sup>	Likelihood	Justification
		EPBC Act	DBCAs / BC Act						
<i>Charadrius veredus</i>	Oriental Plover, Oriental Dotterel	Mi, Ma	MI	2016	4	7 km	The Oriental Plover are common in coastal and northern inland Australia, this species can venture far from water and has been observed frequenting ploughed land, bare claypans, coastal margins and open plains (Pizzey & Knight, 2007).	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Childonias leucopterus</i>	White-winged Black Tern	Mi, Ma	MI	PMST Record			The White-winged Black Tern does not breed in Australia. They are recorded in fresh, brackish or saline, coastal or subcoastal wetlands.	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Cuculus optatus</i>	Oriental Cuckoo, Horsfield's Cuckoo	Mi	MI	1977	1	9 km	The Oriental cuckoo occurs along the north coast from Karratha to the Northern Territory border. The Oriental Cuckoos are found mostly in forest and woodland.	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Falco hypoleucos</i>	Grey Falcon	V	VU	PMST Record			The Grey Falcon occurs in arid and semi-arid Australia in areas where rainfall is less than 500 mm.	Unlikely	The survey area lacks the preferred habitat for this species. There are no records within 20 km of the survey area.
<i>Falco peregrinus</i>	Peregrine Falcon		OS	2012	7	8 km	A well-known falcon, the Peregrine inhabits a vast array of environs in Australia. Usually uncommon and migratory (Pizzey & Knight, 2007). This species lays its eggs in recesses of cliff faces, tree hollows or large abandoned nests (Bamford, 2009)	May	There are several records within 20 km of the survey area. Habitat may be present and considered suitable.
<i>Fregata ariel</i>	Lesser Frigatebird, Least Frigatebird	Mi, Ma	MI	1981	4	9 km	The Lesser Frigatebird is a breeding visitor to the tropical/subtropical waters of Western Australia with breeding colonies on Christmas Island. Only seen on the mainland's north coast prior to cyclonic events (Lindsey, 1986; DAWE, 2021b).	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Gelochelidon nilotica</i>	Gull-billed Tern	Mi	MI	2017	4	8 km	The Gull-billed Terns are found in freshwater swamps, brackish and salt lakes, beaches and estuarine mudflats, floodwaters, sewage farms, irrigated croplands and grasslands. They are only rarely found over the ocean.	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Glareola maldivarum</i>	Oriental Pratincole	Mi, Ma	MI	2013	3	9.5 km	The Oriental Pratincole inhabits open plains, floodplains or short grassland (including farmland), often occurring near terrestrial wetlands, and also occurring along the coast. The species does not breed in Australia.	Unlikely	The survey area lacks the preferred habitat for this species.

Scientific Name	Common Name	Cons. Status		Last Record	Count	Distance from Survey	Ecology <sup>1</sup>	Likelihood	Justification
		EPBC Act	DBCA / BC Act						
<i>Hirundo rustica</i>	Barn Swallow	Mi, Ma	MI	2016	4	8 km	The Barn Swallow is widespread in northern Australia during the summer months (Pizzey & Knight, 2007). Habitat includes open country, agricultural land, especially near water, railyards and towns (Pizzey & Knight, 2007).	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Hydroprogne caspia</i>	Caspian Tern	Mi, Ma	MI	2017	30	0 km	The largest tern in Australia, the Caspian Tern is widespread in coastal regions, breeding on variable types of sites including low islands, cays, spits, banks, ridges, beaches of sand or shell, terrestrial wetlands and stony or rocky islets or banks.	Known	Species recorded during previous surveys associated with the Artificial Wetlands (AECOM 2021).
<i>Limicola falcinellus</i>	Broad-Billed Sandpiper	Mi, Ma	MI	2017	5	7 km	The Broad-billed Sandpiper occurs in sheltered parts of the coast, particularly estuarine mudflats, occasionally saltmarshes, shallow freshwater lagoons, saltworks and sewage farms and areas with large soft intertidal mudflats. They've also been observed on reefs or rocky platforms.	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Limosa lapponica</i>	Bar-tailed Godwit	Mi, Ma	MI	2017	26	1 km	The Bar-tailed Godwit is found in coastal habitats, particularly large intertidal sandflats, banks, mudflats, estuaries, inlets, harbours, coastal lagoons and bays.	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Limosa limosa</i>	Black-tailed Godwit	Mi, Ma		PMST Record			The Black-tailed Godwit has a coastal habitat, found in sheltered bays, estuaries, and lagoons with large intertidal mudflats or sandflats, spits, banks of mud, sand or shell-grit, sometimes rocky coasts or coral islets.	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Macronectes giganteus</i>	Southern Giant-Petrel	E	P4	PMST Record			The Southern Giant-petrel breed on offshore islands. Critical foraging habitat are water south of 25 degrees where most species spend their time.	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Numenius madagascariensis</i>	Eastern Curlew	CE, Ma, Mi	CR	2017	15	5 km	Eastern Curlew is a non-breeding visitor to Australia where it is known from estuaries, mangrove swamps, saltmarshes and intertidal flats (BirdLife, 2020).	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Numenius minutus</i>	Little curlew, Little whimbrel	Mi, Ma	MI	2015	9	1 km	The Little Curlew congregates around pools, river beds and water-filled tidal channels, and shallow water at edges of billabongs. The species prefers pools with bare dry mud (including mudbanks in shallow water) and they do not use pools if they are totally dry, flooded or heavily vegetated (Higgins & Davies 1996). Birds utilise a variety of habitats while resting including grasslands, mudflats and swamps (Higgins & Davies, 1996).	Unlikely	The survey area lacks the preferred habitat for this species.

Scientific Name	Common Name	Cons. Status		Last Record	Count	Distance from Survey	Ecology <sup>1</sup>	Likelihood	Justification
		EPBC Act	DBCAs / BC Act						
<i>Numenius phaeopus</i>	Whimbrel	Mi, Ma	MI	2017	27	3 km	The Whimbrel occurs all along the Australian coast and inhabits estuaries, mangroves, tidal flats, flooded paddocks, and bare grasslands (Pizzey & Knight, 2007)	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Oceanites oceanicus</i>	Wilson's Storm-petrel	Mi, Ma	MI	2008	2	7 km	Wilson's Storm Petrel spends most of its time at sea, migrating sometimes along the coasts of southern continents, feeding at ocean fronts.	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Onychoprion anaethetus</i>	Bridled Tern	Mi, Ma	MI	1994	8	7 km	The Bridled Tern is a non-breeding visitor to Australia. They are found on islands and rocky continental islands and rock stacks, rarely found in inshore continental waters or along mainland coastlines.	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Pezoporus occidentalis</i>	Night Parrot	E	CR	PMST Record			Records are from remote arid and semi-arid inland regions of WA, NT, SA and QLD.	Unlikely	No known records within 20 km of the survey area. No suitable habitat present in survey area.
<i>Plegadis falcinellus</i>	Glossy Ibis	Mi, Ma	MI	2017	4	15 km	The Glossy Ibis occupies well vegetated wetlands, wet pastures, floodwaters, brackish wetlands and mudflats. This species is a non-breeding visitor to south-west Western Australia (Pizzey & Knight 2007).	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Pluvialis fulva</i>	Pacific Golden Plover	Mi, Ma	MI	2013	5	1 km	The Pacific Golden Plover usually forages on sandy or muddy shores (including mudflats and sandflats) or margins of sheltered areas such as estuaries and lagoons, though it also feeds on rocky shores, islands or reefs. In addition, Pacific Golden Plovers occasionally forage among vegetation, such as saltmarsh, mangroves or in pasture or crops.	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Pluvialis squatarola</i>	Grey Plover	Mi, Ma	MI	2017	10	4.5 km	The Grey Plover is a non-breeding visitor to Australia and are almost entirely coastal inhabiting sheltered embankments, estuaries and lagoons with mudflats and sandflats.	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Rostratula australis</i>	Australian Painted Snipe	E, Ma	EN	-	-	-	The Australian Painted Snipe inhabits shallow terrestrial freshwater (occasionally brackish) wetlands, including temporary and permanent lakes, swamps and claypans. They also use inundated or waterlogged grassland or saltmarsh, dams, rice crops, sewage farms and bore drains.	Unlikely	The survey area lacks the preferred habitat for this species.



Scientific Name	Common Name	Cons. Status		Last Record	Count	Distance from Survey	Ecology <sup>1</sup>	Likelihood	Justification
		EPBC Act	DBCA / BC Act						
<i>Sterna dougallii</i>	Roseate Tern	Mi, Ma	MI	1981	5	9 km	The Roseate Tern occurs in coastal and marine areas in subtropical and tropical seas. The species inhabits rocky and sandy beaches, coral reefs, sand cays and offshore islands. Birds rarely occur in inshore waters or near the mainland, usually venturing into these areas only accidentally, when nesting islands are nearby (Higgins & Davies, 1996).	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Sterna hirundo</i>	Common Tern	Mi, Ma	MI	2000	2	12 km	The Common Tern is a marine, pelagic and coastal species. It has been recorded on ocean beaches, platforms and headlands and in sheltered waters.	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Sternula albifrons</i>	Little Tern	Mi, Ma	MI	2017	7	5 km	Little Terns inhabit sheltered coastal environments, including lagoons, estuaries, river mouths and deltas, lakes, bays, harbours and inlets, especially those with exposed sandbanks or sand-spits, and also on exposed ocean beaches	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Sternula nereis nereis</i>	Fairy Tern	V	VU	1990	6	12 km	The Fairy Tern nests on sheltered sandy beaches, spits and banks above the high tide line and below vegetation. It has also been found in embankments.	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Sula leucogaster</i>	Brown Booby	Mi, Ma	MI	1983	3	6 km	The Brown Booby occurs in, but is not restricted to, tropical waters of all major oceans, often staying close to breeding islands. The species is known to approach mainland coastlines more than other boobies and has been recorded in coastal waters, harbours and estuaries and near offshore islands but seldom flying over land (Marchant & Higgins, 1993).	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Thalasseus bergii</i>	Great Crested Tern	Mi, Ma	MI	2017	24	1 km	This large tern is predominantly found offshore and coastal, on beaches, bays, inlets, tidal rivers, salt swamps, lakes and larger rivers (Pizzey & Knight, 2010). The Crested Tern is usually a strictly coastal species, though there are occasional records in the arid interior of Australia, where birds were possibly blown by passing tropical cyclones (Birdlife Australia, 2020).	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Tringa brevipes</i>	Grey-tailed Tattler	Mi, Ma	P4	2017	33	1 km	The Grey-tailed Tattler is found on sheltered coasts with reefs and rock platforms or with intertidal mudflats. Also found on intertidal rocky, coral or stony reefs, platforms and islets that are exposed at low tide.	Unlikely	The survey area lacks the preferred habitat for this species.

Scientific Name	Common Name	Cons. Status		Last Record	Count	Distance from Survey	Ecology <sup>1</sup>	Likelihood	Justification
		EPBC Act	DBCA / BC Act						
<i>Tringa glareola</i>	Wood Sandpiper	Mi, Ma	MI	2017	7	7 km	The Wood Sandpiper uses well-vegetated, shallow, freshwater wetlands, such as swamps, billabongs, lakes, pools and waterholes. They are typically associated with emergent, aquatic plants or grass, and dominated by taller fringing vegetation, such as dense stands of rushes or reeds, shrubs, or dead or live trees, especially <i>Melaleuca</i> spp. and <i>Eucalyptus camaldulensis</i> and often with fallen timber. (Higgins & Davies, 1996).	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Tringa nebularia</i>	Common Greenshank, Greenshank	Mi, Ma	MI	2017	36	1 km	The Common Greenshank is known from a variety of inland wetlands and sheltered coastal habitats. It prefers large mudflats and saltmarsh, mangroves or seagrass.	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Tringa stagnatilis</i>	Marsh Sandpiper, Little Greenshank	Mi, Ma	MI	2017	19	7 km	The Marsh Sandpiper lives in permanent or ephemeral wetlands of varying salinity, including swamps, lagoons, billabongs, salt pans, saltmarshes, estuaries, pools on inundated floodplains, and intertidal mudflats and also regularly at sewage farms and saltworks. They are recorded less often at reservoirs, waterholes, soaks, bore-drain swamps and flooded inland lakes	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Tringa totanus</i>	Common Redshank, Redshank	Mi, Ma	MI	-	-	-	The Common Redshank is found at sheltered coastal wetlands such as bays, river estuaries, lagoons, inlets and saltmarsh (with bare open flats and banks of mud or sand).	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Xenus cinereus</i>	Terek sandpiper	Mi, Ma	MI	2017	4	8 km	The Terek Sandpiper is a coastal species, foraging on soft wet intertidal mudflats or sheltered estuaries, embankments, harbours or lagoons. Has been seen on sandy or shingle beaches or rock/coral reefs and platforms. It roosts among mangroves.	Unlikely	The survey area lacks the preferred habitat for this species.

Scientific Name	Common Name	Cons. Status		Last Record	Count	Distance from Survey	Ecology <sup>1</sup>	Likelihood	Justification
		EPBC Act	DBCA / BC Act						
<b>Mammals</b>									
<i>Dasyurus hallucatus</i>	Northern quoll	E	EN	2018	38	100 m	This species occupies a wide range of habitats including, rocky areas, deserts, eucalypt forests and woodlands, hummock grass ( <i>Plectrachne</i> spp.), basalt hills, mesas, high and low plateaux, lower slopes, occasional tor fields and stony plains supporting either hard or soft spinifex grasslands (Braithwaite & Griffiths 1994; van Vreeswyk et al. 2004). Northern quolls on the Burrup Peninsula are likely to inhabit complex landforms of rocky outcrops, which can afford greater cover from predators than more open areas (Cardno 2019).	Likely	While only limited in extent, some areas of suitable habitat (i.e. rocky outcrops) occur in the survey area.
<i>Hydromys chrysogaster</i>	Water-rat, Rakali		P4	1996	1	6 km	The Water Rat is one of the few Australian mammals adapted to the aquatic environment. The species occurs in the vicinity of permanent bodies of fresh or brackish water. Dens are made at the end of tunnels in banks and occasionally in logs (Van Dyck & Strahan 2008).	Unlikely	No permanent bodies of water, one record more than 20 years ago.
<i>Leggadina lakedownensis</i>	Northern Short-tailed Mouse		P4	2006	2	12 km	Primary habitat includes cracking clays (DBCA, no date) and tussock and hummock grasslands, Acacia shrubland and savannah woodland (Van Dyck & Strahan 2008).	Likely	Suitable habitat present in the survey area in the southern half of the survey area which has previously been recognised as 'core habitat' (Biota 2018).
<i>Macroderma gigas</i>	Ghost Bat	V	VU	2006	3	11 km	The Ghost Bat occupy a range of habitats including arid Pilbara to tropical savanna woodlands and rainforests (TSSC 2016). They roost in caves, rock crevices and old mines during the daytime (TSSC 2016). Foraging occurs on average 1.9 km from active roosting areas (TSSC 2016). The species has been recorded from a recent survey in the King Bay-Hearson Cove area of the Burrup Peninsula (Cardno 2019).	Likely	Species likely to forage opportunistically in the survey area.
<i>Macrotis lagotis</i>	Greater Bilby	V	VU	PMST Record			The Greater Bilby occupies open tussock grasslands on uplands and hills, <i>Acacia aneura</i> woodlands/shrublands on ridges and rises, and hummock grasslands in plains and alluvial areas.	Unlikely	No suitable habitat for this species present and there are no records within 20 km of the survey area.

Scientific Name	Common Name	Cons. Status		Last Record	Count	Distance from Survey	Ecology <sup>1</sup>	Likelihood	Justification
		EPBC Act	DBCA / BC Act						
<i>Mormopterus cobourgianus</i>	North-western Free-tailed Bat		P1	2006	3	12 km	The North-western Free-tailed Bat are associated with mangrove habitat, roosting and foraging in mangrove, eucalypt or melaleuca woodland or other coastal habitat (ALoA 2021). The species has been recorded from a recent survey in the King Bay-Hearson Cove area of the Burrup Peninsula (Cardno 2019).	May	Considered n opportunistic forager, no suitable roosting habitat has previously been recorded (Biota 2011; Rio Tinto 2011). May be an incidental visitor due to the proximity of more suitable mangrove habitat to the south of the East Intercourse Island causeway.
<i>Pseudomys chapmani</i>	Western Pebble-mound Mouse		P4	1993	1	6 km	The Western Pebble-mound Mouse prefers hummock grasslands, <i>Triodia basedowii</i> , <i>Acacia</i> spp. and <i>Ptilotus</i> spp. where it creates its own microhabitat by scattering a mound of pebbles around its burrows (Kitchener, 1983; Burbidge, 2016). Several disused mounds have been recorded on the Burrup recently (GHD 2020).	May	Suitable habitat for this species present in the survey area. There is a single record from within 20 km of the survey area.
<i>Rhinonictes aurantia</i> (Pilbara Form)	Pilbara Leaf-nosed Bat	V	VU	PMST Record			Rocky areas and breakaways, roosting in caves. Roosts within 10 km of permanent water (Biota 2018).	Unlikely	There are no known records within 20 km of the survey area. There is no known roosting habitat (AECOM 2021; Biota 2018; Rio Tinto 2011).
<b>Reptiles</b>									
<i>Ctenotus angusticeps</i>	Airlie Island Ctenotus		P3	2012	5		Coastal mudflats with samphire shrubs, intertidal zone (Biota 2018).	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Lerista neviniae</i>	Nevin's Slider	E	EN	2011	59		Coastal sands and dunes.	Unlikely	The survey area lacks the preferred habitat for this species.
<i>Lerista quadrivincula</i>	Four-lined Slider		P1	No records			Coastal dune crests, sandy areas (Biota 2018).	Unlikely	No DBCA records, no suitable habitat.

Scientific Name	Common Name	Cons. Status		Last Record	Count	Distance from Survey	Ecology <sup>1</sup>	Likelihood	Justification
		EPBC Act	DBCAs / BC Act						
<i>Liasis olivaceus barroni</i>	Pilbara Olive Python	all	VU	2019	20	1 km	The Olive Python (Pilbara subspecies) is known from Hammersley Range and Dampier Archipelago (Wilson & Swan 2010) where it is often associated with rockpiles around permanent water pools and seasonal creeks (DAWE, 2021b). On the Burrup Peninsula they prefer granophyre rock piles and occasionally are found in neighbouring spinifex grasslands (Cardno 2019).	Likely	Suitable habitat present, numerous records in vicinity.
<i>Notoscincus butleri</i>	Lined Soil-crevice Skink (Dampier)		P4	2005	12	6 km	Usually found in hummock grasslands on stony or sandy ground. A relatively poorly known species that has been collected in the Hearson Cove - King Bay area of the Burrup Peninsula.	Likely	Suitable habitat present, numerous records in vicinity.

1. Ecology derived from DAWE (2021b) Species Threats and Profiles Database unless otherwise cited.

# NatureMap Species Report

Created By Guest user on 31/05/2021

**Kingdom** Plantae  
**Current Names Only** Yes  
**Core Datasets Only** Yes  
**Method** 'By Circle'  
**Centre** 116° 44' 46" E, 20° 42' 14" S  
**Buffer** 40km  
**Group By** Family

Family	Species	Records
Acanthaceae	3	75
Aizoaceae	9	63
Amaranthaceae	46	601
Anadyomenaceae	1	20
Apocynaceae	6	107
Araliaceae	4	81
Arecaceae	3	7
Areschougaceae	1	3
Asteraceae	47	369
Bignoniaceae	1	1
Bonnemaisoniaceae	1	15
Boodleaceae	1	7
Boraginaceae	17	179
Brassicaceae	5	24
Bryopsidaceae	1	2
Cactaceae	1	70
Callithamniaceae	2	11
Campanulaceae	2	4
Capparaceae	2	43
Caryophyllaceae	5	30
Caulerpaceae	22	252
Celastraceae	4	9
Ceramiaceae	2	9
Champiaceae	2	23
Chenopodiaceae	47	532
Cladophoraceae	4	17
Cleomaceae	3	98
Codiaceae	5	13
Combretaceae	4	74
Commelinaceae	1	10
Convolvulaceae	32	249
Coralliaceae	3	7
Corynomorphaceae	1	1
Cucurbitaceae	5	64
Cymodoceaceae	2	37
Cyperaceae	26	144
Cystocloniaceae	2	3
Dasyaceae	3	26
Dasycladaceae	4	21
Delesseriaceae	1	1
Dichotomosiphonaceae	3	12
Ditrichaceae	1	1
Dumontiaceae	1	3
Elatinaceae	2	4
Euphorbiaceae	21	405
Fabaceae	132	1689
Frankeniaceae	3	15
Galaxauraceae	5	51
Gelidiaceae	1	1
Gelidiellaceae	1	10
Gentianaceae	3	5
Geraniaceae	1	1
Goodeniaceae	18	257
Gracilariaceae	3	14
Gyrostemonaceae	1	1
Halimedaceae	8	95
Haloragaceae	1	1
Halymeniaceae	4	22
Hydrocharitaceae	7	71
Hydroliothaceae	1	3
Hymenocladaceae	1	4
Lamiaceae	5	36
Lauraceae	2	15
Liagoraceae	8	32
Lomentariaceae	2	17
Loranthaceae	3	5
Lythraceae	4	15
Malvaceae	57	564
Marsileaceae	2	2
Meliaceae	1	3
Menispermaceae	1	28
Molluginaceae	3	11
Montiaceae	3	7
Moraceae	8	135
Mychodeaceae	1	1

Myrtaceae	15	74
Nemastomataceae	1	1
Nyctaginaceae	9	104
Oleaceae	2	25
Orobanchaceae	1	10
Passifloraceae	1	14
Peyssonneliaceae	1	1
Phrymaceae	3	7
Phyllanthaceae	10	82
Pittosporaceae	2	40
Plantaginaceae	3	42
Plumbaginaceae	3	46
Poaceae	100	1191
Polygalaceae	3	14
Polygonaceae	1	1
Polyphysaceae	1	3
Portulacaceae	7	81
Primulaceae	1	6
Proteaceae	7	44
Pteridaceae	4	12
Rhamnaceae	2	6
Rhizophoraceae	3	68
Rhizophyllidaceae	1	17
Rhodomelaceae	13	86
Rhodymeniaceae	3	20
Ricciaceae	1	1
Rubiaceae	7	70
Santalaceae	2	18
Sapindaceae	5	61
Schizymeniaceae	1	11
Scinaiaceae	1	1
Scrophulariaceae	3	63
Sebdeniaceae	1	7
Siphonocladaceae	3	30
Solanaceae	21	202
Solieriaceae	2	15
Stylidiaceae	2	5
Surianaceae	1	22
Tamaricaceae	1	4
Thymelaeaceae	1	2
Udoteaceae	6	68
Valoniaceae	3	8
Violaceae	2	54
Wrangeliaceae	1	3
Zygophyllaceae	8	78
<b>TOTAL</b>	<b>918</b>	<b>9556</b>

Name ID	Species Name	Naturalised	Conservation Code	Endemic To Query Area
<b>Acanthaceae</b>				
1.	6828 <i>Avicennia marina</i> (White Mangrove)			
2.	14555 <i>Avicennia marina</i> subsp. <i>marina</i>			
3.	7166 <i>Dicliptera armata</i>			
<b>Aizoaceae</b>				
4.	2802 <i>Gunnioopsis calcarea</i>			
5.	2818 <i>Sesuvium portulacastrum</i>			
6.	44305 <i>Trianthema pilosum</i>			
7.	2830 <i>Trianthema portulacastrum</i> (Giant Pigweed)	Y		
8.	33278 <i>Trianthema</i> sp. Python Pool (G.R. Guerin & M.E. Trudgen GG 1023)		P2	
9.	44362 <i>Trianthema triquetrum</i>			
10.	44360 <i>Trianthema turgidifolium</i>			
11.	2834 <i>Zaleya galericulata</i> (Hogweed)			
12.	29095 <i>Zaleya galericulata</i> subsp. <i>galericulata</i>			
<b>Amaranthaceae</b>				
13.	2645 <i>Achyranthes aspera</i> (Chaff Flower)			
14.	2646 <i>Aerva javanica</i> (Kapok Bush)	Y		
15.	2647 <i>Alternanthera angustifolia</i>			
16.	2651 <i>Alternanthera nana</i> (Hairy Joyweed)			
17.	2652 <i>Alternanthera nodiflora</i> (Common Joyweed)			
18.	31076 <i>Amaranthus cochleitepalus</i>			
19.	2660 <i>Amaranthus cuspidifolius</i>			
20.	2663 <i>Amaranthus interruptus</i> (Native Amaranth)			
21.	2666 <i>Amaranthus mitchellii</i> (Boggabri Weed)			
22.	20018 <i>Amaranthus undulatus</i>			
23.	2671 <i>Amaranthus viridis</i> (Green Amaranth)	Y		
24.	2674 <i>Gomphrena affinis</i>			
25.	18361 <i>Gomphrena affinis</i> subsp. <i>pilbarensis</i>			
26.	2676 <i>Gomphrena canescens</i> (Batchelors Buttons)			
27.	18363 <i>Gomphrena canescens</i> subsp. <i>canescens</i>			
28.	18360 <i>Gomphrena cucullata</i>		P3	
29.	2680 <i>Gomphrena cunninghamii</i>			
30.	2682 <i>Gomphrena flaccida</i> (Gomphrena Weed)			
31.	18367 <i>Gomphrena kanisii</i>			
32.	2683 <i>Gomphrena leptoclada</i>			
33.	18257 <i>Gomphrena leptoclada</i> subsp. <i>leptoclada</i>			
34.	17894 <i>Gomphrena leptophylla</i>		P3	
35.	11131 <i>Gomphrena sordida</i>			
36.	31074 <i>Gomphrena</i> sp. Martins Well (K.F. Kenneally 6116)			Y
37.	2687 <i>Gomphrena tenella</i>			
38.	2690 <i>Ptilotus aevroides</i>			
39.	2696 <i>Ptilotus astrolasius</i>			
40.	2698 <i>Ptilotus auriculifolius</i>			
41.	2699 <i>Ptilotus axillaris</i> (Mat Mulla Mulla)			
42.	2704 <i>Ptilotus calostachyus</i> (Weeping Mulla Mulla)			
43.	2706 <i>Ptilotus carinatus</i>			
44.	2711 <i>Ptilotus clementii</i> (Tassel Top)			
45.	2717 <i>Ptilotus divaricatus</i> (Climbing Mulla Mulla)			
46.	2721 <i>Ptilotus exaltatus</i> (Tall Mulla Mulla)			
47.	2725 <i>Ptilotus fusiformis</i>			
48.	2728 <i>Ptilotus gomphrenoides</i>			
49.	2729 <i>Ptilotus grandiflorus</i>			
50.	2731 <i>Ptilotus helipteroides</i> (Hairy Mulla Mulla)			
51.	2734 <i>Ptilotus incanus</i>			
52.	2745 <i>Ptilotus murrayi</i>			
53.	2746 <i>Ptilotus nobilis</i> (Tall Mulla Mulla)			
54.	2747 <i>Ptilotus obovatus</i> (Cotton Bush)			
55.	11396 <i>Ptilotus obovatus</i> var. <i>obovatus</i>			
56.	2751 <i>Ptilotus polystachyus</i> (Prince of Wales Feather)			
57.	2766 <i>Ptilotus villosiflorus</i>			
58.	43203 <i>Surreya diandra</i>			
<b>Anadyomenaceae</b>				
59.	35872 <i>Anadyomene plicata</i>			
<b>Apocynaceae</b>				
60.	6580 <i>Asclepias curassavica</i> (Redhead Cottonbush)	Y		



Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
61.	6567 <i>Carissa lanceolata</i> (Conkerberry, Marnuwiji)			
62.	6584 <i>Cynanchum floribundum</i> (Dumara Bush, Tjipa)			
63.	48280 <i>Cynanchum viminalis</i> subsp. australe			
64.	12832 <i>Gymnanthera cunninghamii</i>		P3	
65.	6578 <i>Wrightia saligna</i>			
<b>Araliaceae</b>				
66.	6270 <i>Trachymene didiscoides</i>			
67.	6273 <i>Trachymene glaucifolia</i> (Wild Carrot)			
68.	6278 <i>Trachymene oleracea</i>			
69.	19043 <i>Trachymene oleracea</i> subsp. oleracea			
<b>Arecaceae</b>				
70.	<i>Cocos nucifera</i>			Y
71.	1042 <i>Phoenix dactylifera</i> (Date Palm)	Y		
72.	17910 <i>Washingtonia filifera</i>	Y		
<b>Areschougiaceae</b>				
73.	26823 <i>Erythroclonium sonderi</i>			
<b>Asteraceae</b>				
74.	7827 <i>Angianthus cunninghamii</i> (Coast Angianthus)			
75.	7832 <i>Angianthus milnei</i> (Cone-spike Angianthus)			
76.	<i>Baccharis</i> sp			Y
77.	7854 <i>Bidens bipinnata</i> (Bipinnate Beggartick)	Y		
78.	7866 <i>Blumea tenella</i>			
79.	14090 <i>Calocephalus beardii</i>			
80.	7905 <i>Calotis multicaulis</i> (Many-stemmed Burr-daisy)			
81.	7906 <i>Calotis plumulifera</i>			
82.	7919 <i>Centipeda minima</i> (Spreading Sneezewood, Kanjirralaa, Inteng-inteng, Karengkal, Kata-palkalpa, Munyu-parnti-parnti)			
83.	19762 <i>Centipeda minima</i> subsp. macrocephala			
84.	33516 <i>Chrysocephalum gilesii</i>			
85.	7939 <i>Conyza bonariensis</i> (Flaxleaf Fleabane)	Y		
86.	35558 <i>Flaveria trinervia</i> (Speedy Weed)	Y		
87.	8088 <i>Ixiochlamys cuneifolia</i>			
88.	8095 <i>Lactuca saligna</i> (Wild Lettuce, Willow-leaf Lettuce)	Y		
89.	<i>Launaea sarmentosa</i>			
90.	8098 <i>Launaea sarmentosa</i>			
91.	8109 <i>Minuria integerrima</i> (Smooth Minuria)			
92.	8110 <i>Minuria leptophylla</i> (Minnie Daisy)			
93.	<i>Olearia Kennedy Range</i> (G. Byrne 66)			
94.	8127 <i>Olearia axillaris</i> (Coastal Daisybush)			
95.	42024 <i>Olearia</i> sp. Kennedy Range (G. Byrne 66)			
96.	13494 <i>Pentalepis trichodesmoides</i>			
97.	42160 <i>Pentalepis trichodesmoides</i> subsp. trichodesmoides			
98.	8167 <i>Pluchea dentex</i>			
99.	17816 <i>Pluchea ferdinandi-muelleri</i>			
100.	43944 <i>Pluchea longiseta</i>			
101.	8168 <i>Pluchea rubelliflora</i>			
102.	8170 <i>Pluchea tetranthera</i>			
103.	8189 <i>Pseudognaphalium luteoalbum</i> (Jersey Cudweed)			
104.	8191 <i>Pterocaulon serrulatum</i>			
105.	<i>Pterocaulon</i> sp.			
106.	8192 <i>Pterocaulon sphacelatum</i> (Apple Bush, Fruit Salad Plant)			
107.	8193 <i>Pterocaulon sphaeranthoides</i>			
108.	13301 <i>Rhodanthe floribunda</i>			
109.	13246 <i>Rhodanthe humboldtiana</i>			
110.	13310 <i>Rhodanthe margarethae</i>			
111.	45146 <i>Roebuckiella oncocarpa</i>			
112.	8231 <i>Sonchus oleraceus</i> (Common Sowthistle)	Y		
113.	8234 <i>Streptoglossa adscendens</i>			
114.	8235 <i>Streptoglossa bubakii</i>			
115.	8236 <i>Streptoglossa cylindriceps</i>			
116.	8237 <i>Streptoglossa decurrens</i>			
117.	8238 <i>Streptoglossa liatroides</i>			
118.	8240 <i>Streptoglossa odora</i>			
119.	8241 <i>Streptoglossa tenuiflora</i>			
120.	8252 <i>Tridax procumbens</i> (Tridax, Tridax Daisy)	Y		
<b>Bignoniaceae</b>				
121.	48390 <i>Dolichandrone occidentalis</i>			

Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
<b>Bonnemaisoniaceae</b>				
122.	26486 <i>Asparagopsis taxiformis</i>			
<b>Boodleaceae</b>				
123.	26508 <i>Boodlea composita</i>			
<b>Boraginaceae</b>				
124.	6682 <i>Ehretia saligna</i> (False Cedar)			
125.	14301 <i>Ehretia saligna</i> var. <i>saligna</i>			
126.	17301 <i>Heliotropium chrysocarpum</i>			
127.	6704 <i>Heliotropium conocarpum</i>			
128.	6705 <i>Heliotropium crispatum</i>			
129.	6706 <i>Heliotropium cunninghamii</i>			
130.	6707 <i>Heliotropium curassavicum</i> (Smooth Heliotrope)			
131.	17305 <i>Heliotropium glanduliferum</i>			
132.	6712 <i>Heliotropium heteranthum</i>			
133.	17307 <i>Heliotropium inexplicitum</i>			
134.	6713 <i>Heliotropium ovalifolium</i>			
135.	17309 <i>Heliotropium pachyphyllum</i>			
136.	6714 <i>Heliotropium paniculatum</i>			
137.	17315 <i>Heliotropium tanythrix</i>			
138.	6718 <i>Heliotropium tenuifolium</i> (Mamukata)			
139.	6727 <i>Trichodesma zeylanicum</i> (Camel Bush, Kumbalin)			
140.	11750 <i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>			
<b>Brassicaceae</b>				
141.	2995 <i>Brassica x napus</i>	Y		
142.	3029 <i>Lepidium linifolium</i>			
143.	3035 <i>Lepidium pedicellosum</i>			
144.	3038 <i>Lepidium pholidogynum</i>			
145.	3039 <i>Lepidium platypetalum</i> (Slender Peppergrass)			
<b>Bryopsidaceae</b>				
146.	27191 <i>Pseudobryopsis hainanensis</i>			
<b>Cactaceae</b>				
147.	5227 <i>Opuntia stricta</i> (Common Prickly Pear)	Y		
<b>Callithamniaceae</b>				
148.	26450 <i>Aglaothamnion cordatum</i>			
149.	26706 <i>Crouania attenuata</i>			
<b>Campanulaceae</b>				
150.	37480 <i>Lobelia arnhemiaca</i>			
151.	7393 <i>Wahlenbergia tumidifruca</i>			
<b>Capparaceae</b>				
152.	2981 <i>Capparis spinosa</i>			
153.	48291 <i>Capparis spinosa</i> subsp. <i>nummularia</i>			
<b>Caryophyllaceae</b>				
154.	2898 <i>Polycarpaea corymbosa</i>			
155.	12075 <i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>			
156.	2901 <i>Polycarpaea holtzei</i>			
157.	2902 <i>Polycarpaea involucreta</i>			
158.	2903 <i>Polycarpaea longiflora</i>			
<b>Caulerpaceae</b>				
159.	26554 <i>Caulerpa brachypus</i>			
160.	42620 <i>Caulerpa chemnitzia</i>			
161.	26558 <i>Caulerpa constricta</i>			
162.	35158 <i>Caulerpa corynephora</i>			
163.	26559 <i>Caulerpa cupressoides</i>			
164.	47053 <i>Caulerpa cupressoides</i> var. <i>cupressoides</i>			
165.	47054 <i>Caulerpa cupressoides</i> var. <i>elegans</i>			
166.	27378 <i>Caulerpa cupressoides</i> var. <i>lycopodium</i>			
167.	36368 <i>Caulerpa cupressoides</i> var. <i>mamillosa</i>			Y
168.	44539 <i>Caulerpa cylindracea</i>			
169.	26562 <i>Caulerpa fergusonii</i>			
170.	44547 <i>Caulerpa lamourouxii</i>			
171.	26568 <i>Caulerpa lentillifera</i>			
172.	37643 <i>Caulerpa parvifolia</i>			
173.	26573 <i>Caulerpa racemosa</i>			
174.	35122 <i>Caulerpa racemosa</i> var. <i>racemosa</i>			
175.	26576 <i>Caulerpa serrulata</i>			

Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
176.	26577 <i>Caulerpa sertularioides</i>			
177.	26579 <i>Caulerpa taxifolia</i>			
178.	35124 <i>Caulerpa taxifolia</i> var. <i>taxifolia</i>			
179.	26582 <i>Caulerpa verticillata</i>			
180.	26584 <i>Caulerpa webbiana</i>			
<b>Celastraceae</b>				
181.	4729 <i>Stackhousia clementii</i>		P3	
182.	4731 <i>Stackhousia intermedia</i>			
183.	19555 <i>Stackhousia muricata</i> subsp. <i>annual</i> (W.R. Barker 2172)			
184.	4736 <i>Stackhousia umbellata</i>		P3	
<b>Ceramiaceae</b>				
185.	26587 <i>Centroceras clavulatum</i>			
186.	27310 <i>Spyridia filamentosa</i>			
<b>Champiaceae</b>				
187.	26619 <i>Champia stipitata</i>			
188.	26691 <i>Coelothrix irregularis</i>			
<b>Chenopodiaceae</b>				
189.	2450 <i>Atriplex amnicola</i> (Swamp Saltbush)			
190.	2451 <i>Atriplex bunburyana</i> (Silver Saltbush)			
191.	2453 <i>Atriplex codonocarpa</i> (Flat-topped Saltbush)			
192.	2463 <i>Atriplex isatidea</i> (Coast Saltbush)			
193.	2466 <i>Atriplex lindleyi</i>			
194.	17520 <i>Atriplex lindleyi</i> subsp. <i>conduplicata</i>		P3	
195.	2476 <i>Atriplex semilunaris</i> (Annual Saltbush)			
196.	33479 <i>Dysphania melanocarpa</i> (Black Crumbweed)			
197.	2504 <i>Dysphania plantaginella</i>			
198.	2506 <i>Dysphania rhadinostachya</i>			
199.	11653 <i>Dysphania rhadinostachya</i> subsp. <i>inflata</i>			
200.	11890 <i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>			
201.	2511 <i>Enchylaena tomentosa</i> (Barrier Saltbush)			
202.	12064 <i>Enchylaena tomentosa</i> var. <i>tomentosa</i> (Barrier Saltbush)			
203.	2544 <i>Maireana georgei</i> (Satiny Bluebush)			
204.	2556 <i>Maireana planifolia</i> (Low Bluebush)			
205.	2564 <i>Maireana stipitata</i>			
206.	11662 <i>Maireana tomentosa</i> subsp. <i>tomentosa</i>			
207.	2573 <i>Neobassia astrocarpa</i>			
208.	2582 <i>Rhagodia eremaea</i> (Thorny Saltbush)			
209.	2584 <i>Rhagodia preissii</i>			
210.	11240 <i>Rhagodia preissii</i> subsp. <i>obovata</i>			
211.	11254 <i>Rhagodia preissii</i> subsp. <i>preissii</i>			
212.	30434 <i>Salsola australis</i>			
213.	2597 <i>Sclerolaena bicornis</i> (Goathead Burr)			
214.	11650 <i>Sclerolaena bicornis</i> var. <i>bicornis</i> (Goathead Burr)			
215.	2604 <i>Sclerolaena costata</i>			
216.	2607 <i>Sclerolaena densiflora</i>			
217.	2609 <i>Sclerolaena diacantha</i> (Grey Copperburr)			
218.	8877 <i>Sclerolaena gardneri</i>			
219.	2616 <i>Sclerolaena glabra</i>			
220.	2617 <i>Sclerolaena hostilis</i>			
221.	2633 <i>Sclerolaena uniflora</i> (Two-spined Saltbush)			
222.	2638 <i>Suaeda arbusculoides</i>			
223.	31616 <i>Tecticornia auriculata</i>			
224.	33236 <i>Tecticornia halocnemoides</i> (Shrubby Samphire)			
225.	33240 <i>Tecticornia halocnemoides</i> subsp. <i>longispicata</i>			
226.	33238 <i>Tecticornia halocnemoides</i> subsp. <i>tenuis</i>			
227.	33317 <i>Tecticornia indica</i>			
228.	33319 <i>Tecticornia indica</i> subsp. <i>bidens</i>			
229.	33356 <i>Tecticornia indica</i> subsp. <i>indica</i>			
230.	33357 <i>Tecticornia indica</i> subsp. <i>julacea</i>			
231.	33318 <i>Tecticornia indica</i> subsp. <i>leiostachya</i> (Samphire)			
232.	33299 <i>Tecticornia pergranulata</i> subsp. <i>elongata</i>			
233.	31618 <i>Tecticornia pruinosa</i>			
234.	33220 <i>Tecticornia pterygosperma</i> subsp. <i>denticulata</i>			
235.	2644 <i>Threlkeldia diffusa</i> (Coast Bonefruit)			
<b>Cladophoraceae</b>				
236.	44320 <i>Chaetomorpha basiretrorsa</i>			Y
237.	26612 <i>Chaetomorpha melagonium</i>			
238.	35865 <i>Cladophora catenata</i>			

Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
239.	36316 <i>Cladophora herpestica</i>			
<b>Cleomaceae</b>				
240.	2985 <i>Cleome oxalidea</i>			
241.	2987 <i>Cleome uncifera</i>			
242.	2988 <i>Cleome viscosa</i> (Tickweed, Tjinduwadhu)			
<b>Codiaceae</b>				
243.	35917 <i>Codium arabicum</i>			
244.	47113 <i>Codium arenicola</i>			Y
245.	35857 <i>Codium dwarkense</i>			
246.	26673 <i>Codium geppiorum</i>			
247.	<i>Codium platyclados</i>			Y
<b>Combretaceae</b>				
248.	5300 <i>Terminalia canescens</i> (Joolal)			
249.	45698 <i>Terminalia circumalata</i>			
250.	5310 <i>Terminalia platyphylla</i> (Wild Plum, Durin)			
251.	5313 <i>Terminalia supranitfolia</i>		P3	
<b>Commelinaceae</b>				
252.	1165 <i>Commelina ensifolia</i> (Wandering Jew, Buargu)			
<b>Convolvulaceae</b>				
253.	11167 <i>Bonamia erecta</i>			
254.	6605 <i>Bonamia linearis</i>			
255.	6606 <i>Bonamia media</i>			
256.	6608 <i>Bonamia pannosa</i>			
257.	44782 <i>Bonamia pilbarensis</i>			
258.	6609 <i>Bonamia rosea</i> (Feltly Bellflower)			
259.	19880 <i>Convolvulus angustissimus</i>			
260.	6612 <i>Convolvulus clementii</i>			
261.	19565 <i>Cressa australis</i>			
262.	6662 <i>Cuscuta australis</i> (Australian Dodder)			
263.	13733 <i>Cuscuta victoriana</i>			
264.	48738 <i>Distimake dissectus</i> var. <i>dissectus</i>	Y		
265.	31274 <i>Duperreya commixta</i>			
266.	6617 <i>Evolvulus alsinoides</i> (Tropical Speedwell)			
267.	11416 <i>Evolvulus alsinoides</i> var. <i>decumbens</i>			
268.	11200 <i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>			
269.	6623 <i>Ipomoea coptica</i>			
270.	6624 <i>Ipomoea costata</i> (Rock Morning Glory, Kanti)			
271.	6631 <i>Ipomoea lonchophylla</i> (Cowvine)			
272.	6632 <i>Ipomoea macrantha</i>			
273.	6633 <i>Ipomoea muelleri</i> (Poison Morning Glory, Yumbu)			
274.	6635 <i>Ipomoea pes-caprae</i>			
275.	11312 <i>Ipomoea pes-caprae</i> subsp. <i>brasiliensis</i>			
276.	6636 <i>Ipomoea plebeia</i> (Bellvine)			
277.	6637 <i>Ipomoea polymorpha</i>			
278.	<i>Ipomoea</i> sp.			
279.	6651 <i>Operculina aequisejala</i>			
280.	6652 <i>Operculina brownii</i> (Potato Vine, Bara)			
281.	6653 <i>Polymeria ambigua</i> (Morning Glory)			
282.	6655 <i>Polymeria calycina</i>			
283.	17513 <i>Polymeria lanata</i>			
284.	<i>Polymeria</i> sp.			
<b>Corallinaceae</b>				
285.	26461 <i>Amphiroa foliacea</i>			
286.	26462 <i>Amphiroa fragilissima</i>			
287.	27037 <i>Lithophyllum kotschyianum</i>			
<b>Corynomorphaceae</b>				
288.	26698 <i>Corynomorpha prismatica</i>			
<b>Cucurbitaceae</b>				
289.	41720 <i>Cucumis argenteus</i>			
290.	7371 <i>Cucumis melo</i> (Ulcardo Melon)			
291.	41721 <i>Cucumis variabilis</i>			
292.	7381 <i>Trichosanthes cucumerina</i>			
293.	12032 <i>Trichosanthes cucumerina</i> var. <i>cucumerina</i>			
<b>Cymodoceaceae</b>				
294.	131 <i>Halodule uninervis</i>			
295.	132 <i>Syringodium isoetifolium</i>			

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<b>Cyperaceae</b>				
296.	750 <i>Bulbostylis barbata</i>			
297.	752 <i>Bulbostylis turbinata</i>			
298.	774 <i>Cyperus bifax</i> (Downs Nutgrass)			
299.	12801 <i>Cyperus blakeanus</i>			
300.	777 <i>Cyperus bulbosus</i> (Bush Onion, Tjanmata)			
301.	786 <i>Cyperus cunninghamii</i>			
302.	12811 <i>Cyperus cunninghamii</i> subsp. <i>cunninghamii</i>			
303.	789 <i>Cyperus difformis</i> (Rice Sedge)			
304.	798 <i>Cyperus iria</i>			
305.	804 <i>Cyperus nervulosus</i>			
306.	807 <i>Cyperus pulchellus</i>			
307.	814 <i>Cyperus squarrosus</i>			
308.	818 <i>Cyperus vaginatus</i> (Stiffleaf Sedge)			
309.	826 <i>Eleocharis dulcis</i> (Chinese Water Chestnut)			
310.	827 <i>Eleocharis geniculata</i>			
311.	851 <i>Fimbristylis dichotoma</i> (Eight Day Grass)			
312.	853 <i>Fimbristylis elegans</i>			
313.	855 <i>Fimbristylis ferruginea</i>			
314.	859 <i>Fimbristylis littoralis</i>			
315.	862 <i>Fimbristylis microcarya</i>			
316.	878 <i>Fimbristylis rara</i>			
317.	880 <i>Fimbristylis schultzei</i>			
318.	12159 <i>Fimbristylis simulans</i>			
319.	16257 <i>Schoenoplectus subulatus</i>			
320.	1006 <i>Schoenus odontocarpus</i>			
321.	1010 <i>Schoenus punctatus</i>		P3	
<b>Cystocloniaceae</b>				
322.	35922 <i>Hypnea cornuta</i>			
323.	26970 <i>Hypnea pannosa</i>			
<b>Dasyaceae</b>				
324.	26738 <i>Dasya elongata</i>			
325.	26740 <i>Dasya frutescens</i>			
326.	26930 <i>Heterosiphonia crassipes</i>			
<b>Dasycladaceae</b>				
327.	26509 <i>Bornetella oligospora</i>			
328.	26510 <i>Bornetella sphaerica</i>			
329.	44548 <i>Neomeris bilimbata</i>			
330.	27099 <i>Neomeris van-bossea</i>			
<b>Delesseriaceae</b>				
331.	27056 <i>Martensia elegans</i>			
<b>Dichotomosiphonaceae</b>				
332.	48138 <i>Avrainvillea carteri</i>			
333.	36362 <i>Avrainvillea erecta</i>			
334.	26498 <i>Avrainvillea obscura</i>			
<b>Ditrichaceae</b>				
335.	32348 <i>Eccremidium arcuatum</i>			
<b>Dumontiaceae</b>				
336.	26851 <i>Gibsmithia hawaiiensis</i>			
<b>Elatinaceae</b>				
337.	5183 <i>Bergia ammannioides</i>			
338.	5186 <i>Bergia trimera</i>			
<b>Euphorbiaceae</b>				
339.	4583 <i>Adriana tomentosa</i>			
340.	17422 <i>Adriana tomentosa</i> var. <i>tomentosa</i>			
341.	4617 <i>Euphorbia australis</i> (Namana)			
342.	35307 <i>Euphorbia australis</i> var. <i>australis</i>			
343.	42843 <i>Euphorbia australis</i> var. <i>glabra</i>		P2	
344.	35303 <i>Euphorbia australis</i> var. <i>subtomentosa</i>			
345.	4619 <i>Euphorbia biconvexa</i>			
346.	4620 <i>Euphorbia boophthona</i> (Gascoyne Spurge)			
347.	9048 <i>Euphorbia careyi</i>			
348.	4623 <i>Euphorbia coghlanii</i> (Namana)			
349.	4626 <i>Euphorbia drummondii</i> (Caustic Weed, Piwi)			
350.	4629 <i>Euphorbia hirta</i> (Asthma Plant)			

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351.	4634 <i>Euphorbia mitchelliana</i>			
352.	4635 <i>Euphorbia myrtilloides</i>			
353.	4642 <i>Euphorbia schultzei</i>			
354.	4644 <i>Euphorbia shakoensis</i>			
355.	4647 <i>Euphorbia tannensis</i>			
356.	12097 <i>Euphorbia tannensis</i> subsp. <i>eremophila</i> (Desert Spurge)			
357.	42879 <i>Euphorbia trigonosperma</i>			
358.	13281 <i>Euphorbia vaccaria</i>			
359.	42876 <i>Euphorbia vaccaria</i> var. <i>vaccaria</i>			

**Fabaceae**

360.	<i>Acacia Airlie Island</i> (V. Long VL 163)			
361.	3209 <i>Acacia ampliceps</i>			
362.	44580 <i>Acacia ampliceps</i> x <i>bivenosa</i>			
363.	44586 <i>Acacia ampliceps</i> x <i>sclerosperma</i> subsp. <i>sclerosperma</i>			
364.	3214 <i>Acacia ancistrocarpa</i> (Fitzroy Wattle)			
365.	3223 <i>Acacia arida</i>			
366.	3241 <i>Acacia bivenosa</i>			
367.	44588 <i>Acacia bivenosa</i> x <i>sclerosperma</i> subsp. <i>sclerosperma</i>			
368.	3260 <i>Acacia citrinoviridis</i>			
369.	13403 <i>Acacia colei</i>			
370.	17013 <i>Acacia colei</i> var. <i>colei</i>			
371.	3270 <i>Acacia coriacea</i> (Wirewood)			
372.	13500 <i>Acacia coriacea</i> subsp. <i>coriacea</i>			
373.	13502 <i>Acacia coriacea</i> subsp. <i>pendens</i>			
374.	16174 <i>Acacia elachantha</i>			
375.	12673 <i>Acacia glaucocaesia</i>			
376.	3356 <i>Acacia gregorii</i> (Gregory's Wattle)			
377.	3372 <i>Acacia holosericea</i> (Candelbra Wattle, Liringgin)			
378.	3377 <i>Acacia inaequilatera</i> (Baderi)			
379.	3419 <i>Acacia ligulata</i> (Umbrella Bush, Watarka)			
380.	3434 <i>Acacia maitlandii</i> (Maitland's Wattle)			
381.	3471 <i>Acacia orthocarpa</i> (Needleleaf Wattle)			
382.	3506 <i>Acacia pyrifolia</i> (Ranji Bush, Kandji)			
383.	29016 <i>Acacia pyrifolia</i> var. <i>morrisonii</i>			
384.	29015 <i>Acacia pyrifolia</i> var. <i>pyrifolia</i>			
385.	15203 <i>Acacia sabulosa</i>			
386.	13078 <i>Acacia sclerosperma</i> subsp. <i>sclerosperma</i>			
387.	29135 <i>Acacia sericophylla</i>			
388.	29102 <i>Acacia</i> sp. <i>Airlie Island</i> (V. Long VL 163)			
389.	3551 <i>Acacia sphaerostachya</i>			
390.	19456 <i>Acacia stellaticeps</i>			
391.	13070 <i>Acacia synchronicia</i>			
392.	3573 <i>Acacia tenuissima</i>			
393.	3579 <i>Acacia trachycarpa</i> (Minni Ritchi, Balgali)			
394.	3585 <i>Acacia tumida</i> (Pindan Wattle, Walgali)			
395.	20319 <i>Acacia tumida</i> var. <i>pilbarensis</i>			
396.	3606 <i>Acacia xiphophylla</i>			
397.	3680 <i>Aeschynomene indica</i> (Budda Pea)			
398.	3609 <i>Albizia lebeck</i>			
399.	17147 <i>Alysicarpus muelleri</i>			
400.	11055 <i>Cajanus cinereus</i>			
401.	10972 <i>Cajanus marmoratus</i>			
402.	11150 <i>Cajanus pubescens</i>			
403.	3749 <i>Canavalia rosea</i> (Wild Jack Bean)			
404.	3769 <i>Clitoria ternatea</i>	Y		
405.	3774 <i>Crotalaria cunninghamii</i> (Green Birdflower, Bilbun)			
406.	20176 <i>Crotalaria cunninghamii</i> subsp. <i>cunninghamii</i>			
407.	19378 <i>Crotalaria dissitiflora</i> subsp. <i>benthamiana</i>			
408.	3783 <i>Crotalaria medicaginea</i>			
409.	20179 <i>Crotalaria medicaginea</i> var. <i>neglecta</i>			
410.	3785 <i>Crotalaria novae-hollandiae</i> (New Holland Rattlepod)			
411.	11231 <i>Crotalaria novae-hollandiae</i> subsp. <i>novae-hollandiae</i>			
412.	17433 <i>Cullen badocanum</i>			
413.	17117 <i>Cullen cinereum</i>			
414.	17436 <i>Cullen graveolens</i>			
415.	17439 <i>Cullen lachnostachys</i>			
416.	17118 <i>Cullen leucanthum</i>			
417.	17119 <i>Cullen leucochaites</i>			
418.	17120 <i>Cullen pogonocarpum</i>			
419.	3852 <i>Desmodium campylocaulon</i>			

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420.	3853 <i>Desmodium filiforme</i>			
421.	3856 <i>Desmodium muelleri</i>			
422.	3612 <i>Dichrostachys spicata</i> (Pied Piper Bush)			
423.	3871 <i>Erythrina vespertilio</i> (Yulbah)			
424.	3938 <i>Glycine canescens</i> (Silky Glycine)			
425.	3940 <i>Glycine falcata</i>		P3	
426.	14587 <i>Indigastrium parviflorum</i>			
427.	3973 <i>Indigofera colutea</i> (Sticky Indigo)			
428.	3980 <i>Indigofera linifolia</i>			
429.	3981 <i>Indigofera linnaei</i> (Birdsville Indigo)			
430.	3982 <i>Indigofera monophylla</i>			
431.	3987 <i>Indigofera trita</i>			
432.	31035 <i>Indigofera trita</i> subsp. <i>trita</i>			
433.	3989 <i>Isotropis atropurpurea</i> (Poison Sage)			
434.	3613 <i>Leucaena leucocephala</i> (Leucaena)	Y		
435.	4060 <i>Lotus australis</i> (Austral Trefoil)			
436.	4061 <i>Lotus cruentus</i> (Redflower Lotus)			
437.	3614 <i>Neptunia dimorphantha</i> (Sensitive Plant)			
438.	3617 <i>Neptunia monosperma</i>			
439.	3675 <i>Petalostylis labicheoides</i> (Slender Petalostylis)			
440.	4190 <i>Rhynchosia australis</i> (Rhynchosia)			
441.	20862 <i>Rhynchosia bungarensis</i>		P4	
442.	4191 <i>Rhynchosia minima</i> (Rhynchosia)			
443.	12279 <i>Senna artemisioides</i> subsp. <i>helmsii</i>			
444.	12280 <i>Senna artemisioides</i> subsp. <i>oligophylla</i>			
445.	18444 <i>Senna charlesiana</i>			
446.	12303 <i>Senna costata</i>			
447.	18443 <i>Senna ferraria</i>			
448.	18346 <i>Senna glutinosa</i>			
449.	<i>Senna glutinosa</i> subsp. <i>X luerssenii</i>			Y
450.	12305 <i>Senna glutinosa</i> subsp. <i>chatelainiana</i>			
451.	12307 <i>Senna glutinosa</i> subsp. <i>glutinosa</i>			
452.	12309 <i>Senna glutinosa</i> subsp. <i>pruinosa</i>			
453.	12308 <i>Senna glutinosa</i> subsp. <i>x luerssenii</i>			
454.	18451 <i>Senna hamersleyensis</i>			
455.	12312 <i>Senna notabilis</i>			
456.	18450 <i>Senna symonii</i>			
457.	12319 <i>Senna venusta</i>			
458.	4196 <i>Sesbania cannabina</i> (Sesbania Pea)			
459.	4198 <i>Sesbania formosa</i> (White Dragon Tree)			
460.	12353 <i>Stylosanthes hamata</i> (Verano Stylo)	Y		
461.	4220 <i>Swainsona canescens</i> (Grey Swainsona)			
462.	12356 <i>Swainsona formosa</i>			
463.	4231 <i>Swainsona kingii</i>			
464.	4233 <i>Swainsona leeana</i>			
465.	4234 <i>Swainsona maccullochiana</i> (Ashburton Pea)			
466.	4242 <i>Swainsona pterostylis</i>			
467.	<i>Tephrosia Fortescue</i> (A.A. Mitchell 606)			Y
468.	39500 <i>Tephrosia brachyodon</i> var. <i>longifolia</i>			
469.	4263 <i>Tephrosia clementii</i>			
470.	49016 <i>Tephrosia densa</i>			
471.	4269 <i>Tephrosia flammea</i>			
472.	4272 <i>Tephrosia leptoclada</i>			
473.	4280 <i>Tephrosia rosea</i> (Flinders River Poison, Bungoo'dah)			
474.	41920 <i>Tephrosia rosea</i> var. <i>Port Hedland</i> (A.S. George 1114)		P1	
475.	19531 <i>Tephrosia rosea</i> var. <i>clementii</i>			
476.	<i>Tephrosia rosea</i> var. <i>fortescue creeks</i> (M.I.H. Brooker 2186)			
477.	19529 <i>Tephrosia rosea</i> var. <i>rosea</i>			
478.	15947 <i>Tephrosia</i> sp. <i>B Kimberley Flora</i> (C.A. Gardner 7300)			
479.	17768 <i>Tephrosia</i> sp. <i>Bungaroo Creek</i> (M.E. Trudgen 11601)			
480.	15949 <i>Tephrosia</i> sp. <i>D Kimberley Flora</i> (R.D. Royce 1848)			
481.	42442 <i>Tephrosia</i> sp. <i>NW Eremaean</i> (S. van Leeuwen et al. PBS 0356)			
482.	40060 <i>Tephrosia</i> sp. <i>clay soils</i> (S. van Leeuwen et al. PBS 0273)			
483.	4285 <i>Tephrosia supina</i>			
484.	30716 <i>Vachellia farnesiana</i> (Mimosa Bush)	Y		
485.	4323 <i>Vigna lanceolata</i> (Maloga Vigna, Wega)			
486.	<i>Vigna lanceolata</i> subsp. <i>latifolia</i>			Y
487.	11576 <i>Vigna lanceolata</i> var. <i>lanceolata</i>			
488.	31391 <i>Vigna</i> sp. <i>Hamersley Clay</i> (A.A. Mitchell PRP 113)			
489.	46577 <i>Vigna triodiophila</i>		P3	

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490.	4326 <i>Zornia albiflora</i>			
491.	12679 <i>Zornia muelleriana</i> subsp. <i>congesta</i>			
<b>Frankeniaceae</b>				
492.	5188 <i>Frankenia ambita</i>			
493.	5209 <i>Frankenia pauciflora</i> (Seaheath)			
494.	14297 <i>Frankenia pauciflora</i> var. <i>pauciflora</i>			
<b>Galaxauraceae</b>				
495.	29616 <i>Dichotomaria marginata</i>			
496.	29615 <i>Dichotomaria obtusata</i>			
497.	26835 <i>Galaxaura rugosa</i>			
498.	27340 <i>Tricleocarpa cylindrica</i>			
499.	27341 <i>Tricleocarpa fragilis</i>			
<b>Gelidiaceae</b>				
500.	26848 <i>Gelidium crinale</i>			
<b>Gelidiellaceae</b>				
501.	26842 <i>Gelidiella acerosa</i>			
<b>Gentianaceae</b>				
502.	6539 <i>Centaurium erythraea</i> (Common Centaury)	Y		
503.	41660 <i>Schenkia australis</i>			
504.	41646 <i>Schenkia clementii</i>			
<b>Geraniaceae</b>				
505.	4335 <i>Erodium cygnorum</i> (Blue Heronsbill)			
<b>Goodeniaceae</b>				
506.	7495 <i>Goodenia berardiana</i>			
507.	7509 <i>Goodenia forrestii</i>			
508.	7515 <i>Goodenia heterochila</i>			
509.	7521 <i>Goodenia lamprosperma</i>			
510.	7526 <i>Goodenia microptera</i>			
511.	12552 <i>Goodenia muelleriana</i>			
512.	12570 <i>Goodenia pallida</i>		P1	
513.	10982 <i>Goodenia stobbsiana</i>			
514.	7556 <i>Goodenia tenuiloba</i>			
515.	7560 <i>Goodenia vilmorinae</i>			
516.	12578 <i>Scaevola acacioides</i>			
517.	12723 <i>Scaevola amblyanthera</i>			
518.	7595 <i>Scaevola anchusifolia</i>			
519.	7606 <i>Scaevola crassifolia</i> (Thick-leaved Fan-flower)			
520.	7608 <i>Scaevola cunninghamii</i>			
521.	7614 <i>Scaevola globulifera</i>			
522.	7644 <i>Scaevola spinescens</i> (Currant Bush, Maroon)			
523.	7660 <i>Velleia glabrata</i> (Pee the Bed)			
<b>Gracilariaceae</b>				
524.	35899 <i>Gracilaria canaliculata</i>			
525.	26873 <i>Gracilaria salicornia</i>			
526.	35871 <i>Hydropuntia urvillei</i>			
<b>Gyrostemonaceae</b>				
527.	2778 <i>Codonocarpus cotinifolius</i> (Native Poplar, Kundurangu)			
<b>Halimedaceae</b>				
528.	47313 <i>Halimeda borneensis</i>			
529.	26891 <i>Halimeda cylindracea</i>			
530.	26892 <i>Halimeda discoidea</i>			
531.	26894 <i>Halimeda macroloba</i>			
532.	26896 <i>Halimeda simulans</i>			
533.	26897 <i>Halimeda tuna</i>			
534.	26898 <i>Halimeda velasquezii</i>			
535.	47213 <i>Halimeda versatilis</i>			
<b>Haloragaceae</b>				
536.	6151 <i>Gonocarpus ephemerus</i>			
<b>Halymeniaceae</b>				
537.	26708 <i>Cryptonemia kallymenioides</i>			
538.	37642 <i>Halymenia durvillei</i>			
539.	37640 <i>Halymenia floresii</i>			
540.	44523 <i>Spongophloea tissotii</i>			



Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
<b>Hydrocharitaceae</b>				
541.	160 <i>Enhalus acoroides</i>			
542.	162 <i>Halophila decipiens</i>			
543.	163 <i>Halophila minor</i>			
544.	164 <i>Halophila ovalis</i> (Sea Wrack)			
545.	165 <i>Halophila spinulosa</i>			
546.	139 <i>Najas tenuifolia</i> (Water Nymph)			
547.	169 <i>Thalassia hemprichii</i>			
<b>Hydroolithaceae</b>				
548.	26956 <i>Hydroolithon reinboldii</i>			
<b>Hymenocladaceae</b>				
549.	36140 <i>Asteromenia exanimans</i>			
<b>Lamiaceae</b>				
550.	6729 <i>Clerodendrum floribundum</i> (Lollybush)			
551.	6732 <i>Clerodendrum tomentosum</i>			
552.	13689 <i>Clerodendrum tomentosum</i> var. <i>lanceolatum</i>			
553.	13690 <i>Clerodendrum tomentosum</i> var. <i>tomentosum</i>			
554.	11359 <i>Vitex trifolia</i> var. <i>subtrisecta</i>	Y		
<b>Lauraceae</b>				
555.	2949 <i>Cassytha capillaris</i>			
556.	2950 <i>Cassytha filiformis</i> (Love Vine, Jirawan)			
<b>Liagoraceae</b>				
557.	26837 <i>Ganonema farinosum</i>			
558.	26839 <i>Ganonema pinnatum</i>			
559.	27021 <i>Liagora ceranoides</i>			
560.	44525 <i>Neoizziella divaricata</i>			
561.	35120 <i>Patenocarpus paraphysiferus</i>			Y
562.	29601 <i>Titanophycus validus</i>			
563.	27339 <i>Trichogloea requienii</i>			
564.	27370 <i>Yamadaella caenomyce</i>			
<b>Lomentariaceae</b>				
565.	26606 <i>Ceratodictyon spongiosum</i>			
566.	26845 <i>Gelidiopsis intricata</i>			
<b>Loranthaceae</b>				
567.	2381 <i>Amyema miraculosa</i>			
568.	2383 <i>Amyema preissii</i> (Wireleaf Mistletoe)			
569.	11874 <i>Amyema sanguinea</i> var. <i>sanguinea</i>			
<b>Lythraceae</b>				
570.	5276 <i>Ammannia auriculata</i>			
571.	5277 <i>Ammannia baccifera</i>			
572.	5278 <i>Ammannia multiflora</i>			
573.	<i>Lawsonia inermis</i>			
<b>Malvaceae</b>				
574.	4886 <i>Abutilon amplum</i>			
575.	9080 <i>Abutilon cunninghamii</i>			
576.	4891 <i>Abutilon fraseri</i> (Lantern Bush)			
577.	18120 <i>Abutilon fraseri</i> subsp. <i>fraseri</i>			
578.	4894 <i>Abutilon indicum</i> (Indian Lantern Flower)			
579.	11325 <i>Abutilon indicum</i> var. <i>australiense</i>			
580.	4895 <i>Abutilon lepidum</i>			
581.	4898 <i>Abutilon macrum</i>			
582.	4899 <i>Abutilon malvifolium</i> (Bastard Marshmallow)			
583.	4901 <i>Abutilon otocarpum</i> (Desert Chinese Lantern)			
584.	4902 <i>Abutilon oxycarpum</i> (Flannel Weed)			
585.	43020 <i>Abutilon oxycarpum</i> subsp. <i>prostratum</i> (A.A. Mitchell PRP 1266)			
586.	12716 <i>Brachychiton acuminatus</i>			
587.	<i>Brachychiton australe</i>			Y
588.	18411 <i>Corchorus congener</i>		P3	
589.	4857 <i>Corchorus elachocarpus</i>			
590.	17339 <i>Corchorus incanus</i>			
591.	25847 <i>Corchorus incanus</i> subsp. <i>incanus</i>			
592.	13659 <i>Corchorus laniflorus</i>			
593.	18409 <i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>			
594.	4862 <i>Corchorus parviflorus</i>			
595.	<i>Corchorus</i> sp.			
596.	17661 <i>Corchorus tectus</i>			

Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
597.	4865 <i>Corchorus tridens</i>			
598.	13467 <i>Corchorus trilocularis</i>			
599.	4867 <i>Corchorus walcottii</i> (Woolly Corchorus)			
600.	4910 <i>Gossypium australe</i> (Native Cotton)			
601.	4913 <i>Gossypium hirsutum</i> (Upland Cotton)	Y		
602.	4918 <i>Gossypium robinsonii</i> (Wild Cotton)			
603.	29316 <i>Hibiscus austrinus</i>			
604.	29317 <i>Hibiscus austrinus</i> var. <i>austrinus</i>			
605.	4923 <i>Hibiscus brachysiphonius</i>			
606.	4925 <i>Hibiscus coatesii</i>			
607.	4933 <i>Hibiscus leptocladus</i>			
608.	4942 <i>Hibiscus sturtii</i> (Sturt's Hibiscus)			
609.	11651 <i>Hibiscus sturtii</i> var. <i>campylochlamys</i>			
610.	11385 <i>Hibiscus sturtii</i> var. <i>grandiflorus</i>			
611.	11477 <i>Hibiscus sturtii</i> var. <i>platyklamys</i>			
612.	4960 <i>Lawrenzia viridigrisea</i>			
613.	4962 <i>Malvastrum americanum</i> (Spiked Malvastrum)	Y		
614.	5051 <i>Melhania oblongifolia</i>			
615.	<i>Sida Excedentifolia</i> (J.L. Egan 1925)			Y
616.	31758 <i>Sida arsinata</i>			
617.	4971 <i>Sida cardiophylla</i>			
618.	4972 <i>Sida clementii</i>			
619.	4976 <i>Sida echinocarpa</i>			
620.	4977 <i>Sida fibulifera</i> (Silver Sida)			
621.	4988 <i>Sida rohlenae</i>			
622.	33698 <i>Sida</i> sp. <i>Pilbara</i> (A.A. Mitchell PRP 1543)			
623.	16617 <i>Sida</i> sp. <i>spiciform panicles</i> (E. Leyland s.n. 14/8/90)			
624.	4989 <i>Sida spinosa</i> (Spiny Sida)			
625.	4873 <i>Triumfetta appendiculata</i>			
626.	4875 <i>Triumfetta chaetocarpa</i> (Urchins)			
627.	14694 <i>Triumfetta clementii</i>			
628.	4879 <i>Triumfetta leptacantha</i>			
629.	14942 <i>Triumfetta maconochieana</i>			
630.	5106 <i>Waltheria indica</i>			
<b>Marsileaceae</b>				
631.	75 <i>Marsilea exarata</i>			
632.	76 <i>Marsilea hirsuta</i> (Nardoo)			
<b>Meliaceae</b>				
633.	4518 <i>Owenia reticulata</i> (Native Walnut, Bandal)			
<b>Menispermaceae</b>				
634.	2942 <i>Tinospora smilacina</i> (Snakevine, Oondala)			
<b>Molluginaceae</b>				
635.	2836 <i>Glinus oppositifolius</i>			
636.	48203 <i>Hypertelis cerviana</i>			
637.	48201 <i>Trigastrotheca molluginea</i>			
<b>Montiaceae</b>				
638.	2864 <i>Calandrinia ptychosperma</i>			
639.	2866 <i>Calandrinia quadrivalvis</i>			
640.	2872 <i>Calandrinia tepperiana</i>			
<b>Moraceae</b>				
641.	25811 <i>Ficus aculeata</i>			
642.	31578 <i>Ficus aculeata</i> var. <i>indecora</i> (Ranji)			
643.	19648 <i>Ficus brachypoda</i>			
644.	1753 <i>Ficus platypoda</i> (Native Fig, Makartu)			
645.	<i>Ficus</i> sp.			
646.	1759 <i>Ficus virens</i> (Albayi)			
647.	11572 <i>Ficus virens</i> var. <i>sublanceolata</i>			
648.	12096 <i>Ficus virens</i> var. <i>virens</i>			
<b>Mychodeaceae</b>				
649.	27079 <i>Mychodea carmosa</i>			
<b>Myrtaceae</b>				
650.	19125 <i>Corymbia dichromophloia</i>			
651.	17089 <i>Corymbia greeniana</i>			
652.	17093 <i>Corymbia hamersleyana</i>			
653.	17092 <i>Corymbia opaca</i>			
654.	5580 <i>Eucalyptus camaldulensis</i> (River Gum, Yabalyinba)			

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655.	35345 <i>Eucalyptus camaldulensis</i> subsp. <i>obtus</i> a (Blunt-budded River Red Gum)			
656.	35343 <i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i>			
657.	5714 <i>Eucalyptus microtheca</i> (Coolibah)			
658.	5752 <i>Eucalyptus prominens</i>			
659.	14548 <i>Eucalyptus victrix</i>			
660.	15592 <i>Eucalyptus xerothermica</i>			
661.	5875 <i>Melaleuca argentea</i> (Silver Cadjeput, Bandaran)			
662.	5915 <i>Melaleuca glomerata</i>			
663.	5933 <i>Melaleuca linophylla</i>			
664.	6005 <i>Osbornia octodonta</i> (Myrtle Mangrove)			
<b>Nemastomataceae</b>				
665.	27189 <i>Predaea weldii</i>			
<b>Nyctaginaceae</b>				
666.	2769 <i>Boerhavia burbridgeana</i>			
667.	2770 <i>Boerhavia coccinea</i> (Tar Vine, Wituka)			
668.	8357 <i>Boerhavia diffusa</i>			
669.	2772 <i>Boerhavia gardneri</i>			
670.	2773 <i>Boerhavia paludosa</i>			
671.	2774 <i>Boerhavia repleta</i>			
672.	2775 <i>Boerhavia schomburgkiana</i>			
673.	<i>Boerhavia</i> sp.			
674.	2776 <i>Commicarpus australis</i> (Perennial Tar Vine)			
<b>Oleaceae</b>				
675.	6501 <i>Jasminum didymum</i>			
676.	12059 <i>Jasminum didymum</i> subsp. <i>lineare</i> (Desert Jasmine)			
<b>Orobanchaceae</b>				
677.	7103 <i>Striga curviflora</i>			
<b>Passifloraceae</b>				
678.	5226 <i>Passiflora foetida</i> (Stinking Passion Flower)	Y		
<b>Peyssonneliaceae</b>				
679.	44731 <i>Sonderophycus capensis</i>			
<b>Phrymaceae</b>				
680.	7082 <i>Mimulus gracilis</i>			
681.	7092 <i>Peplidium muelleri</i>			
682.	18462 <i>Peplidium</i> sp. <i>E. Evol. Fl. Fauna Arid Aust. (A.S. Weston 12768)</i>			
<b>Phyllanthaceae</b>				
683.	<i>Breynia desorii</i>			
684.	4603 <i>Bridelia tomentosa</i>			
685.	4654 <i>Flueggea virosa</i>			
686.	12013 <i>Flueggea virosa</i> subsp. <i>melanthesoides</i> (Dogwood, Guwal)			
687.	38421 <i>Notoleptopus decaisnei</i>			
688.	38422 <i>Notoleptopus decaisnei</i> var. <i>decaisnei</i>			
689.	4673 <i>Phyllanthus amarus</i>	Y		
690.	9056 <i>Phyllanthus baccatus</i>			
691.	17626 <i>Phyllanthus erwinii</i>			
692.	4680 <i>Phyllanthus maderaspatensis</i>			
<b>Pittosporaceae</b>				
693.	19744 <i>Pittosporum angustifolium</i>			
694.	41300 <i>Pittosporum phillyreoides</i> (Weeping Pittosporum, Yaliti)			
<b>Plantaginaceae</b>				
695.	7098 <i>Stemodia grossa</i> (Marsh Stemodia, Mindjaara)			
696.	7099 <i>Stemodia kingii</i>			
697.	7102 <i>Stemodia viscosa</i> (Pagurda)			
<b>Plumbaginaceae</b>				
698.	6486 <i>Aegialitis annulata</i> (Club Mangrove)			
699.	6490 <i>Muellerolimon salicorniaceum</i>			
700.	6491 <i>Plumbago zeylanica</i> (Native Plumbago)			
<b>Poaceae</b>				
701.	172 <i>Acrachne racemosa</i>			
702.	204 <i>Aristida burbridgeae</i>			
703.	207 <i>Aristida contorta</i> (Bunched Kerosene Grass)			
704.	210 <i>Aristida holathera</i>			
705.	12063 <i>Aristida holathera</i> var. <i>holathera</i>			
706.	215 <i>Aristida latifolia</i> (Feathertop Wiregrass)			

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707.	217 <i>Aristida nitidula</i> (Flat-awned Threawn)			
708.	226 <i>Arundo donax</i> (Giant Reed)	Y		
709.	229 <i>Astrebala pectinata</i> (Barley Mitchell Grass)			
710.	258 <i>Cenchrus ciliaris</i> (Buffel Grass)	Y		
711.	259 <i>Cenchrus echinatus</i> (Burrgrass)	Y		
712.	41568 <i>Cenchrus setaceus</i> (Fountain Grass)	Y		
713.	29721 <i>Cenchrus setiger</i> (Birdwood Grass)	Y		
714.	266 <i>Chloris barbata</i> (Purpletop Chloris)	Y		
715.	269 <i>Chloris pectinata</i> (Comb Chloris)			
716.	270 <i>Chloris pumilio</i>			
717.	273 <i>Chrysopogon fallax</i> (Golden Beard Grass)			
718.	275 <i>Chrysopogon pallidus</i> (Ribbongrass)			
719.	279 <i>Cymbopogon ambiguus</i> (Scentgrass)			
720.	280 <i>Cymbopogon bombycinus</i> (Silky Oilgrass)			
721.	281 <i>Cymbopogon obtectus</i> (Silkyheads)			
722.	282 <i>Cymbopogon procerus</i> (Lemon Grass)			
723.	46558 <i>Cynodon convergens</i>			
724.	46555 <i>Cynodon prostratus</i>			
725.	290 <i>Dactyloctenium radulans</i> (Button Grass)			
726.	303 <i>Dichanthium fecundum</i> (Curly Bluegrass)			
727.	13741 <i>Dichanthium sericeum</i> subsp. <i>humilius</i>			
728.	11964 <i>Dichanthium sericeum</i> subsp. <i>sericeum</i>			
729.	310 <i>Digitaria brownii</i> (Cotton Panic Grass)			
730.	313 <i>Digitaria ctenantha</i> (Comb Finger Grass)			
731.	328 <i>Echinochloa colona</i> (Awnless Barnyard Grass)	Y		
732.	343 <i>Ectrosia leporina</i> (Hare's-foot Grass)			
733.	357 <i>Enneapogon caeruleus</i> (Limestone Grass)			
734.	358 <i>Enneapogon cylindricus</i> (Jointed Nineawn)			
735.	360 <i>Enneapogon lindleyanus</i> (Wiry Nineawn, Purple-head Nineawn)			
736.	363 <i>Enneapogon pallidus</i> (Conetop Nineawn)			
737.	365 <i>Enneapogon polyphyllus</i> (Leafy Nineawn)			
738.	12749 <i>Enneapogon purpurascens</i> (Purple Nineawn)			
739.	368 <i>Enteropogon ramosus</i> (Windmill Grass, Curly Windmill Grass)			
740.	373 <i>Eragrostis brownii</i> (Brown's Lovegrass)			
741.	375 <i>Eragrostis cumingii</i> (Cuming's Love Grass)			
742.	378 <i>Eragrostis dielsii</i> (Mallee Lovegrass)			
743.	379 <i>Eragrostis elongata</i> (Clustered Lovegrass)			
744.	380 <i>Eragrostis eriopoda</i> (Woollybutt Grass, Wangurnu)			
745.	16731 <i>Eragrostis exigua</i>			
746.	381 <i>Eragrostis falcata</i> (Sickle Lovegrass)			
747.	388 <i>Eragrostis leptocarpa</i> (Drooping Lovegrass)			
748.	393 <i>Eragrostis setifolia</i> (Neverfail Grass)			
749.	38505 <i>Eragrostis surreyana</i>		P3	
750.	398 <i>Eragrostis tenellula</i> (Delicate Lovegrass)			
751.	399 <i>Eragrostis xerophila</i> (Knotty-butt Neverfail)			
752.	400 <i>Eriachne aristidea</i>			
753.	403 <i>Eriachne benthamii</i> (Swamp Wanderrie)			
754.	409 <i>Eriachne gardneri</i>			
755.	411 <i>Eriachne helmsii</i> (Buck Wanderrie Grass)			
756.	413 <i>Eriachne mucronata</i> (Mountain Wanderrie Grass)			
757.	414 <i>Eriachne obtusa</i> (Northern Wandarrie Grass)			
758.	417 <i>Eriachne pulchella</i> (Pretty Wanderrie)			
759.	16485 <i>Eriachne pulchella</i> subsp. <i>dominii</i>			
760.	16486 <i>Eriachne pulchella</i> subsp. <i>pulchella</i>			
761.	421 <i>Eriachne tenuiculmis</i>			
762.	425 <i>Eriochloa procera</i> (Cupgrass)			
763.	11011 <i>Eulalia aurea</i>			
764.	458 <i>Iseilema dolichotrichum</i>			
765.	459 <i>Iseilema eremaeum</i>			
766.	465 <i>Iseilema vaginiflorum</i> (Red Flinders Grass)			
767.	503 <i>Panicum decompositum</i> (Native Millet, Kaltu-kaltu)			
768.	504 <i>Panicum effusum</i> (Hairy Panic Grass)			
769.	505 <i>Panicum laevinode</i>			
770.	515 <i>Paraneurachne muelleri</i> (Northern Mulga Grass)			
771.	10975 <i>Paspalidium basicladum</i>			
772.	518 <i>Paspalidium clementii</i> (Clements Paspalidium)			
773.	523 <i>Paspalidium rarum</i> (Rare Paspalidium)			
774.	525 <i>Paspalidium tabulatum</i>			
775.	599 <i>Schizachyrium fragile</i> (Senale Redgrass)			
776.	606 <i>Setaria dielsii</i> (Diels' Pigeon Grass)			

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777.	613 <i>Setaria verticillata</i> (Whorled Pigeon Grass)	Y		
778.	619 <i>Sorghum plumosum</i> (Plume Canegrass)			
779.	12919 <i>Sorghum plumosum</i> var. <i>plumosum</i>			
780.	622 <i>Sorghum timorense</i>			
781.	625 <i>Spinifex longifolius</i> (Beach Spinifex)			
782.	629 <i>Sporobolus australasicus</i> (Fairy Grass)			
783.	635 <i>Sporobolus virginicus</i> (Marine Couch)			
784.	<i>Themeda</i> Mt Barricade (M.E. Trudgen 2471)			Y
785.	672 <i>Themeda avenacea</i> (Native Oatgrass)			
786.	17820 <i>Themeda</i> sp. Hammersley Station (M.E. Trudgen 11431)		P3	
787.	17819 <i>Themeda</i> sp. Mt Barricade (M.E. Trudgen 2471)			
788.	673 <i>Themeda triandra</i>			
789.	678 <i>Tragus australianus</i> (Small Burrgrass)			
790.	679 <i>Triodia angusta</i>			
791.	13131 <i>Triodia epactia</i>			
792.	696 <i>Triodia pungens</i> (Soft Spinifex)			
793.	704 <i>Triodia wiseana</i> (Limestone Spinifex)			
794.	706 <i>Triraphis mollis</i> (Needle Grass)			
795.	725 <i>Whiteochloa airoides</i>			
796.	728 <i>Whiteochloa cymbiformis</i>			
797.	729 <i>Xerochloa barbata</i> (Rice Grass)			
798.	731 <i>Xerochloa laniflora</i> (Rice Grass)			
799.	732 <i>Yakirra australiensis</i>			
800.	11894 <i>Yakirra australiensis</i> var. <i>australiensis</i>			

### Polygalaceae

801.	41363 <i>Polygala galeocephala</i>
802.	41365 <i>Polygala glaucifolia</i>
803.	4572 <i>Polygala isingii</i>

### Polygonaceae

804.	2443 <i>Rumex vesicarius</i> (Ruby Dock)	Y
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### Polyphysaceae

805.	48409 <i>Acetabularia caliculus</i>
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### Portulacaceae

806.	2875 <i>Portulaca australis</i>	
807.	2878 <i>Portulaca conspicua</i>	
808.	2879 <i>Portulaca cyclophylla</i>	
809.	43981 <i>Portulaca decipiens</i>	
810.	2882 <i>Portulaca intraterranea</i>	
811.	2884 <i>Portulaca oleracea</i> (Purslane, Wakati)	
812.	2886 <i>Portulaca pilosa</i> (Djanggara)	Y

### Primulaceae

813.	6478 <i>Aegiceras corniculatum</i> (River Mangrove)
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### Proteaceae

814.	2079 <i>Grevillea pyramidalis</i> (Caustic Bush, Tjungu)
815.	19570 <i>Grevillea pyramidalis</i> subsp. <i>leucadendron</i>
816.	15975 <i>Grevillea pyramidalis</i> subsp. <i>pyramidalis</i>
817.	13440 <i>Grevillea wickhamii</i> subsp. <i>aprica</i>
818.	2138 <i>Hakea chordophylla</i>
819.	2177 <i>Hakea lorea</i> (Witinti)
820.	19137 <i>Hakea lorea</i> subsp. <i>lorea</i>

### Pteridaceae

821.	31 <i>Cheilanthes austrotenuifolia</i>
822.	33 <i>Cheilanthes contigua</i>
823.	12818 <i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>
824.	8462 <i>Cheilanthes tenuifolia</i> (Rock Fern)

### Rhamnaceae

825.	4809 <i>Cryptandra pungens</i>
826.	4846 <i>Ventilago viminalis</i> (Supplejack, Barndaragu)

### Rhizophoraceae

827.	5291 <i>Bruguiera exaristata</i> (Ribbed Mangrove)
828.	39680 <i>Ceriops australis</i>
829.	5295 <i>Rhizophora stylosa</i> (Spotted-leaved Red Mangrove)

### Rhizophyllidaceae

830.	27186 <i>Portieria hornemannii</i>
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Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
<b>Rhodomelaceae</b>				
831.	26440 <i>Acanthophora dendroides</i>			
832.	26441 <i>Acanthophora spicifera</i>			
833.	26628 <i>Chondria armata</i>			
834.	26762 <i>Dictyomenia sonderi</i>			
835.	26782 <i>Digenea simplex</i>			
836.	26800 <i>Echinophycus minutus</i>			Y
837.	48408 <i>Laurencia dendroidea</i>			
838.	<i>Laurencia similis</i>			
839.	27018 <i>Leveillea jungermannioides</i>			
840.	46834 <i>Osmundaria melvillii</i>			
841.	36400 <i>Palisada perforata</i>			
842.	27335 <i>Tolypocladia calodictyon</i>			
843.	27336 <i>Tolypocladia glomerulata</i>			
<b>Rhodymeniaceae</b>				
844.	26516 <i>Botryocladia leptopoda</i>			
845.	26685 <i>Coelarthrum cliftonii</i>			
846.	26686 <i>Coelarthrum opuntia</i>			
<b>Ricciaceae</b>				
847.	<i>Riccia albida</i>			
<b>Rubiaceae</b>				
848.	7317 <i>Dentella asperata</i>			
849.	7318 <i>Dentella minutissima</i>			
850.	7338 <i>Oldenlandia crouchiana</i>			
851.	19640 <i>Oldenlandia</i> sp. Hamersley Station (A.A. Mitchell PRP 1479)		P3	
852.	<i>Pomax Desert</i> (A.S. George 11968)			Y
853.	7363 <i>Synaptantha tillaeacea</i>			
854.	13339 <i>Synaptantha tillaeacea</i> var. <i>tillaeacea</i>			
<b>Santalaceae</b>				
855.	10977 <i>Exocarpos aphyllus</i> (Leafless Ballart)			
856.	2357 <i>Santalum lanceolatum</i> (Northern Sandalwood, Yarnguli)			
<b>Sapindaceae</b>				
857.	4739 <i>Alectryon oleifolius</i>			
858.	11487 <i>Alectryon oleifolius</i> subsp. <i>oleifolius</i>			
859.	4740 <i>Atalaya hemiglauca</i> (Whitewood)			
860.	4745 <i>Diplopeltis eriocarpa</i> (Hairy Pepperflower)			
861.	4759 <i>Dodonaea coriacea</i>			
<b>Schizymeniaceae</b>				
862.	35182 <i>Titanophora pikeana</i>			
<b>Scinaiaceae</b>				
863.	27270 <i>Scinaia tsinglanensis</i>			
<b>Scrophulariaceae</b>				
864.	7234 <i>Eremophila longifolia</i> (Berrigan, Tulypurpa)			
865.	16363 <i>Eremophila maculata</i> subsp. <i>brevifolia</i> (Native Fuchsia)			
866.	17158 <i>Myoporum montanum</i> (Native Myrtle)			
<b>Sebdeniaceae</b>				
867.	27274 <i>Sebdenia flabellata</i>			
<b>Siphonocladaceae</b>				
868.	26507 <i>Boergesenia forbesii</i>			
869.	26769 <i>Dictyosphaeria cavernosa</i>			
870.	27280 <i>Siphonocladus tropicus</i>			
<b>Solanaceae</b>				
871.	6962 <i>Datura leichhardtii</i> (Native Thornapple)	Y		
872.	6963 <i>Datura metel</i> (Downy Thornapple)	Y		
873.	6966 <i>Duboisia hopwoodii</i> (Pituri, Kundugu)			
874.	6971 <i>Nicotiana benthamiana</i> (Tjuntiwari)			
875.	6976 <i>Nicotiana occidentalis</i> (Native Tobacco)			
876.	11331 <i>Nicotiana occidentalis</i> subsp. <i>obliqua</i>			
877.	11856 <i>Nicotiana occidentalis</i> subsp. <i>occidentalis</i>			
878.	11734 <i>Nicotiana rosulata</i> subsp. <i>rosulata</i>			
879.	6980 <i>Nicotiana umbratica</i>		P3	
880.	20652 <i>Physalis angulata</i>	Y		
881.	<i>Solanum Boomerang Bay</i> (K.F. Kenneally 10021)			Y
882.	41820 <i>Solanum albostellatum</i>		P3	
883.	6998 <i>Solanum cleistogamum</i>			

Name ID	Species Name	Naturalised	Conservation Code	<sup>1</sup> Endemic To Query Area
884.	7002 <i>Solanum diversiflorum</i>			
885.	7007 <i>Solanum esuriale</i> (Quena)			
886.	7009 <i>Solanum gabriellae</i>			
887.	7014 <i>Solanum horridum</i>			
888.	7018 <i>Solanum lasiophyllum</i> (Flannel Bush, Mindjulu)			
889.	7022 <i>Solanum nigrum</i> (Black Berry Nightshade)	Y		
890.	7029 <i>Solanum phlomoides</i>			
891.	7036 <i>Solanum sturtianum</i> (Thargomindah Nightshade)			
<b>Solieriaceae</b>				
892.	48503 <i>Betaphycus speciosus</i>			
893.	26827 <i>Eucheuma denticulatum</i>			
<b>Stylidiaceae</b>				
894.	7729 <i>Stylidium fluminense</i>			
895.	7799 <i>Stylidium spathulatum</i> (Creamy Triggerplant)			
<b>Surianaceae</b>				
896.	3182 <i>Stylobasium spathulatum</i> (Pebble Bush)			
<b>Tamaricaceae</b>				
897.	15741 <i>Tamarix aphylla</i> (Athel Tree)	Y		
<b>Thymelaeaceae</b>				
898.	5230 <i>Pimelea ammocharis</i>			
<b>Udoteaceae</b>				
899.	27121 <i>Penicillus nodulosus</i>			
900.	27213 <i>Rhipidosiphon javensis</i>			
901.	27348 <i>Udotea argentea</i>			
902.	27349 <i>Udotea flabellum</i>			
903.	35302 <i>Udotea glaucescens</i>			
904.	35121 <i>Udotea orientalis</i>			
<b>Valoniaceae</b>				
905.	36143 <i>Valonia fastigiata</i>			
906.	46438 <i>Valonia ventricosa</i>			
907.	27357 <i>Valoniopsis pachynema</i>			
<b>Violaceae</b>				
908.	5215 <i>Hybanthus aurantiacus</i>			
909.	5219 <i>Hybanthus enneaspermus</i>			
<b>Wrangeliaceae</b>				
910.	45078 <i>Grallatoria reptans</i>			
<b>Zygophyllaceae</b>				
911.	48900 <i>Roepera retivalvis</i>			
912.	4375 <i>Tribulus cistoides</i>			
913.	4377 <i>Tribulus hirsutus</i>			
914.	4379 <i>Tribulus macrocarpus</i>			
915.	4380 <i>Tribulus occidentalis</i> (Perennial Caltrop)			
916.	4381 <i>Tribulus platypterus</i> (Cork Hopbush)			
917.	18072 <i>Tribulus suberosus</i>			
918.	4383 <i>Tribulus terrestris</i> (Caltrop)	Y		

**Conservation Codes**

T - Rare or likely to become extinct  
X - Presumed extinct  
IA - Protected under international agreement  
S - Other specially protected fauna  
1 - Priority 1  
2 - Priority 2  
3 - Priority 3  
4 - Priority 4  
5 - Priority 5

<sup>1</sup> For NatureMap's purposes, species flagged as endemic are those whose records are wholly contained within the search area. Note that only those records complying with the search criterion are included in the calculation. For example, if you limit records to those from a specific datasources, only records from that datasources are used to determine if a species is restricted to the query area.



# EPBC Act Protected Matters Report

This report provides general guidance on matters of national environmental significance and other matters protected by the EPBC Act in the area you have selected.

Information on the coverage of this report and qualifications on data supporting this report are contained in the caveat at the end of the report.

Information is available about [Environment Assessments](#) and the EPBC Act including significance guidelines, forms and application process details.

Report created: 01/06/21 08:39:48

[Summary](#)

[Details](#)

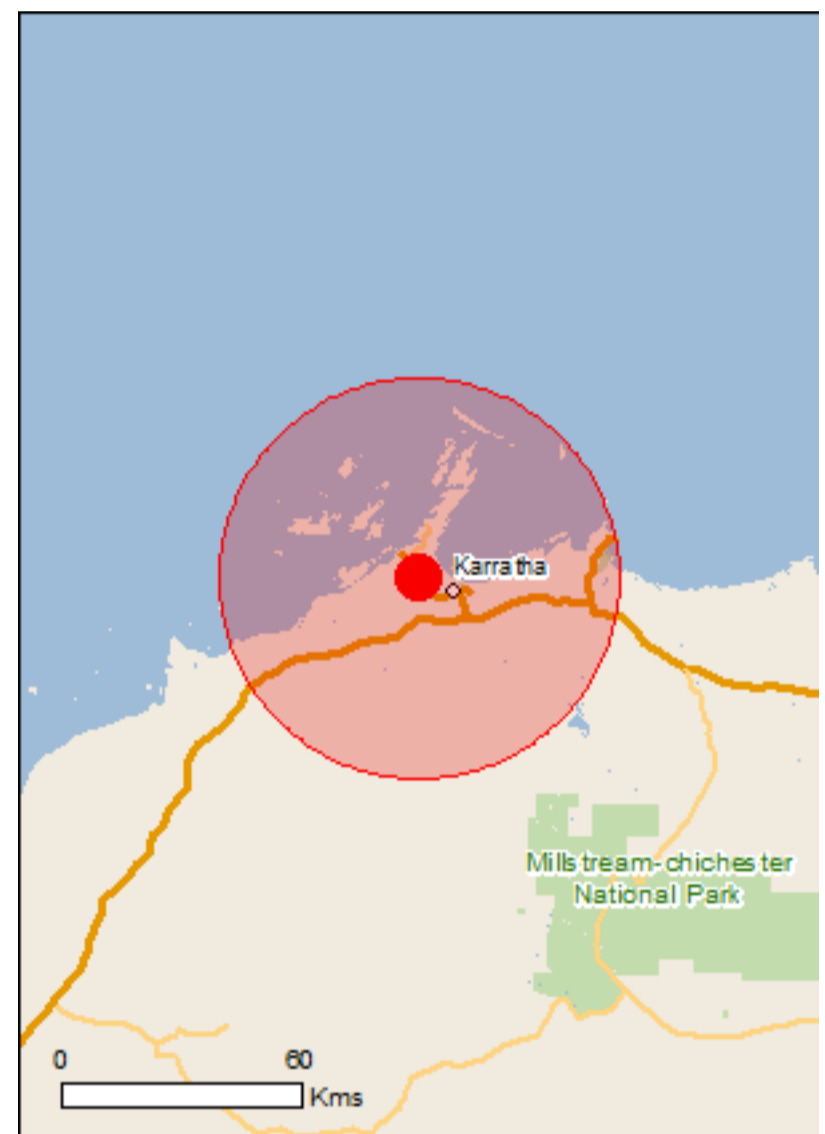
[Matters of NES](#)

[Other Matters Protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

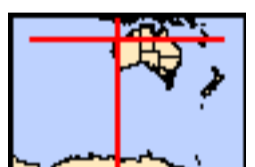
[Acknowledgements](#)



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[Coordinates](#)

Buffer: 50.0Km





# Summary

## Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the [Administrative Guidelines on Significance](#).

<a href="#">World Heritage Properties:</a>	None
<a href="#">National Heritage Places:</a>	1
<a href="#">Wetlands of International Importance:</a>	None
<a href="#">Great Barrier Reef Marine Park:</a>	None
<a href="#">Commonwealth Marine Area:</a>	1
<a href="#">Listed Threatened Ecological Communities:</a>	None
<a href="#">Listed Threatened Species:</a>	31
<a href="#">Listed Migratory Species:</a>	61

## Other Matters Protected by the EPBC Act

This part of the report summarises other matters protected under the Act that may relate to the area you nominated. Approval may be required for a proposed activity that significantly affects the environment on Commonwealth land, when the action is outside the Commonwealth land, or the environment anywhere when the action is taken on Commonwealth land. Approval may also be required for the Commonwealth or Commonwealth agencies proposing to take an action that is likely to have a significant impact on the environment anywhere.

The EPBC Act protects the environment on Commonwealth land, the environment from the actions taken on Commonwealth land, and the environment from actions taken by Commonwealth agencies. As heritage values of a place are part of the 'environment', these aspects of the EPBC Act protect the Commonwealth Heritage values of a Commonwealth Heritage place. Information on the new heritage laws can be found at <http://www.environment.gov.au/heritage>

A [permit](#) may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species.

<a href="#">Commonwealth Land:</a>	2
<a href="#">Commonwealth Heritage Places:</a>	None
<a href="#">Listed Marine Species:</a>	107
<a href="#">Whales and Other Cetaceans:</a>	12
<a href="#">Critical Habitats:</a>	None
<a href="#">Commonwealth Reserves Terrestrial:</a>	None
<a href="#">Australian Marine Parks:</a>	2

## Extra Information

This part of the report provides information that may also be relevant to the area you have nominated.

<a href="#">State and Territory Reserves:</a>	8
<a href="#">Regional Forest Agreements:</a>	None
<a href="#">Invasive Species:</a>	19
<a href="#">Nationally Important Wetlands:</a>	None
<a href="#">Key Ecological Features (Marine)</a>	None

# Details

## Matters of National Environmental Significance

National Heritage Properties		<a href="#">[ Resource Information ]</a>
Name	State	Status
Indigenous		
<a href="#">Dampier Archipelago (including Burrup Peninsula)</a>	WA	Listed place

## Commonwealth Marine Area [\[ Resource Information \]](#)

Approval is required for a proposed activity that is located within the Commonwealth Marine Area which has, will have, or is likely to have a significant impact on the environment. Approval may be required for a proposed action taken outside the Commonwealth Marine Area but which has, may have or is likely to have a significant impact on the environment in the Commonwealth Marine Area. Generally the Commonwealth Marine Area stretches from three nautical miles to two hundred nautical miles from the coast.

Name
EEZ and Territorial Sea

## Marine Regions [\[ Resource Information \]](#)

If you are planning to undertake action in an area in or close to the Commonwealth Marine Area, and a marine bioregional plan has been prepared for the Commonwealth Marine Area in that area, the marine bioregional plan may inform your decision as to whether to refer your proposed action under the EPBC Act.

Name
<a href="#">North-west</a>

## Listed Threatened Species [\[ Resource Information \]](#)

Name	Status	Type of Presence
Birds		
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Calidris tenuirostris</a> Great Knot [862]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Charadrius leschenaultii</a> Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Charadrius mongolus</a> Lesser Sand Plover, Mongolian Plover [879]	Endangered	Species or species habitat known to occur within area
<a href="#">Falco hypoleucos</a> Grey Falcon [929]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Limosa lapponica menzbieri</a> Northern Siberian Bar-tailed Godwit, Russkoye Bar-tailed Godwit [86432]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Macronectes giganteus</a> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area

Name	Status	Type of Presence
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Pezoporus occidentalis</a> Night Parrot [59350]	Endangered	Species or species habitat may occur within area
<a href="#">Rostratula australis</a> Australian Painted Snipe [77037]	Endangered	Species or species habitat may occur within area
<a href="#">Sternula nereis nereis</a> Australian Fairy Tern [82950]	Vulnerable	Breeding known to occur within area
<b>Mammals</b>		
<a href="#">Balaenoptera musculus</a> Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
<a href="#">Dasyurus hallucatus</a> Northern Quoll, Digul [Gogo-Yimidir], Wijingadda [Dambimangari], Wiminji [Martu] [331]	Endangered	Species or species habitat known to occur within area
<a href="#">Macroderma gigas</a> Ghost Bat [174]	Vulnerable	Species or species habitat likely to occur within area
<a href="#">Macrotis lagotis</a> Greater Bilby [282]	Vulnerable	Species or species habitat may occur within area
<a href="#">Megaptera novaeangliae</a> Humpback Whale [38]	Vulnerable	Breeding known to occur within area
<a href="#">Rhinonictis aurantia (Pilbara form)</a> Pilbara Leaf-nosed Bat [82790]	Vulnerable	Species or species habitat may occur within area
<b>Reptiles</b>		
<a href="#">Aipysurus apraefrontalis</a> Short-nosed Seasnake [1115]	Critically Endangered	Species or species habitat likely to occur within area
<a href="#">Caretta caretta</a> Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Vulnerable	Breeding known to occur within area
<a href="#">Dermochelys coriacea</a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
<a href="#">Eretmochelys imbricata</a> Hawksbill Turtle [1766]	Vulnerable	Breeding known to occur within area
<a href="#">Lerista neviniae</a> Nevin's Slider [85296]	Endangered	Species or species habitat known to occur within area
<a href="#">Liasis olivaceus barroni</a> Olive Python (Pilbara subspecies) [66699]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
<b>Sharks</b>		
<a href="#">Carcharias taurus (west coast population)</a> Grey Nurse Shark (west coast population) [68752]	Vulnerable	Species or species habitat likely to occur within area

Name	Status	Type of Presence
<a href="#">Carcharodon carcharias</a> White Shark, Great White Shark [64470]	Vulnerable	Species or species habitat may occur within area
<a href="#">Pristis clavata</a> Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Pristis zijsron</a> Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Rhincodon typus</a> Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area

### Listed Migratory Species

[ [Resource Information](#) ]

\* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
<b>Migratory Marine Birds</b>		
<a href="#">Anous stolidus</a> Common Noddy [825]		Species or species habitat may occur within area
<a href="#">Apus pacificus</a> Fork-tailed Swift [678]		Species or species habitat likely to occur within area
<a href="#">Ardenna pacifica</a> Wedge-tailed Shearwater [84292]		Breeding known to occur within area
<a href="#">Calonectris leucomelas</a> Streaked Shearwater [1077]		Species or species habitat likely to occur within area
<a href="#">Fregata ariel</a> Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area
<a href="#">Hydroprogne caspia</a> Caspian Tern [808]		Breeding known to occur within area
<a href="#">Macronectes giganteus</a> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
<a href="#">Onychoprion anaethetus</a> Bridled Tern [82845]		Breeding known to occur within area
<a href="#">Sterna dougallii</a> Roseate Tern [817]		Breeding likely to occur within area
<b>Migratory Marine Species</b>		
<a href="#">Anoxypristis cuspidata</a> Narrow Sawfish, Knifetooth Sawfish [68448]		Species or species habitat likely to occur within area
<a href="#">Balaenoptera edeni</a> Bryde's Whale [35]		Species or species habitat may occur within area
<a href="#">Balaenoptera musculus</a> Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
<a href="#">Carcharhinus longimanus</a> Oceanic Whitetip Shark [84108]		Species or species habitat likely to occur within area
<a href="#">Carcharodon carcharias</a> White Shark, Great White Shark [64470]	Vulnerable	Species or species

Name	Threatened	Type of Presence
<a href="#">Caretta caretta</a> Loggerhead Turtle [1763]	Endangered	habitat may occur within area Breeding known to occur within area
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Vulnerable	Breeding known to occur within area
<a href="#">Dermochelys coriacea</a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
<a href="#">Dugong dugon</a> Dugong [28]		Species or species habitat known to occur within area
<a href="#">Eretmochelys imbricata</a> Hawksbill Turtle [1766]	Vulnerable	Breeding known to occur within area
<a href="#">Manta alfredi</a> Reef Manta Ray, Coastal Manta Ray, Inshore Manta Ray, Prince Alfred's Ray, Resident Manta Ray [84994]		Species or species habitat known to occur within area
<a href="#">Manta birostris</a> Giant Manta Ray, Chevron Manta Ray, Pacific Manta Ray, Pelagic Manta Ray, Oceanic Manta Ray [84995]		Species or species habitat likely to occur within area
<a href="#">Megaptera novaeangliae</a> Humpback Whale [38]	Vulnerable	Breeding known to occur within area
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
<a href="#">Orcinus orca</a> Killer Whale, Orca [46]		Species or species habitat may occur within area
<a href="#">Pristis clavata</a> Dwarf Sawfish, Queensland Sawfish [68447]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Pristis zijsron</a> Green Sawfish, Dindagubba, Narrowsnout Sawfish [68442]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Rhincodon typus</a> Whale Shark [66680]	Vulnerable	Species or species habitat may occur within area
<a href="#">Sousa chinensis</a> Indo-Pacific Humpback Dolphin [50]		Species or species habitat known to occur within area
<a href="#">Tursiops aduncus (Arafura/Timor Sea populations)</a> Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat known to occur within area
<b>Migratory Terrestrial Species</b>		
<a href="#">Hirundo rustica</a> Barn Swallow [662]		Species or species habitat may occur within area
<a href="#">Motacilla cinerea</a> Grey Wagtail [642]		Species or species habitat may occur within area
<a href="#">Motacilla flava</a> Yellow Wagtail [644]		Species or species habitat may occur within area
<b>Migratory Wetlands Species</b>		
<a href="#">Actitis hypoleucos</a> Common Sandpiper [59309]		Species or species habitat known to occur

Name	Threatened	Type of Presence within area
<a href="#">Arenaria interpres</a> Ruddy Turnstone [872]		Species or species habitat known to occur within area
<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
<a href="#">Calidris alba</a> Sanderling [875]		Species or species habitat known to occur within area
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Calidris melanotos</a> Pectoral Sandpiper [858]		Species or species habitat known to occur within area
<a href="#">Calidris ruficollis</a> Red-necked Stint [860]		Species or species habitat known to occur within area
<a href="#">Calidris subminuta</a> Long-toed Stint [861]		Species or species habitat known to occur within area
<a href="#">Calidris tenuirostris</a> Great Knot [862]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Charadrius leschenaultii</a> Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Charadrius mongolus</a> Lesser Sand Plover, Mongolian Plover [879]	Endangered	Species or species habitat known to occur within area
<a href="#">Charadrius veredus</a> Oriental Plover, Oriental Dotterel [882]		Species or species habitat known to occur within area
<a href="#">Glareola maldivarum</a> Oriental Pratincole [840]		Species or species habitat known to occur within area
<a href="#">Limicola falcinellus</a> Broad-billed Sandpiper [842]		Species or species habitat known to occur within area
<a href="#">Limosa lapponica</a> Bar-tailed Godwit [844]		Species or species habitat known to occur within area
<a href="#">Limosa limosa</a> Black-tailed Godwit [845]		Species or species habitat known to occur within area
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Numenius phaeopus</a> Whimbrel [849]		Species or species habitat known to occur within area

Name	Threatened	Type of Presence
<a href="#">Pandion haliaetus</a> Osprey [952]		Breeding known to occur within area
<a href="#">Phalaropus lobatus</a> Red-necked Phalarope [838]		Species or species habitat known to occur within area
<a href="#">Pluvialis fulva</a> Pacific Golden Plover [25545]		Species or species habitat known to occur within area
<a href="#">Pluvialis squatarola</a> Grey Plover [865]		Species or species habitat known to occur within area
<a href="#">Thalasseus bergii</a> Greater Crested Tern [83000]		Breeding known to occur within area
<a href="#">Tringa brevipes</a> Grey-tailed Tattler [851]		Species or species habitat known to occur within area
<a href="#">Tringa nebularia</a> Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area
<a href="#">Tringa stagnatilis</a> Marsh Sandpiper, Little Greenshank [833]		Species or species habitat known to occur within area
<a href="#">Tringa totanus</a> Common Redshank, Redshank [835]		Species or species habitat known to occur within area
<a href="#">Xenus cinereus</a> Terek Sandpiper [59300]		Species or species habitat known to occur within area

## Other Matters Protected by the EPBC Act

### Commonwealth Land [\[ Resource Information \]](#)

The Commonwealth area listed below may indicate the presence of Commonwealth land in this vicinity. Due to the unreliability of the data source, all proposals should be checked as to whether it impacts on a Commonwealth area, before making a definitive decision. Contact the State or Territory government land department for further information.

Name
Commonwealth Land - Defence - KARRATHA TRAINING DEPOT

### Listed Marine Species [\[ Resource Information \]](#)

\* Species is listed under a different scientific name on the EPBC Act - Threatened Species list.

Name	Threatened	Type of Presence
<b>Birds</b>		
<a href="#">Actitis hypoleucos</a> Common Sandpiper [59309]		Species or species habitat known to occur within area
<a href="#">Anous stolidus</a> Common Noddy [825]		Species or species habitat may occur within area
<a href="#">Apus pacificus</a> Fork-tailed Swift [678]		Species or species habitat likely to occur within area
<a href="#">Ardea ibis</a> Cattle Egret [59542]		Species or species habitat may occur within

Name	Threatened	Type of Presence area
<a href="#">Arenaria interpres</a> Ruddy Turnstone [872]		Species or species habitat known to occur within area
<a href="#">Calidris acuminata</a> Sharp-tailed Sandpiper [874]		Species or species habitat known to occur within area
<a href="#">Calidris alba</a> Sanderling [875]		Species or species habitat known to occur within area
<a href="#">Calidris canutus</a> Red Knot, Knot [855]	Endangered	Species or species habitat known to occur within area
<a href="#">Calidris ferruginea</a> Curlew Sandpiper [856]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Calidris melanotos</a> Pectoral Sandpiper [858]		Species or species habitat known to occur within area
<a href="#">Calidris ruficollis</a> Red-necked Stint [860]		Species or species habitat known to occur within area
<a href="#">Calidris subminuta</a> Long-toed Stint [861]		Species or species habitat known to occur within area
<a href="#">Calidris tenuirostris</a> Great Knot [862]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Calonectris leucomelas</a> Streaked Shearwater [1077]		Species or species habitat likely to occur within area
<a href="#">Charadrius leschenaultii</a> Greater Sand Plover, Large Sand Plover [877]	Vulnerable	Species or species habitat known to occur within area
<a href="#">Charadrius mongolus</a> Lesser Sand Plover, Mongolian Plover [879]	Endangered	Species or species habitat known to occur within area
<a href="#">Charadrius ruficapillus</a> Red-capped Plover [881]		Species or species habitat known to occur within area
<a href="#">Charadrius veredus</a> Oriental Plover, Oriental Dotterel [882]		Species or species habitat known to occur within area
<a href="#">Chrysococcyx osculans</a> Black-eared Cuckoo [705]		Species or species habitat known to occur within area
<a href="#">Fregata ariel</a> Lesser Frigatebird, Least Frigatebird [1012]		Species or species habitat known to occur within area
<a href="#">Glareola maldivarum</a> Oriental Pratincole [840]		Species or species habitat known to occur within area
<a href="#">Haliaeetus leucogaster</a> White-bellied Sea-Eagle [943]		Breeding known to occur within area



Name	Threatened	Type of Presence
<a href="#">Heteroscelus brevipes</a> Grey-tailed Tattler [59311]		Species or species habitat known to occur within area
<a href="#">Himantopus himantopus</a> Pied Stilt, Black-winged Stilt [870]		Species or species habitat known to occur within area
<a href="#">Hirundo rustica</a> Barn Swallow [662]		Species or species habitat may occur within area
<a href="#">Larus novaehollandiae</a> Silver Gull [810]		Breeding known to occur within area
<a href="#">Limicola falcinellus</a> Broad-billed Sandpiper [842]		Species or species habitat known to occur within area
<a href="#">Limosa lapponica</a> Bar-tailed Godwit [844]		Species or species habitat known to occur within area
<a href="#">Limosa limosa</a> Black-tailed Godwit [845]		Species or species habitat known to occur within area
<a href="#">Macronectes giganteus</a> Southern Giant-Petrel, Southern Giant Petrel [1060]	Endangered	Species or species habitat may occur within area
<a href="#">Merops ornatus</a> Rainbow Bee-eater [670]		Species or species habitat may occur within area
<a href="#">Motacilla cinerea</a> Grey Wagtail [642]		Species or species habitat may occur within area
<a href="#">Motacilla flava</a> Yellow Wagtail [644]		Species or species habitat may occur within area
<a href="#">Numenius madagascariensis</a> Eastern Curlew, Far Eastern Curlew [847]	Critically Endangered	Species or species habitat known to occur within area
<a href="#">Numenius phaeopus</a> Whimbrel [849]		Species or species habitat known to occur within area
<a href="#">Pandion haliaetus</a> Osprey [952]		Breeding known to occur within area
<a href="#">Phalaropus lobatus</a> Red-necked Phalarope [838]		Species or species habitat known to occur within area
<a href="#">Pluvialis fulva</a> Pacific Golden Plover [25545]		Species or species habitat known to occur within area
<a href="#">Pluvialis squatarola</a> Grey Plover [865]		Species or species habitat known to occur within area
<a href="#">Puffinus pacificus</a> Wedge-tailed Shearwater [1027]		Breeding known to occur within area
<a href="#">Recurvirostra novaehollandiae</a> Red-necked Avocet [871]		Species or species habitat known to occur within area

Name	Threatened	Type of Presence
<a href="#">Rostratula benghalensis (sensu lato)</a> Painted Snipe [889]	Endangered*	Species or species habitat may occur within area
<a href="#">Sterna anaethetus</a> Bridled Tern [814]		Breeding known to occur within area
<a href="#">Sterna bergii</a> Crested Tern [816]		Breeding known to occur within area
<a href="#">Sterna caspia</a> Caspian Tern [59467]		Breeding known to occur within area
<a href="#">Sterna dougallii</a> Roseate Tern [817]		Breeding likely to occur within area
<a href="#">Sterna fuscata</a> Sooty Tern [794]		Breeding known to occur within area
<a href="#">Sterna nereis</a> Fairy Tern [796]		Breeding known to occur within area
<a href="#">Stiltia isabella</a> Australian Pratincole [818]		Species or species habitat known to occur within area
<a href="#">Tringa nebularia</a> Common Greenshank, Greenshank [832]		Species or species habitat known to occur within area
<a href="#">Tringa stagnatilis</a> Marsh Sandpiper, Little Greenshank [833]		Species or species habitat known to occur within area
<a href="#">Tringa totanus</a> Common Redshank, Redshank [835]		Species or species habitat known to occur within area
<a href="#">Xenus cinereus</a> Terek Sandpiper [59300]		Species or species habitat known to occur within area
<b>Fish</b>		
<a href="#">Acentronura larsonae</a> Helen's Pygmy Pipehorse [66186]		Species or species habitat may occur within area
<a href="#">Bulbonaricus brauni</a> Braun's Pughead Pipefish, Pug-headed Pipefish [66189]		Species or species habitat may occur within area
<a href="#">Campichthys tricarinatus</a> Three-keel Pipefish [66192]		Species or species habitat may occur within area
<a href="#">Choeroichthys brachysoma</a> Pacific Short-bodied Pipefish, Short-bodied Pipefish [66194]		Species or species habitat may occur within area
<a href="#">Choeroichthys latispinosus</a> Muiron Island Pipefish [66196]		Species or species habitat may occur within area
<a href="#">Choeroichthys suillus</a> Pig-snouted Pipefish [66198]		Species or species habitat may occur within area
<a href="#">Doryrhamphus dactyliophorus</a> Banded Pipefish, Ringed Pipefish [66210]		Species or species habitat may occur within area
<a href="#">Doryrhamphus janssi</a> Cleaner Pipefish, Janss' Pipefish [66212]		Species or species

Name	Threatened	Type of Presence
<a href="#">Doryrhamphus multiannulatus</a> Many-banded Pipefish [66717]		habitat may occur within area  Species or species habitat may occur within area
<a href="#">Doryrhamphus negrosensis</a> Flagtail Pipefish, Masthead Island Pipefish [66213]		Species or species habitat may occur within area
<a href="#">Festucalex scalaris</a> Ladder Pipefish [66216]		Species or species habitat may occur within area
<a href="#">Filicampus tigris</a> Tiger Pipefish [66217]		Species or species habitat may occur within area
<a href="#">Halicampus brocki</a> Brock's Pipefish [66219]		Species or species habitat may occur within area
<a href="#">Halicampus grayi</a> Mud Pipefish, Gray's Pipefish [66221]		Species or species habitat may occur within area
<a href="#">Halicampus nitidus</a> Glittering Pipefish [66224]		Species or species habitat may occur within area
<a href="#">Halicampus spinirostris</a> Spiny-snout Pipefish [66225]		Species or species habitat may occur within area
<a href="#">Haliichthys taeniophorus</a> Ribbioned Pipehorse, Ribbioned Seadragon [66226]		Species or species habitat may occur within area
<a href="#">Hippichthys penicillus</a> Beady Pipefish, Steep-nosed Pipefish [66231]		Species or species habitat may occur within area
<a href="#">Hippocampus angustus</a> Western Spiny Seahorse, Narrow-bellied Seahorse [66234]		Species or species habitat may occur within area
<a href="#">Hippocampus histrix</a> Spiny Seahorse, Thorny Seahorse [66236]		Species or species habitat may occur within area
<a href="#">Hippocampus kuda</a> Spotted Seahorse, Yellow Seahorse [66237]		Species or species habitat may occur within area
<a href="#">Hippocampus planifrons</a> Flat-face Seahorse [66238]		Species or species habitat may occur within area
<a href="#">Hippocampus trimaculatus</a> Three-spot Seahorse, Low-crowned Seahorse, Flat-faced Seahorse [66720]		Species or species habitat may occur within area
<a href="#">Micrognathus micronotopterus</a> Tidepool Pipefish [66255]		Species or species habitat may occur within area
<a href="#">Phoxocampus belcheri</a> Black Rock Pipefish [66719]		Species or species habitat may occur within area
<a href="#">Solegnathus hardwickii</a> Pallid Pipehorse, Hardwick's Pipehorse [66272]		Species or species habitat may occur within

Name	Threatened	Type of Presence area
<a href="#">Solegnathus lettiensis</a> Gunther's Pipehorse, Indonesian Pipefish [66273]		Species or species habitat may occur within area
<a href="#">Solenostomus cyanopterus</a> Robust Ghostpipefish, Blue-finned Ghost Pipefish, [66183]		Species or species habitat may occur within area
<a href="#">Syngnathoides biaculeatus</a> Double-end Pipehorse, Double-ended Pipehorse, Alligator Pipefish [66279]		Species or species habitat may occur within area
<a href="#">Trachyrhamphus bicoarctatus</a> Bentstick Pipefish, Bend Stick Pipefish, Short-tailed Pipefish [66280]		Species or species habitat may occur within area
<a href="#">Trachyrhamphus longirostris</a> Straightstick Pipefish, Long-nosed Pipefish, Straight Stick Pipefish [66281]		Species or species habitat may occur within area
<b>Mammals</b>		
<a href="#">Dugong dugon</a> Dugong [28]		Species or species habitat known to occur within area
<b>Reptiles</b>		
<a href="#">Acalyptophis peronii</a> Horned Seasnake [1114]		Species or species habitat may occur within area
<a href="#">Aipysurus apraefrontalis</a> Short-nosed Seasnake [1115]	Critically Endangered	Species or species habitat likely to occur within area
<a href="#">Aipysurus duboisii</a> Dubois' Seasnake [1116]		Species or species habitat may occur within area
<a href="#">Aipysurus eydouxii</a> Spine-tailed Seasnake [1117]		Species or species habitat may occur within area
<a href="#">Aipysurus laevis</a> Olive Seasnake [1120]		Species or species habitat may occur within area
<a href="#">Aipysurus tenuis</a> Brown-lined Seasnake [1121]		Species or species habitat may occur within area
<a href="#">Astrotia stokesii</a> Stokes' Seasnake [1122]		Species or species habitat may occur within area
<a href="#">Caretta caretta</a> Loggerhead Turtle [1763]	Endangered	Breeding known to occur within area
<a href="#">Chelonia mydas</a> Green Turtle [1765]	Vulnerable	Breeding known to occur within area
<a href="#">Dermochelys coriacea</a> Leatherback Turtle, Leathery Turtle, Luth [1768]	Endangered	Breeding likely to occur within area
<a href="#">Disteira kingii</a> Spectacled Seasnake [1123]		Species or species habitat may occur within area
<a href="#">Disteira major</a> Olive-headed Seasnake [1124]		Species or species habitat may occur within area

Name	Threatened	Type of Presence
<a href="#">Emydocephalus annulatus</a> Turtle-headed Seasnake [1125]		Species or species habitat may occur within area
<a href="#">Ephalophis greyi</a> North-western Mangrove Seasnake [1127]		Species or species habitat may occur within area
<a href="#">Eretmochelys imbricata</a> Hawksbill Turtle [1766]	Vulnerable	Breeding known to occur within area
<a href="#">Hydrelaps darwiniensis</a> Black-ringed Seasnake [1100]		Species or species habitat may occur within area
<a href="#">Hydrophis czeblukovi</a> Fine-spined Seasnake [59233]		Species or species habitat may occur within area
<a href="#">Hydrophis elegans</a> Elegant Seasnake [1104]		Species or species habitat may occur within area
<a href="#">Hydrophis mcdowellii</a> null [25926]		Species or species habitat may occur within area
<a href="#">Hydrophis ornatus</a> Spotted Seasnake, Ornate Reef Seasnake [1111]		Species or species habitat may occur within area
<a href="#">Natator depressus</a> Flatback Turtle [59257]	Vulnerable	Breeding known to occur within area
<a href="#">Pelamis platurus</a> Yellow-bellied Seasnake [1091]		Species or species habitat may occur within area

## Whales and other Cetaceans

[ [Resource Information](#) ]

Name	Status	Type of Presence
<b>Mammals</b>		
<a href="#">Balaenoptera acutorostrata</a> Minke Whale [33]		Species or species habitat may occur within area
<a href="#">Balaenoptera edeni</a> Bryde's Whale [35]		Species or species habitat may occur within area
<a href="#">Balaenoptera musculus</a> Blue Whale [36]	Endangered	Species or species habitat likely to occur within area
<a href="#">Delphinus delphis</a> Common Dolphin, Short-beaked Common Dolphin [60]		Species or species habitat may occur within area
<a href="#">Grampus griseus</a> Risso's Dolphin, Grampus [64]		Species or species habitat may occur within area
<a href="#">Megaptera novaeangliae</a> Humpback Whale [38]	Vulnerable	Breeding known to occur within area
<a href="#">Orcinus orca</a> Killer Whale, Orca [46]		Species or species habitat may occur within area
<a href="#">Sousa chinensis</a> Indo-Pacific Humpback Dolphin [50]		Species or species habitat known to occur within area

Name	Status	Type of Presence
<a href="#">Stenella attenuata</a> Spotted Dolphin, Pantropical Spotted Dolphin [51]		Species or species habitat may occur within area
<a href="#">Tursiops aduncus</a> Indian Ocean Bottlenose Dolphin, Spotted Bottlenose Dolphin [68418]		Species or species habitat likely to occur within area
<a href="#">Tursiops aduncus (Arafura/Timor Sea populations)</a> Spotted Bottlenose Dolphin (Arafura/Timor Sea populations) [78900]		Species or species habitat known to occur within area
<a href="#">Tursiops truncatus s. str.</a> Bottlenose Dolphin [68417]		Species or species habitat may occur within area

## Australian Marine Parks [ Resource Information ]

Name	Label
Dampier	Habitat Protection Zone (IUCN IV)
Dampier	National Park Zone (IUCN II)

## Extra Information

### State and Territory Reserves [ Resource Information ]

Name	State
Murujuga	WA
Unnamed WA36907	WA
Unnamed WA36909	WA
Unnamed WA36910	WA
Unnamed WA36913	WA
Unnamed WA36915	WA
Unnamed WA38287	WA
Unnamed WA40877	WA

### Invasive Species [ Resource Information ]

Weeds reported here are the 20 species of national significance (WoNS), along with other introduced plants that are considered by the States and Territories to pose a particularly significant threat to biodiversity. The following feral animals are reported: Goat, Red Fox, Cat, Rabbit, Pig, Water Buffalo and Cane Toad. Maps from Landscape Health Project, National Land and Water Resources Audit, 2001.

Name	Status	Type of Presence
<b>Birds</b>		
<i>Columba livia</i> Rock Pigeon, Rock Dove, Domestic Pigeon [803]		Species or species habitat likely to occur within area
<i>Passer domesticus</i> House Sparrow [405]		Species or species habitat likely to occur within area
<i>Passer montanus</i> Eurasian Tree Sparrow [406]		Species or species habitat likely to occur within area
<b>Mammals</b>		
<i>Camelus dromedarius</i> Dromedary, Camel [7]		Species or species habitat likely to occur within area
<i>Canis lupus familiaris</i> Domestic Dog [82654]		Species or species habitat likely to occur within area

Name	Status	Type of Presence
Equus asinus Donkey, Ass [4]		Species or species habitat likely to occur within area
Equus caballus Horse [5]		Species or species habitat likely to occur within area
Felis catus Cat, House Cat, Domestic Cat [19]		Species or species habitat likely to occur within area
Mus musculus House Mouse [120]		Species or species habitat likely to occur within area
Oryctolagus cuniculus Rabbit, European Rabbit [128]		Species or species habitat likely to occur within area
Rattus rattus Black Rat, Ship Rat [84]		Species or species habitat likely to occur within area
Vulpes vulpes Red Fox, Fox [18]		Species or species habitat likely to occur within area
<b>Plants</b>		
Cenchrus ciliaris Buffel-grass, Black Buffel-grass [20213]		Species or species habitat likely to occur within area
Jatropha gossypifolia Cotton-leaved Physic-Nut, Bellyache Bush, Cotton-leaf Physic Nut, Cotton-leaf Jatropha, Black Physic Nut [7507]		Species or species habitat likely to occur within area
Opuntia spp. Prickly Pears [82753]		Species or species habitat likely to occur within area
Parkinsonia aculeata Parkinsonia, Jerusalem Thorn, Jelly Bean Tree, Horse Bean [12301]		Species or species habitat likely to occur within area
Prosopis spp. Mesquite, Algaroba [68407]		Species or species habitat likely to occur within area
<b>Reptiles</b>		
Hemidactylus frenatus Asian House Gecko [1708]		Species or species habitat likely to occur within area
Ramphotyphlops braminus Flowerpot Blind Snake, Brahminy Blind Snake, Cacing Besi [1258]		Species or species habitat known to occur within area

# Caveat

The information presented in this report has been provided by a range of data sources as acknowledged at the end of the report.

This report is designed to assist in identifying the locations of places which may be relevant in determining obligations under the Environment Protection and Biodiversity Conservation Act 1999. It holds mapped locations of World and National Heritage properties, Wetlands of International and National Importance, Commonwealth and State/Territory reserves, listed threatened, migratory and marine species and listed threatened ecological communities. Mapping of Commonwealth land is not complete at this stage. Maps have been collated from a range of sources at various resolutions.

Not all species listed under the EPBC Act have been mapped (see below) and therefore a report is a general guide only. Where available data supports mapping, the type of presence that can be determined from the data is indicated in general terms. People using this information in making a referral may need to consider the qualifications below and may need to seek and consider other information sources.

For threatened ecological communities where the distribution is well known, maps are derived from recovery plans, State vegetation maps, remote sensing imagery and other sources. Where threatened ecological community distributions are less well known, existing vegetation maps and point location data are used to produce indicative distribution maps.

Threatened, migratory and marine species distributions have been derived through a variety of methods. Where distributions are well known and if time permits, maps are derived using either thematic spatial data (i.e. vegetation, soils, geology, elevation, aspect, terrain, etc) together with point locations and described habitat; or environmental modelling (MAXENT or BIOCLIM habitat modelling) using point locations and environmental data layers.

Where very little information is available for species or large number of maps are required in a short time-frame, maps are derived either from 0.04 or 0.02 decimal degree cells; by an automated process using polygon capture techniques (static two kilometre grid cells, alpha-hull and convex hull); or captured manually or by using topographic features (national park boundaries, islands, etc). In the early stages of the distribution mapping process (1999-early 2000s) distributions were defined by degree blocks, 100K or 250K map sheets to rapidly create distribution maps. More reliable distribution mapping methods are used to update these distributions as time permits.

Only selected species covered by the following provisions of the EPBC Act have been mapped:

- migratory and
- marine

The following species and ecological communities have not been mapped and do not appear in reports produced from this database:

- threatened species listed as extinct or considered as vagrants
- some species and ecological communities that have only recently been listed
- some terrestrial species that overfly the Commonwealth marine area
- migratory species that are very widespread, vagrant, or only occur in small numbers

The following groups have been mapped, but may not cover the complete distribution of the species:

- non-threatened seabirds which have only been mapped for recorded breeding sites
- seals which have only been mapped for breeding sites near the Australian continent

Such breeding sites may be important for the protection of the Commonwealth Marine environment.

# Coordinates

-20.71048 116.75587



# Acknowledgements

This database has been compiled from a range of data sources. The department acknowledges the following custodians who have contributed valuable data and advice:

- [-Office of Environment and Heritage, New South Wales](#)
- [-Department of Environment and Primary Industries, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment, Water and Natural Resources, South Australia](#)
- [-Department of Land and Resource Management, Northern Territory](#)
- [-Department of Environmental and Heritage Protection, Queensland](#)
- [-Department of Parks and Wildlife, Western Australia](#)
- [-Environment and Planning Directorate, ACT](#)
- [-Birdlife Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- [-Natural history museums of Australia](#)
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-South Australian Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence Forestry Corporation, NSW](#)
- [-Geoscience Australia](#)
- [-CSIRO](#)
- [-Australian Tropical Herbarium, Cairns](#)
- [-eBird Australia](#)
- [-Australian Government – Australian Antarctic Data Centre](#)
- [-Museum and Art Gallery of the Northern Territory](#)
- [-Australian Government National Environmental Science Program](#)
- [-Australian Institute of Marine Science](#)
- [-Reef Life Survey Australia](#)
- [-American Museum of Natural History](#)
- [-Queen Victoria Museum and Art Gallery, Inveresk, Tasmania](#)
- [-Tasmanian Museum and Art Gallery, Hobart, Tasmania](#)
- [-Other groups and individuals](#)

The Department is extremely grateful to the many organisations and individuals who provided expert advice and information on numerous draft distributions.

Please feel free to provide feedback via the [Contact Us](#) page.

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# Appendix D

## Flora Species by Community Matrix



Family	Taxon	Wetlands			Tussock Grassland			Hummock Grassland		Survey	
		AaAtTw	AaEgPr	EcScCc	AbHcPo	AxAhPa	SfEx	SdSfTe	ToAlTe	Dampier Desalination	Dampier Resilience
	<i>Euphorbia ?tannensis</i> subsp. <i>eremophila</i>								x	x	
	<i>Euphorbia australis</i>		x					x	x	x	x
	<i>Euphorbia biconvexa</i>								x		x
Fabaceae											
	<i>Acacia ampliceps</i>	x	x							x	x
	<i>Acacia bivenosa</i>	x			x		x		x		x
	<i>Acacia coriacea</i>		x	x						x	
	<i>Acacia pyrifolia</i>						x		x	x	x
	<i>Acacia synchronicia</i>							x	x	x	
	<i>Acacia xiphophylla</i>					x					x
	<i>Alysicarpus muelleri</i>				x						x
	<i>Cajanus pubescens</i>								x	x	x
	<i>Crotalaria medicaginea</i> var. <i>neglecta</i>				x		x				x
	<i>Crotalaria novae-hollandiae</i>			x	x				x	x	x
	<i>Cullen pogonocarpum</i>										
	<i>Indigofera linifolia</i>								x	x	
	<i>Indigofera linnaei</i>								x		x
	<i>Indigofera monophylla</i>		x							x	
	<i>Indigofera trita</i>								x	x	
	<i>Neptunia dimorphantha</i>		x	x	x	x	x			x	x
	<i>Rhynchosia bungarensis</i> (P4)								x		x
	<i>Rhynchosia minima</i>	x		x	x		x		x	x	x
	<i>Senna artemisioides</i> subsp. <i>oligophylla</i>										x
	<i>Senna glutinosa</i> subsp. <i>pruinosa</i>			x							
	<i>Senna notabilis</i>	x			x						x
	<i>Sesbania cannabina</i>	x	x					x		x	x
	* <i>Stylosanthes hamata</i>		x						x	x	
	<i>Swainsona formosa</i>								x	x	
	<i>Tephrosia densa</i>								x	x	x
	* <i>Vachellia farnesiana</i>								x		x
	<i>Zornia muelleriana</i> subsp. <i>congesta</i>								x		x
Goodeniaceae											
	<i>Goodenia microptera</i>	x			x						x
	<i>Scaevola acacioides</i>								x	x	
	<i>Scaevola spinescens</i>						x				x
Lauraceae											
	<i>Cassytha capillaris</i>	x		x					x	x	x
Lythraceae											
	<i>Ammannia baccifera</i>	x	x								x
Malvaceae										x	
	<i>Abutilon lepidum</i>			x	x				x		x
	<i>Brachychiton acuminatus</i>		x						x	x	x
	<i>Corchorus parviflorus</i>									x	
	<i>Corchorus trilocularis</i>						x				x
	<i>Corchorus walcottii</i>					x			x		x

Family	Taxon	Wetlands			Tussock Grassland			Hummock Grassland		Survey	
		AaAtTw	AaEgPr	EcScCc	AbHcPo	AxAhPa	SfEx	SdSfTe	ToAlTe	Dampier Desalination	Dampier Resilience
	<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>				x				x	x	x
	<i>Sida fibulifera</i>				x	x	x		x		x
	<i>Triumfetta</i> ? <i>appendiculata</i>								x	x	
	<i>Triumfetta</i> ? <i>clementii</i>			x						x	
	<i>Triumfetta appendiculata</i>	x							x		x
	<i>Triumfetta clementii</i>								x		x
Moraceae											
	<i>Ficus aculeata</i>		x							x	
Myrtaceae											
	<i>Eucalyptus camaldulensis</i>			x				x	x	x	
	<i>Melaleuca argentea</i>		x							x	
Nyctaginaceae											
	<i>Boerhavia coccinea</i>		x		x	x	x	x	x	x	x
Passifloraceae											
	* <i>Passiflora foetida</i>		x							x	
Phyllanthaceae											
	<i>Flueggea virosa</i> subsp. <i>melanthesoides</i>			x	x					x	x
	<i>Phyllanthus maderaspatensis</i>	x	x	x	x		x		x	x	x
Plantaginaceae											
	<i>Stemodia grossa</i>		x							x	
	<i>Stemodia kingii</i>				x		x				x
Poaceae											
	<i>Aristida contorta</i>				x	x					x
	<i>Aristida latifolia</i>				x		x				x
	* <i>Cenchrus ciliaris</i>	x	x	x	x			x	x	x	x
	* <i>Chloris barbata</i>	x	x							x	x
	<i>Cymbopogon ambiguus</i>								x		x
	<i>Enneapogon caerulescens</i>				x	x			x		x
	<i>Eragrostis cumingii</i>	x									x
	<i>Eragrostis pergracilis</i>		x							x	
	<i>Eragrostis surreyana</i> (P3)	x			x					x	x
	<i>Eragrostis xerophila</i>				x		x				x
	<i>Eriachne obtusa</i>		x							x	
Poa cont.											
	<i>Heteropogon contortus</i>				x	x	x				x
	<i>Panicum laevinode</i>				x		x				x
	<i>Paspalidium tabulatum</i>	x							x		x
	<i>Sorghum timorense</i>										
	<i>Triodia</i> ? <i>angusta</i>		x							x	
	<i>Triodia epactia</i>		x	x	x	x		x	x	x	x
	<i>Triodia wiseana</i>	x							x		x
Portulacaceae											
	<i>Portulaca oleracea</i>	x	x		x	x			x	x	x
	* <i>Portulaca pilosa</i>								x		x
Primulaceae											
	<i>Samolus repens</i>		x							x	
Proteaceae											
	<i>Grevillea pyramidalis</i>		x						x	x	x

Family	Taxon	Wetlands			Tussock Grassland			Hummock Grassland		Survey	
		AaAtTw	AaEgPr	EcScCc	AbHcPo	AxAhPa	SfEx	SdSfTe	ToAlTe	Dampier Desalination	Dampier Resilience
	<i>Hakea lorea</i>								x	x	
	<i>Pittosporum angustifolium</i>	x					x				x
Sapindaceae											
	<i>Diplopeltis eriocarpa</i>	x									x
Solanaceae											
	<i>Solanum diversiflorum</i>	x		x	x	x	x	x	x	x	x
	<i>Solanum horridum</i>	x		x	x	x		x	x	x	x
Violaceae											
	<i>Hybanthus aurantiacus</i>								x	x	x
Zygophyllaceae											
	<i>Tribulus hirsutus</i>								x	x	x

# Appendix E

Relevé Data

## Appendix E - Relevé Data

<b>Site No:</b> DR01	<b>Date:</b> 19/05/2021	<b>Longitude:</b> 116.71975	<b>Latitude:</b> -20.66956
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**Type:** Relevé

**Soil Types:** clay, moist

**Topography:** minor channel

**Surface:**

**Outcrops:** none

**Litter:** 10%

**Condition:** Good

**Condition Notes:** weeds

**Vegetation Type:** AaAtTw Wetland

**Vegetation Description:** *Acacia ampliceps* tall shrubland over *Adriana tomentosa*, *Streptoglossa decurrens* and *Sesbania cannabina* mid to low mixed shrubs and herbs over *Triodia wiseana*, \**Cenchrus ciliaris* and *Eragrostis cumingii* tall to low mixed hummock and tussock grasslands.



Taxon	Ht (cm)	Foliage (%)
<i>Acacia ampliceps</i>	300	20
<i>Acacia bivenosa</i>	250	0.5
<i>Adriana tomentosa</i>	130	2
<i>Ammannia baccifera</i>	30	0.5
<i>Cassytha capillaris</i>	0	0.01
* <i>Cenchrus ciliaris</i>	40	15
* <i>Chloris barbata</i>	10	0.1
<i>Cucumis variabilis</i>		0.01
<i>Cyperus vaginatus</i>	5	0.01
<i>Cyperus vaginatus</i>	50	1
<i>Diplopeltis eriocarpa</i>	40	0.1
<i>Eragrostis cumingii</i>	20	0.1
<i>Eragrostis surreyana</i>	3	0.01
<i>Goodenia microptera</i>	30	0.01



Taxon	Ht (cm)	Foliage (%)
<i>Ipomoea costata</i>	0	0.01
<i>Paspalidium tabulatum</i>	40	0.01
<i>Phyllanthus maderaspatensis</i>	30	0.01
<i>Pittosporum angustifolium</i>	80	0.1
<i>Pluchea rubelliflora</i>	20	0.1
<i>Portulaca oleracea</i>	0	0.01
<i>Pterocaulon sphaeranthoides</i>	40	0.01
<i>Rhynchosia minima</i>	0	0.01
<i>Senna notabilis</i>	10	0.01
<i>Sesbania cannabina</i>	200	1
<i>Solanum diversiflorum</i>	30	0.01
<i>Solanum horridum</i>	30	0.01
<i>Sorghum timorense</i>		
<i>Streptoglossa decurrens</i>	30	1
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	50	0.1
<i>Triodia wiseana</i>	30	50
<i>Triumfetta appendiculata</i>	30	0.01

<b>Site No:</b> DR02	<b>Date:</b> 19/05/2021	<b>Longitude:</b> 116.71758	<b>Latitude:</b> -20.67237
<b>Type:</b> Relevé	<b>Soil Types:</b> shallow skeletal, dry		
<b>Topography:</b> undulating rocky hills	<b>Surface:</b> rocky (100%)		
<b>Outcrops:</b> numerous rocks	<b>Litter:</b> <5%		
<b>Condition:</b> Very Good	<b>Condition Notes:</b> density of herbs varies from 20% to <5%		
<b>Vegetation Type:</b> ToAITe Hummock Grassland			
<b>Vegetation Description:</b> <i>Trachymene oleracea</i> subsp. <i>oleracea</i> , <i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i> and <i>Swainsona formosa</i> mid to tall herbland with <i>Abutilon lepidum</i> , <i>Crotalaria novae-hollandiae</i> and <i>Senna notabilis</i> low shrubland over <i>Triodia epactia</i> tall hummock grassland.			



Taxon	Ht (cm)	Foliage (%)
<i>Abutilon lepidum</i>	50	4
<i>Acacia pyrifolia</i>	200	0.1
<i>Arivela viscosa</i>	40	0.1
<i>Boerhavia coccinea</i>	0	1
<i>Bonamia pilbarensis</i>	0	0.01
<i>Corchorus walcottii</i>	30	1
<i>Evolvulus alsinoides</i>	20	0.5
<i>Gomphrena cunninghamii</i>	10	1
<i>Grevillea pyramidalis</i>	50	0.1
<i>Heliotropium inexplicitum</i>	20	0.01
<i>Hybanthus aurantiacus</i>	30	0.1
<i>Indigofera linnaei</i>	10	0.01

Taxon	Ht (cm)	Foliage (%)
<i>Phyllanthus maderaspatensis</i>	30	0.01
<i>Polycarpaea longiflora</i>	20	0.01
* data-bbox="144 211 286 224"> <i>Portulaca oleracea</i>	0	0.01
<i>Portulaca pilosa</i>	20	0.1
<i>Rhynchosia minima</i>	0	2
<i>Solanum diversiflorum</i>	20	0.01
<i>Solanum horridum</i>	20	0.1
<i>Tephrosia densa</i>	30	2
<i>Tribulus hirsutus</i>	10	0.01
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	150	0.01
<i>Triodia epactia</i>	50	25
<i>Triumfetta appendiculata</i>	30	0.1
<i>Triumfetta clementii</i>	30	0.1
<i>Zornia muelleriana</i> subsp. <i>congesta</i>	30	0.1

<b>Site No:</b> DR03	<b>Date:</b> 19/05/2021	<b>Longitude:</b> 116.71642	<b>Latitude:</b> -20.67497
<b>Type:</b> Relevé	<b>Soil Types:</b> shallow skeletal, dry		
<b>Topography:</b> undulating hills	<b>Surface:</b> rocky (100%)		
<b>Outcrops:</b> numerous	<b>Litter:</b> <5%		
<b>Condition:</b> Excellent	<b>Condition Notes:</b> powerlines		
<b>Vegetation Type:</b> ToAITe Hummock Grassland			
<b>Vegetation Description:</b> <i>Trachymene oleracea</i> subsp. <i>oleracea</i> , <i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i> and <i>Swainsona formosa</i> mid to tall herbland with <i>Abutilon lepidum</i> , <i>Crotalaria novae-hollandiae</i> and <i>Senna notabilis</i> low shrubland over <i>Triodia epactia</i> tall hummock grassland.			

No photo.

Taxon	Ht (cm)	Foliage (%)
<i>Abutilon lepidum</i>	50	3
<i>Acacia bivenosa</i>	100	0.01
<i>Acacia pyrifolia</i>	100	0.01
<i>Acacia pyrifolia</i>	300	2
* <i>Aerva javanica</i>	30	0.1
<i>Arivela viscosa</i>	30	0.01
<i>Boerhavia coccinea</i>	0	1
<i>Bonamia pilbarensis</i>	0	0.01
* <i>Cenchrus ciliaris</i>	30	0.01
<i>Corchorus walcottii</i>	30	0.1
<i>Cucumis variabilis</i>	0	0.01
<i>Cyperus vaginatus</i>	20	0.01
<i>Ehretia saligna</i> var. <i>saligna</i>	250	0.1
<i>Enneapogon caerulescens</i>	30	0.01
<i>Euphorbia australis</i>	5	0.01
<i>Euphorbia biconvexa</i>	30	0.1
<i>Evolvulus alsinoides</i>	20	0.1
<i>Heliotropium inexplicitum</i>	20	0.1
<i>Hybanthus aurantiacus</i>	30	0.1
<i>Indigofera linnaei</i>	30	0.1
<i>Indigofera linnaei</i>	20	0.5
<i>Phyllanthus maderaspatensis</i>	30	0.01
<i>Ptilotus exaltatus</i>	30	0.1
<i>Rhynchosia minima</i>	0	2
<i>Rhynchosia minima</i>		
<i>Sida fibulifera</i>	30	0.01

Taxon	Ht (cm)	Foliage (%)
<i>Solanum diversiflorum</i>	30	0.5
<i>Solanum horridum</i>	30	0.01
<i>Tephrosia densa</i>	30	0.01
<i>Tribulus hirsutus</i>	0	0.01
<i>Triodia epactia</i>	50	30
<i>Triumfetta appendiculata</i>	30	0.01
<i>Triumfetta clementii</i>	30	0.01

<b>Site No:</b> DR04	<b>Date:</b> 19/05/2021	<b>Longitude:</b> 116.72386	<b>Latitude:</b> -20.65518
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**Type:** Relevé**Soil Types:** shallow skeletal clay, dry**Topography:** rock piles**Surface:** rocky (80%)**Outcrops:** numerous**Litter:** <1%**Condition:** Very Good**Condition Notes:** powerline, weeds**Vegetation Type:** ToAITe Hummock Grassland

**Vegetation Description:** *Trachymene oleracea* subsp. *oleracea*, *Trichodesma zeylanicum* var. *zeylanicum* and *Swainsona formosa* mid to tall herbland with *Abutilon lepidum*, *Crotalaria novae-hollandiae* and *Senna notabilis* low shrubland over *Triodia epactia* tall hummock grassland.



Taxon	Ht (cm)	Foliage (%)
<i>Abutilon lepidum</i>	40	0.5
<i>Acacia pyrifolia</i>	200	0.1
<i>Arivela viscosa</i>	40	0.01
<i>Boerhavia coccinea</i>	0	0.1
<i>Bonamia pilbarensis</i>	0	0.01
<i>Brachychiton acuminatus</i>	200	0.01
<i>Cajanus pubescens</i>	50	1
<i>Cassutha capillaris</i>	0	0.1
* <i>Cenchrus ciliaris</i>	30	5
<i>Cucumis variabilis</i>	0	0.1
<i>Cymbopogon ambiguus</i>	60	0.01
<i>Euphorbia biconvexa</i>	40	0.01
<i>Evolvulus alsinoides</i>	10	0.1

Taxon	Ht (cm)	Foliage (%)
<i>gomphrena cunninghamii</i>	10	0.01
<i>Grevillea pyramidalis</i>	200	0.1
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>	50	3
<i>Indigofera monophylla</i>	40	1
<i>Ipomoea costata</i>	200	5
<i>Paspalidium tabulatum</i>	40	0.01
<i>Phyllanthus maderaspatensis</i>	40	0.1
<i>Rhynchosia minima</i>	20	0.5
<i>Solanum diversiflorum</i>	30	0.01
<i>Streptoglossa decurrens</i>	10	0.01
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	100	0.5
<i>Triodia epactia</i>	100	30
<i>Triodia wiseana</i>	100	2
<i>Triumfetta clementii</i>	20	0.01
* <i>Vachellia farnesiana</i>	30	0.01

<b>Site No:</b> DR05	<b>Date:</b> 20/05/2021	<b>Longitude:</b> 116.75018	<b>Latitude:</b> -20.74400
<b>Type:</b> Relevé	<b>Soil Types:</b> deep clay, dry		
<b>Topography:</b> flat	<b>Surface:</b> crabhole plain		
<b>Outcrops:</b> none	<b>Litter:</b> <1%		
<b>Condition:</b> Excellent	<b>Condition Notes:</b>		
<b>Vegetation Type:</b> SfEx Tussock Grassland			
<b>Vegetation Description:</b> <i>Sida fibulifera</i> , <i>Crotalaria medicaginea</i> and <i>Neptunia dimorphantha</i> low mixed herb and shrubland with <i>Eragrostis xerophila</i> , <i>Heteropogon contortus</i> and <i>Panicum laevinode</i> low tussock grassland.			



Taxon	Ht (cm)	Foliage (%)
<i>Aristida latifolia</i>	80	0.5
<i>Boerhavia coccinea</i>	0	3
<i>Corchorus trilocularis</i>	30	1
<i>Crotalaria medicaginea</i>	30	2
<i>Eragrostis xerophila</i>	30	25
<i>Heliotropium inexplicitum</i>	30	0.01
<i>Heteropogon contortus</i>	100	6
<i>Neptunia dimorphantha</i>	0	1
<i>Panicum laevinode</i>	50	5
<i>Phyllanthus maderaspatensis</i>	20	0.5
<i>Ptilotus exaltatus</i>	20	0.01
<i>Rhynchosia minima</i>	0	4
<i>Salsola australis</i>	30	0.1
<i>Sida fibulifera</i>	30	2
<i>Solanum diversiflorum</i>	30	0.1
<i>Stemodia kingii</i>	30	0.1



<b>Site No:</b> DR06	<b>Date:</b> 20/05/2021	<b>Longitude:</b> 116.74628	<b>Latitude:</b> -20.75419
<b>Type:</b> Relevé	<b>Soil Types:</b> clay, dry		
<b>Topography:</b> clay plains	<b>Surface:</b> quartz rocks, some cracking clay		
<b>Outcrops:</b> none	<b>Litter:</b> <1%		
<b>Condition:</b> Very Good	<b>Condition Notes:</b> some weeds		
<b>Vegetation Type:</b> AbHcPo Hummock and Tussock Grassland			
<b>Vegetation Description:</b> <i>Acacia bivenosa</i> , <i>Hibiscus sturtii</i> var. <i>campylochlamys</i> and <i>Sida fibulifera</i> mid to low sparse shrubland over <i>Heteropogon contortus</i> , <i>Triodia epactia</i> and <i>Aristida latifolia</i> low mixed tussock and hummock grassland over <i>Portulaca oleracea</i> , <i>Crotalaria medicaginea</i> and <i>Boerhavia coccinea</i> low sparse herbland.			



Taxon		Ht (cm)	Foliage (%)
	<i>Abutilon lepidum</i>	40	0.01
	<i>Acacia bivenosa</i>	130	1
	<i>Alysicarpus muelleri</i>	30	0.01
	<i>Aristida holathera</i>	20	5
	<i>Aristida latifolia</i>	100	10
	<i>Boerhavia coccinea</i>	0	0.1
*	<i>Cenchrus ciliaris</i>	40	0.01
	<i>Crotalaria medicaginea</i>	30	0.5
	<i>Enneapogon caerulescens</i>	10	1
	<i>Eragrostis xerophila</i>	30	0.5
	<i>Goodenia microptera</i>	30	0.01
	<i>Heteropogon contortus</i>	80	15
	<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>	30	1

Taxon	Ht (cm)	Foliage (%)
<i>Phyllanthus maderaspatensis</i>	30	0.01
<i>Portulaca oleracea</i>	0	2
<i>Pterocaulon sphaeranthoides</i>	30	0.01
<i>Ptilotus auriculifolius</i>	0	0.01
<i>Ptilotus helichrysoides</i>	10	0.01
<i>Rhynchosia minima</i>	0	0.1
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>	40	0.01
<i>Senna notabilis</i>	30	0.1
<i>Sida fibulifera</i>	30	0.1
<i>Solanum diversiflorum</i>	30	0.1
<i>Stemodia kingii</i>	30	0.01

<b>Site No:</b> DR07	<b>Date:</b> 20/05/2021	<b>Longitude:</b> 116.74553	<b>Latitude:</b> -20.75819
<b>Type:</b> Relevé	<b>Soil Types:</b> clay, dry		
<b>Topography:</b> flat clay plains	<b>Surface:</b> crabholes		
<b>Outcrops:</b> none	<b>Litter:</b> <1%		
<b>Condition:</b> Excellent	<b>Condition Notes:</b>		
<b>Vegetation Type:</b> SfEx Tussock Grassland			
<b>Vegetation Description:</b> <i>Sida fibulifera</i> , <i>Crotalaria medicaginea</i> and <i>Neptunia dimorphantha</i> low mixed herb and shrubland with <i>Eragrostis xerophila</i> , <i>Heteropogon contortus</i> and <i>Panicum laevinode</i> low tussock grassland.			



Taxon	Ht (cm)	Foliage (%)
<i>Acacia bivenosa</i>	200	0.1
<i>Acacia pyrifolia</i>	50	0.01
<i>Crotalaria medicaginea</i>	30	2
<i>Eragrostis xerophila</i>	30	35
<i>Heteropogon contortus</i>	80	10
<i>Neptunia dimorphantha</i>	0	0.5
<i>Panicum laevinode</i>	40	0.1
<i>Phyllanthus maderaspatensis</i>	20	0.01
<i>Pittosporum angustifolium</i>	60	0.01
<i>Ptilotus exaltatus</i>	20	0.01
<i>Rhynchosia minima</i>	0	6
<i>Salsola australis</i>	50	0.1
<i>Scaevola spinescens</i>	60	0.01
<i>Sida fibulifera</i>	30	0.5
<i>Solanum diversiflorum</i>	30	0.01

<b>Site No:</b> DR08	<b>Date:</b> 30/05/2021	<b>Longitude:</b> 116.7530	<b>Latitude:</b> -20.73636
<b>Type:</b> Relevé	<b>Soil Types:</b> hard clay, with sand and rocks, dry		
<b>Topography:</b> flat	<b>Surface:</b> hard clay		
<b>Outcrops:</b> none	<b>Litter:</b> <1%		
<b>Condition:</b> Excellent	<b>Condition Notes:</b> bare plains		
<b>Vegetation Type:</b> AxAhPa Tussock Grassland			
<b>Vegetation Description:</b> <i>Acacia xiphophylla</i> isolated low trees over <i>Aristida holathera</i> , <i>Triodia epactia</i> and <i>Heteropogon contortus</i> low sparse mixed tussock and hummock grassland over <i>Ptilotus auriculifolius</i> , <i>Portulaca oleracea</i> and <i>Boerhavia coccinea</i> low sparse herbland.			



Taxon	Ht (cm)	Foliage (%)
<i>Acacia xiphophylla</i>	150	1
<i>Aristida holathera</i>	30	5
<i>Boerhavia coccinea</i>	0	0.01
<i>Corchorus walcottii</i>	20	0.1
<i>Enchylaena tomentosa</i>	20	0.01
<i>Enneapogon caerulescens</i>	10	0.01
<i>Heliotropium inexplicitum</i>	5	0.01
<i>Heteropogon contortus</i>	10	0.01
<i>Neptunia dimorphantha</i>	0	0.01
<i>Portulaca oleracea</i>	0	1
<i>Ptilotus auriculifolius</i>	0	1
<i>Sida fibulifera</i>	30	0.1
<i>Solanum diversiflorum</i>	30	0.01
<i>Solanum horridum</i>	40	0.01
<i>Triodia epactia</i>	60	0.1

<b>Site No:</b> DR09	<b>Date:</b> 20/05/2021	<b>Longitude:</b> 116.75244	<b>Latitude:</b> -20.73851
<b>Type:</b> Relevé	<b>Soil Types:</b> hard clay, dry		
<b>Topography:</b> flat	<b>Surface:</b> clay some cracking, small rocks		
<b>Outcrops:</b> none	<b>Litter:</b> <1%		
<b>Condition:</b> Excellent	<b>Condition Notes:</b>		
<b>Vegetation Type:</b> AbHcPo Hummock and Tussock Grassland			
<b>Vegetation Description:</b> <i>Acacia bivenosa</i> , <i>Hibiscus sturtii</i> var. <i>campylochlamys</i> and <i>Sida fibulifera</i> mid to low sparse shrubland over <i>Heteropogon contortus</i> , <i>Triodia epactia</i> and <i>Aristida latifolia</i> low mixed tussock and hummock grassland over <i>Portulaca oleracea</i> , <i>Crotalaria medicaginea</i> and <i>Boerhavia coccinea</i> low sparse herbland.			



Taxon	Ht (cm)	Foliage (%)
<i>Alysicarpus muelleri</i>	100	0.5
<i>Aristida holathera</i>	40	0.1
<i>Boerhavia coccinea</i>	20	0.5
* <i>Cenchrus ciliaris</i>	0	0.1
<i>Crotalaria medicaginea</i>	30	0.1
<i>Crotalaria novae-hollandiae</i>	30	0.01
<i>Enchylaena tomentosa</i>	20	0.01
<i>Enneapogon caerulescens</i>	30	0.01
<i>Eragrostis xerophila</i>	10	0.01
<i>Evolvulus alsinoides</i>	40	0.1
<i>Flueggea virosa</i> subsp. <i>melanthesoides</i>		Opportunistic
<i>Heteropogon contortus</i>	20	0.1

Taxon		Ht (cm)	Foliage (%)
	<i>Neptunia dimorphantha</i>	100	10
	<i>Panicum laevinode</i>	0	0.01
	<i>Phyllanthus maderaspatensis</i>	40	0.1
	<i>Rhynchosia minima</i>	30	0.01
	<i>Rhynchosia minima</i>	0	0.1
	<i>Senna notabilis</i>		
	<i>Sida fibulifera</i>	30	0.01
	<i>Solanum diversiflorum</i>	30	0.1
	<i>Solanum horridum</i>	30	0.01
	<i>Triodia epactia</i>	30	0.01
*	<i>Vachellia farnesiana</i>		Opportunistic

# Appendix F

## Conservation Significant Flora Locations

## Appendix F Conservation Significant Flora Locations

Easting	Northing	Cons. Status	Taxon	Population
470035	7713750	P3	Eragrostis surreyana	20
470024	7713730	P3	Eragrostis surreyana	1
469989	7713680	P3	Eragrostis surreyana	3
469971	7713660	P3	Eragrostis surreyana	50
469934	7713580	P3	Eragrostis surreyana	5
469966	7713650	P3	Eragrostis surreyana	200
469978	7713660	P3	Eragrostis surreyana	50
469993	7713690	P3	Eragrostis surreyana	20
470255	7714040	P3	Eragrostis surreyana	200
470240	7714010	P3	Eragrostis surreyana	100
470208	7714020	P3	Eragrostis surreyana	10
470805	7714390	P3	Eragrostis surreyana	100
470049	7713790	P3	Eragrostis surreyana	10
469983	7713700	P3	Eragrostis surreyana	4
469947	7713680	P3	Eragrostis surreyana	100
469919	7713520	P3	Eragrostis surreyana	2
469932	7713610	P3	Eragrostis surreyana	100
469938	7713630	P3	Eragrostis surreyana	10
471275	7715820	P4	Rhynchosia bungarensis	2
474550	7709150	P4	Rhynchosia bungarensis	15
471255	7715810	P4	Rhynchosia bungarensis	1
471254	7715810	P4	Rhynchosia bungarensis	1
471243	7715790	P4	Rhynchosia bungarensis	1
471244	7715790	P4	Rhynchosia bungarensis	1
471243	7715790	P4	Rhynchosia bungarensis	1
471242	7715790	P4	Rhynchosia bungarensis	1
471240	7715790	P4	Rhynchosia bungarensis	1
471239	7715790	P4	Rhynchosia bungarensis	1
471272	7715730	P4	Rhynchosia bungarensis	1
471212	7715640	P4	Rhynchosia bungarensis	1
473952	7706090	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	30
473933	7705950	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	5
473925	7705900	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	500
473897	7705860	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	100
473841	7705740	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	100
473690	7705300	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	500
473552	7704790	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	200
473570	7704850	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	200
473698	7705220	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	100
473714	7705260	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	50
473763	7705390	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	100
473779	7705430	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	60
473822	7705590	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	300
473902	7705860	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	200
473918	7705890	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	600
473939	7705930	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	500
474013	7706100	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	5
474122	7706380	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	100
474349	7707560	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	10
474349	7707670	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	500
474365	7707720	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	1000
474471	7708500	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	1000
474415	7708460	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	100
474356	7707760	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	500
474355	7707740	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	500
474343	7707690	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	500



## Appendix F Conservation Significant Flora Locations

Easting	Northing	Cons. Status	Taxon	Population
474338	7707670	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	500
474339	7707620	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	500
474339	7707570	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	1000
474213	7706900	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	1000
474226	7706870	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	1000
474244	7706820	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	5
474192	7706660	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	1000
474432	7708660	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	5
474406	7708620	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	20
474390	7708590	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	25
474369	7708570	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	500
474331	7708520	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	30
473954	7706130	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	30
473947	7706120	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	50
473938	7706100	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	4
473873	7705890	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	200
473795	7705720	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	50
473769	7705670	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	5
473739	7705550	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	30
473706	7705470	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	30
473655	7705300	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	20
473406	7704760	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	50
473601	7704840	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	40
473613	7704870	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	50
473788	7705320	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	50
473789	7705360	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	200
473844	7705530	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	30
473861	7705570	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	20
473939	7705800	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	300
473973	7705880	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	6
473973	7705900	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	30
474013	7705990	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	500
474245	7706650	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	3
474267	7706700	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	200
474302	7706810	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	30
474370	7707410	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	200
474376	7707450	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	200
474384	7707510	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	500
474386	7707550	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	50
474391	7707580	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	200
474394	7707630	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	200
474396	7707650	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	200
474398	7707650	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	200
474402	7707670	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	200
474402	7707680	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	100
474402	7707690	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	100
474407	7707710	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	100
474502	7708490	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	20
474499	7708500	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	10
474508	7708630	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	10
474317	7707770	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	100
474320	7707740	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	500
474310	7707710	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	10
474317	7707680	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	20
474308	7707650	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	100
474301	7707580	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	1

### Appendix F Conservation Significant Flora Locations

Easting	Northing	Cons. Status	Taxon	Population
474151	7706680	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	10
474479	7708660	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	5
474399	7708570	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	100
474385	7708550	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	20
474325	7708510	P3	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	10