Port Hedland Transmission Line

Flora and Vegetation Survey

Report to Pilbara Energy

20 June 2024

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3				

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Executive Summary

Pilbara Energy (APA, formerly Alinta Energy) commissioned Biologic to undertake a detailed flora and vegetation survey covering five potential infrastructure corridors along and adjacent to the Great Northern Highway, comprising of; Route 1 Horizon TXL Route 1b deviation from Horizon TXL, Route 2 SIA Infrastructure Corridor, Route 3 South of GNH and Route 4 North of GNH. Following the field assessment an additional route was added and assessed at a desktop level, Route 6. In total, these six potential alignments cover 9,160.79 hectares (ha) and are located approximately 65 kms southwest of Port Hedland at the furthest point.

The desktop assessment identified 38 significant flora taxa, of which, one was previously recorded within the Survey Area: *Abutilon* sp. Pritzelianum (S. van Leeuwen 5095) (P3). One significant flora species was assessed to be Highly Likely, two were assessed as Likely to occur and five Possible to occur. The desktop assessment indicated no Threatened or Priority Ecological Communities (TECs, PECs) occur within the Survey Area, while two PECs (relevant to terrestrial vegetation) are known occur within 50 km of the Survey Area.

The detailed field survey was conducted in April – May 2023 by two Biologic personnel. Forty-six quadrats, 32 relevés and 11 vegetation mapping notes were sampled in the Survey Area, and targeted surveys were undertaken for significant flora taxa, where potential habitat was observed.

A total of 218 confirmed vascular flora taxa from 40 families and 108 genera were recorded from the Survey Area during the field survey, which comprised 205 native taxa and 13 introduced taxa, none of which are listed as Weeds of National Significance, Declared Pests or as 'Priority Alert' weeds. Two priority-listed taxa were recorded in the Survey Area, *Abutilon* sp. Pritzelianum (S. van Leeuwen 5095) (P3) and *Rothia indica* subsp. *australis* (P3).

Native vegetation covered 97.58 % of the Survey Area, with the remaining area mapped as 'Cleared' due to tracks or infrastructure related disturbances. Ten vegetation types were described and mapped within the vegetated areas of the Survey Area. The condition of the vegetation within the Survey Area ranged from Poor (23.45 ha/ 0.26%) to Excellent (2,058.84 ha/ 22.47%). With most of the mapped native vegetation in Very Good condition (6,754.73 ha/ 73.74%). None of the vegetation types described from the Survey Area are considered to be analogous with TECs or PECs known to occur in the Pilbara region. Two vegetation types (DL EcMa AtAcAtp Te CcCs and DL Ma MgMl Cc CvCi Eb GlPr) were considered to represent vegetation of "other" significance, due to supporting groundwater dependent vegetation (GDV).

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1 Introduction

1.1 Background

Pilbara Energy (APA, formerly Alinta Energy) are seeking to progress development activities to build and operate a 220 kilovolt (kV) transmission line connecting its Port Hedland Power Station to a customer located approximately 65 km southwest of Port Hedland. These planned works are referred to as the Port Hedland Transmission Line project and comprise several potential infrastructure corridors, forming the Survey Area. APA have commissioned Biologic Environmental Survey (Biologic) to complete a single-season detailed flora and vegetation survey and desktop assessments at the Survey Area.

Five potential routes underwent botanical assessment in May 2023 at the detailed level and two were added following the survey. These two were assessed at the desktop level. One is set apart to the east (Route 5, Figure 1.1) and is presented in a separate report (Biologic, 2024). One, Route 6, occurs closer to Routes 1 through 4, and is included in this report, using extrapolated data for assessment. These Routes are shown in Figure 1.1 and are defined as follows:

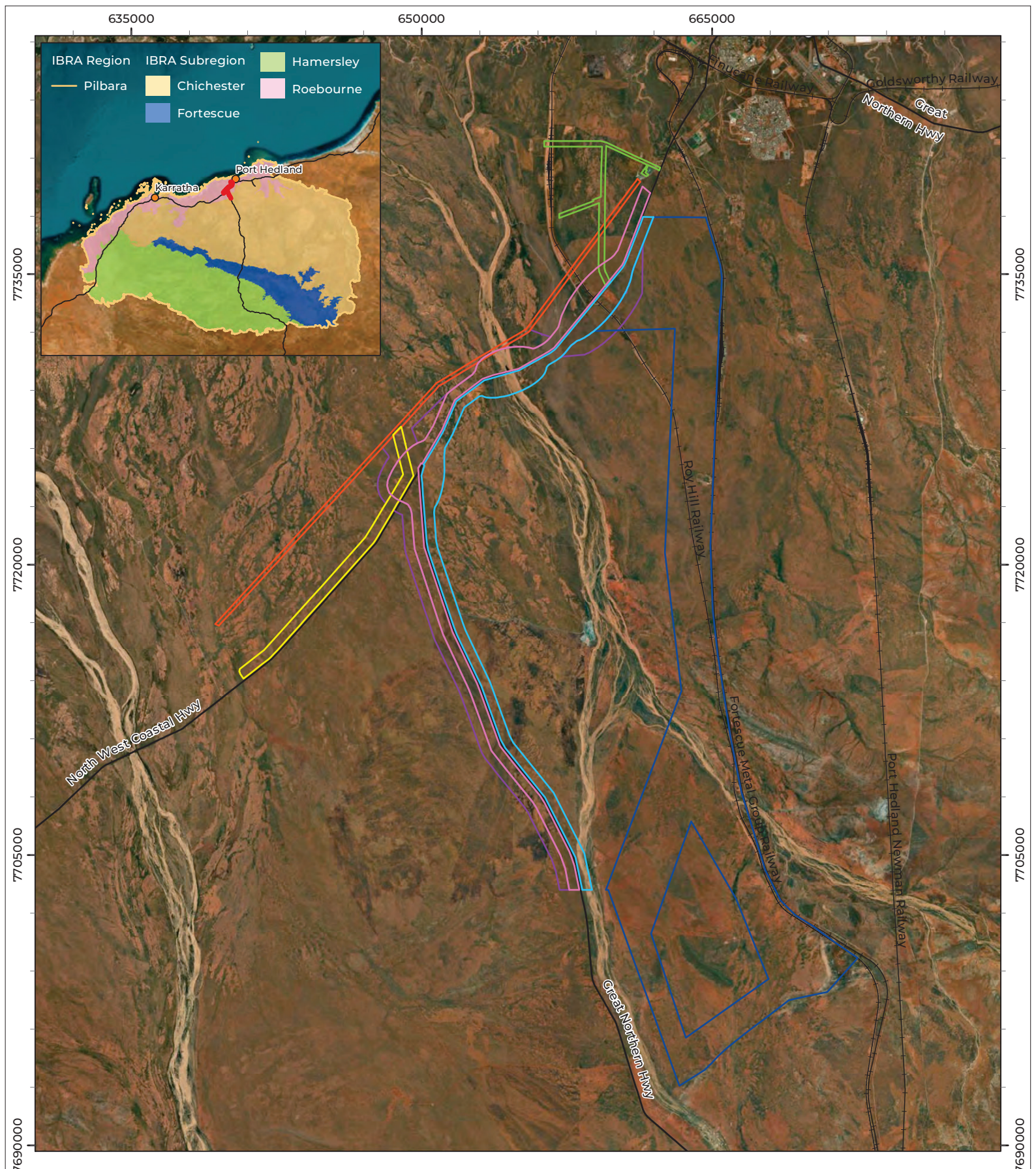
- Detailed Flora and Vegetation Survey:
  - Route 1: Horizon Transmission Line (TXL);
  - Route 1b: deviation from Horizon TXL;
  - Route 2: SIA Infrastructure Corridor;
  - Route 3: South of Great Northern Hwy (GNH); and
  - Route 4: North of GNH.
- Desktop Assessments:
  - Route 5 (Biologic, 2024), included in Figure 1.1 for context)
  - Route 6 (assessed with extrapolated data).

In total, the six potential alignments cover 9,160.79 hectares (ha), referred to collectively as the Survey Area. However, calculations will be presented per route to allow for comparison (Figure 1.1). The Survey Area parallels a section of the GNH from South Hedland to just north of Indee Rd in the Pilbara region, with two alternative routes aligned north of the North-west Coastal Hwy and following an existing powerline corridor (Horizon) through Mundabullangana Station.

1.2 Scope and Objectives

The broader objective of this survey was to gather biological information though a desktop assessment and field surveys to enhance and contextualise the knowledge of flora and vegetation and ecological communities within the Survey Area. This report addresses the flora and vegetation aspects of the survey. The objectives of the Scope of Works (SoW) were:

- Desktop assessment – to gather contextual information on the Survey Area and to identify flora, and vegetation, that may occur within the Survey Area;
- Field Survey – single-season detailed flora and vegetation survey to identify flora and vegetation occurring within the Survey Area, for Routes 1 through 4, including targeted sampling for significant species;
- Reporting – preparation of a flora and vegetation report following completion of the field survey, detailing the methods and results of the desktop assessment and associated field survey;
- Extrapolated data including vegetation and condition mapping for Route 6; and
- Data – preparation and submission of survey data in the Index of Biodiversity Surveys for Assessments (IBSA) data shapefiles format.



LEGEND

Survey Area
- Route 1
- Route 1b
- Route 2
- Route 3
- Route 4

Desktop Assessment Area
- Route 5 (Biologic, 2024)
- Route 6

- State Road
- Rail

Scale 1:180,000
0 2 4 Km

Coordinate System: GDA2020 MGA Zone 50
Projection: Transverse Mercator
Datum: GDA2020 Created 14/06/2024

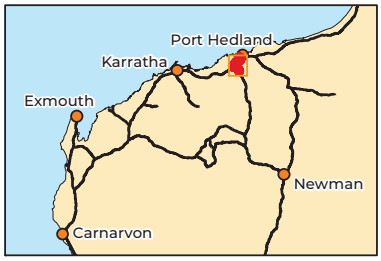


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Figure 1.1: Survey Area and regional context

1.3 Legislation and Compliance

Significant flora and vegetation are protected at a state and commonwealth level and legislated by the following parliamentary acts:

- State *Biodiversity Conservation Act 2016* (BC Act);
- State *Environmental Protection Act 1986* (EP Act); and
- Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The Environmental Protection Authority (EPA) outline guidance for biological surveys in Western Australia (WA). All aspects of botanical assessments at Biologic are compliant with the EPA Technical Guidance for Flora and Vegetation Surveys for Environmental Impact Assessment (EIA) (EPA, 2016b), including preparation, survey design, personnel, data analysis, reporting and client data submission. Additionally, Biologic is consistent with the values presented in the Environmental Factor Guidelines for flora and vegetation (EPA, 2016a), intended to protect the biological diversity and ecological integrity of Western Australian flora and vegetation during the EIA process.

1.3.1 Significant Flora and Vegetation

The state and commonwealth governments protect rare, endemic, new or special flora and vegetation communities at varying levels by classifying them under codes of conservation significance. These codes, jurisdiction and level of protection are detailed in Appendix A

Significant flora may extend beyond the assigned codes and include:

- Being identified as Threatened, Critically Endangered, Endangered or Vulnerable species (State listed BC Act and/or commonwealth listed EPBC Act);
- Being listed as Priority flora species (DBCA, 2023);
- Locally endemic or associated with a restricted habitat type (e.g., surface water or groundwater dependent ecosystems);
- New species or anomalous features that indicate a potential new species;
- Range extensions or representative of outer population extent (particularly at the extremes of range, recently discovered range extensions or isolated outliers of the main range);
- Unusual species; restricted subspecies, varieties, naturally occurring hybrids, or complex taxonomic groups; or
- Relictual status, being representative of taxonomic groups that no longer occur widely in the broader landscape.

Significant vegetation may extend beyond the assigned codes and may include:

- Being identified as Threatened Ecological Community (TEC), Critically Endangered, Endangered or Vulnerable ecological community (State listed BC Act and/or commonwealth listed EPBC Act)
- Identified as a Priority Ecological Community (PEC) (DBCA, 2022b);
- Restricted or endemic distribution;
- Degree of historical impact from threatening processes (such as mining or agricultural);
- A role as a refuge for significant flora; or
- Providing an important function required to maintain ecological integrity of a significant ecosystem.

1.3.2 Introduced Flora

Introduced flora can pose a threat to native vegetation and biodiversity. A database of declared pests is kept by the Department of Primary Industries and Regional Development (DPIRD). This database falls under State jurisdiction, legislated by the Biosecurity and Agricultural Management Act 2007 (BAM Act) (DPIRD, 2007). Some introduced flora may be classified with legal control or management requirements to be met by the land occupier/user. These categories are outlined in Appendix A.

2 Existing Environment

2.1 Biogeography

The Survey Area is located in the northern section of the Pilbara Craton (Kendrick & McKenzie, 2003; Kendrick & Stanley, 2003) in the Pilbara bioregion (Figure 1.1), as defined by the Interim Biogeographic Regionalisation of Australia (Thackway & Cresswell, 1995). The Pilbara bioregion is characterised by vast coastal plains and inland mountain ranges with cliffs and deep gorges (Thackway & Cresswell, 1995). Vegetation is predominantly mulga low woodlands or snappy gum over bunch and hummock grasses (Bastin & ACRIS, 2008).

The Pilbara bioregion is classified into four separate subregions, Chichester (PIL01), Fortescue (PIL02), Hamersley (PIL03) and Roebourne (PIL04), of which the Survey Area is located within the Chichester and Roebourne subregions (Figure 1.1). The Chichester subregion has undulating Archaean granite and basalt plains with areas of basaltic ranges. These plains support a range of vegetation including shrub steppe and hummock grasslands (Kendrick & McKenzie, 2003). The Roebourne subregion is characterised by sub-coastal plains with hummock grasses and dwarf shrub steppe, and ranges of basalt with minor exposures of granite (Kendrick & Stanley, 2003).

2.2 Climate

The Pilbara bioregion has a semi-desert to tropical climate, with rainfall occurring sporadically throughout the year, although mostly during summer (Thackway & Cresswell, 1995). Summer rainfall is usually the result of tropical storms in the north or tropical cyclones that impact upon the coast and move inland. The winter rainfall is generally lighter and is the result of cold fronts moving north easterly across the state (Leighton, 2004). The average annual rainfall ranges from 200 - 350 mm, although there are significant fluctuations between years with some locations receiving up to 1,200 mm (McKenzie *et al.*, 2009).

The Bureau of Meteorology's (BoM) closest and most accurate weather station to the Survey Area, Port Hedland (004032), is located north of the Survey Area. The Port Hedland station has documented the long-term average (LTA) temperature and rainfall since 1948 (BoM, 2023). Long-term average monthly rainfall peaks from early summer and throughout autumn (January–June), with the highest LTA rainfall occurring in January and February (62.3 mm and 89.3 mm, respectively), and the lowest occurring in October (LTA of 0.9 mm) (Figure 2.1). The mean maximum daily temperatures range from 27.4°C in July to 36.8°C in December and March, while the mean minimum daily temperatures range from 12.5°C in July to 25.7°C in January (BoM, 2022) (Figure 2.1).

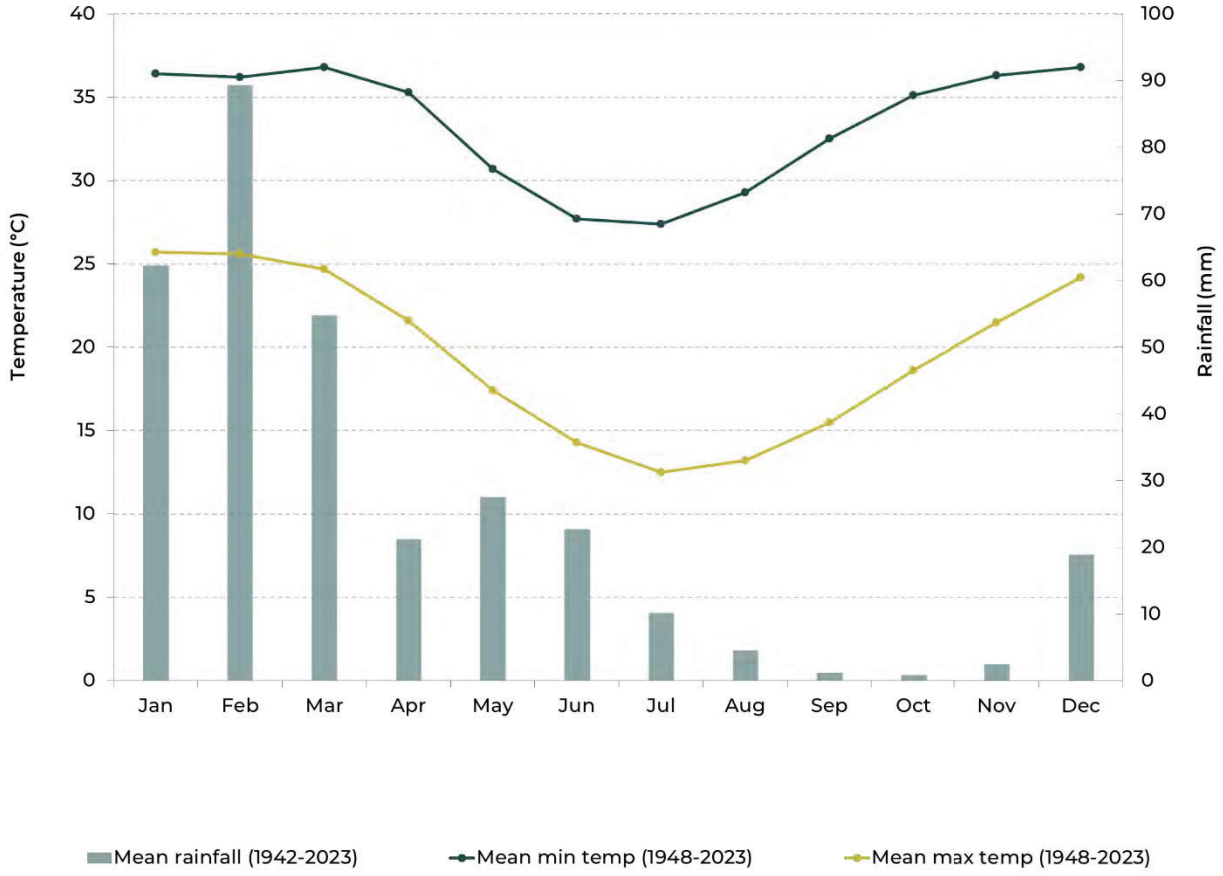
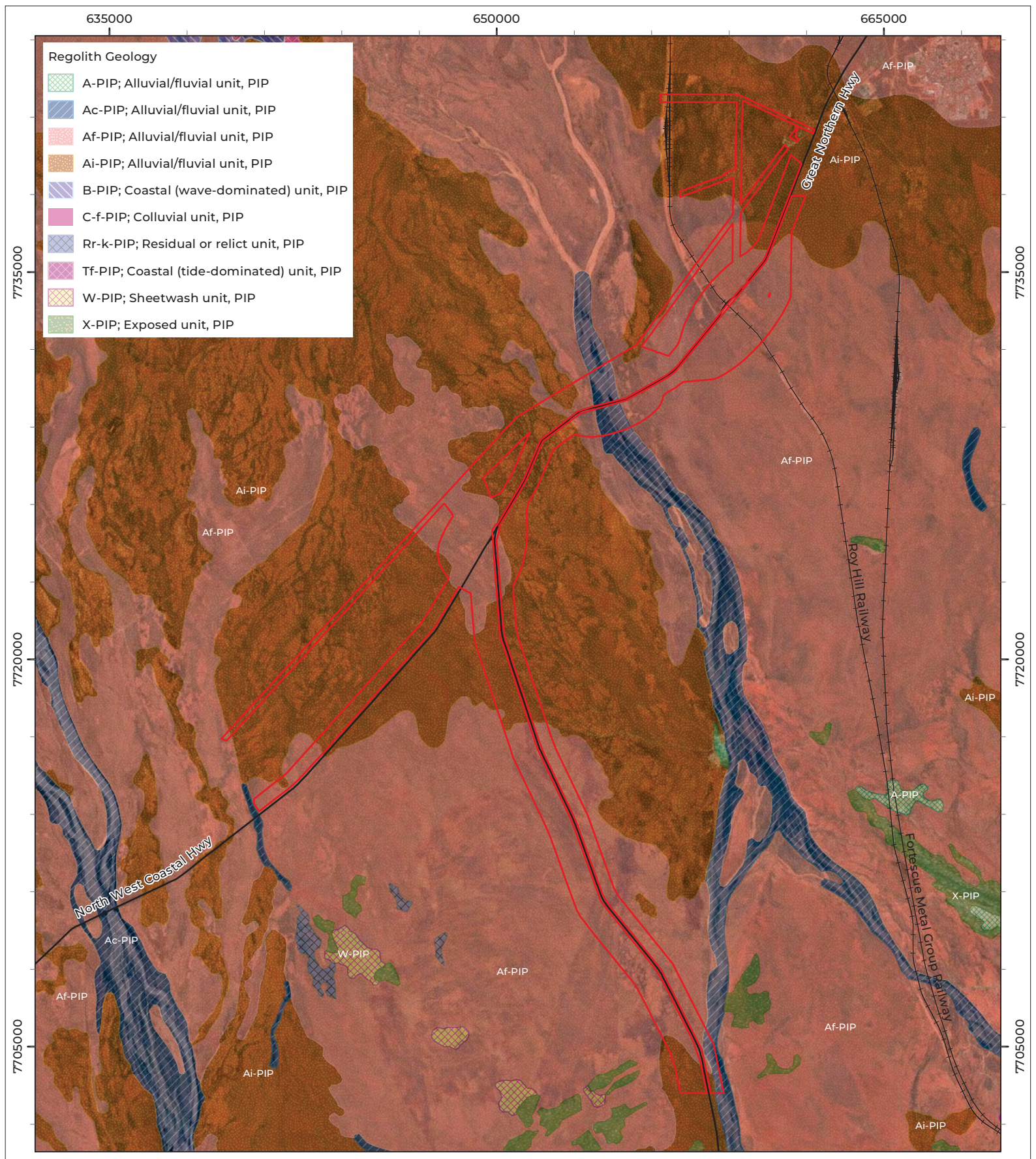


Figure 2.1: Long-term climatic data for Port Hedland (station 004032, 1948-2023) (BoM, 2023a).

2.3 Geology

According to the Australian Geological Provinces database, the Survey Area is located over one geological super province (Pilbara Craton) (Geoscience Australia, 2013). This database was compiled Australia-wide with spatial data captured at a wide scale of approximately 1:1 million.

At a finer scale (1:500,000), the regolith geology of the Survey Area is displayed in Figure 2.2 and Table 2.1 (GSWA, 2020). Regolith geology contains unconsolidated rock produced by weathering, erosion and/ or deposition that sits above solid bedrock (Eggleton, 2001). The entirety of the Survey Area comprises the Alluvial/ fluvial unit of three unit codes: Ac-PIP, Af-PIP and Ai-PIP (Figure 2.2; Table 2.1).



LEGEND

- Survey Area
- State Road
- Rail

Scale 1:135,000

0 2 4 Km

Coordinate System: GDA2020 MGA Zone 50
Projection: Transverse Mercator
Datum: GDA2020 Created 10/06/2024

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Figure 2.2: Geology of the Survey Area

Table 2.1: Geological units of the Survey Area (1:500,000)

Unit Code Unit Name	Description	Route 1		Route 1B		Route 2		Route 3		Route 4		Route 6	
		Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)	%
_Ac-PIP: Alluvial/fluvial unit, PIP	Clay, silt, sand, and gravel in fluvial channels	19.95	3.12	-	-	-	-	203.71	7.94	115.90	4.19	4.06	0.19
_Af-PIP: Alluvial/fluvial unit, PIP	Clay, silt, and sand on floodplains	221.31	34.66	362.50	44.77	97.73	25.06	1569.89	61.20	1890.52	68.35	1,553.11	-
_Ai-PIP: Alluvial/fluvial unit, PIP	Unconsolidated, fine-grained deposits in alluvial drainage depressions, claypans, and ephemeral floodplain lakes; low-lying areas with internal drainage	397.28	62.22	447.19	55.23	292.26	74.94	791.71	30.86	759.47	27.46	604.32	71.85
Total		**638.55**	**100**	**809.69**	**100**	**389.99**	**100**	**2,565.32**	**100**	**2,765.90**	**100**	**2,161.49**	**100**

2.4 Land Systems

Payne *et al.* (1988) and van Vreeswyk *et al.* (2004) classified and mapped the land systems of the Pilbara bioregion according to similarities in landform, soil, vegetation, geology and geomorphology. There are three land systems intersecting the Survey Area (Figure 2.3, Table 2.2). The Uaroo System forms the dominant land system of the Survey Area, occurring over 6,272.56 ha (68.47%).

2.5 Soils

The Atlas of Australian Soils was compiled by Commonwealth Scientific and Industrial Research Organisation in the 1960s to provide a consistent national description of Australia's soils (Northcote *et al.*, 1960-1968). It comprises a series of ten maps and associated explanatory notes and is published at a scale of 1:2,000,000, although the original compilation was produced at scales from 1:250,000 to 1:500,000.

The broad soil landscape units that have been mapped across the Survey Area comprise AB19, B27, BD1, Oc40 and Oc62 (Northcote *et al.*, 1960-1968) (Figure 2.4, Table 2.3). The majority of the Survey Area is mapped as Oc40 and AB19 , with smaller portions of B27, BD1 and Oc62 (Table 2.3).

2.6 Vegetation

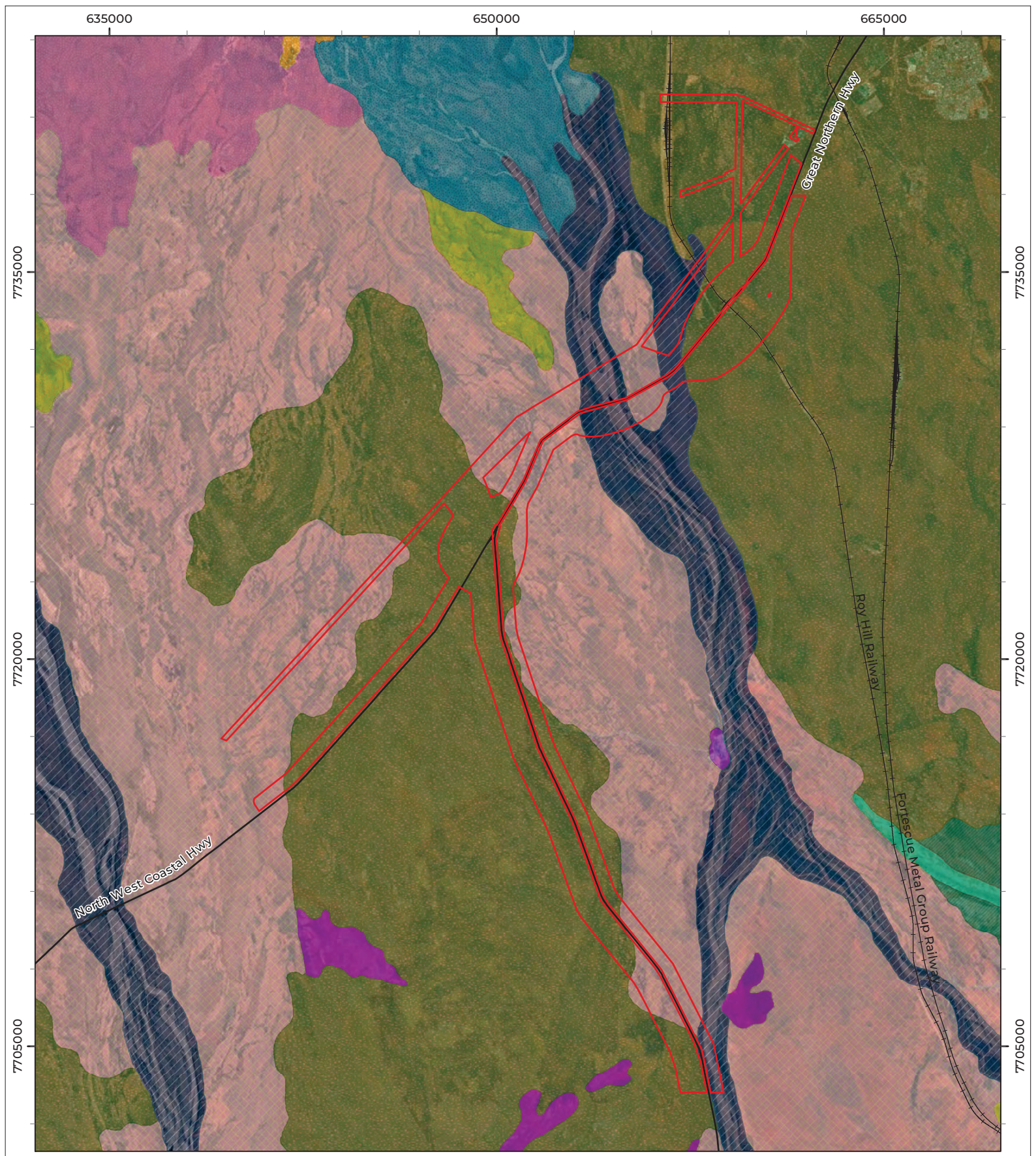
2.6.1 Pre-European Vegetation

Pre-European vegetation mapping was originally undertaken by Beard at various scales (predominantly 1:1,000,000) across the State (Beard, 1975) and has since been updated to be consistent with Native Vegetation Information System (NVIS) descriptions at a scale of 1:250,000. State-wide vegetation statistics are available for these associations which lists pre-European extent, current extent, area in DBCA managed lands and is a useful tool to determine if a vegetation association is rare or otherwise significant. The Beard vegetation mapping (Beard, 1990) provides a broad context of Western Australian native vegetation.

The assessment identified four vegetation associations occurring within the Survey Area (Figure 2.5, Table 2.4):

- Abydos Plain -Chichester 619;
- Abydos Plain 589;
- Abydos Plain 619; and
- Abydos Plain 647.

The largest vegetation association that occurred within the Survey Area was the Abydos Plain 647, followed by the Abydos Plain 589(Table 2.4).



LEGEND

- Survey Area
- State Road
- Rail

Land System

- Cheerawarra System
- Littoral System
- Macroy System
- Mallina System
- Paradise System
- River System
- Robe System
- Ruth System
- Talga System
- Uaroo System
- Yamerina System

Scale 1:135,000

0 2 4 Km

Coordinate System: GDA2020 MGA Zone 50
Projection: Transverse Mercator
Datum: GDA2020 Created 10/06/2024

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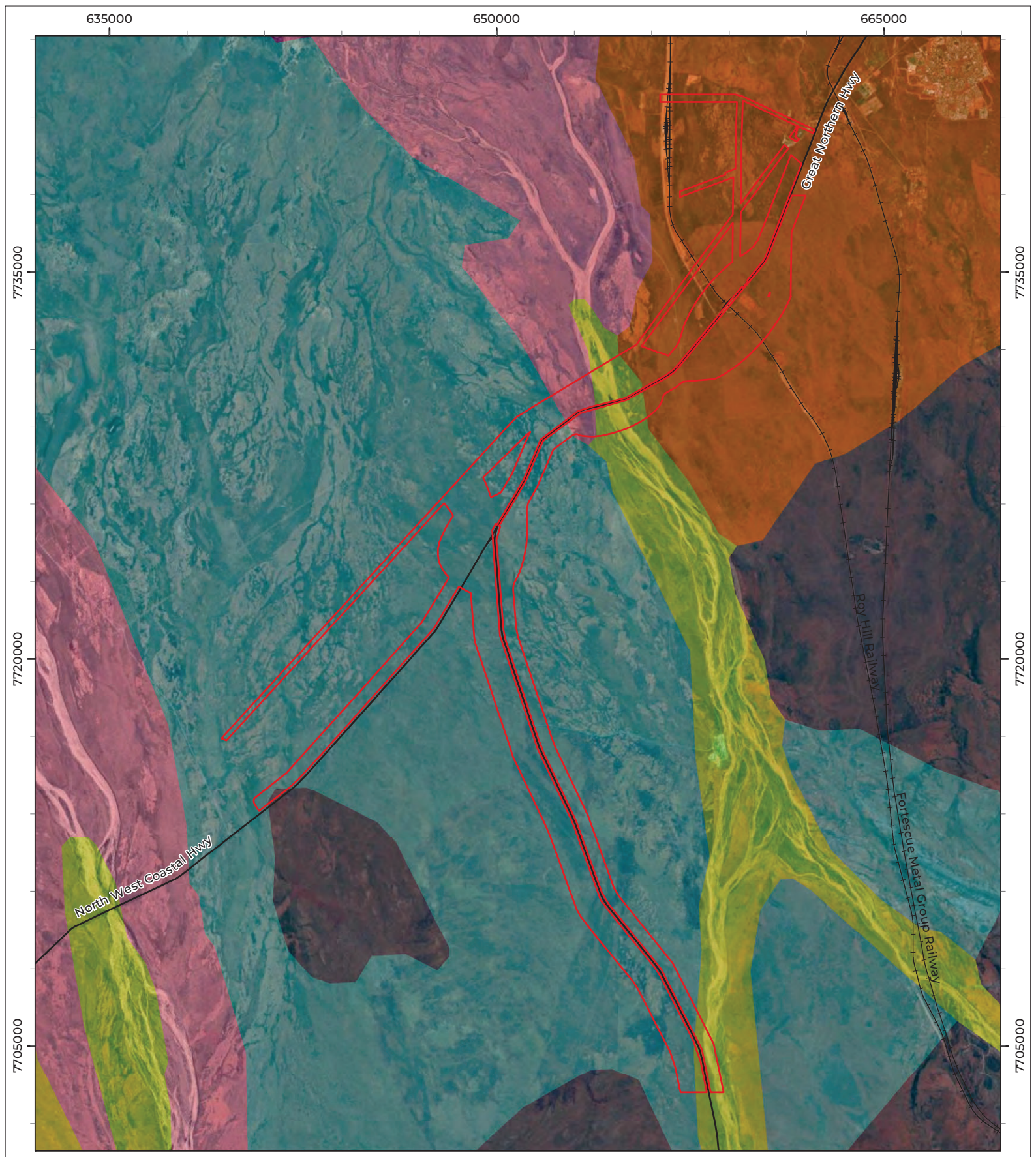
Figure 2.3: Land systems of the Survey Area

Table 2.2: Land Systems of the Survey Area

Land System	Description	Route 1		Route 1B		Route 2		Route 3		Route 4		Route 6	
		Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)	%
Mallina System	Sandy surfaced alluvial plains supporting soft spinifex grasslands and minor hard spinifex and tussock grasslands.	355.40	55.66	71.86	8.88	-	-	885.44	34.52	539.92	19.52	436.48	20.19
River System	Narrow, seasonally active flood plains and major river channels supporting moderately close, tall shrublands or woodlands of acacias and fringing communities of eucalypts sometimes with tussock grasses or spinifex.	101.58	15.91	-	-	-	-	375.28	14.63	269.84	9.76	22.54	1.04
Uaroo System	Broad sandy plains, pebbly plains and drainage tracts supporting hard and soft spinifex hummock grasslands with scattered acacia shrubs.	181.57	28.43	737.83	91.12	389.99	100	1,304.59	50.85	1,956.12	70.72	1,702.46	78.76
Total		**638.55**	**100**	**809.69**	**100**	**389.99**	**100**	**2,565.32**	**100**	**2,765.90**	**100**	**2,161.49**	**100**



LEGEND

- Survey Area
- State Road
- Rail

Soil Unit

- AB19
- AB20
- B27
- BD1
- Oc40
- Oc62
- SV8

Scale 1:135,000

0 2 4 Km

Coordinate System: GDA2020 MGA Zone 50
Projection: Transverse Mercator
Datum: GDA2020 Created 10/06/2024

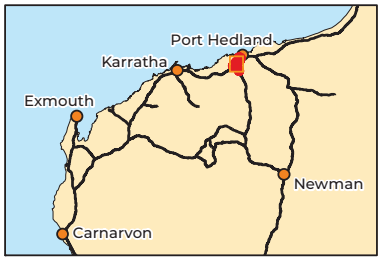


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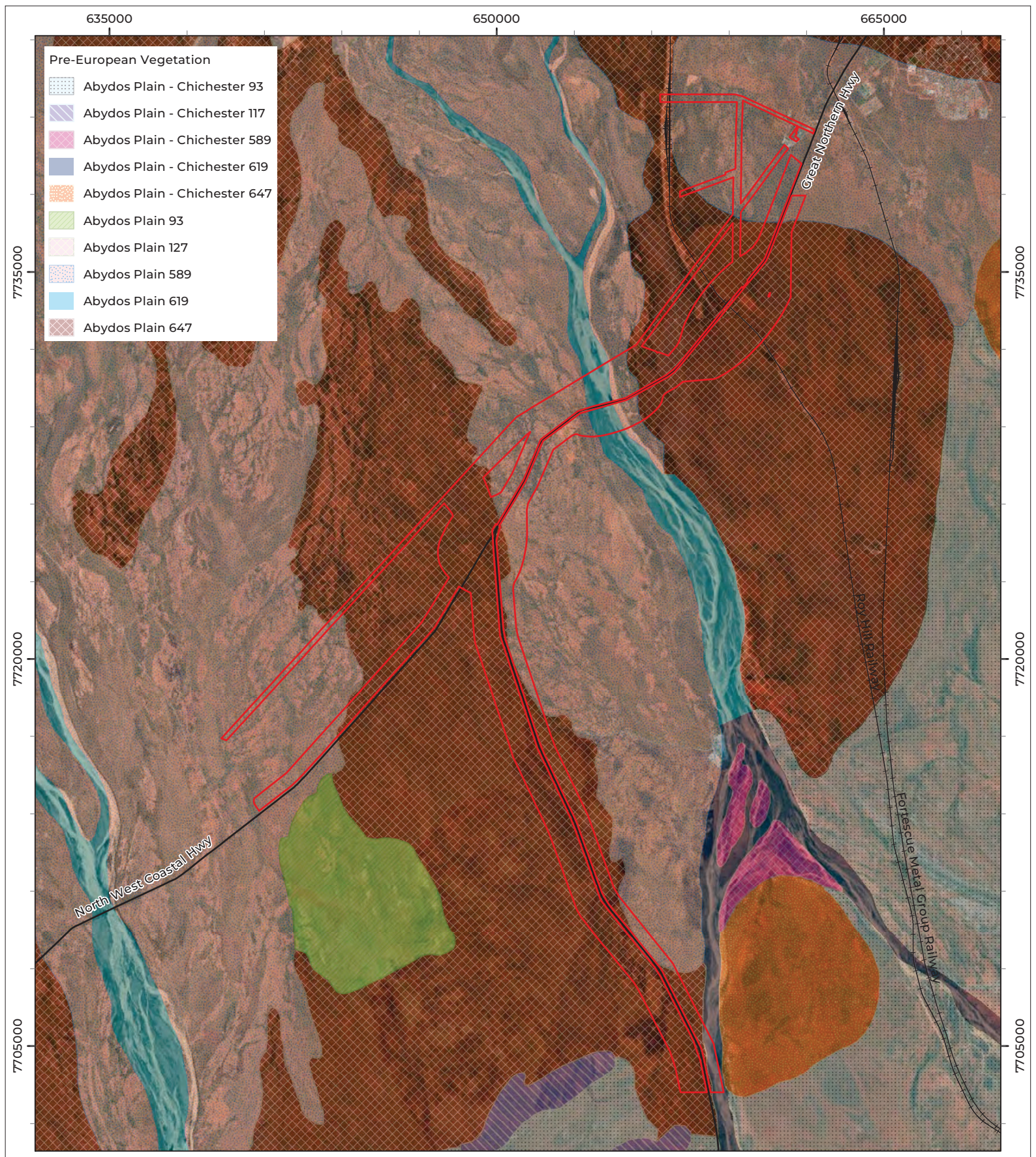
Figure 2.4: Soils of the Survey Area

Table 2.3: Soil landscape units of the Survey Area

Unit Code	Description	Route 1		Route 1B		Route 2		Route 3		Route 4		Route 6	
		Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)	%
AB19	Extensive sandy plains: chief soils are red earthy sands (Uc5.21) with extensive areas of red earths (Gn2.12) and with some hard red soils (Dr) along creek lines. Similar to unit AB21 but without sandstone residuals. Occurs on sheet(s): 6	208.40	32.64	-	-	389.99	100	724.17	28.23	729.27	26.37	576.88	26.69
B27	Low terrace associated with mainstream channels: chief soils are loose sands (Uc1.22) with some (Um5.11) soils on patches of calcrete (kunkar). Occurs on sheet(s): 6	27.06	4.24	-	-	-	-	353.00	13.76	253.44	9.16	20.13	0.93
BD1	Plains and levees	34.95	5.47			-	-	85.34	3.33	119.08	4.31	22.80	1.05
Oc40	Alluvial plains	368.13	57.65	793.90	98.05	-	-	1,402.79	54.68	1,664.09	60.16	1,541.68	71.32
Oc62	Very gently undulating pediplain with low granite outcrops and tors; occasional basic dykes occur as low elongate ridges: chief soils are hard alkaline red soils (Dr2.33) and (Dr2.43) having coarse-textured A horizons up to 18 in. thick. Associated are o	-	-	15.79	1.95	-	-	-	-	-	-	-	-
Total		**638.55**	**100**	**809.69**	**100**	**389.99**	**100**	**2,565.32**	**100**	**2,765.90**	**100**	**2,161.49**	**100**



LEGEND

- Survey Area
- State Road
- Rail

Scale 1:135,000

0 2 4 Km

Coordinate System: GDA2020 MGA Zone 50
Projection: Transverse Mercator
Datum: GDA2020 Created 10/06/2024

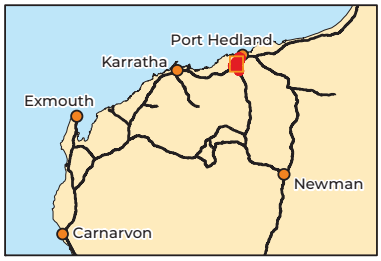


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Figure 2.5: Pre-European vegetation associations of the Survey Area

Table 2.4: Vegetation associations of the Survey Area

Vegetation Association	Description	Route 1		Route 1B		Route 2		Route 3		Route 4		Route 6	
		Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)	%
Abydos Plain Chichester 619	Riverine; rivergum *E. camaldulensis*.	-	-	-	-	-	-	97.49	3.80	-	-	-	-
Abydos Plain 589	Mosaic: Short bunch grassland - savanna / grass plain (Pilbara) / Hummock grasslands, grass steppe; soft spinifex.	324.60	50.83	241.56	29.83	284.74	73.01	927.34	36.15	560.35	20.26	225.46	10.43
Abydos Plain 619	Riverine; rivergum *E. camaldulensis*.	22.28	3.49	-	-	-	-	113.16	4.41	115.09	4.16	1.96	0.09
Abydos Plain 647	Hummock grassland with scattered shrubs or mallee *Triodia* spp. *Acacia* spp., *Grevillea* spp. *Eucalyptus* spp.	291.67	45.68	568.13	70.17	105.26	26.99	1,427.32	55.64	2,090.45	75.58	1,934.06	89.48
Total		**638.55**	**100**	**809.69**	**100**	**389.99**	**100**	**2,565.32**	**100**	**2,765.90**	**100**	**2,161.49**	**100**

2.7 Hydrology and Hydrogeology

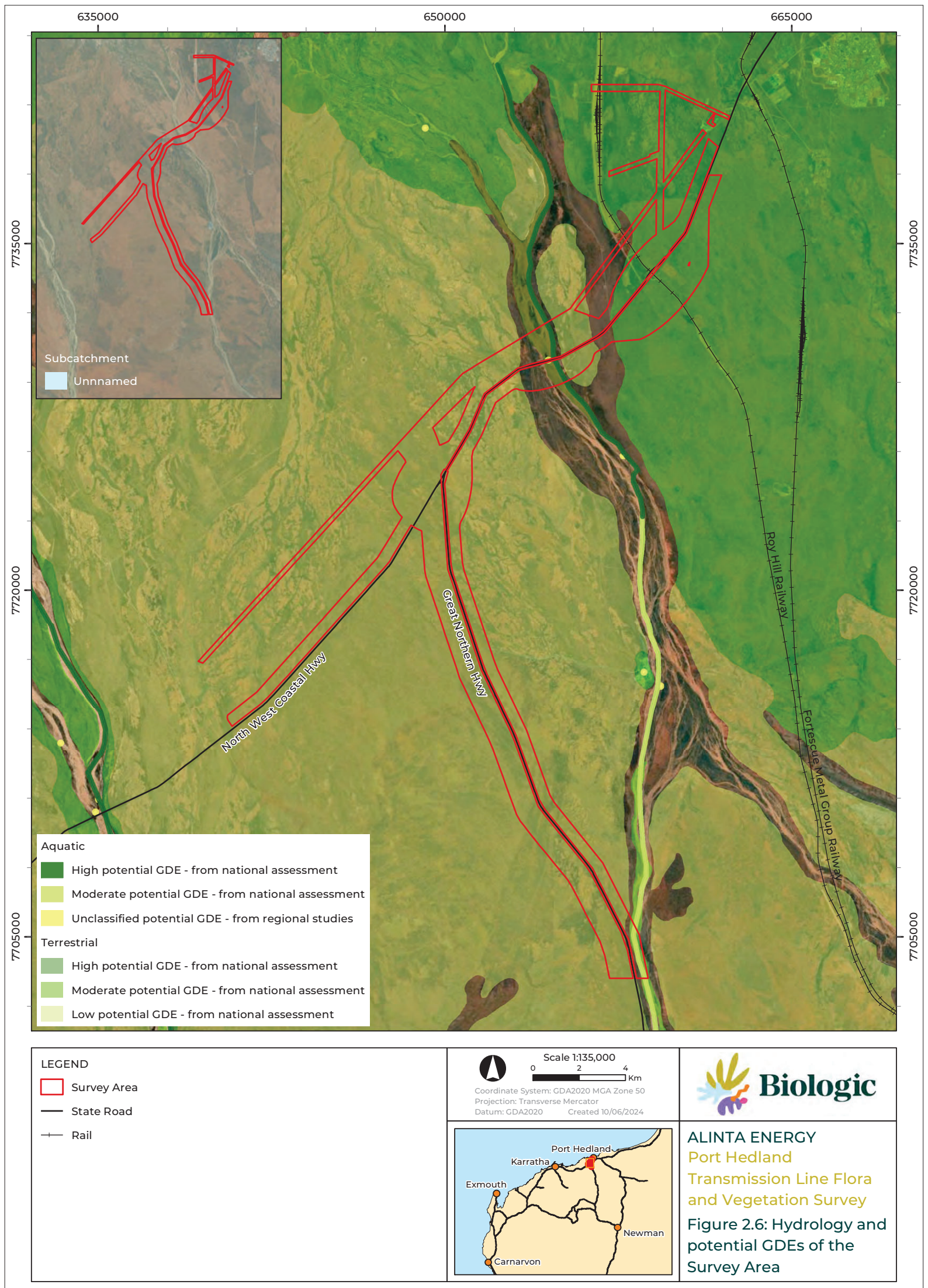
The Survey Area is located within the Port Hedland Coast Basin, which extends from the Port Hedland Coastline, south to Chichester. At a finer scale, the Survey Area is located in the South-West Creek, Coastal and Turner River catchments (Table 2.5, Table 2.6, Figure 2.6). The Turner River runs approximately parallel with the southern section of the Survey Area and bisects the northern and southernmost sections (Figure 2.6). The northernmost point of the Survey Area at Boodarie is 500 metres from South West Creek. (DWER, 2021).

Table 2.5: Hydrological catchments intersecting the Survey Area

Survey Area Route	Intersection with Survey Area:		
	South-West Creek Catchment	Coastal Catchment	Turner River Catchment
Route 1	Yes	Yes	Yes
Route 1B	-	-	Yes
Route 2	Yes	Yes	-
Route 3	Yes	-	Yes
Route 4	Yes	-	Yes
Route 6	Yes	-	Yes

Table 2.6: Groundwater-dependant ecosystems

Type	Geomorphology/ Name	Ecotype Description	Potential
Terrestrial	Floodplains and deltaic plains with stony plains and sandplains; tidal flats and some metamorphic, volcanic and granitic hills and islands.	Broad sandy plains supporting shrubby hard and soft spinifex grasslands.	Low
			Moderate
		River bed land unit of River land system. No vegetation.	Moderate
			High
		Sandy surfaced alluvial plains supporting soft spinifex (and occasionally hard spinifex) grasslands.	Low
Aquatic	Turner River	Major River Bank	High



LEGEND

- Survey Area
- State Road
- Rail

Scale 1:135,000

0 2 4 Km

Coordinate System: GDA2020 MGA Zone 50
Projection: Transverse Mercator
Datum: GDA2020 Created 10/06/2024

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Figure 2.6: Hydrology and potential GDEs of the Survey Area

2.7.1 Groundwater Dependent Ecosystems

Groundwater Dependent Ecosystems (GDEs) are ecosystems that rely upon groundwater for their continued existence (BoM, 2023b). GDEs can be represented by many different assemblages of biota which rely on groundwater, and as a result come in many forms. For terrestrial ecosystems there are three key types of GDE (BoM, 2023b):

- Aquatic ecosystems: that rely on the surface expression of groundwater – this includes surface water ecosystems which may have a groundwater component, such as rivers, wetlands, and springs.
- Terrestrial ecosystems: that rely on the subsurface presence of groundwater – this includes all vegetation ecosystems or GDV.
- Subterranean ecosystems: this includes cave and aquifer ecosystems.

Aboveground terrestrial GDEs are typically characterised by the presence of flora species that rely on groundwater (i.e., phreatophytes). Phreatophytes may be classified as either obligate or facultative phreatophytes depending on their reliance on groundwater (Eamus *et al.*, 2016):

- Obligate phreatophytes are flora species confined to habitats with access to groundwater.
- Facultative phreatophytes are flora species that can utilise groundwater to satisfy a proportion of their ecological water requirement (EWR) when it is available. However, some individuals may also satisfy their EWR by relying solely on uptake from upper unsaturated soils layers where groundwater is inaccessible.

The BoM has developed the Groundwater Dependent Ecosystems Atlas (GDE Atlas) as a national dataset of Australian GDEs to inform groundwater planning and management (BoM, 2023b). It is the first and only national inventory of GDEs in Australia.

The GDE Atlas contains information about three key types of ecosystems: Aquatic ecosystems, Terrestrial ecosystems, and Subterranean ecosystems. Importantly, the GDE Atlas also includes the national inflow-dependent landscapes layer which is derived from remotely sensed data. This layer indicates the likelihood that a landscape is accessing water in addition to rainfall (such as soil moisture, surface water or groundwater), and generally represents a potential GDE dataset for all areas not yet studied or investigated in any detail.

The GDE mapping in the GDE Atlas comes from two broad sources:

- National assessment – national-scale analysis based on a set of rules that describe potential for groundwater/ ecosystem interaction and available geographic information systems (GIS) data.

- Regional studies – more detailed analysis undertaken by various state and regional agencies using a range of different approaches including field work, analysis of satellite imagery and application of rules/conceptual models.

The BoM GDE Atlas indicates that the Survey Area has the potential to support both terrestrial and aquatic GDEs (Figure 2.6). Turner River, which intersects the Survey Area at multiple locations, is mapped as having high potential for terrestrial GDE. The majority of the Survey Area to the west of the Turner River is mapped as having low potential for GDE while the easternmost portion of the Survey Area is mapped as moderate potential (BoM, 2023b).

BoM (2021) defines Inflow Dependent Ecosystems (IDEs) as vegetation that is either groundwater dependent or is likely to be reliant on subsurface water in addition to rainfall, i.e., from soil water, surface water or irrigation. The likelihood of a landscape using additional water is rated from 1 to 10, with ratings above six indicating that a landscape is likely to be inflow dependent (BoM, 2023b). The majority of the Survey Area is rated 6 while the easternmost portion is rated 7 (BoM, 2023b).

3 Method

3.1 Desktop Assessment

3.1.1 Database searches

Database searches identified taxa and ecological communities of significance occurring in and in the vicinity of the Survey Area. This information was obtained prior to mobilisation and used to inform the survey. Databases, including search radius, are provided in Table 3.1.

Table 3.1: Details of the database searches conducted

Purpose	Database	Search Area
To identify flora species and communities previously recorded within the Broad Desktop Assessment Area and its vicinity, in particular those of significance	Threatened & Priority Flora databases (DBCA, 2022d)	40 km buffer around Survey Area
	Western Australian Herbarium databases (DBCA, 2022d)	40 km buffer around Survey Area
	DBCA Threatened and Priority Ecological Communities databases (DBCA, 2022c)	50 km buffer around Survey Area
	DBCA Nature Map resources (DBCA, 2022a)	40 km buffer around Survey Area
	Atlas of Living Australia (ALA) (ALA, 2022)	40 km buffer around central point of -20.664, 118.463
To identify potential species listed under the Commonwealth EPBC Act within the Survey Area	DAWE Protected Matters Search Tool (PMST) (DAWE, 2022)	40 km buffer around Survey Area
To identify declared pest plants within the Survey Area	Declared Plants Database – Western Australian Organism List (WAOL) (DPIRD, 2022)	Town of Port Hedland

3.1.2 Literature review

Background information on the Survey Area and surrounds was compiled prior to, during and after the field survey. The literature review considered 14 sources of relevance to the Survey Area including field surveys and desktop assessments (Table 3.2). All are located within a radius of 40 km from the Survey Area. Five previous surveys partially overlap the Survey Area. The findings of the literature review are presented in Appendix B.

Table 3.2: Literature sources used for the desktop review

Survey	Reference	Distance from Survey Area
Wodgina Gas Pipeline Detailed flora and vegetation survey	360 Environmental (2018)	Partially overlapping
Port Hedland Regional Detailed flora and vegetation assessment	ENV (2011)	Partially overlapping
LandCorp Report for Proposed Boodarie Industrial Area Detailed flora and fauna assessment	GHD (2010)	Partially overlapping
Atlas Iron Limited Mount Dove Direct Shipping Ore Project detailed Flora and Vegetation Studies	Woodman (2011)	Partially overlapping
Port Hedland Area Targeted Priority Flora Survey	ENV (2009)	Partially overlapping
Pilbara Transmission Flora and Vegetation Desktop Assessment	Ecoscape (2018)	Directly adjacent east
Port Hedland Solar Farm Project Detailed flora and vegetation assessment	Phoenix (2022)	Directly adjacent east
A Flora and Fauna Assessment of RGP5 DMMA A, Port Hedland Harbour	Biota (2008)	~7 km N
Technical Memorandum: Reconnaissance Flora and Fauna Survey Port Hedland International Airport-Highway precinct 2	Emerge (2019)	9.6 km NE
Proposed Wilga Quarry Extension Reconnaissance Flora, Vegetation and Fauna Habitat Survey	Ecotec (2018)	~30 km E
Wodgina DSO Project Detailed Flora and Vegetation Assessment	Outback Ecology (2009)	36.1 km SE
Fortescue Metals Group Ltd North Star Detailed Flora and Vegetation Assessment	Ecologia (2012)	38.4 km SE
Pippingarra and Wodgina Roads: Reconnaissance Flora and Fauna Survey	Ecoscape (2020)	~42 km SE
Rutila Resources Railway Corridor Reconnaissance Flora and Vegetation Assessment	Ecoscape (2014)	~78 km SW

3.1.3 Vegetation

Vegetation type and condition mapping for Route 6 is provided at the desktop assessment level. This data is extrapolated using the existing mapping from the detailed survey and (Umwelt, 2023). The mapping for Route 6, while presented with the detailed mapping results (Section 3.2.6.1), has not been ground-truthed and is at a lower confidence than the adjoining mapping for Routes 1 through 4.

3.2 Field Survey

3.2.1 Survey Timing and Personnel

The field survey was undertaken between April 25th – May 5th, 2023, by two botanists (22 person days). The flora field team comprised of Senior Botanist Kelby Jennings and Botanist Emma Marsh, with 13 cumulative years of botanical survey experience, including work within the Pilbara region (Table 3.3).

Table 3.3: Project Team & Licences

Biologic Personnel	Role	Flora Licences	Relevant Botanical Experience
Principal Botanist			
Clinton van den Bergh	• Project Director • QA / QC	n/a	17 years
Senior Botanist			
Carmel Winton	• Overall Project Manager • QA / QC	FB62000274	14 years
Kelby Jennings	• Field team leader • Vegetation mapping • Reporting	FB62000486	11 years
Robyn Chesney	• Reporting	-	12 years
Dr. Rachel Meissner	• Specimen identifications	-	23+ years
Botanist			
Emma Marsh	• Field team member • Specimen Identifications • Data management • Reporting lead author	FB62000233-4	3 years
Darcy Reith	• Reporting support	FB62000359	3 years

3.2.2 Weather and Climate

In the 12 months prior to the survey, mean minimum and maximum temperatures were comparable to the LTA detailed in Section 2.22.2(Figure 3.1). The mean minimum temperature was below the LTA for the majority of the year prior to the survey and maximum temperatures fluctuated above and below the LTA. Prior to the field survey, the wet season (November to February) recorded above average rainfall in November and January (Figure 3.1). The months immediately prior to the survey (February, March, and April 2023) provided adequate seasonal conditions for the survey, although rainfall was consecutively below the LTA rainfall (Figure 3.1).

Weather conditions during the trip were adequate to complete the survey; generally fine and slightly overcast, with temperature maximums ranging from 26-34°C. Weather

conditions did not present any survey limitations. The seasonal timing of the survey is appropriate for this level of survey. The majority of flora species were exhibiting flowering material and ephemeral species were evident. Survey timing is unlikely to represent a survey constraint.

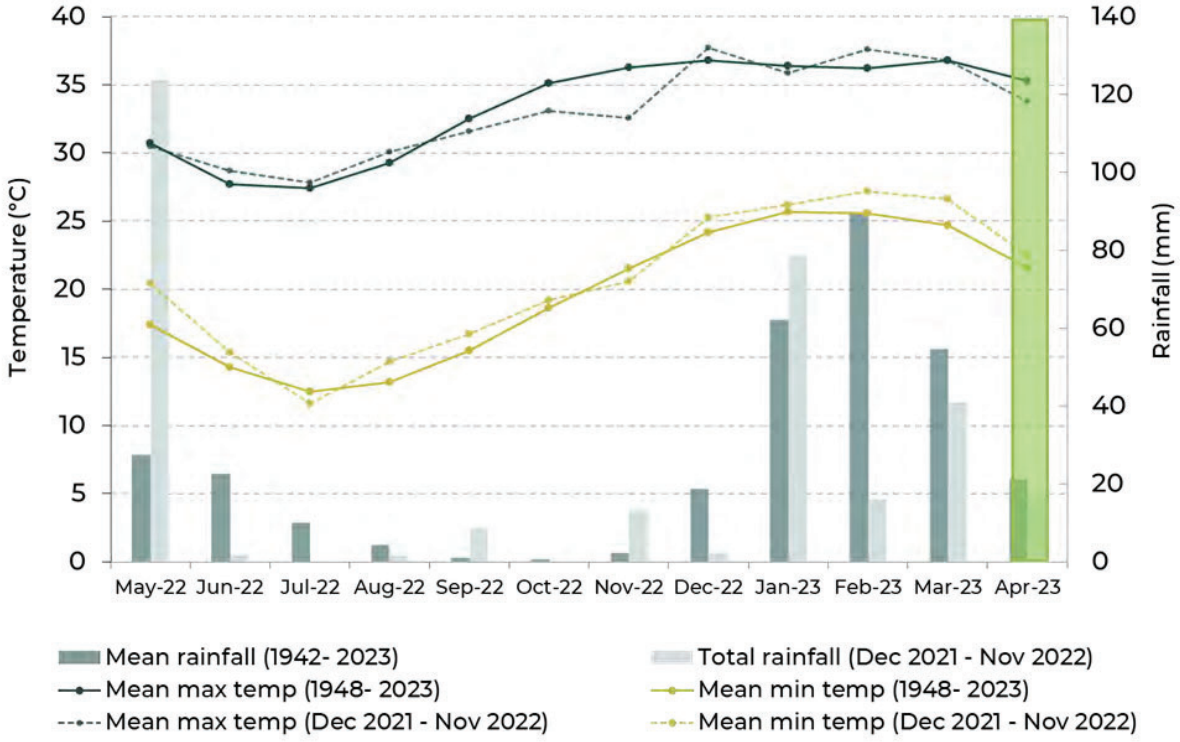
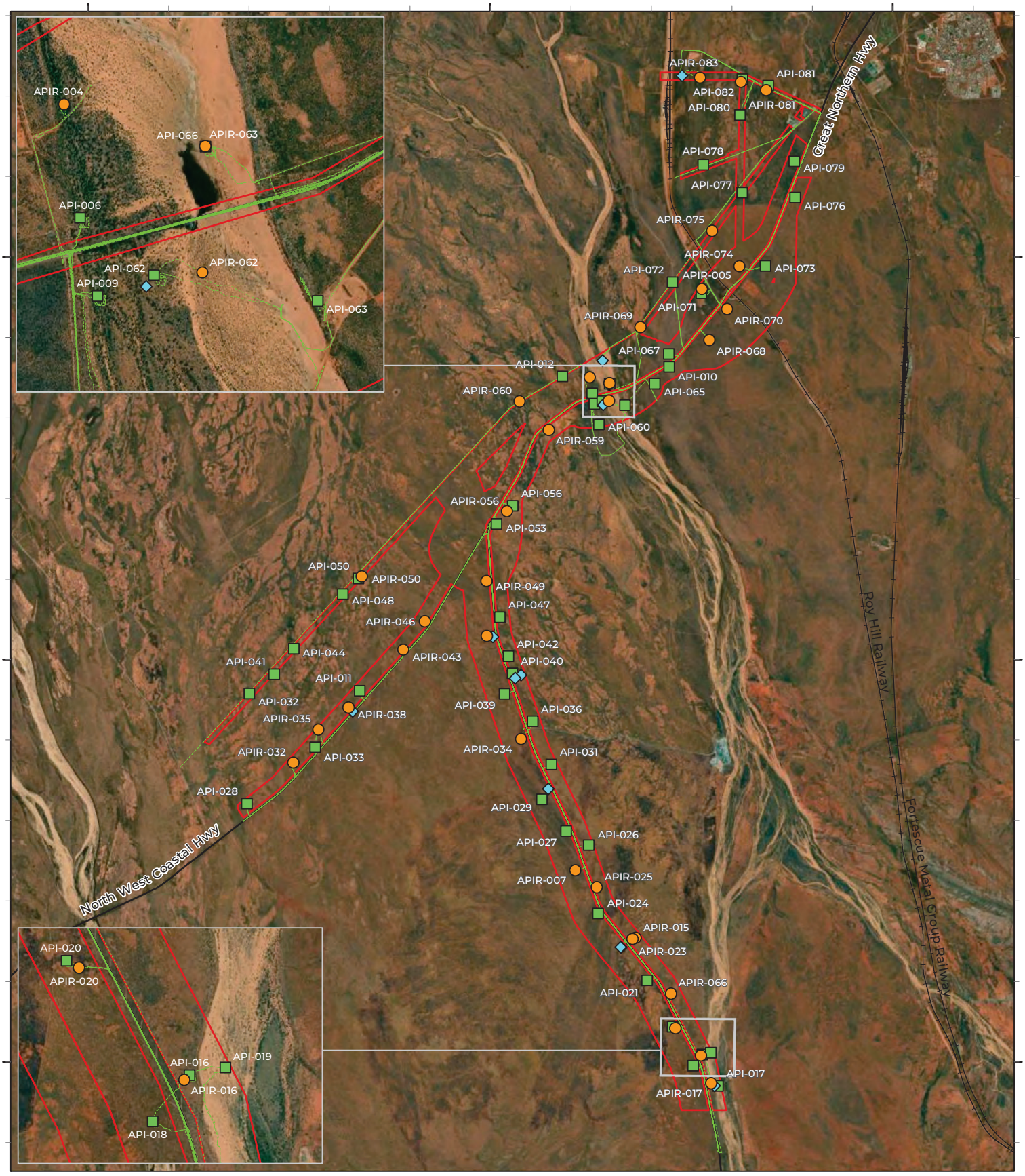


Figure 3.1: Long-term and current climate data for Port Hedland Airport (BoM Station 004032; BoM, 2023a)

3.2.3 Detailed Flora Survey

A combination of quadrats, relevés, meandering traverses, and opportunistic sampling is appropriate for a detailed level flora survey as stipulated in the guidance statement (EPA, 2016b). The techniques are described in Table 3.4.

A total of 46 quadrats and 32 relevés were sampled across the Survey Area (Figure 3.2). An additional 11 vegetation mapping notes and 44 boundary points were taken to delineate general vegetation boundaries and to provide additional notes for vegetation and condition mapping. The survey was completed over one sampling event.



LEGEND

- Survey Area
- State Road
- Rail

Sample Type

- Quadrat
- Relevé
- Vegetation Mapping Note
- Traverse

Scale 1:135,000

0 2 4 Km

Coordinate System: GDA2020 MGA Zone 50
Projection: Transverse Mercator
Datum: GDA2020 Created 10/06/2024

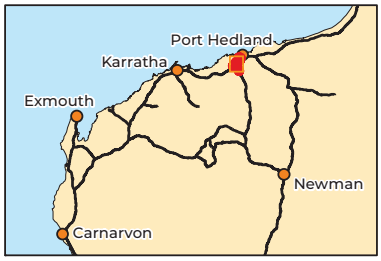


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Figure 3.2: Flora sample sites and traverses

Prior to field mobilisation site locations were selected using a combination of aerial imagery, surface geology layers, contour mapping and specialist knowledge of Pilbara vegetation communities. These sites were selected to be representative of the vegetation units at the Survey Area. Areas that looked unusual from the aerial imagery or appeared to represent potential habitat for significant flora and vegetation were targeted for site sampling. The field survey effort, including sample sites and GPS track logs, is presented in Figure 3.2.

Table 3.4: Detailed field survey techniques

Approach	Description
Quadrat	A comprehensive and replicable survey technique for gathering information during a detailed flora and vegetation assessment. A clearly defined area of set proportions, giving a consistent assessment of flora and vegetation across the Survey Area. Each quadrat represents a vegetation type, and each vegetation type must be represented by a minimum of three quadrat sites, where practicable. Information collected at each quadrat includes: • Site code, date, location, personnel; • A minimum of one photograph, one from the NW corner of the site; • Soil characteristics (texture and colour); • Geology (type, size, nature of any rocks, stones, gravel, or outcropping); • Topography (landform type and aspect); • Description of the vegetation structure in line with NVIS level V classifications (NVIS Technical Working Group, 2017) (Appendix C); • Vegetation condition (Appendix D); • Disturbances (including fire, invasive flora/fauna species); • Comprehensive recording of every vascular flora species within the quadrat boundary, along with height and cover (50x50 m or 2,500 m^2 in size for a Pilbara botanical survey).
Relevé	Relevés are an unbounded, lower intensity survey technique utilised in a detailed survey to: • Support vegetation mapping; • Support the survey effort and sampling intensity; • Provide assessment where quadrats are too dangerous to set up (such as steep gorges or embankments); or • Provide assessment where the landform does not support adequate area for a detailed quadrat. Information collected at each relevé is the same as that of a quadrat site, excluding the comprehensive collection an recording of every species within the quadrat boundary.
Traverse/ Meandering Traverse	A traverse is an unmarked route along which data is collected. Traverses are useful for identifying the boundaries and characteristics of vegetation types, selecting sites for detailed survey, and targeting significant flora or vegetation. Information recorded along a traverse may be the same as a relevé or less detailed, with the addition of noting vegetation changes and relationships between vegetation and substrate.

Approach	Description
Mapping Notes/ Boundary Points	Mapping notes were used to ground-truth existing vegetation mapping and significant flora locations. They are a lower intensity, unbounded, survey technique. Information collected at each mapping note may vary in detail depending upon what is present and needed for that site. The following was recorded as a minimum: • Location co-ordinates; • Representative photograph; and • Brief description of the mapping note focus. Boundary points are point locations taken to note additional information observed during ground-truthing (e.g., recent fire, disturbances etc.)
Opportunistic (Supplementary) Sampling	Flora and vegetation not recorded through other sampling methods are opportunistically sampled as encountered in the survey. Opportunistic sampling includes recording locations of significant, introduced and unknown species.
Targeted Sampling	Habitat likely to support significant flora or vegetation are targeted during the survey. Including areas with existing records of significant flora. Areas are selected based on existing records from database searches, geology, vegetation mapping and known Environmentally Sensitive Areas (ESAs; such as PEC/ TEC or GDE). Where possible, unusual, and restricted geological features are sampled. When potentially significant flora taxa are encountered during a survey, sufficient information is recorded in compliance with a Threatened and Priority Flora Report Form (TPRF) pursuant to the conditions of the flora taking licencing and authorisation to collect threatened flora.

3.2.4 Targeted Flora Survey

Prior to the survey, a list of significant flora known to, or with the potential to occur within the Survey Area was compiled. Field personnel familiarised themselves with photographs, reference samples and descriptions of these taxa before conducting the survey. Once on the ground, personnel actively searched while traversing the Survey Area and in known locations or optimal habitat encountered in the field.

Targeted searching was undertaken for significant flora, as identified during the desktop assessment. Targeted taxa included taxa identified as Confirmed or considered Very Likely, Likely or Possible to occur within the Survey Area from the Assessment of Occurrence (see Section 3.2.8). The meandering targeted searches while traversing the Survey Area focused on habitat considered likely to support significant flora. The existing records of significant flora in the Survey Area were targeted to assess the current population size, health and extent of significant species at the time of survey.

When significant taxa, or potentially significant taxa, were encountered in the field the historical data was checked to see if this location has been previously recorded. If so, the population was assessed for health and accuracy of counts. If it was not an existing record, a GPS coordinate of the individual was taken when occurring in isolation, or a central GPS

coordinate was taken for a small population (central coordinate with an approximate 20 m radius). Information collected at each location comprised:

- Number of individuals, for a small population or estimate for larger populations;
- Condition and reproductive status of the plants in each population;
- Coordinates of either each plant (if few) or the extent of the population (if many) using a GPS;
- Photographs and description of vegetation habitat; and
- Broad information on vegetation type and condition.

Threatened and Priority Flora Report Forms will be provided to the Parks and Wildlife Service of DBCA, as required under the flora collecting permits. Significant flora specimens will be vouchered with the Western Australian Herbarium (WAH), where required and appropriate.

3.2.5 Flora

3.2.5.1 Nomenclature and specimen Identification

Flora nomenclature used in this report is consistent with the WAH plant census, provided on Florabase (WAH, 1998-). All species nomenclature is current at the time of report preparation. Specimens were identified by Dr. Rachel Meissner and botanist Emma Marsh supported by the Biologic botanical team using the appropriate taxonomic keys, Western Australian reference herbarium and, where required, relevant taxonomic experts at the WAH.

Some significant flora specimens, introduced or new species for the region, were submitted to the WAH for formal confirmation of the identification. Two specimens were submitted under the formal ID process under accession #10303; *Rothia indica* subsp. *australis* and **Cyperus conicus*. Both specimens were confirmed as these taxa by Michael Hislop at the WAH under formal ID.

3.2.5.2 Introduced Taxa

Whilst completing the detailed flora assessment and targeted searches, any introduced taxa were noted. Significant environmental weeds were a particular focus and refer to any WoNS or Declared Pests in the BAM Act. Records of any introduced species identified in the Survey Area were recorded. Each record noted the estimated number of individual plants and approximate spatial extent of the population where practicable. Weed classification definitions are provided in Appendix A.

3.2.6 Vegetation

Vegetation was sampled using quadrats, relevés, and vegetation mapping notes, including information on disturbance and condition, as outlined in Section 3.2.3. The sampling methods were carried out in accordance with EPA guidelines (EPA, 2016b).

3.2.6.1 Vegetation Mapping

The current nationally adopted classification system for vegetation descriptions is the Native Vegetation Information System (NVIS) (NVIS Technical Working Group, 2017). NVIS seeks to manage national vegetation data to help improve vegetation planning and management within Australia including standardising scale and technical wording for vegetation associations. Vegetation types and condition is mapped in accordance with the scale for NVIS level V.

Vegetation units identified from previous mapping were ground truthed and assessed during the survey. Site photographs and full vegetation descriptions were recorded at each sampling site. The floristic data collected from the quadrats were statistically analysed (see Section 3.2.7) and broad vegetation types were determined based on a combination of statistics, floristic structural analysis, previous mapping identified in the literature review and expert knowledge of the Pilbara bioregion vegetation complexes. The vegetation boundaries were digitised by interpreting the sampling data in conjunction with aerial imagery, ground-truthing knowledge, geology and historical mapping and sampling data.

Vegetation mapping for Route 6 is completed to desktop assessment level using extrapolated data from the detailed mapping. This data should be considered with lower confidence for the purposes of assessment.

3.2.6.2 Vegetation Condition

Vegetation condition was defined within the Survey Area using the vegetation condition scale for the Eremaean and Northern Botanical Provinces in EPA (2016b), which has been adapted from Keighery (1994) and Trudgen (1988) (Appendix D). The vegetation condition was determined based on the level of disturbance observed in the sampling area. Condition was recorded at each quadrat and relevé, while additional notes were taken while traversing the Survey Area to broadly map vegetation condition boundaries. The vegetation condition mapping was digitised using GIS software.

Vegetation condition mapping for Route 6 is completed to desktop assessment level using extrapolated data from the detailed mapping.

3.2.7 Floristic Data Analysis

Analysis of the field survey results was conducted to assist with delineating vegetation types and to assess survey adequacy. Floristic composition for vegetation classification is a repeatable method and is considered more suitable for identification of significant vegetation as it focuses on the suite of species present within a quadrat (EPA, 2016b). During the survey, flora taxa were recorded using an estimate of the foliage cover of each species within each quadrat. Multivariate statistics were carried out using R (version 4.2.1; R Core Team, 2023), which is a commonly used and accepted method for delineating vegetation communities.

3.2.7.1 Data Reconciliation

Following the survey, the flora taxa list was reconciled to amalgamate selected taxa, e.g., varieties of the same species, and to remove unconfirmed taxa. Tentative species identifications indicated with the prefix of a query were grouped with confirmed taxa of the same name, for example *Acacia* ?*stellaticeps* were grouped with *Acacia stellaticeps*. Tentative genus identifications were removed from the analysis. Relevé sites were excluded from the analyses as records from these comprise presence/ absence data only. The final dataset used in the analyses comprised 180 flora taxa from 46 sample sites (Appendix E).

3.2.7.2 Hierarchical Clustering

To allow for differences in cover and potential differences between observers, a number of different transformations were used: square root transformation, an adapted Braun-Blanquet method (1 = <1 %; 2 = 1–5 %; 3 = 6–25 %; 4 = 26–50 %; 5 = 51–75 %; and 6 = >75 %), and presence-absence. Singletons (taxa which were only recorded once) and weeds were removed from the dataset. The cover code values for the floristic data recorded for each quadrat were compiled in R before a resemblance matrix and dendrogram were created. The similarity testing was undertaken using the Bray Curtis coefficient. Vegetation units were initially grouped based on 40–80 % similarity and distinguished visually in a dendrogram (Appendix F). Several permutations of the analysis were undertaken with differing combinations of data to compare which gave the clearest hierarchical cluster. Excluding weeds, annual taxa, and singletons, and including perennials, (trees, shrubs and perennial herbs/ grasses) provided the clearest grouping of sites for this data set.

3.2.7.3 Species Accumulation Curve

Species accumulation curves provide a visual overview of the observed number of flora taxa as the number of sample sites (quadrats) increases. When a curve approaches an asymptote (i.e., flattens), it suggests that sampling effort has been sufficient to collect the taxa comprising the floral assemblage at the locations sampled (Thompson *et al.*, 2003).

The value at which the curve reaches an asymptote can also be used as an approximate measure of the total size of the species complement at that location(Thompson *et al.*, 2003). The species accumulation curves were created using the reconciled native flora taxa list for each quadrat sampled during the current survey. These curves were based on presence absence data, with a random sample order and a maximum 999 permutations. Estimator curves (Chao, Jackknife 1, Jackknife 2 and Bootstrap) were also used to predict the number of taxa that may have actually been present. If there is a substantial difference in number of species observed to that estimated by the curve, or if the curve does not approach asymptote, discussion around survey effort is encouraged.

3.2.8 Assessment of Occurrence

Significant flora species identified in the database searches and previous reports are assessed per taxa for their likelihood of occurrence in the Survey Area. Prior to field mobilisation, Biologic utilises botanical expertise and a decision matrix to guide a preliminary occurrence assessment to determine the likely presence of significant flora. Following the field assessment, ground-truthing of existing significant flora records and presence of potential habitat is reviewed to revise the occurrence assessment per taxa.

The occurrence assessment decision matrix is outlined below (Table 3.5). A summary of the preliminary occurrence assessment is provided in the desktop assessment flora results, Section 4.1.1. The detailed survey flora results section presents a summary of the revised occurrence assessment in Section 4.3.

Table 3.5: Occurrence assessment decision matrix

Known Record's Proximity to the Survey Area	Habitat Categories within the Survey Area			
	Core/ Critical Habitat Present	**Suitable Habitat Present/ within Known Distribution**	**Marginal Habitat Present/ Adjacent to Known Distribution**	**Not Present/ Outside of Known Distribution**
Within the Survey Area	Confirmed	Confirmed	Confirmed	Confirmed
Within <5 km	Highly Likely	Likely	Possible	Possible
Within 5-15 km	Likely	Possible	Possible	Unlikely
Within 15-40 km	Possible	Possible	Unlikely	Unlikely
Greater than 40 km	Possible	Unlikely	Unlikely	Highly Unlikely
Taxa Considered Locally/ Regionally Extinct	Unlikely	Unlikely	Highly Unlikely	Highly Unlikely

4 Results and Discussion

4.1 Desktop Assessment

A total of 756 vascular flora taxa from 87 families and 274 genera were identified by the desktop assessment as occurring within the 40 km search radius and have potential to occur within the Survey Area (Appendix G and Appendix H). The search area covers a wide variety of landforms, habitats and vegetation communities, as such, only a subset of the potentially occurring vascular flora taxa is likely to occur in the Survey Area.

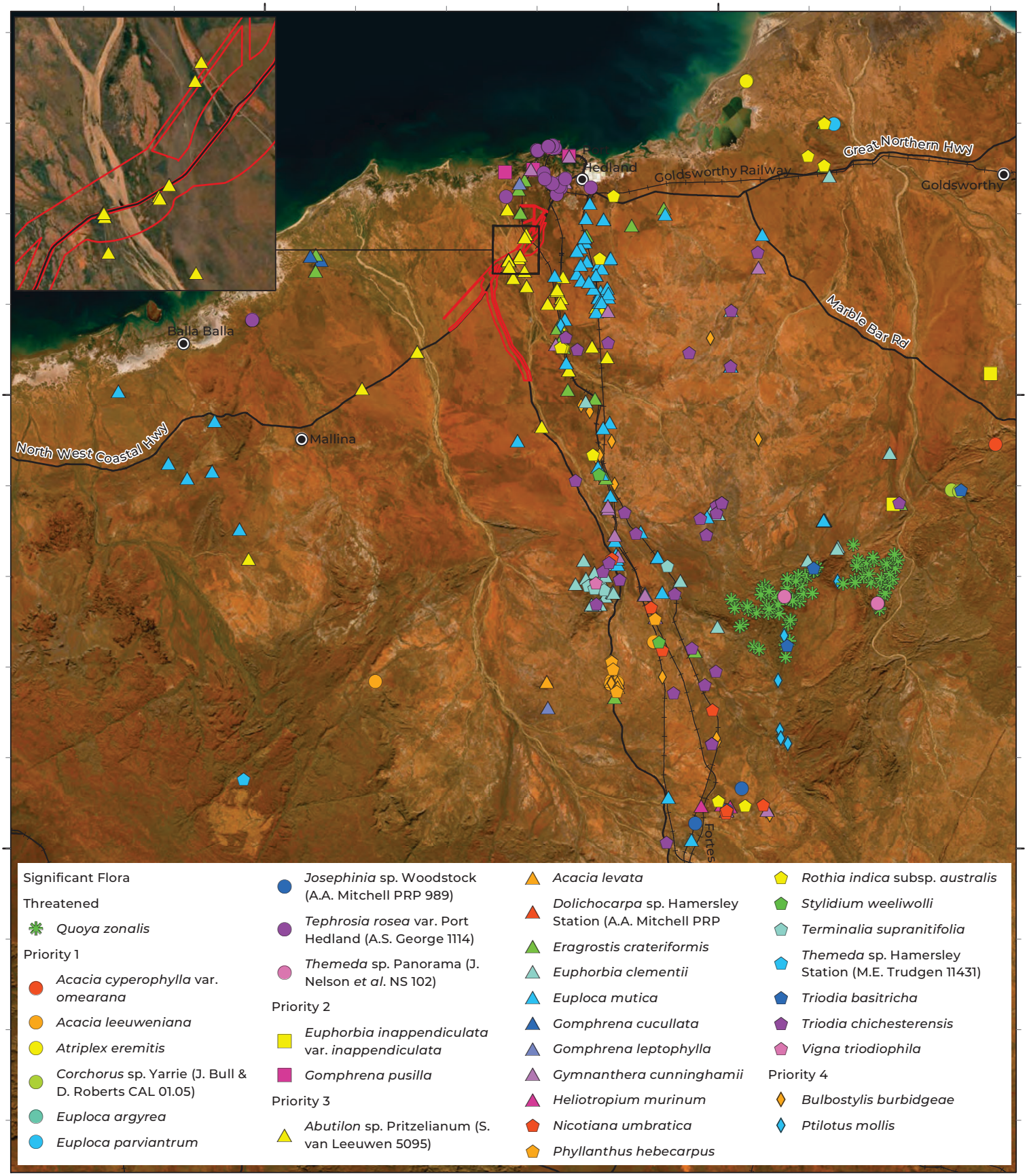
4.1.1 Significant Flora

The desktop assessment identified 38 significant flora taxa (those listed under the EPBC Act, BC Act, or DBCA's Priority List) within and occurring in the vicinity of the Survey Area (Figure 4.1, Table 4.1, Appendix I). The significant flora identified from the desktop assessment comprised:

- One Threatened flora taxon: *Quoya zonalis*;
- Ten Priority 1 taxa;
- Three Priority 2 taxa;
- Twenty Priority 3 taxa; and
- Four Priority 4 taxa.

The Threatened taxon, *Quoya zonalis* (T) was returned from the EPBC database search. This database often provides a conservative and broad indication of significant taxa present for an area. Some taxa that are returned in the search may have little or no likelihood of occurring within the Survey Area. This Threatened taxon is known to occur primarily within hillslopes and gorges (habitat not found in the Survey Area), with the nearest known record located 56.7 km south-east of the Survey Area; as a result, it is considered Highly Unlikely to occur within the Survey Area.

Of the 38 flora taxa identified by the desktop assessment, one was previously recorded within the Survey Area: *Abutilon* sp. Pritzelianum (S. van Leeuwen 5095) (P3) (Table 4.1). Locations of this taxa were ground-truthed where possible to determine their presence/absence, and if present, the health of the population. All taxa locations as per DBCA records, were found to be present at the existing locations (within the Survey Area). The assessment of occurrence is presented at Appendix I and the post-survey review is further discussed in Section 4.3.



Significant Flora

Threatened

- *Quoya zonalis*

Priority 1

- *Acacia cyperophylla* var. *omearana*
- *Acacia leeuweniana*
- *Atriplex eremitis*
- *Corchorus* sp. Yarrie (J. Bull & D. Roberts CAL 01.05)
- *Euploca argyrea*
- *Euploca parviantrum*
- *Josephinia* sp. Woodstock (A.A. Mitchell PRP 989)
- *Tephrosia rosea* var. Port Hedland (A.S. George 1114)
- *Themeda* sp. Panorama (J. Nelson *et al.* NS 102)

Priority 2

- *Euphorbia inappendiculata* var. *inappendiculata*
- *Gomphrena pusilla*

Priority 3

- *Abutilon* sp. Pritzelianum (S. van Leeuwen 5095)
- *Acacia levata*
- *Dolichocarpa* sp. Hamersley Station (A.A. Mitchell PRP
- *Eragrostis crateriformis*
- *Euphorbia clementii*
- *Euploca mutica*
- *Gomphrena cucullata*
- *Gomphrena leptophylla*
- *Gymnanthera cunninghamii*
- *Heliotropium murinum*
- *Nicotiana umbratica*
- *Phyllanthus hebecarpus*
- *Rothia indica* subsp. *australis*
- *Stylidium weeliwolli*
- *Terminalia supranitifolia*
- *Themeda* sp. Hamersley Station (M.E. Trudgen 11431)
- *Triodia basitricha*
- *Triodia chichesterensis*
- *Vigna triodiophila*

Priority 4

- *Bulbostylis burbidgeae*
- *Ptilotus mollis*

LEGEND

- Survey Area
- State Road
- Rail

Scale 1:800,000

0 10 20 Km

Coordinate System: GDA2020 MGA Zone 50
Projection: Transverse Mercator
Datum: GDA2020 Created 10/06/2024

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Figure 4.1: Significant flora from the desktop assessment

Table 4.1: Desktop significant flora within the Survey Area

Taxon	Description	Distance from Survey Area
Confirmed		
Abutilon sp. Pritzelianum (S. van Leeuwen 5095) (P3)	Shrub to 2.5 m. Grey/ green leaves. Fl. Yellow. Sandplain. Sand, sandy loam or sandy clay.	Within the Survey Area
Highly Likely		
Eragrostis crateriformis (P3)	Annual, grass-like or herb, 0.1-0.5 m high. Fl. Jan to May or Jul. Clayey loam or clay. Creek banks, depressions.	1.4 km S
Likely		
Euploca mutica (P3)	Low perennial shrub to 0.4m. Fl. White. Flats/ plains, sandplain. Sandy loam, sandy clay often over ironstone.	6.8 km SE
Gymnanthera cunninghamii (P3)	Erect shrub, 1-2 m high. Fl. cream-yellow-green, Jan to Dec. Sandy soils.	7.5 km NNE
Possible		
Euphorbia clementii (P3)	Erect herb with pink stems, to 0.6 m high. Gravelly hillsides, stony grounds. Responds to fire.	12.8 km ESE
Gomphrena leptophylla (P3)	Prostrate or erect to spreading annual, herb, to 0.15 m high. Fl. white, Mar to Sep. Sand, sandy to clayey loam, granite, quartzite. Open flats, sandy creek beds, edges salt pans; marshes, stony hillsides.	4.8 km N
Rothia indica subsp. *australis* (P3)	Prostrate annual, herb, to 0.3 m high, densely covered in spreading hairs. Fl. Apr to Aug. Sandy soils. Sandhills and sandy flats.	8.5 km ENE
Stylidium weeliwolli (P3)	Annual, herb, 0.1-0.25 m high, throat appendages 4, rod-shaped. Fl. pink & red, Aug to Sep. Gritty sand soil, sandy clay. Edge of watercourses.	25.5 km SE
Triodia chichesterensis (P3)	Hummock grass to 0.4m. Grey-green leaves and woolly orifice hairs. Non-resinous. Lemmas with hairy mid-lobes. Ironstone, basalt, often with some quartz. Red/ brown sand or loam.	10.5 km ENE

4.1.2 Vegetation

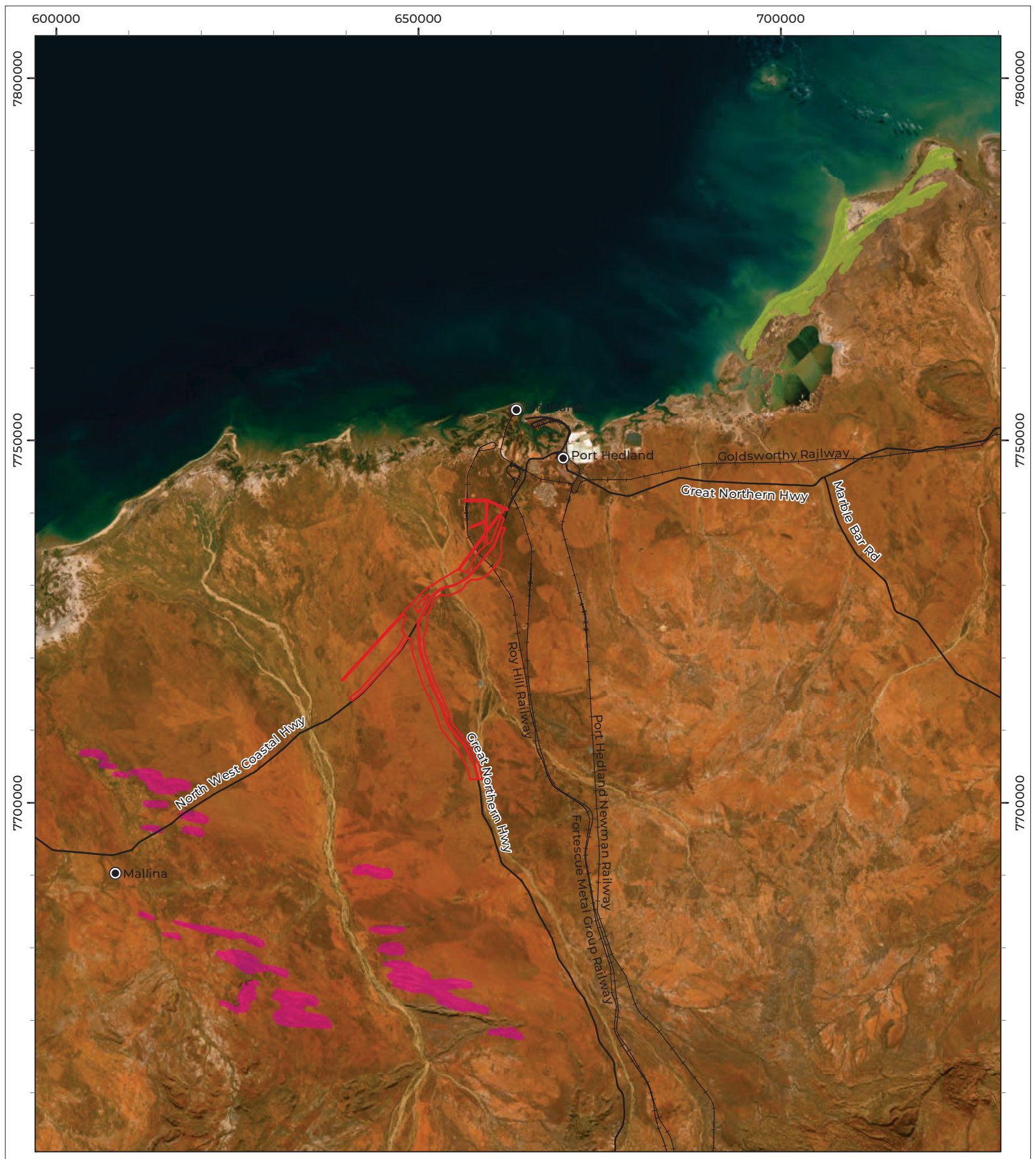
Vegetation type and condition mapping for Route 6 was extrapolated using the existing mapping from the detailed survey and Umwelt (2023). The majority of the This mapping for Route 6 has not been ground-truthed and is at a lower confidence than the adjoining mapping for Routes 1 through 4. It is discussed further in Section 4.2.4.

4.1.3 Significant Vegetation

The database searches indicated that no TECs intersect the Survey Area or are located within the desktop Study Area (50 km). No PECs are known to intersect the Survey Area. Two PECs, the Gregory Land System (Priority 3) and Eighty Mile Land System (Priority 3), were identified as occurring within 50 km of the Survey Area (Table 4.2, Figure 4.2).

Table 4.2: PECs in the vicinity of the Survey Area

PEC name and description	Distance from Survey Area (km)	Distance from Survey Area
Gregory Land System (Priority 3)	Linear dunes and restricted sandplains supporting shrubby hard spinifex (and occasionally soft spinifex) grasslands	16.6 km NE
Eighty Mile Land System (Priority 3)	Beach foredunes, longitudinal coastal dunes and sandy plains with tussock grasslands and spinifex grasslands	38.9 km SW



LEGEND

- Survey Area
- State Road
- Rail

Community - Category

- Eighty Mile Land System - Priority 3
- Gregory Land System - Priority 3

Scale 1:481,000

0 6 12 Km

Coordinate System: GDA2020 MGA Zone 50
Projection: Transverse Mercator
Datum: GDA2020 Created 10/06/2024

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Figure 4.2: Significant ecological communities from the desktop assessment

4.2 Detailed Assessment

4.2.1 Flora Composition

The field survey identified a total of 218 confirmed flora species within the Survey Area, representing 108 genera from 40 families (Appendix J). The most commonly represented family was Fabaceae (43 taxa, 19.7%), followed by Poaceae (38 taxa, 17.4%) and Malvaceae (19 taxa, 8.7%) (Table 4.3). The most commonly represented genus was *Acacia* (18 taxa, 8.3%), followed by *Ptilotus* (10 taxa, 4.6%) and *Cyperus*, *Corymbia* and *Eriachne* (seven taxa, 3.2% each). This data is further detailed in Table 4.3.

The 218 flora species were confirmed from an initial 226 records (Appendix J). One record, *Corymbia* ?*flavescens*, was tentatively identified and was unable to be definitively confirmed due to insufficient identifying material. Due to general morphological characteristics, geographic range and habitat requirements, this record is considered likely to represent *Corymbia flavescens* and has been included in the confirmed species list as such. Eight records were unable to be definitively confirmed to species level due to insufficient/poor identifying material as indicated with a "?" or "sp. indet" in the species list (Appendix J and Appendix E). These were considered likely to represent confirmed records within the Survey Area of the same genus, and none of these records are considered to potentially represent a significant species. A breakdown of taxa recorded per site is presented in a site by species matrix in Appendix K.

Table 4.3: Species diversity at the Survey Area

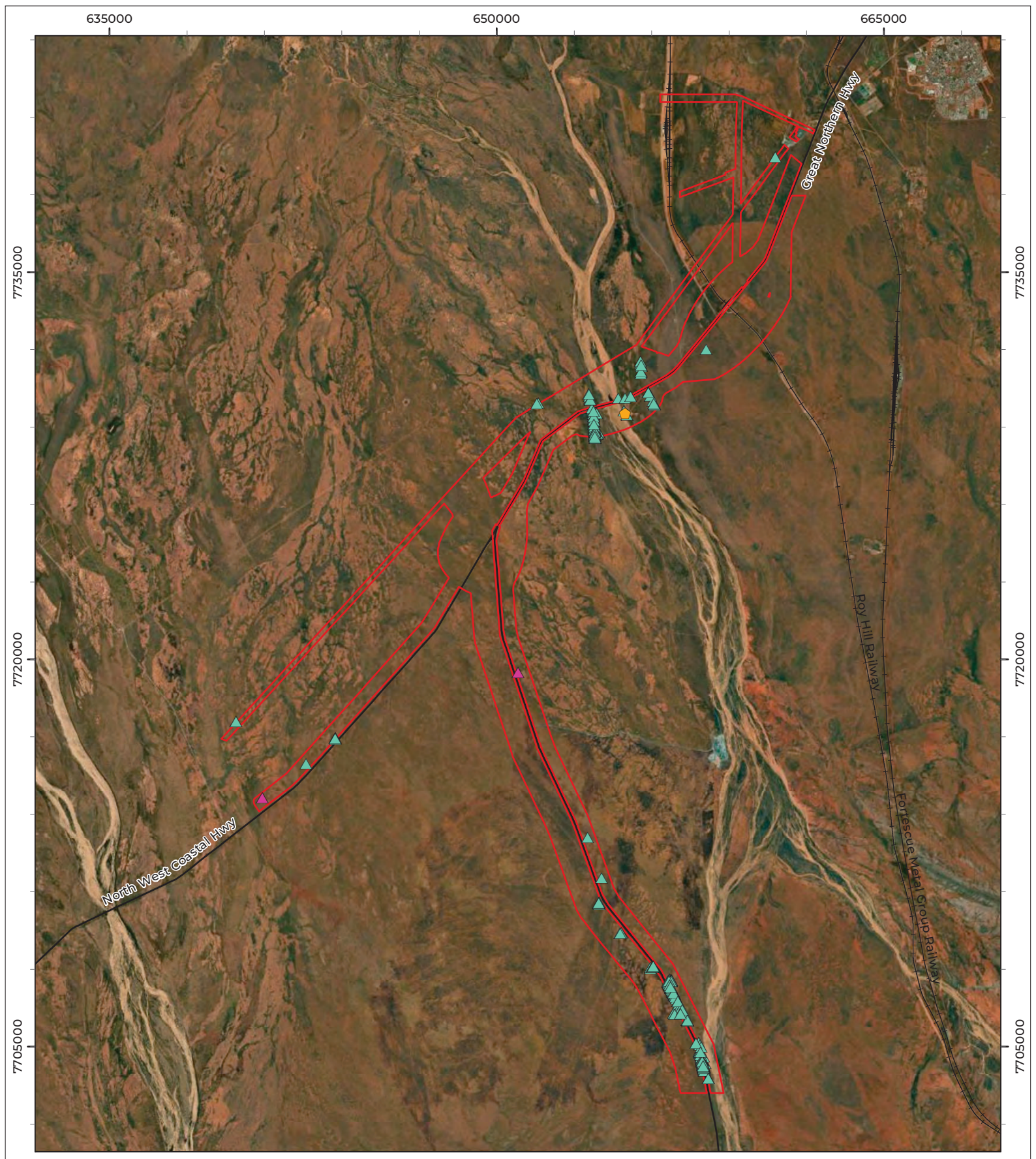
Classification	Taxa Count	Classification	Taxa Count
Most species rich families		**Most species rich genera**	
Fabaceae	43 taxa from 17 genera	*Acacia* (Fabaceae)	18 taxa
Poaceae	38 taxa from 20 genera	*Ptilotus* (Amaranthaceae)	18 taxa
Malvaceae	19 taxa from 9 genera	*Cyprus* (Cyperaceae)	7 taxa
Amaranthaceae	15 taxa from 5 genera	*Corymbia* (Myrtaceae)	7 taxa
Myrtaceae	14 taxa from 3 genera	*Eriachne* (Poaceae)	7 taxa

4.2.2 Significant Flora

The field survey identified two flora taxa of significance occurring within the Survey Area: *Abutilon* sp. Pritzelianum (S. van Leeuwen 5095) (P3) and *Rothia indica* subsp. *australis* (P3). The locations of these taxa are presented in Figure 4.3.

Table 4.4: Significant flora of the Survey Area per route

Priority Flora	Route 1	Route 1b	Route 2	Route 3	Route 4	Route 6
Abutilon sp. Pritzelianum (S. van Leeuwen 5095) (P3)	●	●		●	●	●
Rothia indica subsp. *australis* (P3)		●		●		



LEGEND

- Survey Area
- State Road
- Rail

Significant Flora

Priority 3

- *Abutilon* sp. Pritzelianum (S. van Leeuwen 5095)
- *Rothia indica* subsp. *australis*

Other Significance

- *Acacia trachycarpa* × *tumida* var. *pilbarensis*

Scale 1:135,000

0 2 4 Km

Coordinate System: GDA2020 MGA Zone 50
Projection: Transverse Mercator
Datum: GDA2020 Created 13/06/2024

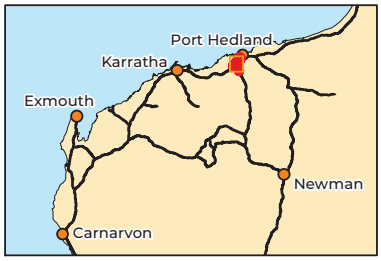


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Figure 4.3: Significant flora recorded in the Survey Area

4.2.2.1 *Abutilon* sp. Pritzelianum (S. van Leeuwen 5095) (P3)

Abutilon sp. Pritzelianum (S. van Leeuwen 5095) (Plate 4.1) is a greyish green shrub to 2 m high. The WAH holds 50 records of the taxon. Review of records indicates that specimens collected in July and August were in bud and flower, with flowers yellow in colour (WAH, 1998-). The taxon has been recorded in various vegetation types including isolated low to mid *Acacia* shrubland over *Triodia basedowii* or *T. epactia* hummock grassland, occasionally with isolated low *Corymbia* mallee woodland (WAH, 1998-). Associated soils range from sandplains of orange to brown sand or sandy loam, to hilltops of red-brown sandy clay (WAH, 1998-). During the survey 1,272 individuals from 321 locations were recorded both within the Survey Area and in adjacent vegetation. The field survey identified 741 individuals from 199 location within the Survey Area, and 531 individuals from 122 locations in vegetation adjacent to the Survey Area. *Abutilon* sp. Pritzelianum (S. van Leeuwen 5095) was primarily located along tracks and roads and/or other areas of disturbance, as well as floodplain and drainage areas, and was recorded in Route 1, Route 1b, Route 3 and Route 4 as demonstrated in Figure 4.3.

Plate 4.1: *Abutilon* sp. Pritzelianum (S. van Leeuwen 5095) (P3); flowers, fruit., habit. and leaves (Source: Biologic 2023).

4.2.2.2 *Rothia indica* subsp. *australis* (P3)

Rothia indica subsp. *australis* (Plate 4.2) is a prostrate herb to 0.1 m in height and 0.3 m in width (WAH, 1998-). The WAH holds 21 records of the taxon. Review of records indicates that flowering specimens were collected in July (WAH, 1998-). The taxon has been recorded in vegetation including open *Corymbia* woodland, to sparse low shrubland of *Pluchea ferdinandi-muelleri* or *Acacia* spp., to tall sparse *Acacia* shrubland, over mixed grassland (*Triodia longiceps*, *Triodia epactia*, *Eriachne obtusa*) (WAH, 1998-), occasionally recorded from the edges of creeklines. Associated soils include red / brown clay loam and red sandy clay (WAH, 1998-).

Within the Survey Area, *Rothia indica* subsp. *australis* was recorded as two individuals from two locations (Quadrats API-040 and API-028). These were located within vegetation units SP As SpPaPt TeTs and SP Cz AiHll As Be TsTe in the Route 1b and Route 4 sections of the Survey Area (Figure 4.3). As these vegetation units were found extensively in the Survey Area, it is possible that individuals of this species are located elsewhere; however, this species was not locally common at the time of survey.

In accordance with Florabase, these individuals represent the most westerly extent of the range of this species, resulting in a minor range extension of approximately 20 km west from previously confirmed records.

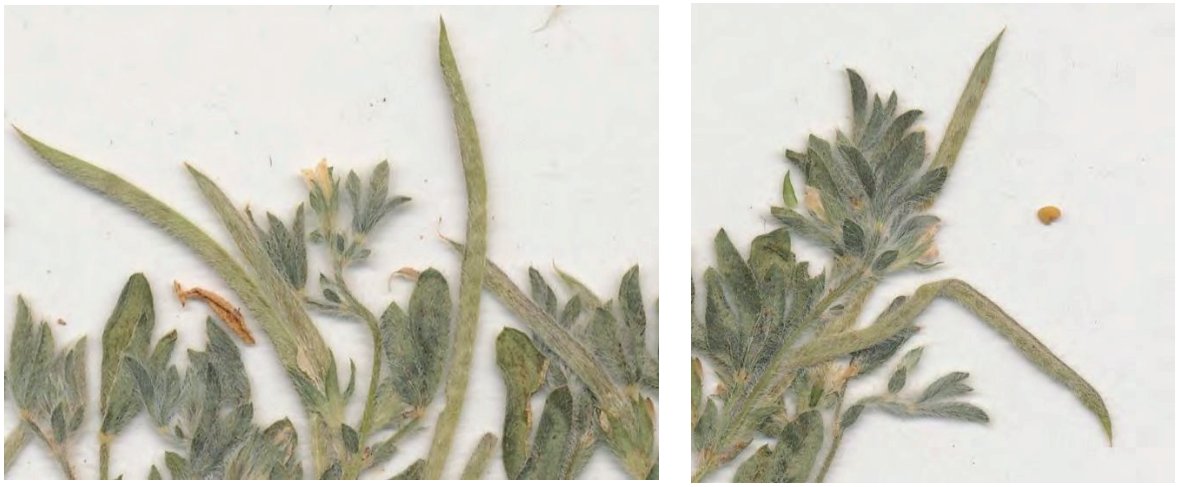


Plate 4.2: *Rothia indica* subsp. *australis* (P3) herbarium specimen with flower, pods and seed (Rio Tinto & WAH, 2015).

4.2.2.3 Flora of other significance

Two taxa were identified as significant by representing of range extensions or filling in a 'locality hole'. This is defined by species that, although the record is located within their broader range, have not previously been identified within the vicinity.

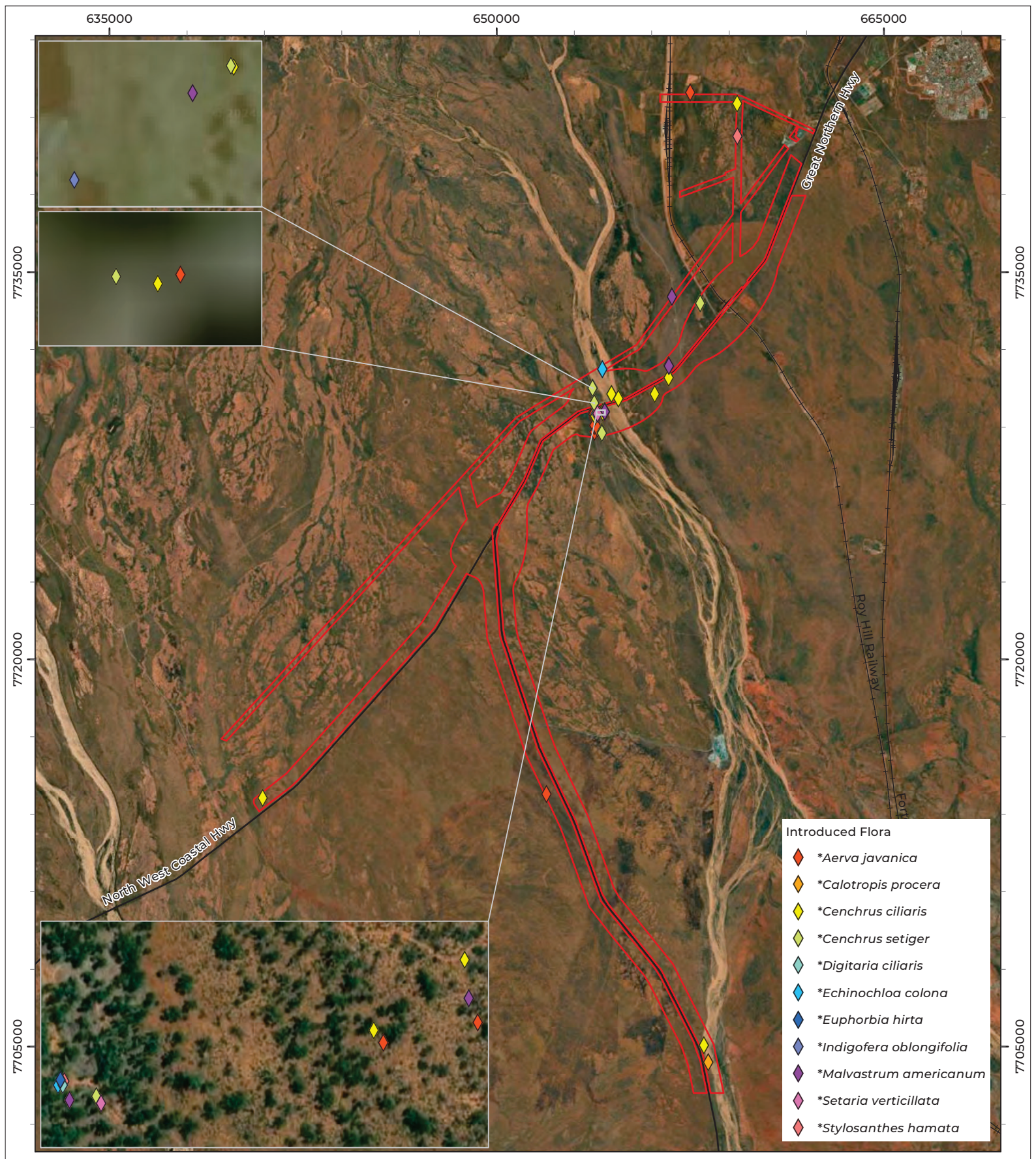
**Cyperus vorsteri* is an introduced weed species of the Cyperaceae family. Native to southern Africa, this species has previously only been recorded within the Perth metropolitan region (WAH, 1998 -). Due to its unusual location, this was formally identified by Michael Hislope at the WAH (ACC#10303). Its location within the Pilbara region suggests that this species has the ability to persist in a range of environments within Western Australia that are currently outside its known distribution. This species is further mentioned in Section 4.2.3, and due to being a weed is presented with the other introduced flora recorded from the survey.

Acacia trachycarpa ×*tumida* var. *pilbarensis* is a recognised hybrid that occurs exclusively within the Pilbara bioregion. It occurs on red sand, light brown-orange gravelly sandy loam, stony soils and granite in areas of outcrops and boulders, in hilly country, along banks of creeks and rocky dry creek beds and in roadside scree. This record is considered to fill a significant 'locality hole' for this species, with the nearest confirmed records on Florabase (WAH, 1998-) being located approximately 95 km south-west, 130 km south-east and 185 km east of this record. This species was recorded within Route 3 (on the banks of the Turner River) and is presented on Figure 4.3.

4.2.3 Introduced Flora

Twelve introduced taxa, representing seven families, were recorded from the Survey Area (Figure 4.4, Table 4.5). None of the introduced flora are listed as WoNS, a DP under the BAM Act, or as 'Priority Alert' weeds by the DCBA Parks and Wildlife Service. Dominant weeds within the Survey Area include **Cenchrus ciliaris*, **Cenchrus setiger* and **Aerva javanica*. The most abundant taxa were; **Aerva javanica* and **Cenchrus ciliaris* with 262 and 1,904 individuals respectively.

Introduced flora were distributed primarily within drainage line, floodplain, and stony plain vegetation types. Introduced flora are known to be more prevalent in these vegetation types due to dispersal of seeds by water movement and the higher water availability of these landforms for germination and growth (Hill et al., 2005; van der Meulen & Sindel, 2008). Furthermore, infestations being spread via cattle is more prevalent on the lower landforms, compared to rocky, breakaway country and large hills and ranges. The latter landscape was not found to occur within the Survey Area.



LEGEND

- Survey Area
- State Road
- Rail

Scale 1:135,000

0 2 4 Km

Coordinate System: GDA2020 MGA Zone 50
Projection: Transverse Mercator
Datum: GDA2020 Created 10/06/2024

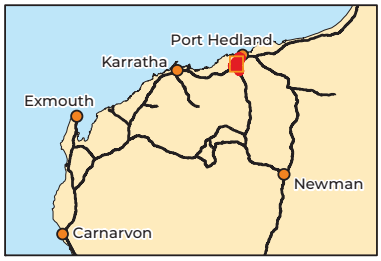


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Figure 4.4: Introduced flora recorded in the Survey Area

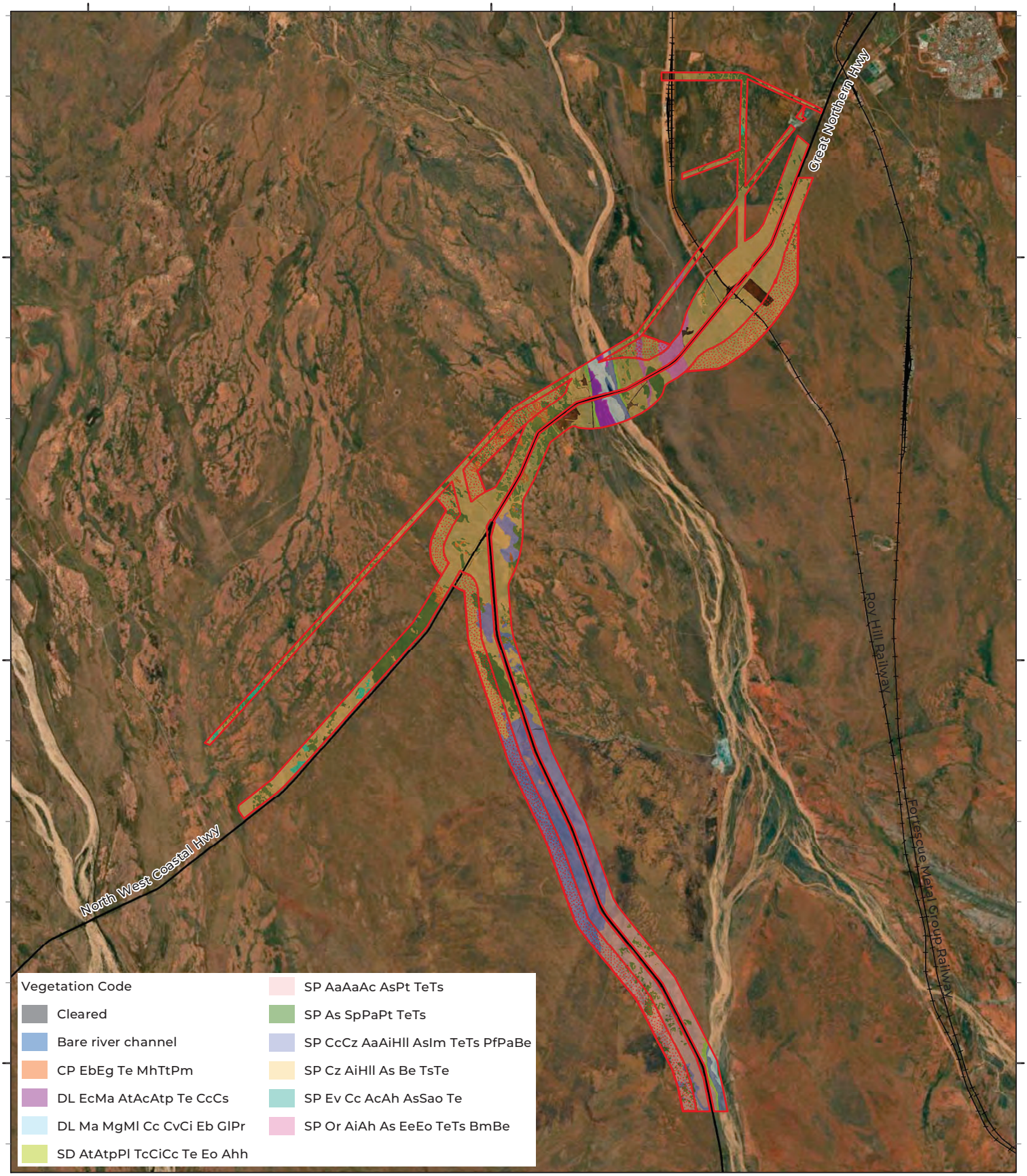
Table 4.5: Introduced flora recorded in the Survey Area

Family	Taxon	Extent
Amaranthaceae	*Aerva javanica*	262 individuals from 21 locations
Apocynaceae	*Calotropis procera*	1 individual from 1 location
Cyperaceae	*Cyperus vorsteri*	2 individuals from 2 locations
Euphorbiaceae	*Euphorbia hirta*	1 individual from 1 location
Fabaceae	*Indigofera oblongifolia*	1 individual from 1 location
	Stylosanthes hamata	2 individuals from 2 locations
Malvaceae	*Malvastrum americanum*	27 individuals from 5 locations
Poaceae	*Cenchrus ciliaris*	1,904 individuals from 17 locations
	Cenchrus setiger	176 individuals from 5 locations
	Digitaria ciliaris	1 individual from 1 location
	Echinochloa colona	2 individuals from 2 locations
	Setaria verticillata	1 individual from 1 location

4.2.4 Vegetation

Ten vegetation types were described from three broad landforms in the Survey Area (Figure 4.5, Table 4.6, Table 4.7). These were derived from a combination of dendrogram interpretation (hierarchical clustering), review of structural floristic assemblages, review of previously mapping data for the area and aerial imagery. The dominant landforms of the Survey Area were sandplains, hardpan plains and drainage lines, totalling 96.27%. Native vegetation covered 97.58% of the Survey Area, with the remaining area mapped as either 'Cleared' due to tracks and infrastructure related disturbances or 'Bare River Channel' due to sections of the Turner River intersecting the Survey Area, where channel deposits predominate, and no vegetation was observed. Sample site data collected during the field survey is presented in Appendix L.

At the primary division, the hierarchical clustering split vegetation types associated with a dominant *Triodia* hummock grassland layer from types that were defined by a more diverse structural composition; i.e. those with a higher percentage of trees, shrubs, forbs and tussock grasses (Appendix F). At the secondary division vegetation types were grouped by landform, with major drainage areas, claypans and sandplains clearly defined. The *Triodia*-dominated communities were all located within sandplain landforms and did not show strong groupings beyond the primary division, reflecting the relatively uniform vegetation types dominated by a few species (*Triodia* spp., *Acacia stellaticeps*), with subtle, poorly-defined changes in vegetation cover and composition in these areas. Minor drainage and some other smaller vegetation types were extracted from the groupings and defined using, structural floristic analysis, historical literature of the area and aerial imagery.



LEGEND

- Survey Area
- Extrapolated Desktop Mapping
- State Road
- Rail

Scale 1:135,000

0 2 4 Km

Coordinate System: GDA2020 MGA Zone 50
Projection: Transverse Mercator
Datum: GDA2020 Created 13/06/2024

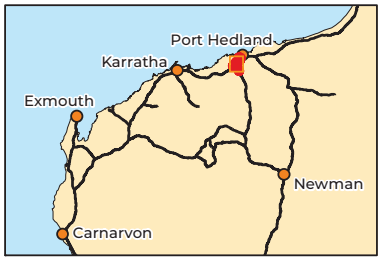


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Figure 4.5: Vegetation types in the Survey Area

Table 4.6: Vegetation types of the Survey Area

Vegetation Code Description	Sample Sites	Features of Interest	Representative Photo
Sandplain / Hardpan Plain			
SP AaAaAc AsPt TeTs *Acacia ancistrocarpa*, *Acacia acradenia*, *Acacia colei* tall open shrubland over *Acacia stellaticeps, Pluchea tetranthera* mid open shrubland over *Triodia epactia, Triodia schinzii* low open hummock grassland.	API-018, API-021 APIR-015, APIR-016, APIR-020, APIR-066	Represents habitat for *Abutilon* sp. Pritzelianum (S. van Leeuwen 5095) (P3).	
SP As SpPaPt TeTs *Acacia stellaticeps* mid isolated shrubs over *Sida* sp. Pilbara (A.A. Mitchell PRP 1543), *Ptilotus astrolasius, Pluchea tetranthera* low isolated shrubs over *Triodia epactia, Triodia schinzii* low open hummock grassland.	API-012, API-020, API-033, API-039, API-040, API-041, API-044, API-050, API-056, API-065, API-078, API-081, API-082 APIR-023, APIR-038, APIR-043, APIR-046, APIR-059, APIR-069	Represents habitat for *Abutilon* sp. Pritzelianum (S. van Leeuwen 5095) (P3) and *Rothia indica* var. *australis* (P3).	
SP Ev Cc AcAh AsSao Te *Eucalyptus victrix* mid isolated trees over *Corymbia candida* low isolated trees over *Acacia colei, Acacia holosericea* tall sparse shrubland over *Acacia stellaticeps, Senna artemisioides* subsp. *oligophylla* mid sparse shrubland over *Triodia epactia* mid hummock grassland.	API-011, API-032	Represents habitat for *Abutilon* sp. Pritzelianum (S. van Leeuwen 5095) (P3). Represents vegetation of significance due to GDE. Vegetation type restricted (<1% of Survey Area).	

Vegetation Code Description	Sample Sites	Features of Interest	Representative Photo
SP CcCz AaAiHll AsIm TeTs PfPaBe *Corymbia candida, Corymbia zygophylla* low isolated trees over *Acacia ancistrocarpa, Acacia inaequilatera, Hakea lorea* subsp. *lorea* tall isolated shrubs over *Acacia stellaticeps, Indigofera monophylla* mid shrubland over *Triodia epactia, Triodia schinzii* low open hummock grassland over *Bonamia erecta* low sparse shrubland over *Ptilotus fusiformis, Ptilotus astrolasius* low sparse herbland.	API-024, API-026, API-027, API-029, API-031 APIR-007, APIR-025, APIR-034, APIR-045	Represents habitat for *Abutilon* sp. Pritzelianum (S. van Leeuwen 5095) (P3).	
SP Cz AiHll As Be TsTe *Corymbia zygophylla* low isolated trees over *Acacia inaequilatera, Hakea lorea* subsp. *lorea* tall isolated shrubs over *Acacia stellaticeps* low-mid shrubland over *Bonamia erecta* low sparse shrubland over *Triodia schinzii, Triodia epactia* mid open hummock grassland.	API-028, API-036, API-042, API-048, API-053, API-073, API-076, API-077, API-079, API-080 APIR-032, APIR-035, APIR-049, APIR-050, APIR-056, APIR-060, APIR-068, APIR-070, APIR-074, APIR-075, APIR-081, APIR-082, APIR-083	Represents habitat for *Abutilon* sp. Pritzelianum (S. van Leeuwen 5095) (P3); and *Rothia indica* var. *australis* (P3).	
SP Or AiAh As EeEo TeTs BmBe *Owenia reticulata* low isolated trees over *Acacia inaequilatera, Acacia holosericea* tall isolated shrubs over *Acacia stellaticeps*, *Bonamia erecta* low sparse shrubland over *Eragrostis eriopoda, Eriachne obtusa* low tussock grassland with *Triodia epactia, Triodia schinzii* mid isolated clumps of grasses over Bonamia media low sparse herbland.	API-010, API-067, API-072	Represents habitat for *Abutilon* sp. Pritzelianum (S. van Leeuwen 5095) (P3).	

Vegetation Code Description	Sample Sites	Features of Interest	Representative Photo
Claypan			
CP EbEg Te MhTtPm *Eriachne benthamii, Eriachne* glauca low isolated clumps of tussock grasses with *Triodia epactia* isolated clumps of hummock grasses over *Marsilea hirsuta, Trainthema triquetrum, Peplidium muelleri* low sparse herbland.	API-047, API-071 APIR-005	Vegetation type restricted (<1% of Survey Area).	
Drainage Area			
DL EcMa AtAcAtp Te CcCs *Eucalyptus camaldulensis, Melaleuca argentea* mid open woodland over *Acacia trachycarpa, Acacia colei, Acacia tumida* var. *pilbarensis* tall sparse shrubland over *Triodia epactia* mid sparse tussock grassland with **Cenchrus ciliaris, *Cenchrus setiger* low open tussock grassland.	API-006, API-009, API-060, API-062 APIR-004	Represents habitat for *Abutilon* sp. Pritzelianum (S. van Leeuwen 5095) (P3). Riparian/GDE.	
SD AtAtpPl TcCiCc Te Eo Ahh *Acacia trachycarpa, Acacia tumida* var. *pilbarensis, Petalostylis labicheoides* tall open woodland over *Triumfetta chaetocarpa, Corchorus incanus, Cajanus cinereus* mid isolated shrubs over *Triodia epactia* mid open hummock grassland over *Eriachne obtusa, Aristida holathera* sparse tussock grassland.	API-016, API-063 APIR-017	Represents habitat for *Abutilon* sp. Pritzelianum (S. van Leeuwen 5095) (P3). Vegetation type restricted (<1% of Survey Area).	

Vegetation Code Description	Sample Sites	Features of Interest	Representative Photo
DL Ma MgMl Cc CvCi Eb GlPr *Melaleuca argenta* low open woodland over *Melaleuca glomerata, Melaleuca linophylla* tall sparse shrubland *over Crotalaria cunninghamii* mid isolated shrubs over *Cyprus vaginatus, Cyperus ixiocarpus* mid sparse sedgeland over *Eriachne benthamii* isolated clumps of tussock grasses over *Goodenia lamprosperma, Pluchea rubelliflora* low sparse herbland.	API-019, API-066 APIR-062, APIR-063	Represents vegetation of significance due to GDE and riparian values	
Bare river channel	API-017	Watercourse	
Disturbed			
Cleared	N/A	Disturbed	-

Table 4.7: Extent of vegetation types within the Survey Area

Vegetation Code	Route 1		Route 1B		Route 2		Route 3		Route 4		Route 6	
	Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)	%
Sandplain / Hardpan Plain												
SP AaAaAc AsPt TeTs	-	-	-	-	-	-	343.69	13.40	335.00	12.11	295.92	13.69
SP As SpPaPt TeTs	143.55	22.48	265.25	32.76	109.78	28.15	243.83	9.50	322.03	11.64	188.01	8.70
SP Ev Cc AcAh AsSao Te	27.97	4.38	32.12	3.97	5.08	1.30	-	-	-	-	-	-
SP CcCz AaAiHll AsIm TeTs PfPaBe	-	-	0.63	0.08	-	-	471.60	18.38	484.14	17.50	456.62	21.13
SP Cz AiHll As Be TsTe	410.94	64.35	482.08	59.54	243.46	62.43	1,105.81	43.11	1,336.13	48.31	1118.04	51.73
SP Or AiAh As EeEo TeTs BmBe	13.71	2.15	-	-	-	-	48.12	1.88	78.55	2.84	30.65	1.42
Claypan												
CP EbEg Te MhTtPm	8.44	1.32	20.50	2.53	0.60	0.15	22.30	0.87	19.77	0.71	49.72	2.30
Drainage Area												
DL EcMa AtAcAtp Te CcCs	5.71	0.89	-	-	-	-	55.30	2.16	30.14	1.09	0.48	0.02
SD AtAtpPl TcCiCc Te Eo Ahh	3.19	0.50	-	-	-	-	42.98	1.68	19.32	0.70	-	-
DL Ma MgMl Cc CvCi Eb GlPr	12.14	1.90	-	-	-	-	68.94	2.69	50.93	1.84	1.76	0.08
Bare river channel	2.28	0.36	-	-	-	-	67.64	2.64	31.25	1.13	1.91	0.09
Disturbed												
Cleared	10.63	1.66	9.10	1.12	31.08	7.97	95.11	3.71	58.64	2.12	18.38	0.85
Total	**638.56**	**100**	**809.70**	**100**	**390.00**	**100**	**2,565.32**	**100**	**2,765.90**	**100**	**2161.49**	**100**

Much of the Route 6 aerial imagery presented the same vegetation patterns as the adjoining detailed assessment vegetation. Considering this, the majority of the Route 6 area was mapped with the same vegetation types as Routes 1 through 4. One area in the southwest of Route 6 presented differently on the aerial. However, it has been mapped as vegetation type SP CcCz AaAiHll AsIm TeTs PfPaBe. Although this area looked more densely treed than nearby imagery of the same vegetation type, it is thought this is the closest definition. It is likely species composition is very similar and only the density of the overstory creates the difference to the aerial imagery. In that the *Corymbia candida* and the *Corymbia zygophylla* form a low woodland rather than low isolated trees, as defined in the vegetation description for SP CcCz AaAiHll AsIm TeTs PfPaBe. To increase confidence, this area would need ground-truthing.

Vegetation types with higher level statistical grouping and less clear floristic relationships were refined with structural floristic and aerial imagery. Just under half (47.8%) of the vegetation types grouped strongly together in the tertiary or quarternary clusters with strong structural floristic relationships, indicating clear vegetation types. These included:

- SP CcCz AaAiHll AsIm TeTs PfPaBe: Sandplains with *Corymbia candida, Corymbia zygophylla* low isolated trees over mixed shrubland/hummock grassland;
- DL EcMa AtAcAtp Te CcCs: Major drainage areas defined by *Eucalyptus camaldulensis* and *Melaleuca argentea*; and
- CP EbEg Te MhTtPm: Claypans with low isolated tussock grasses over sparse forbland
- SP Or AiAh As EeEo TeTs BmB: *Owenia reticulata* low isolated trees over low tussock grassland

4.2.5 Significant Vegetation

None of the vegetation types described and delineated from the Survey Area are considered to be analogous with any TECs or PECs known to occur in the Pilbara region. The Gregory Land System and Eighty Mile Beach Land System PEC's that were identified during the desktop assessment were not considered to be represented within the Survey Area.

4.2.5.1 Vegetation of Other Significance

No Tecs or PECs were recorded within the survey area. Eight vegetation types were observed to be habitat associated with and/or supporting significant flora taxa. Vegetation types supporting *Abutilon* sp. Pritzelianum (S. van Leeuwen 5095) (P3):

- SP AaAaAc AsPt TeTs
- SP As SpPaPt TeTs

- SP Ev Cc AcAh AsSao Te
- SP CcCz AaAiHll AsIm TeTs PfPaBe
- SP Cz AiHll As Be TsTe
- SP Or AiAh As EeEo TeTs BmBe
- DL EcMa AtAcAtp Te CcCs
- SD AtAtpPl TcCiCc Te Eo Ahh

Vegetation types supporting *Rothia indica* subsp. *australis* (P3):

- SP As SpPaPt TeTs
- SP Cz AiHll As Be TsTe

The remaining two vegetation types mapped within the Survey Area were deemed not to have local or regional significance. Restricted vegetation types within the Survey Area were determined to be locally common and not restricted in a local or regional context.

4.2.5.2 Groundwater Dependent Ecosystems

Vegetation types: DL EcMa AtAcAtp Te CcCs and DL Ma MgMl Cc CvCi Eb GlPr are both associated with the Turner River system and are considered to represent riparian vegetation. They are also considered to be groundwater-dependent communities (GDE's) due to the presence of key indicator species *Melaleuca argenta* and/or *Eucalyptus camaldulensis* within the vegetation composition. Both these species are considered to be phreatophytes (groundwater-dependent), with *Melaleuca argenta* considered to be obligate (requires persistent groundwater access for survival). These vegetation types are considered to hold local significance as components of the Turner River system. These vegetation types collectively occur over 322.62 ha (4.61%) of the Survey Area. These vegetation types are considered integral to the maintenance of the Turner River system and the ecological processes which it provides/regulates.

In addition, SP Ev Cc AcAh AsSao Te is considered to be a potential GDE due to the presence of *Eucalyptus victrix*, which is known to be a facultative phreatophyte (Thomas, 2014). Facultative phreatophytes are species that utilize groundwater but are not wholly dependent upon its presence for their persistence in the environment. The degree of groundwater dependence can depend upon the physiology of the species and between individuals, and the environment in which they are located.

4.2.6 Vegetation Condition

The condition of the vegetation within the Survey Area ranged Poor (0.26%) to Excellent (22.47%), with the majority of the mapped vegetation in Very Good condition (73.74%) (Table 4.9, Figure 4.6). The main disturbances observed was pastoral activity, primarily evidence of grazing, and weed invasion.

4.3 Review of Occurrence Assessment

One significant flora taxon was known to occur in the Survey Area prior to mobilisation and was recorded during the current field survey; *Abutilon* sp. Pritzelianum (S. van Leeuwen 5095) (P3). *Rothia indica* subsp. *australis* (P3), was assessed as Possible to occur during the pre-survey likelihood assessment and was confirmed as present in the Survey Area. *Eragrostis crateriformis* (P3), previously listed as Highly Likely, is an annual taxon and has been reassessed as Likely due to absence during adequate seasonal timing and lack of optimal habitat in the Survey Area. Two flora taxa considered Likely to occur were revised as Possible to occur as they may potentially be present within the Survey Area but, they are perennial flora and were not observed in optimal habitat during the survey. Table 4.8 provides a summary of changes to likelihood based on the post-survey review of the occurrence assessment. The complete post-survey assessment of occurrence is presented in Appendix I).

Table 4.8: Summary of post-survey review of assessment of occurrence

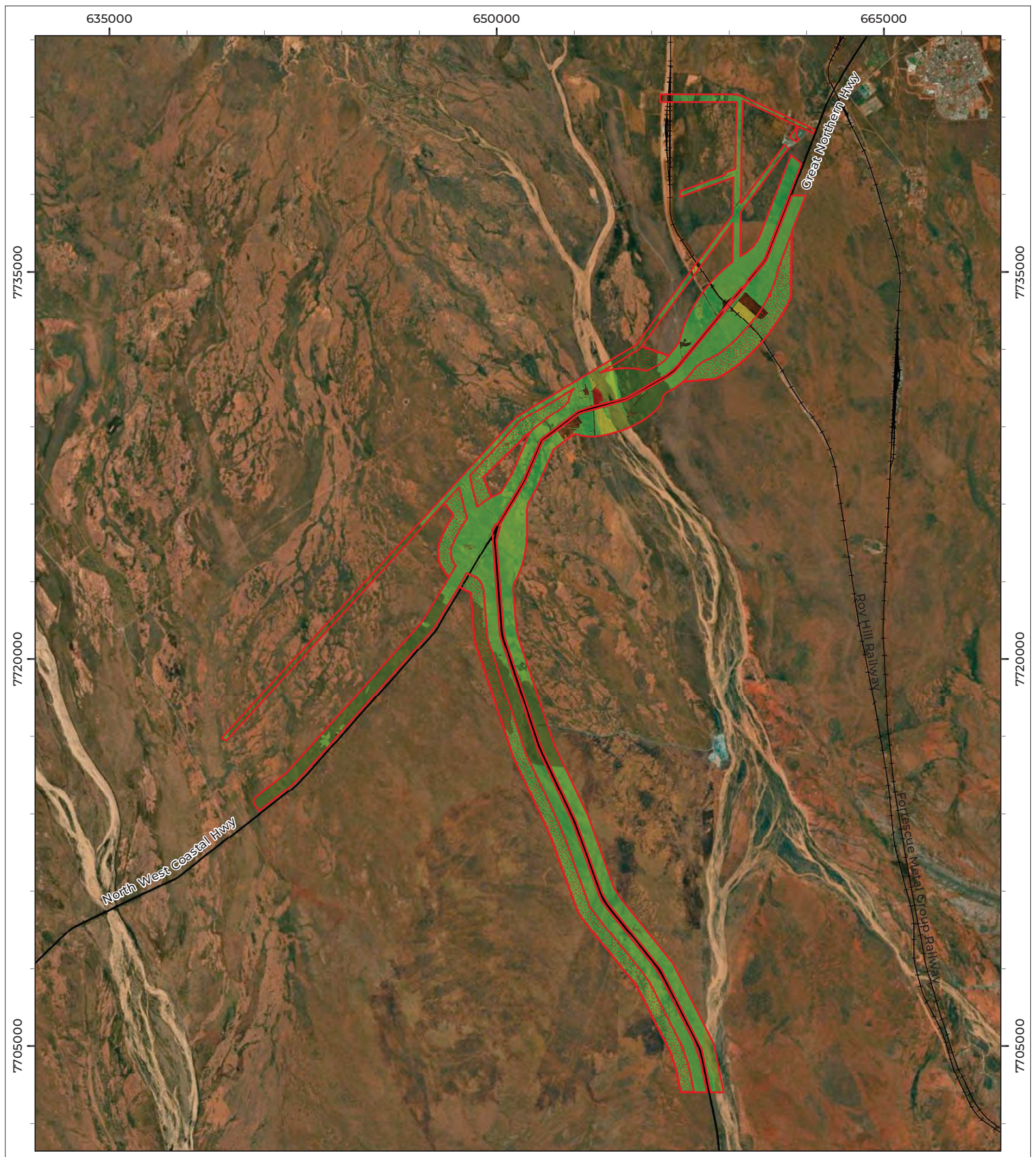
Taxon	Pre-survey Likelihood	Post-survey Likelihood
Rothia indica subsp. *australis* (P3)	Possible	Confirmed
Eragrostis crateriformis (P3)	Highly Likely	Likely
Euploca mutica (P3)	Likely	Possible
Gymnanthera cunninghamii (P3)	Likely	Possible

4.4 Survey Adequacy

A total of 89 floristic sampling sites were sampled across the five routes of the Survey Area (46 quadrats, 32 relevés and 11 vegetation mapping notes), excluding Route 6, totalling 0.0131 sites sampled per hectare of native vegetation. (6,795.98 ha). In addition to the sites, 44 bio photo & boundary points were taken within the Survey Area to assist in vegetation mapping. These photo points and relevant notes included information such as, recent fire disturbance, equivalent vegetation units to an existing quadrat/relevé and/or other interesting geological, vegetative, or disturbance-based information.

Table 4.9: Vegetation condition in the Survey Area

Vegetation Condition	Route 1		Route 1B		Route 2		Route 3		Route 4		Route 6	
	Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)	%	Area (ha)	%
Excellent	282.92	44.31	529.89	65.44	15.69	4.02	479.10	18.68	411.17	14.87	344.69	15.95
Very Good	337.52	52.86	270.70	33.43	342.44	87.81	1901.44	74.12	2268.27	82.01	1798.42	83.20
Good	7.49	1.17	-	-	0.79	0.20	88.38	3.45	5.64	0.20	-	-
Poor	-	-	-	-	-	-	1.29	0.05	22.17	0.80	-	-
Cleared	10.63	1.66	9.10	1.12	31.08	7.97	95.11	3.71	58.64	2.12	18.38	0.85



LEGEND

- Survey Area
- Extrapolated Desktop Mapping
- State Road
- Rail

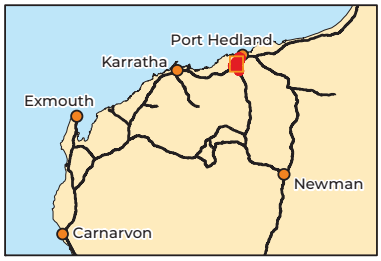
Vegetation Condition

- Excellent
- Very Good
- Good
- Poor
- Cleared

Scale 1:135,000

0 2 4 Km

Coordinate System: GDA2020 MGA Zone 50
Projection: Transverse Mercator
Datum: GDA2020 Created 13/06/2024



Biologic

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Port Hedland
Transmission Line Flora and Vegetation Survey

Figure 4.6: Vegetation condition in the Survey Area

Table 4.10 presents comparative survey intensity to provide context to the current survey adequacy. Sources from the literature review without sufficient data to determine survey adequacy (e.g., non-detailed surveys) were excluded.

Table 4.10: Comparison of survey intensity and effort in the Survey Area

Survey	Survey Area Size (ha)	No. of Taxa Recorded	No. of Sites	Sites / ha
ENV (2011)	80,870	577	161	0.00020
Ecoscape (2014)	69,070	474	152	0.0022
Current Survey	**6,795.98**	**218**	**89**	**0.0131**
GHD (2010)	3,770	144	14	0.0382
Outback Ecology (2009)	550	122	41	0.0745
Ecoscape (2020)	129.8	100	10	0.0770
Emerge (2019)	37.99	43	5	0.1316
Phoenix (2022)	670.37	146	30	0.2180

The species accumulation curve produces a curve that steadily increases, with estimators starting to plateau (Figure 4.7). Richness estimators indicated that the survey was approximately 82.1 % (Jacknife 1) to 90.6 % (Bootstrap) adequate, with an observed value of 180 flora taxa (confirmed native vascular flora taxa recorded from quadrats and reconciled for statistical analysis (Appendix E) (Table 4.11). The survey adequacy increases when the 25 relevé and opportunistic observations (not observed from the quadrats) are included in the assessment (Table 4.11). The estimators suggest that up to 103.2 % (Bootstrap based on a total of 205) of the flora potentially present within the Survey Area, has been recorded by Biologic (Table 4.11). For the purposes of a single season detailed survey, survey effort is considered to be adequate.

Table 4.11: Expected native species richness for the Survey Area

Treatment	Results	Richness Estimates	
		Based on Species Observed (180)	Based on Total# (205)
Chao 1	214 ± 14.1	84.1 %	95.8 %
Jacknife 1	219.1 ± 8.9	82.1 %	93.6 %
Bootstrap	198.6 ± 5.8	90.6 %	103.2 %
SOBS^	180		

^Number of confirmed native species observed. #Total taxa includes taxa not found in quadrats.

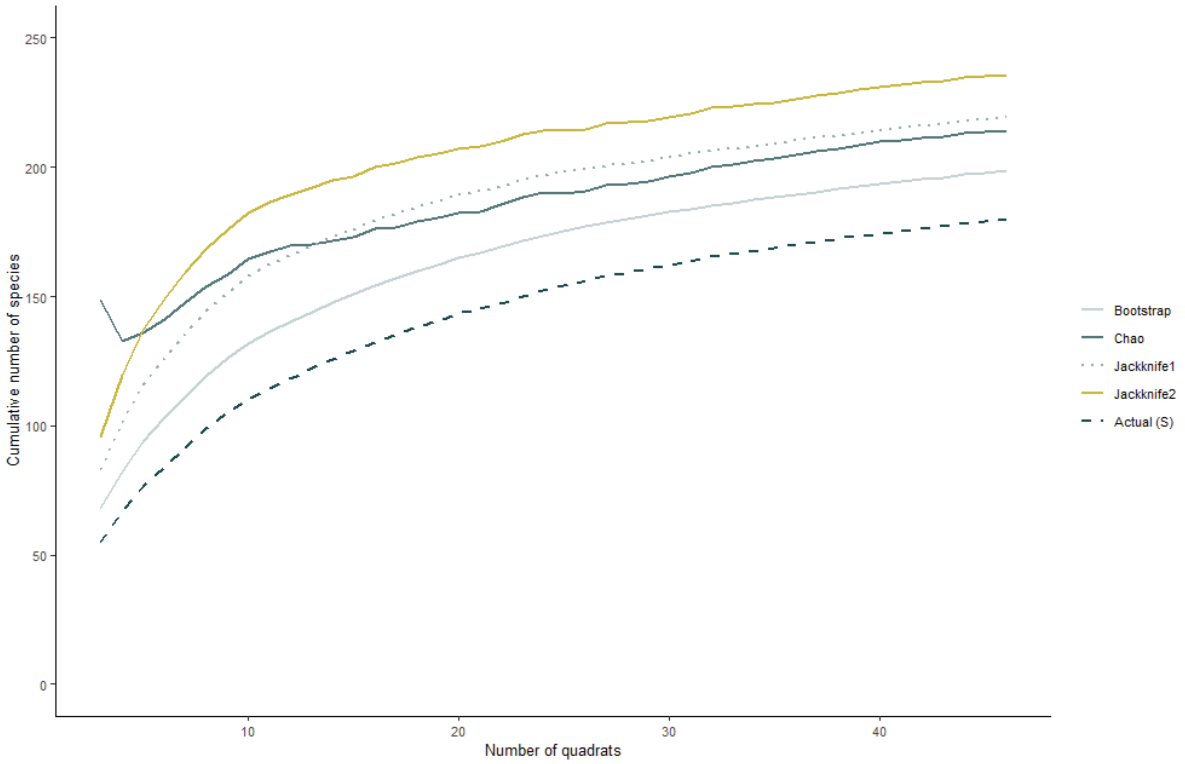

Figure 4.7: Species accumulation curve for the Survey Area

4.5 Constraints and Limitations

The (EPA, 2016b) outlines several potential limitations to flora surveys. These aspects are assessed and discussed in Table 4.12 No major limitations or constraints were identified for the survey.

Table 4.12: Survey limitations and constraints

Potential limitation or constraint	Constraint	Applicability to this survey
Availability of data and information	No	A sufficient amount of survey work has been undertaken in the wider local area and the surrounding region, and most of these previous survey results were available for review at the time of reporting. Historical botanical surveys within the vicinity of the survey area were conducted from 2008 through to 2022; of the 14 surveys reviewed seven were detailed surveys.

Potential limitation or constraint	Constraint	Applicability to this survey
Competency/ experience of the survey team, including experience in the bioregion surveyed	No	The field personnel involved in the survey are experienced in undertaking flora surveys of similar nature, including with the species of conservation significance targeted during the survey. The flora field lead, Kelby Jennings, has over 5 years leading ecological surveys including experience in the Pilbara bioregion and meets the minimum requirements to manage a flora and vegetation field survey in the Pilbara bioregion (EPA, 2016b).
Proportion of flora recorded/collected and any identification issues	No	This detailed survey was conducted within the guidance for flora and vegetation assessment of WA (EPA, 2016b). Any unknown flora encountered within quadrats and relevés, as well as opportunistic and targeted traverse was collected by field staff. Eight specimens (3.5%) collected were unable to be confirmed due to insufficient/poor identifying material. Richness estimators indicated that the survey adequacy was approximately 82.1 % (Jacknife 1) to 90.6 % (Bootstrap), from an observed value of 180 flora taxa from quadrat sampling (see Section 4.4). A total of 0.0131 sites were sampled per hectare of native vegetation, this was slightly below the average of other detailed surveys in the vicinity; due to linear nature of the survey area and uniform nature of the botanical attributes.
Timing, weather, and season	No	Above average rainfall was recorded in the overall 12 months prior to the survey (January 2022 – January 2023), with sufficient rainfall recorded directly prior to the survey (January - April 2023). Maximum temperatures recorded were slightly higher than the long-term averages. Minimum temperatures were also higher than the long-term average.
Disturbance that may have affected results, e.g., fire, flood	Partial	Recent fire (<3 years) in large sections of the Survey Area, particularly those directly adjacent to the Great Northern Hwy, made ground-truthing vegetation assessment sub-optimal. However, with historic aerial imagery available, and utilising the desktop results, vegetation types could be extrapolated from the available data.
Appropriate area fully surveyed (effort & extent)	No	Route 1 through Route 4 were assessed at the detailed flora and vegetation level. The sampling methods and survey intensity was appropriate to achieve the scope of the survey. Route 6 has been assessed at desktop level and has used extrapolated data for vegetation and condition mapping. Route 6 has lower confidence as it has not been ground-truthed.

Potential limitation or constraint	Constraint	Applicability to this survey
Access restrictions within the Survey Area	No	Access was sufficient for the purposes of the survey; track condition was good throughout the Survey Area, with no limitations associated to access.
Problems with data and analysis, including sampling bias	No	No limitations with data collection and/or analysis were encountered during the field survey or during subsequent analysis.

5 Conclusion

A detailed flora and vegetation survey was completed in the Survey Area 25 April to 5 May 2023, by two personnel over 22 person days. Rainfall for the months preceding the survey (January to March 2023) provided adequate seasonal timing. All vegetation types for Route 1 through to Route 4 were ground-truthed and adequately sampled with no substantial limitations to the field survey. A desktop assessment and extrapolated mapping was undertaken for Route 6. The survey and reporting have been completed in line with EPA guidelines, consistent with the level of a detailed survey.

The key findings of the survey are.

- Eighty-nine floristic sample sites; 46 quadrat, 32 relevés and 11 vegetation mapping notes, were sampled across the Survey Area, as well as opportunistic sampling.
- Confirmed vascular flora taxa totals 218 from 40 families and 108 genera, comprising 205 native flora taxa and 13 introduced taxa.
- Two conservation significant listed flora taxa were recorded within the Survey Area:
  - P3: *Abutilon* sp. Pritzelianum (S. van Leeuwen 5095) - 1,272 individuals from 321 locations; and
  - P3: *Rothia indica* subsp. *australis* - two individuals from two locations.
- Thirteen introduced taxa were recorded, none of which are listed as WoNS or DP.
- Ten vegetation types were determined from within the Survey Area,
- No TECs or PECs were recognised in the vegetation types of the Survey Area, however, two vegetation types were considered to have “other” significance due to the presence groundwater dependent vegetation (associated with the Turner River).
- The condition of the vegetation in the Survey Area ranged from Excellent to Poor, with the majority considered to be in Very Good condition (73.74%) throughout the Survey Area.

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Appendix A: Conservation Codes

Environment Protection and Biodiversity Conservation Act 1999

Category	Definition
Threatened Flora Species	
Extinct (EX)	A native species is eligible to be included in the Extinct category at a particular time if, at that time, there is no reasonable doubt that the last member of the species has died.
Extinct in the Wild (EW)	A native species is eligible to be included in the Extinct in the Wild category at a particular time if, at that time: (a) it is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or (b) it has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
Critically Endangered (CR)	A native species is eligible to be included in the critically endangered category at a particular time if, at that time, it is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.
Endangered (EN)	A native species is eligible to be included in the endangered category at a particular time if, at that time: (a) it is not critically endangered; and (b) it is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.
Vulnerable (VU)	A native species is eligible to be included in the vulnerable category at a particular time if, at that time: (a) it is not critically endangered or endangered; and (b) it is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.
Conservation Dependent (CD)	A native species is eligible to be included in the Conservation Dependent category at a particular time if, at that time: (a) the species is the focus of a specific conservation program the cessation of which would result in the species becoming Vulnerable, Endangered or Critically Endangered; or (b) the following subparagraphs are satisfied (i) the species is a species of fish; (ii) the species is the focus of a plan of management that provides for management actions necessary to stop the decline of, and support the recovery of, the species so that its chances of long-term survival in nature are maximised; (iii) the plan of management is in force under a law of the Commonwealth or of a State or Territory; and (iv) cessation of the plan of management would adversely affect the conservation status of the species.

Category	Definition
Threatened Ecological Communities (TEC)	
Critically Endangered	An ecological community is eligible to be included in the critically endangered category at a particular time if, at that time, it is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.
Endangered	An ecological community is eligible to be included in the endangered category at a particular time if, at that time: (a) it is not critically endangered; and (b) it is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.
Vulnerable	An ecological community is eligible to be included in the vulnerable category at a particular time if, at that time: (a) it is not critically endangered nor endangered; and (b) it is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.

Biodiversity Conservation Act 2016

Category	Definition
Threatened Flora Species	
Critically Endangered (CR)	Threatened species considered to be "facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines". Published under schedule 1 of the *Wildlife Conservation (Rare Flora) Notice 2018* for critically endangered flora.
Endangered (EN)	Threatened species considered to be "facing a very high risk of extinction in the wild in the near future, as determined in accordance with criteria set out in the ministerial guidelines". Published under schedule 2 of the *Wildlife Conservation (Rare Flora) Notice 2018* for endangered flora.
Vulnerable (VU)	Threatened species considered to be "facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with criteria set out in the ministerial guidelines". Published under schedule 3 of the Wildlife Conservation (Rare Flora) Notice 2018 for vulnerable flora.
Extinct (EX)	Species where "there is no reasonable doubt that the last member of the species has died", and listing is otherwise in accordance with the ministerial guidelines (section 24 of the BC Act). Published as presumed extinct under schedule 4 of the Wildlife Conservation (Rare Flora) Notice 2018 for extinct flora.
Extinct in the Wild (EW)	Species that "is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; and it has not been recorded in its known habitat or expected habitat, at appropriate seasons, anywhere in its past range, despite surveys

Category	Definition
	over a time frame appropriate to its life cycle and form", and listing is otherwise in accordance with the ministerial guidelines (section 25 of the BC Act). Currently there are no threatened flora species listed as extinct in the wild.
Threatened Ecological Communities (TEC)	
Critically Endangered (CR)	An ecological community is eligible for listing in the category of critically endangered ecological community at a particular time if, at that time — (a) it is facing an extremely high risk of becoming eligible for listing as a collapsed ecological community in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines; and (b) listing in that category is otherwise in accordance with the ministerial guidelines.
Endangered (EN)	An ecological community is eligible for listing in the category of endangered ecological community at a particular time if, at that time — (a) it is not a critically endangered ecological community; and (b) it is facing a very high risk of becoming eligible for listing as a collapsed ecological community in the near future, as determined in accordance with criteria set out in the ministerial guidelines; and (c) listing in that category is otherwise in accordance with the ministerial guidelines.
Vulnerable (VU)	An ecological community is eligible for listing in the category of vulnerable ecological community at a particular time if, at that time — (a) it is not a critically endangered ecological community or an endangered ecological community; and (b) it is facing a high risk of becoming eligible for listing as a collapsed ecological community in the medium-term future, as determined in accordance with criteria set out in the ministerial guidelines; and (c) listing in that category is otherwise in accordance with the ministerial guidelines.
Collapsed	An ecological community is eligible for listing as a collapsed ecological community at a particular time if, at that time — (a) there is no reasonable doubt that the last occurrence of the ecological community has collapsed; or (b) the ecological community has been so extensively modified throughout its range that no occurrence of it is likely to recover — (i) its species composition or structure; or (ii) its species composition and structure.

Department of Biodiversity, Conservation and Attractions Priority Definitions

Category	Definition
Priority Flora Species	
Priority 1 (P1)	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, e.g., agricultural, or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.
Priority 2 (P2)	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, e.g., national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.
Priority 3 (P3)	Poorly-known Species Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.
Priority 4 (P4)	Rare, Near Threatened and other species in need of monitoring (a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection but could be if present circumstances change. These species are usually represented on conservation lands. (b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for vulnerable but are not listed as Conservation Dependent. (c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.
Priority Ecological Communities (PEC)	
Priority 1 (P1)	Poorly-known ecological communities Ecological communities that are known from very few occurrences with a very restricted distribution (generally ≤5 occurrences or a total area of ≤ 100ha). Occurrences are believed to be under threat either due to limited extent, or being on lands under immediate threat (e.g., within agricultural or pastoral lands, urban areas, active mineral

Category	Definition
	leases) or for which current threats exist. May include communities with occurrences on protected lands. Communities may be included if they are comparatively well-known from one or more localities but do not meet adequacy of survey requirements, and/or are not well defined, and appear to be under immediate threat from known threatening processes across their range.
Priority 2 (P2)	Poorly-known Ecological Communities Communities that are known from few occurrences with a restricted distribution (generally ≤10 occurrences or a total area of ≤200ha). At least some occurrences are not believed to be under immediate threat (within approximately 10 years) of destruction or degradation. Communities may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements, and/or are not well defined, and appear to be under threat from known threatening processes.
Priority 3 (P3)	Poorly-known Ecological Communities (i) Communities that are known from several to many occurrences, a significant number or area of which are not under threat of habitat destruction or degradation or: (ii) communities known from a few widespread occurrences, which are either large or with significant remaining areas of habitat in which other occurrences may occur, much of it not under imminent threat (within approximately 10 years), or; (iii) communities made up of large, and/or widespread occurrences, that may or may not be represented in the reserve system, but are under threat of modification across much of their range from processes such as grazing by domestic and/or feral stock, inappropriate fire regimes, clearing, hydrological change etc. Communities may be included if they are comparatively well known from several localities but do not meet adequacy of survey requirements and/or are not well defined, and known threatening processes exist that could affect them.
Priority 4 (P4)	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. These communities require regular monitoring. (i) Rare. Ecological communities known from few occurrences that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection but could be if present circumstances change. These communities are usually represented on conservation lands. (ii) Near Threatened. Ecological communities that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for a higher threat category. (iii) Ecological communities that have been removed from the list of threatened communities during the past five years.

Category	Definition
Priority 5 (P5)	Conservation Dependent Ecological Communities Ecological communities that are not threatened but are subject to a specific conservation program, the cessation of which would result in the community becoming threatened within five years.

Introduced flora

Legal Status Definitions of Listed Plants in Western Australia

Legal status	Definition
Declared Pest, Prohibited – s12	Prohibited organisms are declared pests by virtue of section 22(1) and many only be imported and keep subject to permits
Declared Pest – s22(2)	Declared pests must satisfy any applicable import requirements when imported and may be subject to control keeping requirements
Permitted – s11	Permitted organisms must satisfy applicable import requirements and import permits (where required)
Permitted Requires Permit – r73	Regulation 73 permitted organisms may be subject to restriction under legislation other and the BAM Act (2007)
Unlisted	Unlisted organisms are prohibited in WA
Control Categories	**Definition**
C1 Exclusion	Organisms should be excluded from parts or all of WA
C2 Eradication	Organisms should be eradicated from all or parts of WA
C3 Management	Organisms should have some form of management applied that will alleviate the harmful impact of the organism, reduce the numbers or distribution of the organism or prevent or contain the spread of the organism
Unassigned	Declared pests that are recognised a having a harmful impact under certain circumstances where their subsequent control requirements are determined by a plan or other legislative arrangements under the Act
Keeping Categories	**Definition**
Prohibited Keeping	Can only be kept under a permit or public display, education or scientific purposes
Restricted Keeping	Kept under a permit by private individuals due to low risk of becoming a problem for the environment
Exempt Keeping	No permit or conditions are required for keeping. Organism may be subject to restrictions under the Wildlife Conservation Act (1950)

Appendix B: Literature review key findings

		Wodgina Gas Pipeline Detailed Flora and Vegetation Survey	Port Hedland Regional Flora and Vegetation Assessment	LandCorp Report for Proposed Boodarie Industrial Area Flora and Fauna Assessment	Baseline Flora and Vegetation Survey for the Port Hedland Solar Farm Project	Atlas Iron Limited Mount Dove Direct Shipping Ore Project Flora and Vegetation Studies
Survey Details	**Reference**	360 Environmental (2018)	ENV (2011)	GHD (2010)	Phoenix (2022)	Woodman (2011)
	Type	Detailed flora and vegetation assessment	Detailed flora and vegetation assessment	Detailed flora and vegetation assessment	Two phase detailed flora and vegetation survey	Detailed flora and vegetation assessment
	Client	Mineral Resources	BHPBIO	LandCorp	Alinta Energy Development Pty Ltd	Atlas Iron Ltd
	Location	Wodgina mine gas pipeline, partially overlaps Survey Area	Port Hedland and surrounds, overlaps north-east section of Survey Area	5 km to west of South Hedland townsite, overlaps northern section of Survey Area	3.5 km to south-west of South Hedland, adjacent east of Survey Area	68 km south of Port Hedland ~ 13.5 km west of the Great Norther Highway, partially overlapping Survey Area
	Size (ha)	Not stated	80870 ha	3770 ha	670.37 ha	Not stated
	Timing	9-16 June 2018	30 April- 6 March 2011 20 June to 1 July 2011	8-12 June 2009	Autumn 23-26 March 2021- Phase 1 Spring 14-15 September 2021- Phase 2	14- 23 June 2010
Methods	**Desktop Assessment (Yes/No)**	Yes	Yes	Yes	Yes	Yes
	Quadrat #	36 current survey	158	14	19	49
	Relevé #	14 completed Feb 2018	3	Yes, but number not specified	11	No
	Targeted Searching (Yes/No)	Yes	Yes	Not specified	Yes	Yes
	Other Methods	Vegetation mapping	Vegetation mapping	Vegetation mapping	Vegetation mapping	n/a
Results	**Taxa**	142	338 Current survey (CS) 577 (combined surveys)	144	146	90
	Families	31	55 (CS) 67 (combined)	48	38	24
	Genera	67	152 (CS) 198 (Combined)	Not stated	88	52
	Vegetation Types	13	40	9	6	5 FCT. Veg types not stated
	Vegetation Condition	Very Good- Completely Degraded (76.9% Very Good)	Excellent- Completely Degraded	Excellent	Excellent- Degraded (98.6% Excellent-Very Good)	Excellent or Very Good
	Weeds #	3	12	3	6	2
Significant Findings	**Threatened/ Priority Flora**	One priority one taxon: • *Euphorbia clementii* (P3)	Four priority taxa found: • *Abutilon* sp. Pritzelianum (S. van Leeuwen 5095) (P1)[1] • *Heliotropium muticum* (P1)[2] • *Tephrosia rosea* var. venulosa (P1)[3] • *Gomphrena pusilla* (P2)	None	None	One priority one taxon: • *Heliotropium muticum* (P1)[2]
	Threatened/ Priority Ecological Communities	None	None	None	None	None
	WoNS and DPP Weeds	None	None	None	None	None
	Range Extensions	None	Nine range extensions	*Stemodia lathraia*	None	None
	Other significant findings	None	One vegetation of conservation significance- mangroves	None	None	None
Other	**Limitations of Survey**	Fifteen specimens not fully identified but not believed to be conservation significant species. Some veg types too small to put three quadrats in and large areas of burnt vegetation.	No significant limitations. Minor access limitations.	No significant limitations.	Not many local reports but substantial regional information. 48% of Survey Area affected by fire with a high number of fire ephemerals.	Limited sampling in central section due to lack of tracks.

1. *Abutilon* sp. Pritzelianum (S. van Leeuwen 5095) is now a priority 3 taxon.
2. *Heliotropium muticum* is now called *Euploca mutica* and is a priority 3 taxon.
3. *Tephrosia rosea* var. *venulosa* is now called *Tephrosia rosea* var. Port Hedland (A.S. George 1114).

		Pilbara Transmission Flora and Vegetation Desktop	Port Hedland Area Targeted Priority Flora Survey	A Flora and Fauna Assessment of RGP5 DMMA A, Port Hedland Harbour	Technical Memorandum: Flora and Fauna Survey Port Hedland International Airport-Highway precinct 2	Rutila Resources Railway Corridor Flora and Vegetation Assessment
Survey Details	**Reference**	Ecoscape (2018)	ENV (2009)	Biota (2008)	Emerge (2019)	Ecoscape (2014)
	Type	Desktop assessment	Targeted flora survey	Flora and vegetation survey	Reconnaissance flora and vegetation survey	Reconnaissance flora and vegetation survey then Detailed
	Client	Fortescue Metals Group	Sinclair Knight Merz Pty Ltd	BHPBIO	PHIA Asset Trust	Rutila Resources Pty Ltd
	Location	Fortescue rail corridor, Port Hedland to Cloudbreak and Solomon (375 km long), adjacent east	Three areas west and southwest of Port Hedland and South Hedland, partially overlapping Survey Area	West of Finucane Island access road, approx. 7 km north	Southeast of Port Hedland International Airport, 9.6 km north-east	Between Balla Balla and the Flinders Mines Blacksmith tenement, approx. 78 km north-east
	Size (ha)	80,884 ha	Not stated	123.2 ha	37.99 ha	69 070 ha
	Timing	n/a	18- 22 March 2009	26- 27 February 2008	16 November 2018	26-29 May 2014 (Reccy) 7-17 July 2014 and 28 July- 7 August 2014 (Detailed)
Methods	**Desktop Assessment (Yes/No)**	Yes	Yes	Previous desktop in 2007	Yes	Yes
	Quadrat #	n/a	n/a	n/a	5	152
	Relevé #	n/a	n/a	n/a	n/a	4
	Targeted Searching (Yes/No)	n/a	Yes	Yes	Yes	Yes
	Other Methods	n/a	n/a	Vegetation mapping	n/a	Vegetation mapping
Results	**Taxa**	495	n/a	24	43	474
	Families	58	n/a	17	16	63
	Genera	179	n/a	21	31	189
	Vegetation Types	218	n/a	2	Not stated	58
	Vegetation Condition	Not stated	n/a	Very Good	Very Good- Completely Degraded	Excellent- Poor (90.64% Excellent)
	Weeds #	30	n/a	2	5	16* (Cucumis melo no longer alien)
Significant Findings	**Threatened/ Priority Flora**	56 species of conservation significance within the Survey Area	Four priority flora taxa: • *Heliotropium muticum* (P1)[1] • *Tephrosia* rosea var. venulosa (P1)[2] • *Pterocaulon* sp. A Kimberley Flora (B. J. Cater 599) (P2)[3] • *Goodenia nuda* (P3)[4]	None	None	Nine priority taxa: • *Abutilon* sp. Pritzelianum (S. van Leeuwen 5095) (P1)[5] • *Goodenia nuda* (P4)[4] • *Helichrysum oligochaetum* (P1) • *Heliotropium muticum* (P1)[1] • *Indigofera* sp. Bungaroo Creek (S. van Leeuwen 4301) (P3)[6] • *Oldenlandia* sp. Hamersley Station (A.A. Mitchell PRP 1479) (P3)[7] • *Pentalepis trichodesmoides* subsp. *hispida* (P2) • *Rhynchosia bungarensis* (P4) • *Sida* sp. Barlee Range (S. van Leeuwen 1642) (P3)[8]
	Threatened/ Priority Ecological Communities	None	n/a	Not stated	None	One of the vegetation types (Sb) may be consistent with Four plant assemblages of the Wona Land System (P1-3) PEC. Another vegetation type is considered to represent Horseflat Land System of the Roebourne Plains (P3) PEC.
	WoNS and DPP Weeds	**Calotropis procera* and **Opuntia* spp.	n/a	None	One, **Calotropis procera*	None
	Range Extensions	n/a	n/a	None	None	Two range extensions • *Gyrostemon tepperi* • *Sida* sp. Rabbit Flat (B. J Carter 626)
	Other significant findings	n/a	n/a	None	None	One potentially undescribed species Acacia sp.
Other	**Limitations of Survey**	n/a	No significant limitations	Conditions were 'not optimal' for collection of annuals and flowering grasses.	The current survey is stated as 'likely' to have missed a portion of flora taxa present	Field survey was conducted July-August instead of March-May so some annuals may not be present in some vegetation types.

1. *Heliotropium muticum* is now called *Euploca mutica* and is a priority 3 taxon.
2. *Tephrosia rosea* var. venulosa is now called *Tephrosia rosea* var. Port Hedland (A.S. George 1114).
3. *Pterocaulon* sp. A Kimberley Flora (B. J. Cater 599) is now called *Pterocaulon intermedium* and is now no longer a priority taxon.
4. *Goodenia nuda* is no longer a priority taxon.
5. *Abutilon* sp. Pritzelianum (S. van Leeuwen 5095) is now a priority 3 taxon.
6. *Indigofera* sp. Bungaroo Creek (S. van Leeuwen 4301) is now called *Indigofera rivularis*.
7. *Oldenlandia* sp. Hamersley Station (A.A. Mitchell PRP 1479) is now called *Dolichocarpa* sp. Hamersley Station (A.A. Mitchell PRP 1479)
8. *Sida* sp. Barlee Range (S. van Leeuwen 1642) is now a priority 4 taxon

.

		Proposed Wilga Quarry Extension Reconnaissance Flora, Vegetation and Fauna Habitat Survey	Pippingarra and Wodgina Roads: Flora and Fauna Survey	Wodgina DSO Project Flora ad Vegetation Assessment	North Star Vegetation and Flora Assessment
Survey Details	**Reference**	Ecotec (2018)	Ecoscape (2020)	Outback Ecology (2009)	Ecologia (2012)
	Type	Reconnaissance flora and vegetation survey	Reconnaissance flora and vegetation survey	Detailed flora and vegetation assessment	Two-phase detailed flora and vegetation assessment
	Client	WA Limestone	Iron Bridge, subsidiary of Fortescue Metals Group Ltd	Atlas Iron Ltd	Fortescue Metals Group Ltd
	Location	Granite outcrop immediately adjacent to Wilga Quarry 40 km east of Port Hedland, approx. 30 km from Survey Area	90 km south of Port Hedland on boundary of Shire of East Pilbara and Town of Port Hedland. Approx 42 km southeast of the Survey Area	Adjacent to Wodgina Tantalum mine ~100 km south of Port Hedland and 7 km east of the Great Northern Highway. Approx 36 km southeast of the Survey Area.	100 km southeast of Port Hedland and 25 km east of the Fortescue Main Line between Port Hedland and Christmas Creek. Approx. 38 km southeast of the Survey Area.
	Size (ha)	Not stated	129.8 ha	550 ha	Not stated
	Timing	28- 29 November	2-6 July 2020	15- 22 May and 20- 25 July 2009	1-7 April 2011 (Phase 1 southern portion) 27 June- 6 July 2011 (Phase 1 northern) 17- 22 August 2011 (Phase 2 southern) 12- 19 September 2011 (Phase 2 northern)
Methods	**Desktop Assessment (Yes/No)**	Yes	Yes	Yes	Yes
	Quadrat #	n/a	10	41	272
	Relevé #	6	n/a	n/a	n/a
	Targeted Searching (Yes/No)	Note stated	Yes	Yes	Some traverses
	Other Methods	n/a	n/a	Vegetation mapping	Vegetation mapping
Results	**Taxa**	25	100	122	453
	Families	12	24	38	55
	Genera	Not stated	54	67	168
	Vegetation Types	2 broad types	9	12	33 vegetation communities
	Vegetation Condition	Good- Poor	Excellent (63.9%)	Excellent- Completely Degraded (majority Excellent, 425 ha)	Majority Excellent or Very Good
	Weeds #	2	2	1	9 weeds
Significant Findings	**Threatened/ Priority Flora**	None	Two priority flora taxa: • *Heliotropium muticum* (P3)[1] • *Triodia chichesterensis* (P3)	One priority flora taxa: • *Terminalia supranitifolia* (P3)	Eight priority flora taxa: • *Abutilon* sp. Pritzelianum (S. van Leeuwen 5095) (P1)1 • *Heliotropium muticum* (P3)2 • *Pityrodia* sp. Marble Bar (G. Woodman & D. Coultas GWDC Opp 4) (P1)3 • *Euphorbia clementii* (P2)4 • *Acacia glaucocaesia* (P3)5 • *Goodenia nuda* (P4)6 • *Ptilotus mollis* (P4)
	Threatened/ Priority Ecological Communities	None	None	None	None
	WoNS and DPP Weeds	None	None	None	None
	Range Extensions	None	None	*Terminalia supranitifolia* (P3)	5 range extensions
	Other significant findings	n/a	EcAtCc vegetation type is considered likely to be representative of groundwater dependent vegetation	n/a	n/a
Other	**Limitations of Survey**	Due to survey timing annual species were unlikely to be present.	There was a recent fire which affected a 'substantial proportion' of the Survey Area.	No significant limitations	Minor limitation due to lack of studies in local area. Minor limitation due to only 2 quadrats in a veg type (escarpment springs) as it was difficult to access.

1. *Heliotropium muticum* is now called *Euploca mutica* and is a priority 3 taxon.
2. *Abutilon* sp. Pritzelianum (S. van Leeuwen 5095) (P1) is not a Priority 3 taxon.
3. *Pityrodia* sp. Marble Bar (G. Woodman & D. Coultas GWDC Opp 4) (P1) is now known as *Quoya zonalis* (T).
4. *Euphorbia clementii* (P2) is now a Priority 3 taxon.
5. *Acacia glaucocaesia* (P3) is no longer a Priority listed taxon.
6. *Goodenia nuda* (P4)[6] is no longer a Priority listed taxon.

Appendix C: Vegetation Structural Classifications

NVIS Vegetation Structural Classifications

Cover Characteristics							
Foliage cover *	70-100	30-70	10-30	<10	≈0	0-5	unknown
Crown cover **	>80	50-80	20-50	0.25-20	<0.25	0-5	unknown
% Crown cover ***	>80	50-80	20-50	0.25-20	<0.25	0-5	unknown
Cover code	d	c	i	r	bi	bc	unknown

Growth Form	Height ranges (m)	Structural Formation Classes						
tree, palm	>30 Tall	closed forest	open forest	woodland	open woodland	isolated trees	isolated clumps of trees	trees
	10-30 Mid							
	<10 Low							
tree mallee	10-30 Tall	closed mallee forest	open mallee forest	mallee woodland	open mallee woodland	isolated mallee trees	isolated clumps of mallee trees	mallee trees
	<10 Mid							
	<3 Low							
shrub, cycad, grasstree, fern	>2 Tall	closed shrubland	shrubland	open shrubland	sparse shrubland	isolated shrubs	isolated clumps of shrubs	shrubs
	1-2 Mid							
	<1 Low							
mallee shrub	10-30 Tall	closed mallee shrubland	mallee shrubland	open mallee shrubland	sparse mallee shrubland	isolated mallee shrubs	isolated clumps of mallee shrubs	mallee shrubs
	<10 Mid							
	<3 Low							
heath shrub	>2 Tall	closed heathland	heathland	open heathland	sparse heathland	isolated heath shrubs	isolated clumps of heath shrubs	heath shrubs
	1-2 Mid							
	<1 Low							

Growth Form	Height ranges (m)	Structural Formation Classes						
chenopod shrub	>2 Tall	closed chenopod shrubland	chenopod shrubland	open chenopod shrubland	sparse chenopod shrubland	isolated chenopod shrubs	isolated clumps of chenopod shrubs	chenopod shrubs
	1-2 Mid							
	<1 Low							
samphire shrub	>0.5 Low	closed samphire shrubland	samphire shrubland	open samphire shrubland	sparse samphire shrubland	isolated samphire shrubs	isolated clumps of samphire shrubs	samphire shrubs
	<0.5 Low							
hummock grass	>2 Tall	closed hummock grassland	hummock grassland	open hummock grassland	sparse hummock grassland	isolated hummock grasses	isolated clumps of hummock grasses	hummock grasses
	<2 Tall							
tussock grass	>0.5 Mid	closed tussock grassland	tussock grassland	open tussock grassland	sparse tussock grassland	isolated tussock grasses	isolated clumps of tussock grasses	tussock grasses
	<0.5 Low							
other grass	>0.5 Mid	closed grassland	grassland	open grassland	sparse grassland	isolated grasses	isolated clumps of grasses	other grasses
	<0.5 Low							
sedge	>0.5 Mid	closed sedgeland	sedgeland	open sedgeland	sparse sedgeland	isolated sedges	isolated clumps of sedges	sedges
	<0.5 Low							
rush	>0.5 Mid	closed rushland	rushland	open rushland	sparse rushland	isolated rushes	isolated clumps of rushes	rushes
	<0.5 Low							
forb	>0.5 Mid	closed forbland	forbland	open forbland	sparse forbland	isolated forbs	isolated clumps of forbs	forbs
	<0.5 Low							
fern	>2 Tall	closed fernland	fernland	open fernland	sparse fernland	isolated ferns	isolated clumpsof ferns	ferns
	1-2 Tall							
	<1 Low							
bryophyte	<0.5	closed bryophyte land	bryophyte land	open bryophyte land	sparse bryophyte land	isolated bryophytes	isolated clumps of bryophytes	bryophytes
lichen	<0.5	closed lichenland	lichenland	open lichenland	sparse lichenland	isolated lichens	isolated clumps of lichens	lichens

Growth Form	Height ranges (m)	Structural Formation Classes						
vine	>30 Tall	closed vineland	vineland	open vineland	sparse vineland	isolated vines	isolated clumps of vines	vines
	10-30 Med							
	<10 Low							
aquatic	<1 Tall	closed aquatic bed	aquatic bed	open aquatic bed	sparse aquatics	isolated aquatics	isolated clumps of aquatics	aquatics
	0-0.5 Low							
seagrass	<1 Tall	closed seagrass bed	Seagrass bed	open seagrass bed	sparse seagrass bed	isolated seagrasses	isolated clumps of seagrasses	seagrasses
	0-0.5 Low							

From: NVIS Structural Formation Terminology (Australian Vegetation Attribute Manual Version 7.0 November 2017 https://www.environment.gov.au/land/publications/australian-vegetation-attribute-manual-version-7)

* Foliage Cover is defined for each stratum as 'the proportion of the ground, which would be shaded if sunshine came from directly overhead'. It includes branches and leaves and is obtained by multiplying Crown Cover with Crown type (Hnatiuk *et al.*, 2009). It is applied to a stratum in a plot, rather than an individual crown, with the NVIS measure for a vegetation type ideally being a summary of several plots. Foliage Projective Cover, which considers only the vertical projection of photosynthetic components (generally leaves), can be measured by line interception methods for tree, shrub and ground layer vegetation (Specht & Specht, 1999).

** Crown Cover (canopy cover) as per Hnatiuk *et al.* (2009) Although relationships between this attribute and Foliage Cover are dependent on season, species, species age etc., the crown cover category classes have been adopted as the defining measure.

*** The percentage cover is defined as the percentage of a strictly defined plot area, covered by vegetation. This can be an estimate and is a less precise measure than using, for example, a point intercept transect method on ground layer, or overstorey vegetative cover. That is, for precisely measured values (e.g., crown densitometer or point intercept transects) the value measured would be 'foliage' cover. Where less precise or qualitative measures are used these will most probably be recorded as 'percentage' cover.

Appendix D: Vegetation condition rating scale

Vegetation Condition	Eremaean & Northern Botanical Province
Pristine	N/A
Excellent	Pristine or nearly so, no obvious signs of disturbance or damage caused by human activities since European settlement
Very Good	Some relatively slight signs of damage caused by human activities since European settlement. For example, some signs of damage to tree trunks caused by repeated fire, the presence of some relatively non-aggressive weeds, or occasional vehicle tracks.
Good	More obvious signs of damage caused by human activity since European settlement, including some obvious impact on the vegetation structure such as that caused by low levels of grazing or slightly aggressive weeds.
Poor	Still retains basic vegetation structure or ability to regenerate it after very obvious impacts of human activities since European settlement, such as grazing, partial clearing, frequent fires or aggressive weeds.
Degraded	Severely impacted by grazing, very frequent fires, clearing or a combination of these activities. Scope for some regeneration but not to a state approaching good condition without intensive management. Usually with a number of weed species present including very aggressive species.
Completely Degraded	Areas that are completely or almost completely without native species in the structure of their vegetation, i.e., areas that are cleared or 'parkland cleared' with their flora comprising weed or crop species with isolated native trees or shrubs.

Appendix E: Reconciled species list

Non-Reconciled	Reconciled Taxon
?*Dolichandrone occidentalis*	Removed
Abutilon lepidum	*Abutilon lepidum*
Abutilon otocarpum	*Abutilon otocarpum*
Abutilon sp. Pritzelianum (S. van Leeuwen 5095)	*Abutilon* sp. Pritzelianum (S. van Leeuwen 5095)
Acacia acradenia	*Acacia acradenia*
Acacia ampliceps	*Acacia ampliceps*
Acacia ancistrocarpa	*Acacia ancistrocarpa*
Acacia ayersiana	*Acacia ayersiana*
Acacia colei var. *colei*	*Acacia colei* var. *colei*
Acacia holosericea	*Acacia holosericea*
Acacia inaequilatera	*Acacia inaequilatera*
Acacia melleodora	*Acacia melleodora*
Acacia pyrifolia var. *pyrifolia*	*Acacia pyrifolia* var. *pyrifolia*
Acacia sericophylla	*Acacia sericophylla*
Acacia sp. indet	Removed
Acacia sphaerostachya	*Acacia sphaerostachya*
Acacia stellaticeps	*Acacia stellaticeps*
Acacia stellaticeps x *trachycarpa*	*Acacia stellaticeps* x *trachycarpa*
Acacia stenophylla	*Acacia stenophylla*
Acacia synchronicia	*Acacia synchronicia*
Acacia trachycarpa	*Acacia trachycarpa*
Acacia trachycarpa x *tumida* var. *pilbarensis*	*Acacia trachycarpa* x *tumida* var. *pilbarensis*
Acacia tumida var. *pilbarensis*	*Acacia tumida* var. *pilbarensis*
Achyranthes aspera	*Achyranthes aspera*
Aerva javanica	*Aerva javanica*
Aeschynomene indica	*Aeschynomene indica*
Afrohybanthus aurantiacus	*Afrohybanthus aurantiacus*
Alternanthera angustifolia	*Alternanthera angustifolia*
Alternanthera nana	*Alternanthera nana*
Amaranthus undulatus	*Amaranthus undulatus*
Aristida contorta	*Aristida contorta*
Aristida holathera var. *holathera*	*Aristida holathera* var. *holathera*
Aristida inaequiglumis	*Aristida inaequiglumis*
Arivela uncifera	*Arivela uncifera*
Arivela viscosa	*Arivela viscosa*
Bergia perennis subsp. *perennis*	*Bergia perennis* subsp. *perennis*
Boerhavia coccinea	*Boerhavia coccinea*
Boerhavia sp. indet	Removed
Bonamia erecta	*Bonamia erecta*
Bonamia media	*Bonamia media*
Bonamia pilbarensis	*Bonamia pilbarensis*
Bulbostylis barbata	*Bulbostylis barbata*

Non-Reconciled	Reconciled Taxon
Cajanus cinereus	*Cajanus cinereus*
Calandrinia polyandra	*Calandrinia polyandra*
Calandrinia pumila	*Calandrinia pumila*
Calandrinia sp. indet	Removed
Calandrinia tepperiana	*Calandrinia tepperiana*
Calotropis procera	*Calotropis procera*
Carissa lanceolata	*Carissa lanceolata*
Cassytha filiformis	*Cassytha filiformis*
Cenchrus ciliaris	*Cenchrus ciliaris*
Cenchrus setiger	*Cenchrus setiger*
Chloris pumilio	*Chloris pumilio*
Chrysopogon fallax	*Chrysopogon fallax*
Clerodendrum tomentosum	*Clerodendrum tomentosum*
Clerodendrum tomentosum var. *lanceolatum*	*Clerodendrum tomentosum*
Corchorus elachocarpus	*Corchorus elachocarpus*
Corchorus incanus subsp. *incanus*	*Corchorus incanus* subsp. *incanus*
Corchorus sp. indet	Removed
Corchorus tridens	*Corchorus tridens*
Corymbia ?flavescens	Removed
Corymbia candida	*Corymbia candida*
Corymbia candida subsp. x lautifolia	*Corymbia candida subsp. x lautifolia*
Corymbia deserticola	*Corymbia deserticola*
Corymbia hamersleyana	*Corymbia hamersleyana*
Corymbia opaca	*Corymbia opaca*
Corymbia zygophylla	*Corymbia zygophylla*
Corynotheca pungens	*Corynotheca pungens*
Crotalaria cunninghamii subsp. *sturtii*	*Crotalaria cunninghamii* subsp. *sturtii*
Cucumis melo	*Cucumis melo*
Cucumis variabilis	*Cucumis variabilis*
Cullen martinii	*Cullen martinii*
Cullen stipulaceum	*Cullen stipulaceum*
Cymbopogon ambiguus	*Cymbopogon ambiguus*
Cynanchum floribundum	*Cynanchum floribundum*
Cynodon prostratus	*Cynodon prostratus*
Cyperus blakeanus	*Cyperus blakeanus*
Cyperus difformis	*Cyperus difformis*
Cyperus iria	*Cyperus iria*
Cyperus ixiocarpus	*Cyperus ixiocarpus*
Cyperus squarrosus	*Cyperus squarrosus*
Cyperus vaginatus	*Cyperus vaginatus*
Cyperus vorsteri	*Cyperus vorsteri*
Dactyloctenium radulans	*Dactyloctenium radulans*

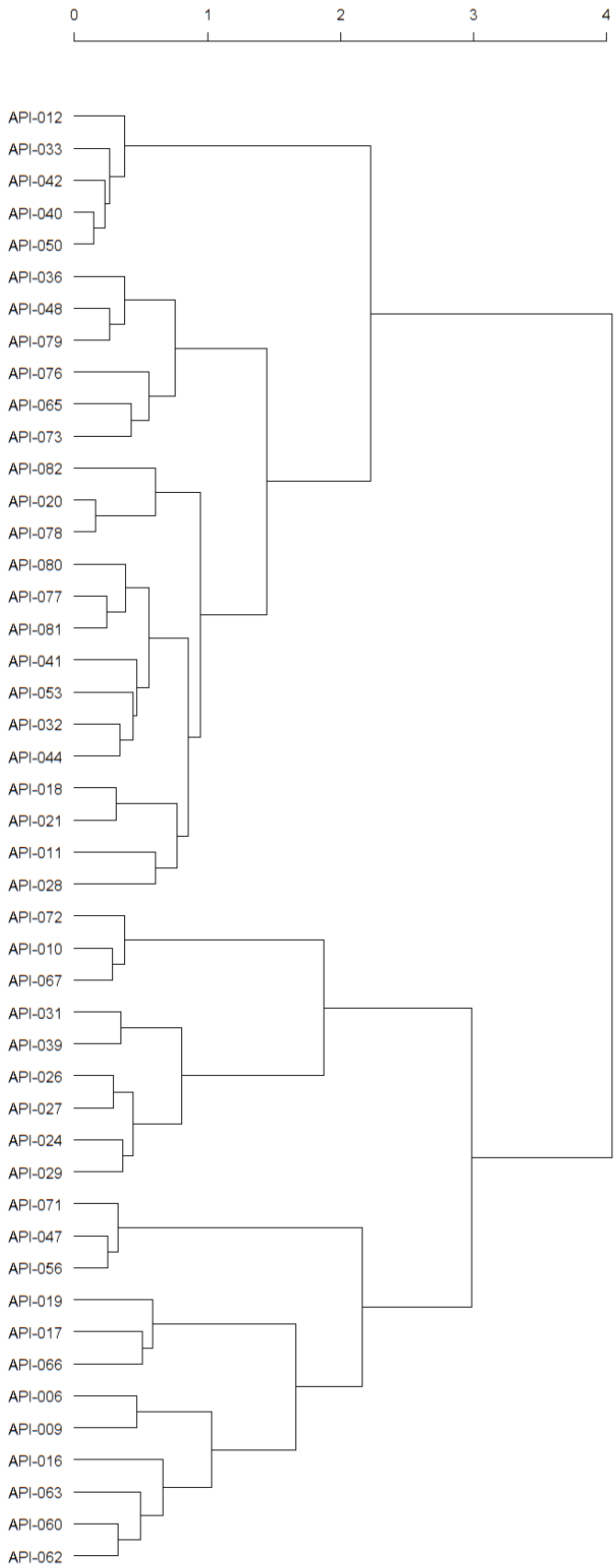
Non-Reconciled	Reconciled Taxon
Dentella asperata	*Dentella asperata*
Digitaria brownii	*Digitaria brownii*
Digitaria ciliaris	*Digitaria ciliaris*
Distimake davenportii	*Distimake davenportii*
Dodonaea coriacea	*Dodonaea coriacea*
Dolichandrone occidentalis	*Dolichandrone occidentalis*
Duperreya commixta	*Duperreya commixta*
Echinochloa colona	*Echinochloa colona*
Ehretia saligna	*Ehretia saligna*
Eragrostis cumingii	*Eragrostis cumingii*
Eragrostis eriopoda	*Eragrostis eriopoda*
Eragrostis sp. indet	Removed
Eragrostis speciosa	*Eragrostis speciosa*
Eragrostis tenellula	*Eragrostis tenellula*
Eriachne aristidea	*Eriachne aristidea*
Eriachne benthamii	*Eriachne benthamii*
Eriachne glauca var. *glauca*	*Eriachne glauca* var. *glauca*
Eriachne helmsii	*Eriachne helmsii*
Eriachne mucronata	*Eriachne mucronata*
Eriachne obtusa	*Eriachne obtusa*
Eriachne pulchella subsp. *dominii*	*Eriachne pulchella* subsp. *dominii*
Eucalyptus camaldulensis	*Eucalyptus camaldulensis*
Eucalyptus camaldulensis subsp. *refulgens*	*Eucalyptus camaldulensis*
Eucalyptus victrix	*Eucalyptus victrix*
Eulalia aurea	*Eulalia aurea*
Euphorbia australis var. *subtomentosa*	*Euphorbia australis* var. *subtomentosa*
Euphorbia coghlanii	*Euphorbia coghlanii*
Euphorbia hirta	*Euphorbia hirta*
Euphorbia trigonosperma	*Euphorbia trigonosperma*
Euphorbia vaccaria var. *vaccaria*	*Euphorbia vaccaria* var. *vaccaria*
Euploca ovalifolia	*Euploca ovalifolia*
Evolvulus alsinoides var. *decumbens*	*Evolvulus alsinoides*
Evolvulus alsinoides var. *villosicalyx*	*Evolvulus alsinoides*
Fimbristylis dichotoma	*Fimbristylis dichotoma*
Goodenia forrestii	*Goodenia forrestii*
Goodenia lamprosperma	*Goodenia lamprosperma*
Goodenia microptera	*Goodenia microptera*
Goodenia stobbsiana	*Goodenia stobbsiana*
Gossypium australe	*Gossypium australe*
Grevillea pyramidalis	*Grevillea pyramidalis*
Grevillea wickhamii	*Grevillea wickhamii*

Non-Reconciled	Reconciled Taxon
Grona filiformis	*Grona filiformis*
Hakea lorea subsp. *lorea*	*Hakea lorea* subsp. *lorea*
Hibiscus leptocladus	*Hibiscus leptocladus*
Hibiscus solanifolius	*Hibiscus solanifolius*
Indigofera colutea	*Indigofera colutea*
Indigofera linifolia	*Indigofera linifolia*
Indigofera monophylla	*Indigofera monophylla*
Indigofera oblongifolia	*Indigofera oblongifolia*
Ipomoea muelleri	*Ipomoea muelleri*
Ipomoea polymorpha	*Ipomoea polymorpha*
Iseilema dolichotrichum	*Iseilema dolichotrichum*
Leptosema anomalum	*Leptosema anomalum*
Malvastrum americanum	*Malvastrum americanum*
Marsilea hirsuta	*Marsilea hirsuta*
Melaleuca argentea	*Melaleuca argentea*
Melaleuca glomerata	*Melaleuca glomerata*
Melaleuca lasiandra	*Melaleuca lasiandra*
Melaleuca linophylla	*Melaleuca linophylla*
Microstachys chamaelea	*Microstachys chamaelea*
Murdannia graminea	*Murdannia graminea*
Nellica maderaspatensis	*Nellica maderaspatensis*
Neptunia dimorphantha	*Neptunia dimorphantha*
Olearia fluvialis	*Olearia fluvialis*
Owenia reticulata	*Owenia reticulata*
Panicum australiense var. *australiense*	*Panicum australiense* var. *australiense*
Paraneurachne muelleri	*Paraneurachne muelleri*
Paspalidium basicladum	*Paspalidium basicladum*
Paspalidium rarum	*Paspalidium rarum*
Paspalidium tabulatum	*Paspalidium tabulatum*
Peplidium muelleri	*Peplidium muelleri*
Petalostylis labicheoides	*Petalostylis labicheoides*
Pimelea ammocharis	*Pimelea ammocharis*
Pluchea dentex	*Pluchea dentex*
Pluchea ferdinandi-muelleri	*Pluchea ferdinandi-muelleri*
Pluchea rubelliflora	*Pluchea rubelliflora*
Pluchea tetranthera	*Pluchea tetranthera*
Pluchea ferdinandi-muelleri	*Pluchea ferdinandi-muelleri*
Polycarpaea corymbosa	*Polycarpaea corymbosa*
Polycarpaea longiflora	*Polycarpaea longiflora*
Polygala galeocephala	*Polygala galeocephala*
Polymeria ambigua	*Polymeria ambigua*
Portulaca cyclophylla	*Portulaca cyclophylla*

Non-Reconciled	Reconciled Taxon
Portulaca filifolia	*Portulaca filifolia*
Portulaca oleracea	*Portulaca oleracea*
Pterocaulon sphacelatum	*Pterocaulon sphacelatum*
Ptilotus arthrolasius	*Ptilotus arthrolasius*
Ptilotus astrolasius	*Ptilotus astrolasius*
Ptilotus axillaris	*Ptilotus axillaris*
Ptilotus calostachyus	*Ptilotus calostachyus*
Ptilotus clementii	*Ptilotus clementii*
Ptilotus exaltatus	*Ptilotus exaltatus*
Ptilotus fusiformis	*Ptilotus fusiformis*
Ptilotus murrayi	*Ptilotus murrayi*
Ptilotus obovatus	*Ptilotus obovatus*
Ptilotus polystachyus	*Ptilotus polystachyus*
Rhynchosia minima	*Rhynchosia minima*
Rothia indica subsp. *australis*	*Rothia indica* subsp. *australis*
Salsola australis	*Salsola australis*
Scaevola parvifolia subsp. *pilbarae*	*Scaevola parvifolia* subsp. *pilbarae*
Scaevola spinescens	*Scaevola spinescens*
Senna artemisioides subsp. *oligophylla*	*Senna artemisioides* subsp. *oligophylla*
Senna glutinosa subsp. *glutinosa*	*Senna glutinosa* subsp. *glutinosa*
Senna notabilis	*Senna notabilis*
Senna venusta	*Senna venusta*
Seringia nephrosperma	*Seringia nephrosperma*
Sesbania cannabina	*Sesbania cannabina*
Setaria verticillata	*Setaria verticillata*
Sida arenicola	*Sida arenicola*
Sida echinocarpa	*Sida echinocarpa*
Sida rohlenae subsp. *rohlenae*	*Sida rohlenae* subsp. *rohlenae*
Sida sp. L (A.M. Ashby 4202)	*Sida* sp. L (A.M. Ashby 4202)
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	*Sida* sp. Pilbara (A.A. Mitchell PRP 1543)
Sida sp. spiciform panicles (E. Leyland s.n. 14/8/90)	*Sida* sp. spiciform panicles (E. Leyland s.n. 14/8/90)
Solanum cleistogamum	*Solanum cleistogamum*
Solanum diversiflorum	*Solanum diversiflorum*
Solanum phlomoides	*Solanum phlomoides*
Solanum sp. indet	Removed
Sporobolus australasicus	*Sporobolus australasicus*
Stemodia grossa	*Stemodia grossa*
Streptoglossa bubakii	*Streptoglossa bubakii*
Streptoglossa macrocephala	Removed
Streptoglossa sp. indet	Removed
Stylosanthes hamata	*Stylosanthes hamata*
Synaptantha tillaeacea	*Synaptantha tillaeacea*

Non-Reconciled	Reconciled Taxon
Tephrosia sp. Bungaroo Creek (M.E. Trudgen 11601)	*Tephrosia* sp. Bungaroo Creek (M.E. Trudgen 11601)
Tephrosia sp. B Kimberley Flora (C.A. Gardner 7300)	*Tephrosia* sp. B Kimberley Flora (C.A. Gardner 7300)
Tephrosia sp. NW Eremaean (S. van Leeuwen et al. PBS 0356)	*Tephrosia* sp. NW Eremaean (S. van Leeuwen et al. PBS 0356)
Trianthema glossostigmum	*Trianthema glossostigmum*
Trianthema triquetrum	*Trianthema triquetrum*
Tribulopis angustifolia	*Tribulopis angustifolia*
Tribulus hirsutus	*Tribulus hirsutus*
Tribulus occidentalis	*Tribulus occidentalis*
Trichodesma zeylanicum var. *zeylanicum*	*Trichodesma zeylanicum* var. *zeylanicum*
Trigastrotheca molluginea	*Trigastrotheca molluginea*
Triodia epactia	*Triodia epactia*
Triodia lanigera	*Triodia lanigera*
Triodia longiceps	*Triodia longiceps*
Triodia schinzii	*Triodia schinzii*
Triumfetta chaetocarpa	*Triumfetta chaetocarpa*
Vigna lanceolata	*Vigna lanceolata*
Waltheria indica	*Waltheria indica*

Appendix F: Dendrogram output


0
1
2
3
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API-012
API-033
API-042
API-040
API-050
API-036
API-048
API-079
API-076
API-065
API-073
API-082
API-020
API-078
API-080
API-077
API-081
API-041
API-053
API-032
API-044
API-018
API-021
API-011
API-028
API-072
API-010
API-067
API-031
API-039
API-026
API-027
API-024
API-029
API-071
API-047
API-056
API-019
API-017
API-066
API-006
API-009
API-016
API-063
API-060
API-062

Appendix G: Database search results

Family	Taxon	Source						Conservation Code			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
Acanthaceae	*Avicennia marina*	•	•								
	Avicennia marina subsp. *marina*	•									
Aizoaceae	*Sesuvium portulacastrum*	•	•								
	Trianthema cusackianum	•									
	Trianthema oxycalyptrum var. *oxycalyptrum*	•									
	Trianthema pilosum	•	•								
	Trianthema portulacastrum	•									Y
	Trianthema sp.	•									
	Trianthema triquetrum	•									
	Trianthema turgidifolium	•	•								
	Zaleya galericulata	•									
Alismataceae	*Sagittaria platyphylla*						•				Y
Amaranthaceae	*Achyranthes aspera*	•	•								
	Aerva javanica	•	•								Y
	Alternanthera angustifolia	•	•								
	Alternanthera nana	•	•								
	Alternanthera nodiflora	•									
	Amaranthus cochleitepalus		•								
	Amaranthus interruptus	•	•								
	Amaranthus pallidiflorus	•									
	Amaranthus undulatus	•	•								
	Gomphrena affinis		•								
	Gomphrena affinis subsp. *pilbarensis*	•									
	Gomphrena canescens subsp. *canescens*	•									
	Gomphrena celosioides	•									Y
	Gomphrena cucullata	•		•	•			P3			
	Gomphrena cunninghamii	•	•								
	Gomphrena leptoclada	•	•								
	Gomphrena leptoclada subsp. *leptoclada*	•									
	Gomphrena leptophylla	•		•				P3			
	Gomphrena pusilla	•		•				P2			
	Gomphrena sordida	•									
	Gomphrena tenella		•								
	Hemichroa diandra	•									
	Ptilotus appendiculatus	•	•								
	Ptilotus arthrolasius	•	•								
	Ptilotus astrolasius	•	•								
	Ptilotus axillaris	•	•								
	Ptilotus calostachyus	•	•								
	Ptilotus clementii	•	•								
	Ptilotus divaricatus	•									
	Ptilotus exaltatus	•									

Family	Taxon	Source						Conservation Code			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
Amaranthaceae cont.	*Ptilotus fusiformis*	•	•								
	Ptilotus helipteroides		•								
	Ptilotus incanus	•	•								
	Ptilotus mollis	•	•	•				P4			
	Ptilotus murrayi	•	•								
	Ptilotus nobilis	•	•								
	Ptilotus obovatus		•								
	Ptilotus polystachyus	•	•								
	Ptilotus villosiflorus	•									
	Pupalia lappacea	•									Y
	Surreya diandra	•	•								
Anacardiaceae	*Mangifera indica*		•								Y
Apocynaceae	*Calotropis procera*	•					•				Y
	Carissa lanceolata	•									
	Carissa spinarum		•								
	Cryptostegia madagascariensis						•				Y
	Cynanchum floribundum	•	•								
	Cynanchum viminale		•								
	Cynanchum viminale subsp. *australe*	•									
	Gymnanthera cunninghamii	•	•	•	•			P3			
	Vincetoxicum carnosum	•	•								
Araceae	*Pistia stratiotes*						•				Y
	Zantedeschia aethiopica						•				Y
Araliaceae	*Hydrocotyle ranunculoides*						•				Y
	Trachymene oleracea		•								
	Trachymene oleracea subsp. *oleracea*	•									
Asparagaceae	*Asparagus asparagoides*						•				Y
Asteraceae	*Blumea tenella*	•	•								
	Calotis hispidula	•									
	Calotis plumulifera	•									
	Centipeda minima	•	•								
	Chondrilla juncea						•				Y
	Chrysocephalum apiculatum subsp. *pilbarense*	•									
	Cyanthillium cinereum var. *cinereum*	•									Y
	Erigeron bonariensis	•									Y
	Erymophyllum ramosum subsp. *ramosum*	•									
	Flaveria trinervia	•									Y
	Minuria sp.	•									
	Onopordum acaulon						•				Y
	Pentalepis trichodesmoides		•								
	Pluchea dentex	•									
	Pluchea ferdinandi-muelleri	•	•								

Family	Taxon	Source						Conservation Code			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
Asteraceae cont.	*Pluchea longiseta*	•	•								
	Pluchea rubelliflora	•									
	Pluchea tetranthera	•	•								
	Pseudognaphalium luteoalbum	•	•								
	Pterocaulon intermedium	•	•								
	Pterocaulon niveum		•								
	Pterocaulon serrulatum var. *serrulatum*	•									
	Pterocaulon sphacelatum	•									
	Rhodanthe margarethae	•									
	Silybum marianum						•				Y
	Streptoglossa bubakii	•									
	Streptoglossa cylindriceps	•									
	Streptoglossa decurrens	•									
	Streptoglossa macrocephala	•	•								
	Streptoglossa odora	•	•								
	Streptoglossa sp.	•									
	Symphyotrichum squamatum	•									Y
	Tridax procumbens	•									Y
	Xanthium spinosum						•				Y
	Xanthium strumarium						•				Y
Bignoniaceae	*Dolichandrone occidentalis*	•	•								
Bonnemaisoniaceae	*Asparagopsis taxiformis*		•								
Boraginaceae	*Echium plantagineum*						•				Y
	Ehretia saligna var. *saligna*	•									
	Euploca argyrea			•				P1			
	Euploca chrysocarpa	•									
	Euploca conocarpa	•	•								
	Euploca cunninghamii	•									
	Euploca foliata	•	•								
	Euploca glandulifera	•									
	Euploca mutica	•	•	•				P3			
	Euploca ovalifolia		•								
	Euploca pachyphylla	•									
	Euploca parviantrum			•				P1			
	Euploca skeleton	•									
	Euploca transformis	•	•								
	Euploca vestita	•	•								
	Halgania solanacea var. Mt Doreen (G.M. Chippendale 4206)	•									
	Heliotropium crispatum	•									
	Heliotropium curassavicum	•									
	Heliotropium murinum			•				P3			
	Trichodesma zeylanicum	•									

Family	Taxon	Source						Conservation Code			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
Boraginaceae	*Trichodesma zeylanicum* var. *grandiflorum*	•									
Brassicaceae	*Lepidium pedicellosum*	•									
Byblidaceae	*Byblis filifolia*	•	•								
	Byblis pilbarana	•	•								
Cactaceae	*Austrocylindropuntia cylindrica*						•				Y
	Austrocylindropuntia subulata						•				Y
	Cylindropuntia fulgida						•				Y
	Cylindropuntia imbricata	•	•				•				Y
	Cylindropuntia kleiniae						•				Y
	Cylindropuntia pallida						•				Y
	Cylindropuntia tunicata						•				Y
	Opuntia elata	•	•				•				Y
	Opuntia elatior						•				Y
	Opuntia engelmannii						•				Y
	Opuntia ficus-indica						•				Y
	Opuntia microdasys						•				Y
	Opuntia monacantha						•				Y
	Opuntia polyacantha						•				Y
	Opuntia puberula						•				Y
	Opuntia stricta	•					•				Y
	Opuntia tomentosa						•				Y
Campanulaceae	*Wahlenbergia tumidifructa*	•									
Capparaceae	*Capparis lasiantha*		•								
	Capparis spinosa subsp. *nummularia*	•									
Caryophyllaceae	*Polycarpaea corymbosa*	•	•								
	Polycarpaea corymbosa var. *corymbosa*	•									
	Polycarpaea holtzei	•									
	Polycarpaea involucrata	•									
	Polycarpaea longiflora	•									
	Polycarpaea sp.	•									
Casuarinaceae	*Allocasuarina distyla*		•								
	Allocasuarina torulosa		•								
Caulerpaceae	*Caulerpa brachypus*		•								
	Caulerpa chemnitzia		•								
	Caulerpa cupressoides		•								
	Caulerpa lentillifera		•								
	Caulerpa sertularioides		•								
	Caulerpa taxifolia		•								
Celastraceae	*Stackhousia intermedia*	•	•								
Centrolepidaceae	*Centrolepis banksii*	•	•								
Chenopodiaceae	*Atriplex eremitis*			•	•			P1			
	Atriplex codonocarpa		•								

Family	Taxon	Source						Conservation Code			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
Chenopodiaceae cont.	*Atriplex semilunaris*	•									
	Dissocarpus paradoxus	•									
	Dysphania plantaginella	•	•								
	Dysphania rhadinostachya	•									
	Dysphania rhadinostachya subsp. *inflata*	•									
	Dysphania rhadinostachya subsp. *rhadinostachya*	•									
	Enchylaena tomentosa var. *tomentosa*	•									
	Neobassia astrocarpa	•	•								
	Rhagodia eremaea	•									
	Salsola australis	•									
	Sclerolaena bicornis var. *bicornis*	•									
	Sclerolaena glabra	•									
	Sclerolaena hostilis	•									
	Sclerolaena sp.	•									
	Suaeda arbusculoides	•	•								
	Tecticornia auriculata	•	•								
	Tecticornia halocnemoides	•	•								
	Tecticornia halocnemoides subsp. *tenuis*	•									
	Tecticornia indica	•	•								
	Tecticornia indica subsp. *bidens*	•									
	Tecticornia indica subsp. *leiostachya*	•									
	Tecticornia pruinosa		•								
	Tecticornia pterygosperma		•								
	Tecticornia pterygosperma subsp. *denticulata*	•									
	Threlkeldia diffusa	•									
Cleomaceae	*Arivela uncifera*	•	•								
	Arivela viscosa	•	•								
Combretaceae	*Terminalia circumalata*	•									
	Terminalia supranitifolia	•		•				P3			
Commelinaceae	*Commelina ensifolia*	•	•								
	Murdannia graminea	•	•								
Convolvulaceae	*Bonamia alatisemina*	•	•								
	Bonamia erecta	•	•								
	Bonamia linearis	•	•								
	Bonamia media	•	•								
	Bonamia oblongifolia	•						P3			
	Bonamia pilbarensis	•	•								
	Bonamia rosea	•									
	Convolvulus clementii	•									
	Distimake davenportii	•	•								
	Distimake dissectus		•								Y
	Distimake dissectus var. *dissectus*	•									Y

Family	Taxon	Source						Conservation Code			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
Convolvulaceae cont.	*Duperreya commixta*	•									
	Evolvulus alsinoides		•								
	Evolvulus alsinoides var. *decumbens*	•									
	Evolvulus alsinoides var. *villosicalyx*	•									
	Ipomoea coptica	•									
	Ipomoea muelleri	•	•								
	Ipomoea pes-caprae	•	•								
	Ipomoea pes-caprae subsp. *brasiliensis*	•									
	Ipomoea polymorpha	•	•								
	Operculina aequisepala	•									
	Polymeria ambigua	•	•								
	Polymeria lanata	•	•								
	Polymeria mollis	•	•								
Cucurbitaceae	*Citrullus amarus*	•	•								Y
	Coccinia grandis	•					•				Y
	Cucumis argenteus	•									
	Cucumis melo	•									
	Cucumis variabilis	•	•								
	Trichosanthes cucumerina		•								
	Trichosanthes cucumerina var. *cucumerina*	•									
Cymodoceaceae	*Halodule uninervis*	•	•								
Cyperaceae	*Abildgaardia oxystachya*	•	•								
	Bulbostylis barbata	•	•								
	Bulbostylis burbidgeae	•	•	•	•			P4			
	Bulbostylis turbinata	•	•								
	Cyperus bifax	•									
	Cyperus blakeanus	•	•								
	Cyperus bulbosus	•									
	Cyperus castaneus	•	•								
	Cyperus concinnus	•									
	Cyperus conicus	•	•								
	Cyperus cunninghamii		•								
	Cyperus cunninghamii subsp. *cunninghamii*	•									
	Cyperus difformis	•									
	Cyperus hesperius	•									
	Cyperus iria	•	•								
	Cyperus ixiocarpus	•									
	Cyperus leptocarpus	•	•								
	Cyperus polystachyos	•									
	Cyperus pulchellus	•									
	Cyperus squarrosus	•	•								
	Cyperus vaginatus	•	•								

Family	Taxon	Source						Conservation Code			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
Cyperaceae cont.	*Eleocharis atropurpurea*	•	•								
	Fimbristylis dichotoma	•									
	Fimbristylis elegans	•	•								
	Fimbristylis littoralis	•	•								
	Fimbristylis microcarya	•									
	Fimbristylis neilsonii	•									
	Fimbristylis rara	•	•								
	Fimbristylis simulans	•									
	Fuirena ciliaris	•	•								
	Schoenoplectiella dissachantha	•									
	Schoenoplectiella laevis	•	•								
	Schoenoplectiella lateriflora	•	•								
	Schoenoplectus subulatus	•									
Droseraceae	*Drosera burmanni*	•	•								
	Drosera finlaysoniana		•								
Elatinaceae	*Bergia ammannioides*	•									
	Bergia henshallii	•	•								
	Bergia pedicellaris	•	•								
	Bergia trimera	•	•								
Euphorbiaceae	*Adriana tomentosa*	•	•								
	Adriana tomentosa var. *tomentosa*	•									
	Euphorbia alsiniflora	•									
	Euphorbia australis	•	•								
	Euphorbia australis var. *australis*	•									
	Euphorbia australis var. *subtomentosa*	•									
	Euphorbia biconvexa	•									
	Euphorbia clementii	•	•	•	•			P3			
	Euphorbia coghlanii	•	•								
	Euphorbia inappendiculata var. *inappendiculata*			•				P2			
	Euphorbia maculata		•								Y
	Euphorbia myrtoides	•									
	Euphorbia psilosperma	•	•								
	Euphorbia tannensis subsp. *eremophila*	•									
	Euphorbia tirucalli	•	•								Y
	Euphorbia trigonosperma	•	•								
	Euphorbia vaccaria		•								
	Euphorbia vaccaria var. *erucoides*	•									
	Euphorbia vaccaria var. *vaccaria*	•									
	Jatropha gossypifolia	•									
	Jatropha gossypiifolia						•				Y
	Mallotus nesophilus		•								
	Ricinus communis	•									Y

Family	Taxon	Source						Conservation Code			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
Fabaceae	*Acacia acradenia*	•	•								
	Acacia ampliceps	•	•								
	Acacia ancistrocarpa	•	•								
	Acacia ancistrocarpa x arida	•									
	Acacia arida	•	•								
	Acacia bivenosa	•	•								
	Acacia bivenosa x sclerosperma subsp. *sclerosperma*	•									
	Acacia colei	•	•								
	Acacia colei var. *colei*	•									
	Acacia coriacea		•								
	Acacia coriacea subsp. *pendens*	•									
	Acacia cyperophylla var. *omearana*			•				P1			
	Acacia dictyophleba	•	•								
	Acacia eriopoda	•									
	Acacia holosericea		•								
	Acacia inaequilatera	•	•								
	Acacia leeuweniana			•	•			P1			
	Acacia levata			•	•			P3			
	Acacia maitlandii	•	•								
	Acacia melleodora	•	•								
	Acacia orthocarpa	•	•								
	Acacia pyrifolia	•	•								
	Acacia pyrifolia var. *morrisonii*	•									
	Acacia pyrifolia var. *pyrifolia*	•									
	Acacia robeorum	•									
	Acacia sabulosa	•	•								
	Acacia sclerophylla var. *sclerophylla*	•									
	Acacia sclerosperma		•								
	Acacia sclerosperma subsp. *sclerosperma*	•									
	Acacia sericophylla	•	•								
	Acacia sphaerostachya	•	•								
	Acacia stellaticeps	•	•								
	Acacia synchronicia	•									
	Acacia trachycarpa	•	•								
	Acacia trudgeniana	•	•								
	Acacia tumida		•								
	Acacia tumida var. *pilbarensis*	•									
	Aeschynomene indica	•									
	Albizia lebbeck	•									
	Alhagi maurorum						•				Y
	Alysicarpus muelleri	•									
	Cajanus acutifolius	•	•								

Family	Taxon	Source						Conservation Code			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
Fabaceae cont.	*Cajanus cinereus*	•	•								
	Cajanus marmoratus	•	•								
	Cajanus pubescens	•	•								
	Canavalia rosea	•	•								
	Clitoria ternatea	•									Y
	Crotalaria cunninghamii	•	•								
	Crotalaria cunninghamii subsp. *sturtii*	•									
	Crotalaria dissitiflora subsp. *benthamiana*	•									
	Crotalaria medicaginea	•	•								
	Crotalaria medicaginea var. *neglecta*	•									
	Crotalaria novae-hollandiae	•									
	Crotalaria ramosissima	•	•								
	Cullen lachnostachys	•	•								
	Cullen leucanthum	•	•								
	Cullen leucochaites	•	•								
	Cullen martinii	•	•								
	Cullen pogonocarpum	•									
	Cullen pustulatum		•								
	Cullen stipulaceum	•	•								
	Desmodium scorpiurus	•									Y
	Erythrina vespertilio	•									
	Glycine tomentella	•	•								
	Grona filiformis	•	•								
	Indigastrum parviflorum	•									
	Indigofera boviperda		•								
	Indigofera boviperda subsp. *boviperda*	•									
	Indigofera colutea	•	•								
	Indigofera hirsuta	•	•								
	Indigofera hochstetteri	•	•								Y
	Indigofera linifolia	•	•								
	Indigofera linnaei	•									
	Indigofera monophylla	•	•								
	Indigofera oblongifolia	•	•								Y
	Indigofera rugosa	•	•								
	Indigofera sessiliflora	•									Y
	Indigofera trita	•	•								
	Isotropis atropurpurea	•	•								
	Leptosema anomalum	•	•								
	Leucaena leucocephala	•	•								Y
	Neltuma glandulosa × *velutina*						•				Y
	Neptunia dimorphantha	•									
	Neptunia monosperma	•	•								

Family	Taxon	Source						Conservation Code			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
Fabaceae cont.	*Parkinsonia aculeata*	•					•				Y
	Petalostylis labicheoides	•	•								
	Rhynchosia minima	•									
	Rothia indica		•								
	Rothia indica subsp. *australis*	•		•				P3			
	Senna alata						•				Y
	Senna artemisioides		•								
	Senna artemisioides subsp. *oligophylla*	•									
	Senna curvistyla	•	•								
	Senna glutinosa		•								
	Senna glutinosa subsp. *glutinosa*	•									
	Senna glutinosa subsp. *pruinosa*	•									
	Senna glutinosa subsp. *x luerssenii*	•									
	Senna notabilis	•	•								
	Senna obtusifolia						•				Y
	Senna occidentalis	•									Y
	Senna stricta	•									
	Senna venusta	•	•								
	Sesbania cannabina	•									
	Sesbania formosa	•	•								
	Stylosanthes guianensis var. *guianensis*	•									Y
	Stylosanthes hamata	•	•								Y
	Swainsona formosa		•								
	Swainsona pterostylis	•	•								
	Tephrosia clementii	•									
	Tephrosia leptoclada	•	•								
	Tephrosia rosea	•	•								
	Tephrosia rosea var. *clementii*	•									
	Tephrosia rosea var. Fortescue creeks (M.I.H. Brooker 2186)	•									
	Tephrosia rosea var. Port Hedland (A.S. George 1114)	•		•				P1			
	Tephrosia rosea var. *rosea*	•									
	Tephrosia simplicifolia	•	•								
	Tephrosia sp. B Kimberley Flora (C.A. Gardner 7300)	•									
	Tephrosia sp. Bungaroo Creek (M.E. Trudgen 11601)	•									
	Tephrosia sp. clay soils (S. van Leeuwen et al. PBS 0273)	•									
	Tephrosia sp. D Kimberley Flora (R.D. Royce 1848)	•									
	Tephrosia supina	•									
	Tephrosia virens	•									
	Ulex europaeus						•				Y
	Vachellia farnesiana	•									Y
	Vigna lanceolata	•	•								
	Vigna lanceolata var. *lanceolata*	•									

Family	Taxon	Source						Conservation Code			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
Fabaceae cont.	*Vigna triodiophila*			•				P3			
	Zornia albiflora	•	•								
	Zornia chaetophora	•	•								
	Zornia muelleriana	•	•								
	Zornia muelleriana subsp. *congesta*	•									
Frankeniaceae	*Frankenia ambita*	•									
	Frankenia pauciflora	•	•								
Gentianaceae	*Schenkia australis*	•									
Goodeniaceae	*Dampiera candicans*	•	•								
	Goodenia armitiana	•	•								
	Goodenia connata	•									
	Goodenia forrestii	•	•								
	Goodenia lamprosperma	•	•								
	Goodenia microptera	•	•								
	Goodenia muelleriana	•	•								
	Goodenia nuda	•	•								
	Goodenia pascua	•									
	Goodenia scaevolina	•	•								
	Goodenia stobbsiana	•									
	Scaevola amblyanthera	•									
	Scaevola amblyanthera var. *centralis*	•									
	Scaevola browniana	•	•								
	Scaevola browniana subsp. *browniana*	•									
	Scaevola crassifolia	•	•								
	Scaevola parvifolia		•								
	Scaevola parvifolia subsp. *pilbarae*	•									
	Scaevola spinescens	•									
Gyrostemonaceae	*Codonocarpus cotinifolius*	•									
	Gyrostemon tepperi	•	•								
Haloragaceae	*Gonocarpus ephemerus*	•	•								
	Haloragis gossei	•									
Hemerocallidaceae	*Corynotheca micrantha*	•									
	Corynotheca pungens	•	•								
Hydrocharitaceae	*Halophila decipiens*		•								
	Halophila ovalis		•								
	Thalassia hemprichii	•	•								
Iridaceae	*Moraea flaccida*						•				Y
	Moraea miniata						•				Y
Lamiaceae	*Clerodendrum tomentosum* var. *lanceolatum*	•									
	Quoya zonalis			•	•			T	EN	EN	
Lauraceae	*Cassytha capillaris*	•	•								
	Cassytha filiformis	•	•								

Family	Taxon	Source						Conservation Code			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
Loganiaceae	*Mitrasacme connata*	•	•								
	Mitrasacme exserta	•	•								
Loranthaceae	*Amyema preissii*	•	•								
Lythraceae	*Ammannia muelleri*	•	•								
	Ammannia multiflora	•									
	Ammannia sp.	•									
	Rotala diandra	•	•								
Malvaceae	*Abutilon cryptopetalum*		•								
	Abutilon lepidum	•	•								
	Abutilon otocarpum	•	•								
	Abutilon oxycarpum subsp. Prostrate (A.A. Mitchell PRP 1266)	•									
	Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)	•									
	Abutilon sp. Pilbara (W.R. Barker 2025)	•									
	Abutilon sp. Pritzelianum (S. van Leeuwen 5095)	•	•	•	•			P3			
	Corchorus carnarvonensis	•									
	Corchorus elachocarpus	•	•								
	Corchorus incanus	•	•								
	Corchorus incanus subsp. *incanus*	•									
	Corchorus laniflorus	•	•								
	Corchorus parviflorus	•									
	Corchorus sp. Yarrie (J. Bull & D. Roberts CAL 01.05)			•							
	Corchorus tectus	•									
	Corchorus tridens	•	•								
	Corchorus trilocularis	•									
	Corchorus walcottii	•	•								
	Gossypium australe	•	•								
	Gossypium hirsutum	•	•								Y
	Hibiscus austrinus		•								
	Hibiscus austrinus var. *austrinus*	•									
	Hibiscus brachychlaenus	•	•								
	Hibiscus burtonii	•									
	Hibiscus goldsworthii	•									
	Hibiscus leptocladus	•	•								
	Hibiscus sturtii	•	•								
	Hibiscus sturtii var. *campylochlamys*	•									
	Malvastrum americanum	•									Y
	Melhania oblongifolia	•	•								
	Seringia exastia	•									
	Seringia nephrosperma	•	•								
	Sida ammophila	•									
	Sida arenicola	•	•								
	Sida calyxhymenia	•									

Family	Taxon	Source						Conservation Code			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
Malvaceae cont.	*Sida clementii*	•	•								
	Sida echinocarpa	•	•								
	Sida fibulifera	•									
	Sida rohlenae	•	•								
	Sida rohlenae subsp. *rohlenae*	•									
	Sida sp. Pilbara (A.A. Mitchell PRP 1543)	•	•								
	Sida sp. *Pindan (B.G. Thomson 3398)*	•									
	Sida sp. Rabbit Flat (B.J. Carter 626)	•									
	Sida sp. spiciform panicles (E. Leyland s.n. 14/8/90)	•									
	Sida trichopoda	•	•								
	Triumfetta appendiculata	•	•								
	Triumfetta chaetocarpa	•	•								
	Triumfetta clementii	•	•								
	Triumfetta deserticola	•									
	Triumfetta johnstonii	•									
	Triumfetta maconochieana	•	•								
	Triumfetta propinqua	•	•								
	Triumfetta ramosa	•	•								
	Triumfetta sp.	•									
	Waltheria indica	•	•								
	Waltheria virgata	•									
Marsileaceae	*Marsilea drummondii*	•	•								
	Marsilea hirsuta	•	•								
Meliaceae	*Owenia reticulata*	•	•								
Menispermaceae	*Tinospora smilacina*	•									
Molluginaceae	*Glinus oppositifolius*	•	•								
	Hypertelis cerviana	•									
	Trigastrotheca molluginea	•	•								
Montiaceae	*Calandrinia pentavalvis*	•	•								
	Calandrinia pentavalvis Obbens	•									
	Calandrinia ptychosperma	•									
	Calandrinia pumila	•	•								
	Calandrinia quadrivalvis	•	•								
	Calandrinia stagnensis	•	•								
	Calandrinia tepperiana	•									
Moraceae	*Ficus aculeata*	•	•								
	Ficus aculeata var. *indecora*	•									
	Ficus brachypoda	•	•								
Myrtaceae	*Corymbia aspera*	•									
	Corymbia candida	•	•								
	Corymbia candida subsp. *lautifolia*	•									
	Corymbia deserticola subsp. *deserticola*	•									

Family	Taxon	Source						Conservation Code			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
Myrtaceae cont.	*Corymbia flavescens*	•	•								
	Corymbia hamersleyana	•	•								
	Corymbia opaca	•	•								
	Corymbia terminalis		•								
	Corymbia zygophylla	•	•								
	Eucalyptus camaldulensis		•								
	Eucalyptus camaldulensis subsp. *obtusa*	•									
	Eucalyptus camaldulensis subsp. *refulgens*	•									
	Eucalyptus leucophloia	•									
	Eucalyptus patellaris		•								
	Eucalyptus victrix	•	•								
	Melaleuca argentea	•	•								
	Melaleuca glomerata	•	•								
	Melaleuca lasiandra	•	•								
	Melaleuca linophylla	•									
	Osbornia octodonta	•	•								
Nyctaginaceae	*Boerhavia coccinea*	•									
	Boerhavia repleta	•	•								
Oleaceae	*Jasminum didymum* subsp. *lineare*	•									
Onagraceae	*Ludwigia perennis*	•									
Papaveraceae	*Argemone ochroleuca* subsp. *ochroleuca*	•									Y
Passifloraceae	*Passiflora foetida*		•								Y
	Passiflora foetida var. *hispida*	•									Y
Pedaliaceae	*Josephinia eugeniae*	•									
	Josephinia sp. Woodstock (A.A. Mitchell PRP 989)			•				P1			
Phrymaceae	*Glossostigma diandrum*	•									
	Peplidium aithocheilum	•									
	Peplidium muelleri	•	•								
	Uvedalia linearis		•								
	Uvedalia linearis var. *linearis*	•									
Phyllanthaceae	*Cathetus exilis*	•									
	Dendrophyllanthus erwinii	•	•								
	Flueggea virosa subsp. *melanthesoides*	•									
	Nellica maderaspatensis	•									
	Phyllanthus hebecarpus			•				P3			
Pittosporaceae	*Pittosporum angustifolium*	•									
Plantaginaceae	*Stemodia grossa*	•									
	Stemodia lathraia	•	•								
	Stemodia viscosa	•	•								
Plumbaginaceae	*Muellerolimon salicorniaceum*	•	•								
Poaceae	*Andropogon gayanus*	•									Y
	Aristida burbidgeae	•									

Family	Taxon	Source						Conservation Code			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
Poaceae cont.	*Aristida contorta*	•									
	Aristida holathera	•	•								
	Aristida holathera var. *holathera*	•									
	Aristida hygrometrica	•	•								
	Aristida inaequiglumis	•	•								
	Bothriochloa ewartiana	•									
	Cenchrus ciliaris	•	•								Y
	Cenchrus setaceus	•									Y
	Cenchrus setiger	•	•								Y
	Chloris barbata	•									Y
	Chloris pectinata	•									
	Chloris pumilio	•									
	Chloris virgata	•	•								Y
	Chrysopogon fallax	•	•								
	Cymbopogon ambiguus	•									
	Cymbopogon bombycinus	•									
	Cynodon dactylon	•									Y
	Dactyloctenium aegyptium	•									Y
	Dactyloctenium radulans	•									
	Dichanthium sericeum		•								
	Dichanthium sericeum subsp. *humilius*	•									
	Digitaria brownii	•	•								
	Digitaria ciliaris	•									Y
	Diplachne fusca	•	•								
	Diplachne fusca subsp. *fusca*	•									
	Echinochloa colona	•	•								Y
	Elytrophorus spicatus	•	•								
	Enneapogon lindleyanus	•									
	Enneapogon polyphyllus	•									
	Enneapogon purpurascens	•									
	Enneapogon robustissimus	•									
	Enteropogon ramosus	•									
	Eragrostis crateriformis	•	•	•	•			P3			
	Eragrostis cumingii	•	•								
	Eragrostis dielsii	•	•								
	Eragrostis elongata	•	•								
	Eragrostis eriopoda	•	•								
	Eragrostis falcata	•	•								
	Eragrostis fallax	•	•								
	Eragrostis minor	•	•								Y
	Eragrostis pilosa	•	•								Y
	Eragrostis setifolia	•									

Family	Taxon	Source						Conservation Code			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
Poaceae cont.	*Eragrostis speciosa*	•	•								
	Eragrostis tenellula	•									
	Eragrostis xerophila	•									
	Eriachne aristidea	•	•								
	Eriachne benthamii	•									
	Eriachne ciliata	•	•								
	Eriachne festucacea	•									
	Eriachne glauca	•	•								
	Eriachne glauca var. *glauca*	•									
	Eriachne helmsii	•									
	Eriachne melicacea	•	•								
	Eriachne mucronata	•	•								
	Eriachne obtusa	•	•								
	Eriachne pulchella	•	•								
	Eriachne sulcata	•	•								
	Eulalia aurea	•	•								
	Heteropogon contortus	•	•								
	Iseilema membranaceum	•									
	Lamarckia aurea	•									Y
	Panicum australiense	•	•								
	Panicum decompositum	•	•								
	Panicum majusculum	•	•								
	Paraneurachne muelleri	•	•								
	Paspalidium basicladum	•	•								
	Paspalidium clementii	•									
	Paspalidium rarum	•									
	Paspalidium tabulatum	•									
	Paspalum fasciculatum	•									Y
	Perotis rara	•	•								
	Phragmites karka	•									
	Schizachyrium fragile	•	•								
	Setaria dielsii	•									
	Setaria sphacelata	•									Y
	Setaria surgens	•									
	Sorghum plumosum	•									
	Sorghum stipoideum	•	•								
	Spinifex longifolius	•									
	Sporobolus actinocladus	•	•								
	Sporobolus australasicus	•	•								
	Sporobolus mitchellii	•									
	Sporobolus virginicus	•	•								
	Themeda avenacea	•									

Family	Taxon	Source						Conservation Code			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
Poaceae cont.	*Themeda* sp. Hamersley Station (M.E. Trudgen 11431)			•				P3			
	Themeda sp. Panorama (J. Nelson et al. NS 102)			•				P1			
	Themeda triandra	•									
	Tragus australianus	•									
	Triodia angusta	•	•								
	Triodia basitricha			•				P3			
	Triodia chichesterensis	•	•	•				P3			
	Triodia epactia	•	•								
	Triodia lanigera	•	•								
	Triodia longiceps	•	•								
	Triodia schinzii	•	•								
	Triodia scintillans	•									
	Triodia secunda	•	•								
	Triodia vanleeuwenii	•									
	Tripogon loliiformis	•									
	Triraphis mollis	•									
	Urochloa holosericea		•								
	Urochloa holosericea subsp. *velutina*	•									
	Whiteochloa airoides		•								
	Whiteochloa cymbiformis	•	•								
	Xerochloa barbata	•									
	Xerochloa imberbis	•	•								
Polygalaceae	*Polygala galeocephala*	•	•								
	Polygala saccopetala	•									
Portulacaceae	*Portulaca australis*	•									
	Portulaca decipiens	•									
	Portulaca oleracea	•	•								
	Portulaca pilosa	•									Y
Primulaceae	*Aegiceras corniculatum*	•	•								
Proteaceae	*Grevillea pyramidalis*	•	•								
	Grevillea wickhamii		•								
	Grevillea wickhamii subsp. *hispidula*	•									
	Hakea lorea subsp. *lorea*	•									
Pteridaceae	*Cheilanthes brownii*	•	•								
Rhamnaceae	*Cryptandra monticola*		•								
	Ziziphus mauritiana						•				Y
Rhizophoraceae	*Bruguiera exaristata*	•	•								
	Ceriops australis	•	•								
	Rhizophora stylosa	•	•								
Rosaceae	*Rubus anglocandicans*						•				Y
	Rubus laudatus						•				Y
	Rubus rugosus						•				Y

Family	Taxon	Source						Conservation Code			Introduced
		NM	ALA	WAH	TPFL	EPBC	WAOL	DBCA	BC Act	EPBC Act	
Rosaceae	*Rubus ulmifolius*						•				
Rubiaceae	*Dentella asperata*	•	•								
	Dolichocarpa sp. Hamersley Station (A.A. Mitchell PRP 1479)			•				P3			
	Scleromitrion galioides	•									
	Synaptantha tillaeacea	•	•								
	Synaptantha tillaeacea var. *tillaeacea*	•									
Santalaceae	*Santalum lanceolatum*	•									
Sapindaceae	*Atalaya hemiglauca*	•									
	Dodonaea coriacea	•	•								
Scrophulariaceae	*Myoporum montanum*	•	•								
Solanaceae	*Nicotiana benthamiana*	•	•								
	Nicotiana occidentalis	•									
	Nicotiana umbratica	•		•				P3			
	Physalis angulata	•									Y
	Solanum cleistogamum	•	•								
	Solanum diversiflorum	•	•								
	Solanum elaeagnifolium						•				Y
	Solanum horridum	•									
	Solanum lasiophyllum	•									
	Solanum linnaeanum						•				Y
	Solanum lucani	•	•								
	Solanum phlomoides	•	•								
Stylidiaceae	*Stylidium desertorum*	•	•								
	Stylidium weeliwolli	•		•				P3			
Tamaricaceae	*Tamarix aphylla*						•				Y
Thymelaeaceae	*Pimelea ammocharis*	•	•								
Verbenaceae	*Lantana camara*						•				Y
Violaceae	*Afrohybanthus aurantiacus*	•	•								
Zygophyllaceae	*Tribulopis angustifolia*	•	•								
	Tribulus hirsutus	•	•								
	Tribulus macrocarpus	•	•								
	Tribulus occidentalis	•	•								

Appendix H: Desktop introduced flora

Family	Taxon	Source				DPP	WoNS	Ecological	Invasiveness
		NatureMap	ALA	EPBC	WAOL				
Aizoaceae	*Trianthema portulacastrum*	•						Not Assessed	Not Assessed
Alismataceae	*Sagittaria platyphylla*				•	•	•	Not Assessed	Not Assessed
Amaranthaceae	*Aerva javanica*	•	•					High	Rapid
	Gomphrena celosioides	•						Low	Unknown
	Pupalia lappacea	•						Not Assessed	Not Assessed
Anacardiaceae	*Mangifera indica*		•					Not Assessed	Not Assessed
Apocynaceae	*Calotropis procera*	•			•	•		Not Assessed	Not Assessed
	Cryptostegia madagascariensis				•	•		Not Assessed	Not Assessed
Araceae	*Pistia stratiotes*				•	•		Not Assessed	Not Assessed
	Zantedeschia aethiopica				•	•		Not Assessed	Not Assessed
Araliaceae	*Hydrocotyle ranunculoides*				•	•		Not Assessed	Not Assessed
Asparagaceae	*Asparagus asparagoides*				•	•	•	Not Assessed	Not Assessed
Asteraceae	*Chondrilla juncea*				•	•		Not Assessed	Not Assessed
	Cyanthillium cinereum var. *cinereum*	•						Not Assessed	Not Assessed
	Erigeron bonariensis	•						Not Assessed	Not Assessed
	Flaveria trinervia	•						Not Assessed	Not Assessed
	Onopordum acaulon				•	•		Not Assessed	Not Assessed
	Silybum marianum				•	•		Not Assessed	Not Assessed
	Symphyotrichum squamatum	•						Not Assessed	Not Assessed
	Tridax procumbens	•						Not Assessed	Not Assessed
	Xanthium spinosum				•	•		Not Assessed	Not Assessed
	Xanthium strumarium				•	•		Not Assessed	Not Assessed
Boraginaceae	*Echium plantagineum*				•	•		Not Assessed	Not Assessed
Cactaceae	*Austrocylindropuntia cylindrica*				•	•	•	Not Assessed	Not Assessed
	Austrocylindropuntia subulata				•	•	•	Not Assessed	Not Assessed
	Cylindropuntia fulgida				•	•		High	Slow
	Cylindropuntia imbricata	•	•		•	•		Not Assessed	Not Assessed
	Cylindropuntia kleiniae				•	•		Not Assessed	Not Assessed
	Cylindropuntia pallida				•	•		Not Assessed	Not Assessed
	Cylindropuntia tunicata				•	•		Not Assessed	Not Assessed
	Opuntia elata	•	•		•	•	•	Not Assessed	Not Assessed
	Opuntia elatior				•	•	•	Not Assessed	Not Assessed
	Opuntia engelmannii				•	•	•	Not Assessed	Not Assessed
	Opuntia ficus-indica				•	•	•	Not Assessed	Not Assessed
	Opuntia microdasys				•	•	•	Not Assessed	Not Assessed
	Opuntia monacantha				•	•	•	Not Assessed	Not Assessed
	Opuntia polyacantha				•	•	•	Not Assessed	Not Assessed
	Opuntia puberula				•	•	•	Not Assessed	Not Assessed
	Opuntia stricta	•			•	•	•	High	Rapid
	Opuntia tomentosa				•	•	•	Not Assessed	Not Assessed

Family	Taxon	Source				DPP	WoNS	Ecological	Invasiveness
		NatureMap	ALA	EPBC	WAOL				
Convolvulaceae	*Distimake dissectus*		•					Not Assessed	Not Assessed
	Distimake dissectus var. *dissectus*	•						Not Assessed	Not Assessed
Cucurbitaceae	*Citrullus amarus*	•	•					Not Assessed	Not Assessed
	Coccinia grandis	•			•	•		Not Assessed	Not Assessed
Euphorbiaceae	*Euphorbia maculata*		•					Not Assessed	Not Assessed
	Euphorbia tirucalli	•	•					Not Assessed	Not Assessed
	Jatropha gossypiifolia				•	•		Not Assessed	Not Assessed
	Ricinus communis	•						Not Assessed	Not Assessed
Fabaceae	*Alhagi maurorum*				•	•		Not Assessed	Not Assessed
	Clitoria ternatea	•						Not Assessed	Not Assessed
	Desmodium scorpiurus	•						Not Assessed	Not Assessed
	Indigofera hochstetteri	•	•					Not Assessed	Not Assessed
	Indigofera oblongifolia	•	•					Not Assessed	Not Assessed
	Indigofera sessiliflora	•						Not Assessed	Not Assessed
	Leucaena leucocephala	•	•					Not Assessed	Not Assessed
	Neltuma glandulosa × *velutina*				•	•	•	Not Assessed	Not Assessed
	Parkinsonia aculeata	•			•	•	•	High	Rapid
	Senna alata				•	•		Not Assessed	Not Assessed
	Senna obtusifolia				•	•		Not Assessed	Not Assessed
	Senna occidentalis	•						Not Assessed	Not Assessed
	Stylosanthes guianensis var. *guianensis*	•						Not Assessed	Not Assessed
	Stylosanthes hamata	•	•					Not Assessed	Not Assessed
	Ulex europaeus				•	•	•	Not Assessed	Not Assessed
	Vachellia farnesiana	•						High	Rapid
Iridaceae	*Moraea flaccida*				•	•		Not Assessed	Not Assessed
	Moraea miniata				•	•		Not Assessed	Not Assessed
Malvaceae	*Gossypium hirsutum*	•	•					Not Assessed	Not Assessed
	Malvastrum americanum	•						High	Rapid
Papaveraceae	*Argemone ochroleuca* subsp. *ochroleuca*	•						Unknown	Rapid
Passifloraceae	*Passiflora foetida*		•					Not Assessed	Not Assessed
	Passiflora foetida var. *hispida*	•						High	Rapid
Poaceae	*Andropogon gayanus*	•						Not Assessed	Not Assessed
	Cenchrus ciliaris	•	•					High	Rapid
	Cenchrus setaceus	•						Not Assessed	Not Assessed
	Cenchrus setiger	•	•					High	Rapid
	Chloris barbata	•						High	Rapid
	Chloris virgata	•	•					High	Rapid
	Cynodon dactylon	•						High	Rapid
	Dactyloctenium aegyptium	•						Not Assessed	Not Assessed
	Digitaria ciliaris	•						Low	Slow

Family	Taxon	Source				DPP	WoNS	Ecological	Invasiveness
		NatureMap	ALA	EPBC	WAOL				
Poaceae cont.	*Echinochloa colona*	•	•					High	Rapid
	Eragrostis minor	•	•					Not Assessed	Not Assessed
	Eragrostis pilosa	•	•					Unknown	Unknown
	Lamarckia aurea	•						Not Assessed	Not Assessed
	Paspalum fasciculatum	•						Not Assessed	Not Assessed
	Setaria sphacelata	•						Low	Rapid
Portulacaceae	*Portulaca pilosa*	•						Not Assessed	Not Assessed
Rhamnaceae	*Ziziphus mauritiana*				•	•		Not Assessed	Not Assessed
Rosaceae	*Rubus anglocandicans*				•	•	•	Not Assessed	Not Assessed
	Rubus laudatus				•	•	•	Not Assessed	Not Assessed
	Rubus rugosus				•	•	•	Not Assessed	Not Assessed
Solanaceae	*Physalis angulata*	•						Unknown	Unknown
	Solanum elaeagnifolium				•	•	•	Not Assessed	Not Assessed
	Solanum linnaeanum				•	•		Not Assessed	Not Assessed
Tamaricaceae	*Tamarix aphylla*				•	•	•	High	Rapid
Verbenaceae	*Lantana camara*				•	•	•	Not Assessed	Not Assessed

Appendix I: Likelihood of occurrence assessment

Taxon	Conservation Code			Habit and Habitat	Habitat within Survey Area	Within Current Known Distribution	Distance to Nearest Record	Pre-Survey Likelihood of Occurrence	Post-Survey Likelihood of Occurrence
	DBCA	BC Act	EPBC Act						
Abutilon sp. Pritzelianum (S. van Leeuwen 5095)	P3			Shrub to 2.5 m. Grey/ green leaves. Fl. Yellow. Sandplain. Sand, sandy loam or sandy clay.	Yes	Yes	Within Survey Area	Confirmed	Confirmed
Rothia indica subsp. *australis*	P3			Prostrate annual, herb, to 0.3 m high, densely covered in spreading hairs. Fl. Apr to Aug. Sandy soils. Sandhills and sandy flats.	Yes	Adjacent	8.5 km ENE	Possible	Confirmed
Eragrostis crateriformis	P3			Annual, grass-like or herb, 0.1-0.5 m high. Fl. Jan to May or Jul. Clayey loam or clay. Creek banks, depressions.	Yes	Yes	1.4 km S	Highly Likely	Likely
Euploca mutica	P3			Low perennial shrub to 0.4m. Fl. White. Flats/ plains, sandplain. Sandy loam, sandy clay often over ironstone.	Yes	Yes	6.8 km SE	Likely	Possible
Gymnanthera cunninghamii	P3			Erect shrub, 1-2 m high. Fl. cream-yellow-green, Jan to Dec. Sandy soils.	Yes	Yes	7.5 km NNE	Likely	Possible
Euphorbia clementii	P3			Erect herb, to 0.6 m high. Gravelly hillsides, stony grounds.	Possible	Adjacent	10.3 km ENE	Possible	Unlikely
Gomphrena leptophylla	P3			Prostrate or erect to spreading annual, herb, to 0.15 m high. Fl. white, Mar to Sep. Sand, sandy to clayey loam, granite, quartzite. Open flats, sandy creek beds, edges salt pans and marshes, stony hillsides.	Likely	Yes	4.8 km N	Possible	Unlikely
Stylidium weeliwolli	P3			Annual, herb, 0.1-0.25 m high, throat appendages 4, rod-shaped. Fl. pink & red, Aug to Sep. Gritty sand soil, sandy clay. Edge of watercourses	Yes	Adjacent	16.6 km SE	Possible	Unlikely
Triodia chichesterensis	P3			Hummock grass to 0.4m. Grey-green leaves and woolly orifice hairs. Non-resinous. Lemmas with hairy mid-lobes. Ironstone, basalt, often with some quartz. Red/ brown sand or loam.	Yes	Adjacent	10.5 km ENE	Possible	Unlikely
Tephrosia rosea var. Port Hedland (A.S. George 1114)	P1			Small to large, open, sprawling shrubs 0.4–1.5 m tall, 1–3.5 m wide. Dense wavy to crisped hairs on stems. Leaves dull green. 5-7 leaflets narrowly obovate to obovate, truncate to emarginate. Fruits woolly, 20–33 mm long, 22–2.9 mm wide, with 2-5 seeds. Grows in coastal and near-coastal locations. Sandy and sandy loam soils.	Unlikely	No	3.6 km WNW	Unlikely	Unlikely
Bulbostylis burbidgeae	P4			Tufted, erect to spreading annual, grass-like or herb (sedge), 0.03-0.25 m high, spikelets in a simple umbel or rarely solitary; stamens 3; involucral bracts long, hairy. Fl. brown, Mar or Jun to Aug. Granitic soils. Granite outcrops, cliff bases.	Unlikely	Yes	6 km NNE	Unlikely	Highly Unlikely
Corchorus sp. Yarrie (J. Bull & D. Roberts CAL 01.05)	P1			Herb or shrub, with hairy stems. Leaves 20-35 mm long, 8-15 mm wide, not lobed; margins crenate or sinuate; hairy, with stellate hairs with scales absent, Sessile glands absent; stipules present but early deciduous (only visible on youngest leaves). Flowering time June. Occurring in drainage lines on or near mesas.	Yes	No	95.7 km E	Unlikely	Highly Unlikely
Dolichocarpa sp. Hamersley Station (A.A. Mitchell PRP 1479)	P3			Spreading annual, herb, 0.05-0.1 m high. Fl. blue, Mar. Cracking clay, basalt. Gently undulating plain with large surface rocks, flat crabholed plain	No?	No	84.3 km ESE	Unlikely	Highly Unlikely
Gomphrena cucullata	P3			Spreading or erect annual, herb, to 0.25 m high, bracteoles forming hoods over the tepals. Fl. white/pink/purple, Feb or May. Red sandy loam, clayey sand. Open floodplains.	Yes	No	29.9 km WNW	Unlikely	Highly Unlikely

Taxon	Conservation Code			Habit and Habitat	Habitat within Survey Area	Within Current Known Distribution	Distance to Nearest Record	Pre-Survey Likelihood of Occurrence	Post-Survey Likelihood of Occurrence
	DBCA	BC Act	EPBC Act						
Gomphrena pusilla	P2			Slender branching annual, herb, to 0.2 m high. Fl. white, Mar to Apr or Jun. Fine beach sand. Behind foredune, on limestone.	No	No	7.8 km N	Unlikely	Highly Unlikely
Josephinia sp. Woodstock (A.A. Mitchell PRP 989)	P1			Woolly stemmed perennial shrub / herb with densely hairy foliage and stems to 0.5 m. Fl. Pink. Occurs in rocky creeklines and on plains	Limited?	No	101.3 km SSE	Unlikely	Highly Unlikely
Nicotiana umbratica	P3			Erect, short-lived annual or perennial, herb, 0.3-0.7 m high. Fl. white, Apr to Jun. Shallow soils. Rocky outcrops.	Yes	Adjacent	43.1 km SSE	Unlikely	Highly Unlikely
Phyllanthus hebecarpus	P3			Shrub to 0.5m Granite outcrops. Red/brown sandy or clayey loam.	Yes	No?	59.2 km SSE	Unlikely	Highly Unlikely
Ptilotus mollis	P4			Compact, perennial shrub, to 0.5 m high, soft grey foliage. Fl. white/pink, May or Sep. Stony hills and screes.	No?	No	11.1 km NE	Unlikely	Highly Unlikely
Terminalia supranitifolia	P3			Spreading, tangled shrub or tree, 1.5-3 m high. Fl. green-yellow, May or Jul or Dec. Sand. Among basalt rocks.	Possible	No	47 km SSE	Unlikely	Highly Unlikely
Vigna triodiophila	P3			Twining or climbing herb. Fl. yellow, March and May. Stony red/brown clay loam. Steep upper slopes.	No	Adjacent	46.9 km SSE	Unlikely	Highly Unlikely
Acacia cyperophylla var. *omearana*	P1			Tree, 4-10 m high, 'minni-ritchi' bark. Fl. yellow, Mar to Apr. Stony & gritty alluvium. Along drainage lines.	Yes	No	103.3 km E	Highly Unlikely	Highly Unlikely
Acacia leeuweniana	P1			Narrow, obconic tree, to 14 m high, bark minni ritchi; inflorescence in spikes. Gritty, skeletal red-grey sandy loam, light orange-brown gravelly sand, granite. In rock fissures in outcrops, among boulders.	Yes	No	63.6 km SSE	Highly Unlikely	Highly Unlikely
Acacia levata	P3			Spreading, multi-stemmed shrub, 1-3 m high, to 5 m wide. Fl. yellow, May. Sand or sandy loam over granite. Hillslopes.	No?	No	66.6 km S	Highly Unlikely	Highly Unlikely
Atriplex eremitis	P1			Perennial, erect and open shrub: 0.40 m high and 0.5 m wide. Green flower. Claypan, plain.	Yes	No	52.4 km NE	Highly Unlikely	Highly Unlikely
Bonamia oblongifolia	P3			Perennial, herb or shrub. Fl. blue, Feb. Sandy or gravelly soils.	Yes	No	201.5 km NE	Highly Unlikely	Highly Unlikely
Euphorbia inappendiculata var. *inappendiculata*	P2			Prostrate annual herb, to 0.1 m high. Red brown clay loam. Flat plain, cracking clay floodplain, gentle slopes.	Yes	No	84.3 km E	Highly Unlikely	Highly Unlikely
Euploca argyrea	P1			Erect perennial herb. Flowers white. Loose rubble on limestone ridge.	Limited	One record	104.2 km SSE	Highly Unlikely	Highly Unlikely
Euploca parviantrum	P1			Erect annual, herb, to 0.15 m high. Fl. Feb to Jun. Sandy soils. Flats, plains, rocky slopes. Flower white. On 'spinifex plain'.	Yes	No	66 km ENE	Highly Unlikely	Highly Unlikely
Helichrysum oligochaetum	P1			Erect annual, herb, to ca 0.25 m high. Fl. yellow, Aug to Nov. Red clay. Alluvial plains.	Yes	No	132.7 km W	Highly Unlikely	Highly Unlikely
Heliotropium murinum	P3			Short-lived perennial, herb, up to 0.4 m high. Fl. White, May or Sep. Red sand. Plains.	Yes	No	101 km SSE	Highly Unlikely	Highly Unlikely

Taxon	Conservation Code			Habit and Habitat	Habitat within Survey Area	Within Current Known Distribution	Distance to Nearest Record	Pre-Survey Likelihood of Occurrence	Post-Survey Likelihood of Occurrence
	DBCA	BC Act	EPBC Act						
Pentalepis trichodesmoides subsp. *hispida*	P2			0.4-1.0m shrub. Leaves dull green, ovate to lanceolate, acute to acuminate, both surfaces covered with swollen hair bases. Hairs are white. Flowers Aug to Sep. Achenes (old fruiting heads) resent Aug- Apr. Hillslope, hillcrest at altitudes to 1150m. Basaltic soils.	Limited?	No	127 km SW	Highly Unlikely	Highly Unlikely
Quoya zonalis	T	EN		Erect shrub to 2m. Stems and branches with dense indumentum of white, cream, or yellow branched hairs. Opposite leaves 100mm long by 50 mm wide. Fl. White to pale pink with darker pink spots. July-September. Ovoid to ellipsoid densely tomentose fruit. Hillslope or gorge. Sandy loam, sandy clay loam or sometimes skeletal soils.	Yes	No	65.4 km SE	Highly Unlikely	Highly Unlikely
Rhynchosia bungarensis	P4			Compact, prostrate shrub, to 0.5 m high. Fl. yellow. Pebbly, shingly coarse sand amongst boulders. Banks of flow line in the mouth of a gully in a valley wall.	No	Yes	122.2 km SE	Highly Unlikely	Highly Unlikely
Sida sp. Barlee Range (S. van Leeuwen 1642)	P4			Spreading shrub, to 0.5 m high. Fl. yellow, Aug. Skeletal red soils pockets. Steep slope.	No	No	191.8 km SE	Highly Unlikely	Highly Unlikely
Themeda sp. Hamersley Station (M.E. Trudgen 11431)	P3			Tussocky perennial, grass-like or herb, 0.9-1.8 m high. Fl. Aug. Red clay. Clay pan, grass plain.	Some	No	107.5 km SSW	Highly Unlikely	Highly Unlikely
Themeda sp. Panorama (J. Nelson et al. NS 102)	P1			Themeda sp. Panorama forms large tussocks and its typical habitat is proximity to waterways and colluvial or rocky footslopes, on loam or clay loam, in areas of ironstone range, tussock and hummock grassland or open grassland, occasionally with shrubs or trees.	Limited	No	73.4 km SE	Highly Unlikely	Highly Unlikely
Triodia basitricha	P3			Hummock grass to 0.8 m high, non-resinous. Red/brown clay loam over ironstone. Floodplains, flat hill crest, lower slopes.	Some?	No	74.7 km ESE	Highly Unlikely	Highly Unlikely

Appendix J: Flora composition

Aizoaceae

Trianthema glossostigmum
Trianthema triquetrum

Amaranthaceae

Achyranthes aspera
**Aerva javanica*
Alternanthera angustifolia
Alternanthera nana
Amaranthus undulatus
Ptilotus arthrolasius
Ptilotus astrolasius
Ptilotus axillaris
Ptilotus calostachyus
Ptilotus clementii
Ptilotus exaltatus
Ptilotus fusiformis
Ptilotus murrayi
Ptilotus obovatus
Ptilotus polystachyus

Apocynaceae

**Calotropis procera*
Carissa lanceolata
Cynanchum floribundum

Asteraceae

Olearia fluvialis
Pluchea dentex
Pluchea ferdinandi-muelleri
Pluchea rubelliflora
Pluchea tetranthera
Pterocaulon sphacelatum
Streptoglossa bubakii
Streptoglossa macrocephala
Streptoglossa sp. indet

Bignoniaceae

?*Dolichandrone occidentalis*
Dolichandrone occidentalis

Boraginaceae

Ehretia saligna
Euploca ovalifolia
Trichodesma zeylanicum var. *zeylanicum*

Caryophyllaceae

Polycarpaea corymbosa
Polycarpaea longiflora

Chenopodiaceae

Salsola australis

Cleomaceae

Arivela uncifera
Arivela viscosa

Commelinaceae

Murdannia graminea

Convolvulaceae

Bonamia erecta
Bonamia media
Bonamia pilbarensis
Distimake davenportii
Duperreya commixta
Evolvulus alsinoides var. *decumbens*
Evolvulus alsinoides var. *villosicalyx*
Ipomoea muelleri
Ipomoea polymorpha
Polymeria ambigua

Cucurbitaceae

Cucumis melo
Cucumis variabilis

Cyperaceae

Bulbostylis barbata
Cyperus blakeanus
Cyperus difformis
Cyperus iria
Cyperus ixiocarpus
Cyperus squarrosus
Cyperus vaginatus
**Cyperus vorsteri*
Fimbristylis dichotoma

Elatinaceae

Bergia perennis subsp. *perennis*

Euphorbiaceae

Euphorbia australis var. *subtomentosa*
Euphorbia coghlanii
**Euphorbia hirta*
Euphorbia trigonosperma

Euphorbia vaccaria var. *vaccaria*
Microstachys chamaelea

Fabaceae

Acacia acradenia
Acacia ampliceps
Acacia ancistrocarpa
Acacia ayersiana
Acacia colei var. *colei*
Acacia holosericea
Acacia inaequilatera
Acacia melleodora
Acacia pyrifolia var. *pyrifolia*
Acacia sericophylla
Acacia sp. Indet
Acacia sphaerostachya
Acacia stellaticeps
Acacia stellaticeps x *trachycarpa*
Acacia stenophylla
Acacia synchronicia
Acacia trachycarpa
Acacia trachycarpa x *tumida* var. *pilbarensis*
Acacia tumida var. *pilbarensis*
Aeschynomene indica
Cajanus cinereus
Crotalaria cunninghamii subsp. *sturtii*
Cullen martinii
Cullen stipulaceum
Grona filiformis
Indigofera colutea
Indigofera linifolia
Indigofera monophylla
**Indigofera oblongifolia*
Leptosema anomalum
Neptunia dimorphantha
Petalostylis labicheoides
Rhynchosia minima
Rothia indica subsp. *australis* (P3)
Senna artemisioides subsp. *oligophylla*
Senna glutinosa subsp. *glutinosa*
Senna notabilis
Senna venusta
Sesbania cannabina
**Stylosanthes hamata*
Tephrosia sp. B Kimberley Flora (C.A. Gardner 7300)
Tephrosia sp. Bungaroo Creek (M.E. Trudgen 11601)
Tephrosia sp. NW Eremaean (S. van Leeuwen et al. PBS 0356)

Vigna lanceolata

Goodeniaceae

Goodenia forrestii
Goodenia lamprosperma
Goodenia microptera
Goodenia stobbsiana
Scaevola parvifolia subsp. *pilbarae*
Scaevola spinescens

Hemerocallidaceae

Corynotheca pungens

Lamiaceae

Clerodendrum tomentosum
Clerodendrum tomentosum var. *lanceolatum*

Lauraceae

Cassytha filiformis

Malvaceae

Abutilon lepidum
Abutilon otocarpum
Abutilon sp. Pritzelianum (S. van Leeuwen 5095) (P3)
Corchorus elachocarpus
Corchorus incanus subsp. *incanus*
Corchorus sp. Indet
Corchorus tridens
Gossypium australe
Hibiscus leptocladus
Hibiscus solanifolius
**Malvastrum americanum*
Seringia nephrosperma
Sida arenicola
Sida echinocarpa
Sida rohlenae subsp. *rohlenae*
Sida sp. L (A.M. Ashby 4202)
Sida sp. Pilbara (A.A. Mitchell PRP 1543)
Sida sp. spiciform panicles (E. Leyland s.n. 14/8/90)
Triumfetta chaetocarpa
Waltheria indica

Marsileaceae

Marsilea hirsuta

Meliaceae

Owenia reticulata

Molluginaceae

Trigastrotheca molluginea

Montiaceae

Calandrinia polyandra
Calandrinia pumila
Calandrinia sp. Indet
Calandrinia tepperiana

Myrtaceae

Corymbia candida
Corymbia candida subsp. ×*lautifolia*
Corymbia deserticola
Corymbia ?flavescens
Corymbia hamersleyana
Corymbia opaca
Corymbia zygophylla
Eucalyptus camaldulensis
Eucalyptus camaldulensis subsp. *refulgens*
Eucalyptus victrix
Melaleuca argentea
Melaleuca glomerata
Melaleuca lasiandra
Melaleuca linophylla

Nyctaginaceae

Boerhavia coccinea
Boerhavia sp. indet

Phrymaceae

Peplidium muelleri

Phyllanthaceae

Nellica maderaspatensis

Plantaginaceae

Stemodia grossa

Poaceae

Aristida contorta
Aristida holathera var. *holathera*
Aristida inaequiglumis
**Cenchrus ciliaris*
**Cenchrus setiger*
Chloris pumilio
Chrysopogon fallax
Cymbopogon ambiguus
Cynodon prostratus
Dactyloctenium radulans
Digitaria brownii
**Digitaria ciliaris*
**Echinochloa colona*

Eragrostis cumingii
Eragrostis eriopoda
Eragrostis sp. indet
Eragrostis speciosa
Eragrostis tenellula
Eriachne aristidea
Eriachne benthamii
Eriachne glauca var. *glauca*
Eriachne helmsii
Eriachne mucronata
Eriachne obtusa
Eriachne pulchella subsp. *dominii*
Eulalia aurea
Iseilema dolichotrichum
Panicum australiense var. *australiense*
Paraneurachne muelleri
Paspalidium basicladum
Paspalidium rarum
Paspalidium tabulatum
**Setaria verticillata*
Sporobolus australasicus
Triodia epactia
Triodia lanigera
Triodia longiceps
Triodia schinzii
Xerochloa barbata

Polygalaceae

Polygala galeocephala

Portulacaceae

Portulaca cyclophylla
Portulaca filifolia
Portulaca oleracea

Proteaceae

Grevillea pyramidalis
Grevillea wickhamii
Hakea lorea subsp. *lorea*

Rubiaceae

Dentella asperata
Synaptantha tillaeacea

Sapindaceae

Dodonaea coriacea

Solanaceae

Solanum cleistogamum
Solanum diversiflorum
Solanum phlomoides
Solanum sp. Indet

Thymelaeaceae

Pimelea ammocharis

Violaceae

Afrohybanthus aurantiacus

Zygophyllaceae

Tribulopis angustifolia
Tribulus hirsutus
Tribulus occidentalis

Appendix K: Site by species matrix

Taxon	API-006	API-009	API-010	API-011	API-012	API-016	API-017	API-018	API-019	API-020	API-021	API-024	API-026	API-027	API-028	API-029	API-031	API-032	API-033	API-036	API-039	API-040	API-041	API-042	API-044	API-047	API-048	API-050	API-053	API-056	API-060	API-062	API-063	API-065	API-066	API-067
Abutilon lepidum		x														x							x								x				
Abutilon otocarpum		x	x																																	x
Abutilon sp. Pritzelianum (S. van Leeuwen 5095)		x										x																					x			
Acacia acradenia								x			x	x	x	x																						
Acacia ancistrocarpa		x						x		x	x	x	x	x	x	x	x			x	x		x		x		x						x		
Acacia colei var. *colei*		x		x							x		x	x	x		x	x			x		x		x		x			x					
Acacia holosericea		x	x									x								x													x		x
Acacia inaequilatera			x					x		x	x	x	x			x	x			x	x		x				x		x				x		
Acacia melleodora															x																					
Acacia pyrifolia var. *pyrifolia*						x	x		x				x																		x	x			x	
Acacia sericophylla				x								x	x	x	x	x	x			x	x								x				x		x
Acacia sphaerostachya													x				x			x	x															
Acacia stellaticeps			x					x			x		x	x	x	x	x	x	x	x	x		x		x		x		x				x	x		x
Acacia stellaticeps x *trachycarpa*															x																					
Acacia synchronicia					x														x																	
Acacia trachycarpa	x	x				x	x	x	x						x	x															x	x	x			
Acacia trachycarpa x *tumida* var. *pilbarensis*																																	x			
Acacia tumida var. *pilbarensis*	x					x		x			x																				x	x	x			
Achyranthes aspera																																				
Aeschynomene indica		x	x																							x					x	x	x	x		x
Afrohybanthus aurantiacus	x	x					x		x									x													x	x	x	x	x	
Alternanthera angustifolia																																				
Alternanthera nana		x																																		
Amaranthus undulatus			x	x										x																						x
Aristida contorta										x																				x						
Aristida holathera var. *holathera*		x	x	x	x	x			x		x	x	x	x	x	x	x	x	x				x						x		x	x	x	x	x	x
Aristida inaequiglumis		x		x																														x		
Arivela uncifera	x												x	x		x															x	x				
Arivela viscosa	x	x		x			x		x			x	x			x										x				x	x	x	x		x	
Boerhavia coccinea		x	x	x		x						x	x	x		x	x														x	x	x			x
Bonamia erecta			x		x	x						x	x	x		x	x			x	x	x					x		x				x	x		x
Bonamia media	x	x	x	x												x																	x	x		x
Bonamia pilbarensis						x								x																						
Bulbostylis barbata			x			x							x	x		x						x		x		x					x	x	x			
Cajanus cinereus	x	x				x	x																									x	x			
Calandrinia pumila																						x		x		x										
Calandrinia tepperiana							x																													
Carissa lanceolata	x	x											x										x				x			x						
Cassytha filiformis												x	x	x	x	x	x	x					x											x		
Chloris pumilio	x																														x					
Chrysopogon fallax		x	x	x							x	x	x	x		x	x	x			x		x		x									x		x
Clerodendrum tomentosum														x				x																		
Corchorus elachocarpus				x								x	x			x													x							
Corchorus incanus subsp. *incanus*	x	x	x	x		x	x						x		x												x				x	x	x	x		x
Corymbia candida												x						x					x		x	x			x	x						
Corymbia candida subsp. *lautifolia*														x	x	x																				
Corymbia deserticola												x																									

Taxon	API-006	API-009	API-010	API-011	API-012	API-016	API-017	API-018	API-019	API-020	API-021	API-024	API-026	API-027	API-028	API-029	API-031	API-032	API-033	API-036	API-039	API-040	API-041	API-042	API-044	API-047	API-048	API-050	API-053	API-056	API-060	API-062	API-063	API-065	API-066	API-067
Corymbia hamersleyana																x																				
Corymbia zygophylla													x	x	x	x	x			x	x						x									
Corynotheca pungens							x																								x	x	x			
Crotalaria cunninghamii subsp. *sturtii*							x		x																							x				
Cucumis melo																																x				
Cucumis variabilis	x											x											x								x		x			
Cullen martinii		x											x																							
Cymbopogon ambiguus									x																											
Cynanchum floribundum		x	x						x					x				x					x								x			x		
Cynodon prostratus																																				
Cyperus blakeanus				x																																
Cyperus difformis																																				
Cyperus iria																										x										
Cyperus ixiocarpus							x																													
Cyperus squarrosus																																				
Cyperus vaginatus		x					x																												x	
Dactyloctenium radulans	x	x			x																								x		x					
Dentella asperata		x					x		x																						x	x				
Digitaria brownii																																				
Distimake davenportii			x																													x				
Dodonaea coriacea				x									x	x		x																				
Dolichandrone occidentalis																																				
Duperreya commixta						x	x	x	x			x	x	x	x								x				x				x		x	x		
Eragrostis cumingii		x																								x										
Eragrostis eriopoda			x	x		x					x	x	x		x	x	x				x						x				x	x	x	x		x
Eragrostis speciosa		x																								x										
Eriachne aristidea													x											x							x	x				x
Eriachne benthamii																										x				x			x			
Eriachne glauca var. *glauca*																										x				x						
Eriachne helmsii																																				
Eriachne mucronata																																				x
Eriachne obtusa			x			x									x							x		x				x			x		x	x		x
Eriachne pulchella subsp. *dominii*																	x																			
Eucalyptus camaldulensis	x	x					x		x																						x				x	
Eucalyptus victrix				x														x					x		x											
Eulalia aurea		x																															x			
Euphorbia australis var. *subtomentosa*						x						x	x	x		x																x				
Euphorbia coghlanii	x	x							x			x			x							x										x	x		x	
Euphorbia trigonosperma		x																																		
Euphorbia vaccaria var. *vaccaria*	x		x				x		x			x	x	x																		x	x	x			x
Euploca ovalifolia										x																											
Evolvulus alsinoides		x	x										x		x								x										x	x		x
Fimbristylis dichotoma				x	x													x	x				x	x	x											
Goodenia forrestii													x			x																				x
Goodenia lamprosperma	x	x		x																						x				x	x	x			x	
Goodenia microptera												x	x	x		x																				
Gossypium australe												x				x																				x

Taxon	API-006	API-009	API-010	API-011	API-012	API-016	API-017	API-018	API-019	API-020	API-021	API-024	API-026	API-027	API-028	API-029	API-031	API-032	API-033	API-036	API-039	API-040	API-041	API-042	API-044	API-047	API-048	API-050	API-053	API-056	API-060	API-062	API-063	API-065	API-066	API-067
Grevillea pyramidalis														x															x					x		x
Grevillea wickhamii												x																								
Grona filiformis																			x																	x
Hakea lorea subsp. *lorea*			x					x					x	x	x	x	x	x		x	x		x				x							x		x
Hibiscus leptocladus													x		x	x																		x		
Hibiscus solanifolius																										x										
Indigofera colutea																x																				
Indigofera linifolia			x	x															x																	x
Indigofera monophylla			x									x	x	x		x	x	x		x	x	x	x				x		x					x		x
Ipomoea muelleri	x	x																													x					
Ipomoea polymorpha		x		x																											x	x	x			
Leptosema anomalum												x	x		x	x	x				x															
Marsilea hirsuta		x																								x				x						
Melaleuca argentea		x					x		x																						x	x			x	
Melaleuca glomerata		x																													x					
Melaleuca lasiandra																													x							
Melaleuca linophylla	x	x					x		x																							x			x	
Microstachys chamaelea									x																											
Murdannia graminea																																				
Nellica maderaspatensis	x																																		x	
Olearia fluvialis																																			x	
Owenia reticulata			x																															x		x
Panicum australiense var. *australiense*			x	x								x	x	x	x	x			x			x		x						x	x	x	x		
Paraneurachne muelleri			x			x						x	x	x		x	x			x	x												x		x
Paspalidium rarum		x							x																	x									
Paspalidium tabulatum																															x					
Peplidium muelleri																																				
Petalostylis labicheoides																																x				
Pimelea ammocharis			x									x	x										x													x
Pluchea ferdinandi-muelleri																													x							
Pluchea rubelliflora																														x			x		x	
Pluchea tetranthera				x	x						x	x			x	x		x	x		x	x	x	x	x		x	x	x							
Polycarpaea longiflora			x			x							x			x						x		x							x	x				
Polygala galeocephala												x	x	x		x																x				
Polymeria ambigua				x							x	x	x			x													x							
Portulaca cyclophylla					x																	x				x		x		x						
Portulaca filifolia																															x		x			
Portulaca oleracea	x	x		x						x		x	x	x		x	x													x	x	x				
Pterocaulon sphacelatum	x												x	x																	x					
Ptilotus astrolasius												x	x	x	x	x	x			x							x							x		
Ptilotus axillaris													x			x																				
Ptilotus calostachyus												x																								
Ptilotus clementii																																		x		
Ptilotus exaltatus													x																							
Ptilotus fusiformis				x			x		x	x		x	x	x		x															x	x			x	
Ptilotus murrayi					x																															
Ptilotus obovatus																x																				

Taxon	API-006	API-009	API-010	API-011	API-012	API-016	API-017	API-018	API-019	API-020	API-021	API-024	API-026	API-027	API-028	API-029	API-031	API-032	API-033	API-036	API-039	API-040	API-041	API-042	API-044	API-047	API-048	API-050	API-053	API-056	API-060	API-062	API-063	API-065	API-066	API-067
Ptilotus polystachyus																																				
Rhynchosia minima		x											x																							
Rothia indica subsp. *australis*															x							x														
Scaevola parvifolia subsp. *pilbarae*													x		x																					
Scaevola spinescens																	x																			
Senna artemisioides subsp. *oligophylla*													x			x	x	x									x						x			
Senna glutinosa subsp. *glutinosa*																	x																			
Senna notabilis		x		x		x				x		x	x	x		x						x		x		x				x	x					x
Seringia nephrosperma																																				
Sida arenicola												x	x	x			x																			
Sida echinocarpa			x									x	x																					x		
Sida rohlenae subsp. *rohlenae*		x	x	x		x						x	x	x		x							x								x	x	x			x
Sida sp. L (A.M. Ashby 4202)		x																																		
Sida sp. Pilbara (A.A. Mitchell PRP 1543)											x	x	x	x		x							x				x		x					x		
Sida sp. spiciform panicles (E. Leyland s.n. 14/8/90)												x	x																							
Solanum cleistogamum		x																																		
Solanum phlomoides										x			x	x																						
Sporobolus australasicus										x							x																			
Stemodia grossa	x																																		x	
Streptoglossa bubakii			x									x	x	x		x																				
Synaptantha tillaeacea												x				x																				
Tephrosia sp. B Kimberley Flora (C.A. Gardner 7300)			x	x	x							x	x		x	x							x												
Tephrosia sp. Bungaroo Creek (M.E. Trudgen 11601)													x																							
Tephrosia sp. NW Eremaean (S. van Leeuwen et al. PBS 0356)																x																				
Trianthema glossostigmum												x				x															x		x			
Trianthema triquetrum	x																											x	x							
Tribulopis angustifolia																																x				
Tribulus hirsutus												x	x	x		x																				
Tribulus occidentalis	x	x																														x				
Trichodesma zeylanicum var. *zeylanicum*							x																												x	
Trigastrotheca molluginea			x	x		x				x		x	x	x	x	x	x	x														x			
Triodia epactia	x	x		x	x	x		x	x	x	x		x		x			x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	
Triodia lanigera																	x														x	x		x		
Triodia longiceps					x														x			x		x	x			x	x							
Triodia schinzii			x									x	x	x	x	x	x		x		x													x		x
Triumfetta chaetocarpa		x	x			x																	x								x	x	x			x
Vigna lanceolata		x																																		
Waltheria indica		x	x																												x		x	x		x
Xerochloa barbata					x																															

Taxon	API-071	API-072	API-073	API-076	API-077	API-078	API-079	API-080	API-081	API-082
Abutilon lepidum								x		
Abutilon otocarpum		x								
Abutilon sp. Pritzelianum (S. van Leeuwen 5095)										
Acacia acradenia										
Acacia ancistrocarpa										
Acacia colei var. *colei*					x	x		x		
Acacia holosericea		x	x	x	x			x	x	x
Acacia inaequilatera		x	x	x	x		x			
Acacia melleodora										
Acacia pyrifolia var. *pyrifolia*										
Acacia sericophylla		x	x	x	x			x		
Acacia sphaerostachya			x							
Acacia stellaticeps		x	x	x	x		x	x	x	
Acacia stellaticeps x *trachycarpa*										
Acacia synchronicia										
Acacia trachycarpa										
Acacia trachycarpa x *tumida* var. *pilbarensis*										
Acacia tumida var. *pilbarensis*										
Achyranthes aspera				x				x		
Aeschynomene indica		x								
Afrohybanthus aurantiacus		x		x	x			x	x	
Alternanthera angustifolia								x		
Alternanthera nana										
Amaranthus undulatus		x								
Aristida contorta	x					x				
Aristida holathera var. *holathera*	x	x	x	x	x			x		
Aristida inaequiglumis				x			x			
Arivela uncifera										
Arivela viscosa										
Boerhavia coccinea	x	x								
Bonamia erecta		x		x			x			
Bonamia media		x								
Bonamia pilbarensis										
Bulbostylis barbata	x					x				
Cajanus cinereus										
Calandrinia pumila	x									
Calandrinia tepperiana										
Carissa lanceolata			x					x		
Cassytha filiformis		x	x		x			x	x	
Chloris pumilio	x									
Chrysopogon fallax		x		x	x		x	x		
Clerodendrum tomentosum				x						
Corchorus elachocarpus										
Corchorus incanus subsp. *incanus*	x	x	x	x	x			x		
Corymbia candida					x					
Corymbia candida subsp. *lautifolia*								x	x	
Corymbia deserticola										

Taxon	API-071	API-072	API-073	API-076	API-077	API-078	API-079	API-080	API-081	API-082
Corymbia hamersleyana					x					
Corymbia zygophylla										
Corynotheca pungens										
Crotalaria cunninghamii subsp. *sturtii*										
Cucumis melo										
Cucumis variabilis		x								
Cullen martinii										
Cymbopogon ambiguus										
Cynanchum floribundum		x								
Cynodon prostratus						x				
Cyperus blakeanus								x	x	
Cyperus difformis	x									
Cyperus iria										
Cyperus ixiocarpus										
Cyperus squarrosus	x									
Cyperus vaginatus										
Dactyloctenium radulans	x									
Dentella asperata										
Digitaria brownii							x			
Distimake davenportii										
Dodonaea coriacea			x							
Dolichandrone occidentalis				x						
Duperreya commixta			x	x	x		x	x	x	
Eragrostis cumingii										
Eragrostis eriopoda		x	x	x	x			x		
Eragrostis speciosa								x		
Eriachne aristidea	x					x				
Eriachne benthamii	x									
Eriachne glauca var. *glauca*	x									
Eriachne helmsii		x								
Eriachne mucronata							x			
Eriachne obtusa	x	x					x	x	x	
Eriachne pulchella subsp. *dominii*						x				
Eucalyptus camaldulensis										
Eucalyptus victrix								x		
Eulalia aurea							x			
Euphorbia australis var. *subtomentosa*										
Euphorbia coghlanii										
Euphorbia trigonosperma										
Euphorbia vaccaria var. *vaccaria*										
Euploca ovalifolia										
Evolvulus alsinoides		x	x	x	x				x	
Fimbristylis dichotoma						x				
Goodenia forrestii										
Goodenia lamprosperma								x		
Goodenia microptera										
Gossypium australe										

Taxon	API-071	API-072	API-073	API-076	API-077	API-078	API-079	API-080	API-081	API-082
Grevillea pyramidalis				x						
Grevillea wickhamii										
Grona filiformis										
Hakea lorea subsp. *lorea*			x							
Hibiscus leptocladus				x						
Hibiscus solanifolius										
Indigofera colutea										
Indigofera linifolia		x								
Indigofera monophylla		x	x	x	x		x			
Ipomoea muelleri										
Ipomoea polymorpha										
Leptosema anomalum									x	
Marsilea hirsuta	x									
Melaleuca argentea										
Melaleuca glomerata										
Melaleuca lasiandra										
Melaleuca linophylla										
Microstachys chamaelea										
Murdannia graminea								x		
Nellica maderaspatensis										
Olearia fluvialis										
Owenia reticulata		x		x						
Panicum australiense var. *australiense*		x						x		
Paraneurachne muelleri		x		x						
Paspalidium rarum	x									
Paspalidium tabulatum										
Peplidium muelleri	x									
Petalostylis labicheoides										
Pimelea ammocharis										
Pluchea ferdinandi-muelleri									x	
Pluchea rubelliflora										
Pluchea tetranthera						x		x	x	
Polycarpaea longiflora										
Polygala galeocephala										
Polymeria ambigua										
Portulaca cyclophylla	x					x				
Portulaca filifolia	x	x				x				
Portulaca oleracea	x	x								
Pterocaulon sphacelatum										
Ptilotus astrolasius			x	x			x			
Ptilotus axillaris										
Ptilotus calostachyus			x							
Ptilotus clementii										
Ptilotus exaltatus										
Ptilotus fusiformis										
Ptilotus murrayi										
Ptilotus obovatus										

Taxon	API-071	API-072	API-073	API-076	API-077	API-078	API-079	API-080	API-081	API-082
Ptilotus polystachyus		x	x							
Rhynchosia minima								x		
Rothia indica subsp. *australis*										
Scaevola parvifolia subsp. *pilbarae*			x							
Scaevola spinescens			x							
Senna artemisioides subsp. *oligophylla*										
Senna glutinosa subsp. *glutinosa*										
Senna notabilis	x	x						x		
Seringia nephrosperma					x					
Sida arenicola										
Sida echinocarpa										
Sida rohlenae subsp. *rohlenae*		x						x		
Sida sp. L (A.M. Ashby 4202)		x								
Sida sp. Pilbara (A.A. Mitchell PRP 1543)			x	x	x		x	x		
Sida sp. spiciform panicles (E. Leyland s.n. 14/8/90)										
Solanum cleistogamum		x	x					x		
Solanum phlomoides							x			
Sporobolus australasicus						x				
Stemodia grossa										
Streptoglossa bubakii										
Synaptantha tillaeacea										
Tephrosia sp. B Kimberley Flora (C.A. Gardner 7300)										
Tephrosia sp. Bungaroo Creek (M.E. Trudgen 11601)										
Tephrosia sp. NW Eremaean (S. van Leeuwen et al. PBS 0356)										
Trianthema glossostigmum		x								
Trianthema triquetrum	x									
Tribulopis angustifolia										
Tribulus hirsutus										
Tribulus occidentalis										
Trichodesma zeylanicum var. *zeylanicum*										
Trigastrotheca molluginea		x							x	
Triodia epactia	x	x	x	x	x	x	x	x	x	x
Triodia lanigera			x							
Triodia longiceps										
Triodia schinzii				x			x			
Triumfetta chaetocarpa		x		x			x			
Vigna lanceolata										
Waltheria indica		x								
Xerochloa barbata										

Appendix L: Sample site data

Alinta Transmission Line **Site API-006**

Date	1/05/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	653789 mE;	7729921 mN
	118.4749 E	-20.523238 S
Veg Condition	Degraded	
Soil	Clay Loam	
Rock Type	None Discernible	
Fire Age	5-10 yrs	
Habitat	Drainage Area/ Floodplain	
Vegetation	*Eucalyptus camaldulensis* mid open woodland over *Acacia tumida* var. *pilbarensis* isolated shrubs over **Cenchrus ciliaris*, **Cenchrus setiger*, **Aerva javanica* open tussock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia trachycarpa	0.1	1.8		
Acacia tumida var. *pilbarensis*	0.5	4.5	API62.01	
**Aerva javanica*	0.5	0.5		
Afrohybanthus aurantiacus	0.1	0.3		
Arivela uncifera	0.1	0.3	API27.02	
Arivela viscosa	0.1	0.3		
Bonamia media	0.1	0.1	API63.03	
Cajanus cinereus	0.1	1.7	KJEM.02	
Carissa lanceolata	0.1	1.6	API48.01	
**Cenchrus ciliaris*	15	0.3		
**Cenchrus setiger*	10	0.3		
Chloris pumilio	0.1	0.2	API60.01	
Corchorus incanus subsp. *incanus*	0.1	1.2	API76.08	
Cucumis variabilis	0.1	0.1		
Dactyloctenium radulans	0.1	0.1		
Eucalyptus camaldulensis	20	13		
Euphorbia coghlanii	0.1	0.3	APIR82.13	
Euphorbia vaccaria var. *vaccaria*	0.1	0.1	APIR20.02	
Goodenia lamprosperma	0.1	0.3		
Ipomoea muelleri	0.1	0.1		
Melaleuca linophylla	0.1	2		
Nellica maderaspatensis	0.1	0.3		

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Portulaca oleracea	0.1	0.1		
Pterocaulon sphacelatum	0.1	0.2		
Stemodia grossa	0.1	0.2		
Trianthema triquetrum	0.1	0.1		
Tribulus occidentalis	0.1	0.1	API62.04	
Triodia epactia	5	0.6	API18.02	

Alinta Transmission Line **Site API-009**

Date	2/05/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone50	
	653876 mE;	7729519 mN
	118.4758 E	-20.526867 S
Veg Condition	Good	
Soil	Clay Loam	
Rock Type	None Discernible	
Fire Age	>10 yrs	
Habitat	Major Drainage Line	
Vegetation	*Eucalyptus camaldulensis* mid open woodland over *Melaleuca glomerata* tall isolated shrubs over *Triodia epactia* mid isolated clumps of hummock grasses.	
Notes	Appears as though regularly scoured out by flash floods.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Abutilon lepidum	0.1	0.2	API29.07	
Abutilon otocarpum	0.1	0.3		
Abutilon sp. Pritzelianum (S. van Leeuwen 5095)	0.1	0.7	KJEM-Opp1	P3
Acacia ancistrocarpa	0.1	1.7		
Acacia colei var. *colei*	0.1	1.5	APIR20.01	
Acacia holosericea	0.1	2.5	API82.02	
Acacia trachycarpa	0.1	0.5		
**Aerva javanica*	0.1	0.3		
Aeschynomene indica	0.1	0.1	API47.05	
Afrohybanthus aurantiacus	0.1	0.4		
Alternanthera nana	0.1	0.1		
Aristida holathera var. *holathera*	0.1	0.4		
Aristida inaequiglumis	0.1	0.3	API76.11	
**Arivela viscosa*	0.1	0.2		
Boerhavia coccinea	0.1	0.1		
Bonamia media	0.1	0.1	API63.03	
Cajanus cinereus	0.1	0.4	KJEM.02	
Carissa lanceolata	0.1	0.3	API48.01	
**Cenchrus ciliaris*	0.1	0.2		
**Cenchrus setiger*	0.1	0.3		
Chrysopogon fallax	0.1	0.3		
Corchorus incanus subsp. *incanus*	0.1	0.6	APIR82.06	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Cullen martinii	0.1	0.2	API26.05	
Cynanchum floribundum	0.1	0	KJEM.05	
Cyperus vaginatus	0.1	1		
**Cyperus vorsteri*	0	0.4	API09.08	Supp
Dactyloctenium radulans	0.1	0.1		
Dentella asperata	0.1	0.1	API17.05	
**Digitaria ciliaris*	0.1	0.2	API09.03	
**Echinochloa colona*	0.1	0.1	API09.04	
Eragrostis cumingii	0.1	0.3	API09.06	
Eragrostis speciosa	0.1	0.5	API47.02	
Eucalyptus camaldulensis subsp. *refulgens*	12	13	API17.07	
Eulalia aurea	0.1	0.6		
Euphorbia coghlanii	0.1	0.2	API19.01	
**Euphorbia hirta*	0.1	0.1	API09.01	
Euphorbia trigonosperma	0.1	0.1	API09.07	
Evolvulus alsinoides var. *decumbens*	0.1	0.1		
Evolvulus alsinoides var. *villosicalyx*	0.1	0.1		
Goodenia lamprosperma	0.1	0.3		
Ipomoea muelleri	0.1	0		
Ipomoea polymorpha	0.1	0.1	API11.02	
**Malvastrum americanum*	0.1	0.3		
Marsilea hirsuta	0.1	0.1		
Melaleuca argentea	0.1	4.5		
Melaleuca glomerata	0.5	2.5		
Melaleuca linophylla	0.1	2		
Paspalidium rarum	0.1	0.1	APIR81.04	
Portulaca oleracea	0.1	0.1		
Rhynchosia minima	0.1	0		
Senna notabilis	0.1	0.1		
Setaria verticillata	0.1	0.1		
Sida rohlenae subsp. *rohlenae*	0.1	0.5	APIR82.05	
Sida sp. L (A.M. Ashby 4202)	0.1	0.2	API72.01	
Solanum cleistogamum	0.1	0.2		
Solanum sp. indet	0.1	0.5	API18.01	
Stylosanthes hamata	0.1	0.1	API09.05	
Tribulus occidentalis	0.1	0.1	API62.04	
Triodia epactia	0.5	0.5	API18.02	
Triumfetta chaetocarpa	0.1	0.4	API76.01	
Vigna lanceolata	0.1	0		
Waltheria indica	0.1	0.3	APIR81.02	

Alinta Transmission Line **Site API-010**

Date 2/05/2023

Described by Kelby Jennings & Emma Marsh

Type Quadrat 50m x 50m

Location MGA Zone 50

656662 mE; 7730900 mN

118.5024 E -20.514159 S

Veg Condition Very Good

Soil Sandy Clay Loam

Rock Type None Discernible

Fire Age 3-5 yrs

Habitat Other

Vegetation *Owenia reticulata* low isolated trees over *Triumfetta chaetocarpa, Acacia stellaticeps, Dolichandrone occidentalis* low-mid sparse shrubland over *Eragrostis eriopoda, Aristida holathera* low open tussock grassland with *Triodia schinzii* isolated clumps of hummock grasses over *Bonamia media* low sparse herbland.

Notes Landform = very low/minor rise

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
?Dolichandrone occidentalis	0.5	1.2	API29.11	
Abutilon otocarpum	0.1	0.3		
Acacia holosericea	0.1	1.8	API82.02	
Acacia inaequilatera	0	2		Supp
Acacia stellaticeps	2	1.2	APIR82.01	
**Aerva javanica*	0.1	0.4		
Aeschynomene indica	0.1	0.1	API47.05	
Amaranthus undulatus	0.1	0.2		
Aristida holathera var. *holathera*	0.4	0.5		
Boerhavia coccinea	0.1	0.1		
Bonamia erecta	0.1	0.3	API16.01	
Bonamia media	0.5	0.1	API63.06	
Bulbostylis barbata	0.1	0.1		
**Cenchrus ciliaris*	0.1	0.3		
Chrysopogon fallax	0.1	0.3		
Corchorus incanus subsp. *incanus*	0.1	0.4	API17.06	
Cynanchum floribundum	0.1	0		
Distimake davenportii	0.1	0	API63.04	
Eragrostis eriopoda	11	0.4	APIR81.03	
Eriachne obtusa	0.1	0.2	API81.02	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Euphorbia vaccaria var. *vaccaria*	0.1	0.1	APIR20.02	
Evolvulus alsinoides var. *decumbens*	0.1	0.2		
Evolvulus alsinoides var. *villosicalyx*	0.1	0.1		
Hakea lorea subsp. *lorea*	0	2.2		Supp
Indigofera linifolia	0.1	0.2	KJEM.06	
Indigofera monophylla	0.1	0.5		
Owenia reticulata	6	6.5	API76.03	
Panicum australiense var. *australiense*	0.1	0.1	API27.01	
Paraneurachne muelleri	0.1	0.3		
Pimelea ammocharis	0.1	1.2	KJEM.13	
Polycarpaea longiflora	0.1	0.1		
Sida echinocarpa	0.1	0.4		
Sida rohlenae subsp. *rohlenae*	0.1	0.4	APIR82.05	
Solanum sp. indet	0.1	0.3	API18.01	
Streptoglossa bubakii	0.1	0.2		
Tephrosia sp. B Kimberley Flora (C.A. Gardner 7300)	0.1	0.1	APIMN22.01	
Trigastrotheca molluginea	0	0.1		Supp
Triodia schinzii	0.5	0.4	API76.05	
Triumfetta chaetocarpa	4	0.8	API76.01	
Waltheria indica	0.1	0.4	APIR81.02	

Alinta Transmission Line **Site API-011**

Date	30/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	645128 mE;	7718832 mN
	118.3928 E	-20.624096 S
Veg Condition	Excellent	
Soil	Sandy Clay Loam	
Rock Type	None Discernible	
Fire Age	>10 yrs	
Habitat	Sand Plain	
Vegetation	*Eucalyptus victrix* low open woodland over *Acacia colei* tall sparse shrubland over *Triodia epactia* mid open hummock grassland over *Eragrostis eriopoda, Aristida holathera* mid sparse tussock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia colei var. *colei*	6	5	APIR20.01	
Acacia sericophylla	0	1.8	APIR82.14	Supp
Amaranthus undulatus	0.1	0.3		
Aristida holathera var. *holathera*	0.5	0.4		
Aristida inaequiglumis	0.1	0.5	API76.11	
Arivela viscosa	0.1	0.5		
Boerhavia coccinea	0.1	0.1		
Bonamia media	0.1	0.1	API29.03	
Chrysopogon fallax	0.1	0.4		
Corchorus elachocarpus	0.1	0.5	API29.06	
Corchorus incanus subsp. *incanus*	0.1	0.4	API76.10	
Cyperus blakeanus	0.1	0.4	API81.01	
Dodonaea coriacea	0.1	0.5	APIR34.01	
Eragrostis eriopoda	2	0.5	APIR81.03	
Eucalyptus victrix	15	10		
Fimbristylis dichotoma	0.1	0.3	API11.01	
Goodenia lamprosperma	0.1	0.3		
Indigofera linifolia	0.1	0.2	KJEM.06	
Ipomoea polymorpha	0.1	0.1	API11.02	
Panicum australiense var. *australiense*	0.1	0.1	API28.01	
Pluchea tetranthera	0.1	0.6	APIR82.15	
Polymeria ambigua	0.1	0.1	API29.08	
Portulaca oleracea	0.1	0.1		

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Ptilotus fusiformis	0.1	0.2		
Senna notabilis	0.1	0.1		
Sida rohlenae subsp. *rohlenae*	0.1	0.5	APIR82.05	
Tephrosia sp. B Kimberley Flora (C.A. Gardner 7300)	0.1	0.2	API41.01	
Trigastrotheca molluginea	0.1	0.1		
Triodia epactia	20	0.5	API18.02	

Alinta Transmission Line **Site API-012**

Date	29/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	652685 mE;	7730555 mN
	118.4643 E	-20.517605 S
Veg Condition	Very Good	
Soil	Sandy Clay Loam	
Rock Type	None Discernible	
Fire Age	5-10 yrs	
Habitat	Sand Plain	
Vegetation	*Triodia epactia*, *Triodia longiceps* mid hummock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia synchronicia	0	2		Supp
Aristida holathera var. *holathera*	0.1	0.3		
Bonamia erecta	0.1	0.2	API27.03	
Dactyloctenium radulans	0.1	0.1		
Fimbristylis dichotoma	0.1	0.2	API42.01	
Pluchea tetranthera	0.1	0.5	APIR82.15	
Portulaca cyclophylla	0.1	0.1		
Ptilotus murrayi	0.1	0.1	APIR61.01	
Tephrosia sp. B Kimberley Flora (C.A. Gardner 7300)	0.1	0.1	APIMN22.01	
Triodia epactia	13	0.4	API18.02	
Triodia longiceps	50	0.4	API12.01	
Xerochloa barbata	0.1	0.1	API12.03	

Alinta Transmission Line **Site API-016**

Date	27/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	657893 mE;	7705277 mN
	118.5165 E	-20.745507 S
Veg Condition	Very Good	
Soil	Sand	
Rock Type	None Discernible	
Fire Age	5-10 yrs	
Habitat	Sand Plain	
Vegetation	*Acacia tumida, Acacia trachycarpa* tall shrubland over *Triumfetta chaetocarpa* mid open shrubland over *Aristida holathera, Eriachne obtusa, Eragrostis eriopoda* low open tussock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia pyrifolia var. *pyrifolia*	0.1	0		Overhang
Acacia trachycarpa	3	4		
Acacia tumida var. *pilbarensis*	15	5	APIR17.01	
Aristida holathera var. *holathera*	1	0.5		
Boerhavia coccinea	0.1	0.1		
Bonamia erecta	0.1	0.3	API16.01	
Bonamia pilbarensis	0.1	0.1		
Bulbostylis barbata	0.1	0.1		
Cajanus cinereus	0.1	1.6	KJEM.02	
Corchorus incanus subsp. *incanus*	5	1	API17.06	
Duperreya commixta	0.1	0.1	APIR17.05	
Eragrostis eriopoda	0.5	0.6	APIR81.03	
Eriachne obtusa	2	0.5	API81.02	
Euphorbia australis var. *subtomentosa*	0.1	0.1		
Paraneurachne muelleri	0.1	0.3		
Polycarpaea longiflora	0.1	0.1		
Senna notabilis	0.1	0.1		
Sida rohlenae subsp. *rohlenae*	0.1	0.2	APIR82.05	
Trigastrotheca molluginea	0.1	0.1		
Triodia epactia	0.1	0.6	API18.02	
Triumfetta chaetocarpa	0.1	1.7	API76.01	

Alinta Transmission Line **Site API-017**

Date	27/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	658476 mE;	7704110 mN
	118.5222 E	-20.756000 S
Veg Condition	Very Good	
Soil	Sand	
Rock Type	River stones	
Fire Age	>10 yrs	
Habitat	Major Drainage Line	
Vegetation	*Melaleuca argenta* low open woodland over *Cyperus ixiocarpus* mid isolated clumps of sedges.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia pyrifolia var. *pyrifolia*	0.1	1.6		
Acacia trachycarpa	0	1.7		Supp
Afrohybanthus aurantiacus	0	1.4		Supp
Arivela viscosa	0.1	0.5		
Cajanus cinereus	0	1	KJEM.02	Supp
Calandrinia tepperiana	0.1	0.1	API17.04	
Corchorus incanus subsp. *incanus*	0.1	0.3	API17.06	
Corynotheca pungens	0	0.4	APIR17.04	Supp
Crotalaria cunninghamii subsp. *sturtii*	0.1	1.5	API17.03	
Cyperus ixiocarpus	1	0.6	API17.01	
Cyperus vaginatus	0.1	1		
Dentella asperata	0.1	0.1	API17.05	
Duperreya commixta	0.1	0.2	API17.08	
Eucalyptus camaldulensis subsp. *refulgens*	0.5	3.5	API17.07	
Euphorbia vaccaria var. *vaccaria*	0.1	0.1	API17.02	
Melaleuca argentea	3	5		
Melaleuca linophylla	0	1.7		Supp
Ptilotus fusiformis	0	0.3		Supp
Trichodesma zeylanicum var. *zeylanicum*	0	0.3		Supp

Alinta Transmission Line **Site API-018**

Date	27/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	657556 mE;	7704864 mN
	118.5133 E	-20.749265 S
Veg Condition	Excellent	
Soil	Sand	
Rock Type	None Discernible	
Fire Age	5-10 yrs	
Habitat	Sand Plain	
Vegetation	*Acacia tumida* tall isolated shrubs over *Acacia ancistrocarpa, Acacia acradenia* mid open shrubland over *Triodia epactia* hummock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia acradenia	5	2.2	APIR16.01	
Acacia ancistrocarpa	15	2.2		
Acacia inaequilatera	0.1	3.5		
Acacia stellaticeps	6	1	APIR82.01	
Acacia trachycarpa	0.1	1.7	API16.02	
Acacia tumida var. *pilbarensis*	0.5	3	APIR17.01	
Duperreya commixta	0.1	0.1	APIR82.18	
Hakea lorea subsp. *lorea*	0.1	1.1		
Solanum sp. indet	0.1	0.3	API18.01	
Triodia epactia	35	0.5	API18.02	

Alinta Transmission Line **Site API-019**

Date	27/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	658216 mE;	7705344 mN
	118.5196 E	-20.744878 S
Veg Condition	Excellent	
Soil	Sand	
Rock Type	River stones	
Fire Age	>10 yrs	
Habitat	Major Drainage Line	
Vegetation	*Melaleuca argenta, Eucalyptus camaldulensis* low isolated trees over *Melaleuca linophylla, Acacia pyrifolia* tall sparse shrubland over *Crotalaria cunninghamii* isolated shrubs over *Triodia epactia* low isolated clumps of hummock grasses.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia pyrifolia var. *pyrifolia*	0.1	1.5		
Acacia trachycarpa	0	3.5		Supp
Afrohybanthus aurantiacus	0.1	0.3		
Aristida holathera var. *holathera*	0.1	0.4		
Arivela viscosa	0.1	0.6		
Crotalaria cunninghamii subsp. *sturtii*	0.5	1.2	API17.03	
Cymbopogon ambiguus	0.1	0.5		
Cynanchum floribundum	0.1	0.1	KJEM.05	
Dentella asperata	0.1	0.1	API17.05	
Duperreya commixta	0.1	0.1	APIR17.05	
Eucalyptus camaldulensis	0	7		Supp
Euphorbia coghlanii	0.1	0.6	API19.01	
Euphorbia vaccaria var. *vaccaria*	0.1	0.1	API17.02	
Melaleuca argentea	1.5	5		
Melaleuca linophylla	9	2.5		
Microstachys chamaelea	0.1	1	API19.02	
Paspalidium rarum	0.1	0.1	APIR81.04	
Ptilotus fusiformis	0.1	0.3		
Triodia epactia	0.5	0.5	API18.02	

Alinta Transmission Line **Site API-020**

Date	27/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	656790 mE;	7706317 mN
	118.5058 E	-20.736209 S
Veg Condition	Very Good	
Soil	Sand	
Rock Type	None Discernible	
Fire Age	5-10 yrs	
Habitat	Sand Plain	
Vegetation	*Triodia epactia* low hummock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia ancistrocarpa	0.1	2.2		
Acacia inaequilatera	0.1	1.8		
Aristida contorta	0.1	0.2		
Euploca ovalifolia	0	0.2	API20.02	Supp
Portulaca oleracea	0.1	0.1		
Ptilotus fusiformis	0	0.3		Supp
Senna notabilis	0.1	0.2		
Solanum phlomoides	0	0.4	API20.01	Supp
Sporobolus australasicus	0.1	0.1		
Trigastrotheca molluginea	0	0.1		Supp
Triodia epactia	35	0.4	API18.02	

Alinta Transmission Line **Site API-021**

Date	2/05/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	655835 mE;	7708044 mN
	118.4965 E	-20.720686 S
Veg Condition	Excellent	
Soil	Sandy Clay Loam	
Rock Type	Quartz,Ironstone	
Fire Age	5-10 yrs	
Habitat	Sand Plain	
Vegetation	*Acacia acradenia, Acacia ancistrocarpa, Acacia colei, Acacia tumida* tall open shrubland banding over *Acacia stellaticeps* low isolated shrubs over *Triodia epactia* mid open hummock grassland.	
Notes	The thick Acacia shrubland occurs as banding within the wider Triodia hummock grassland, it is however distinguishable on aerial.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia acradenia	15	2.5	APIR16.01	
Acacia ancistrocarpa	6	2.5		
Acacia colei var. *colei*	0.5	2	APIR20.01	
Acacia inaequilatera	0.1	1.8		
Acacia stellaticeps	0.5	0.9	APIR82.01	
Acacia tumida var. *pilbarensis*	0.5	1.8	APIR17.01	
Aristida holathera var. *holathera*	0.1	0.4		
Chrysopogon fallax	0.1	0.5		
Eragrostis eriopoda	0.1	0.4	APIR81.03	
Pluchea tetranthera	0.1	0.6	APIR82.15	
Polymeria ambigua	0.1	0.1		
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	0.4	APIR82.10	
Solanum sp. indet	0.1	0.6	API18.01	
Triodia epactia	20	0.6	API18.02	

Alinta Transmission Line **Site API-024**

Date	3/05/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	654011 mE;	7710541 mN
	118.4788 E	-20.698285 S
Veg Condition	Very Good	
Soil	Sandy Loam	
Rock Type	None Discernible	
Fire Age	3-5 yrs	
Habitat	Sand Plain	
Vegetation	*Corymbia zygophylla, Corymbia candida* low isolated trees over *Acacia acradenia* low isolated shrubs over *Triodia schinzii* low open hummock grassland over *Ptilotus astrolasius* low isolated herbs.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Abutilon sp. Pritzelianum (S. van Leeuwen 5095)	0.1	0.2	KJEM-Opp1	P3
Acacia acradenia	1.5	0.5	APIR16.01	
Acacia ancistrocarpa	0.1	0.4		
Acacia holosericea	0	0.6	API82.02	Supp
Acacia inaequilatera	0.1	0.5		
Acacia sericophylla	0.1	1.8	APIR82.14	
Aristida holathera var. *holathera*	0.1	0.4		
Arivela viscosa	0.1	0.6		
Boerhavia coccinea	0.1	0.1		
Bonamia erecta	0.1	0.3	APIR82.07	
Cassytha filiformis	0.1	0.1	APIR82.17	
Chrysopogon fallax	0.1	0.4		
Corchorus elachocarpus	0.1	0.8	API24.01	
Corymbia candida	0.5	4		
Corymbia deserticola	1	5.5		
Cucumis variabilis	0	0.1		
Duperreya commixta	0.1	0.1	APIR17.05	
Eragrostis eriopoda	0.1	0.3	APIR81.03	
Euphorbia australis var. *subtomentosa*	0.1	0.1		
Euphorbia coghlanii	0.1	0.4	API19.01	
Euphorbia vaccaria var. *vaccaria*	0.1	0.2	APIR20.02	
Goodenia microptera	0.1	0.3		
Gossypium australe	0.1	1		

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Grevillea wickhamii	0.1	0.4		
Indigofera monophylla	0.1	0.4		
Leptosema anomalum	0.1	0.2	API81.04	
Panicum australiense var. *australiense*	0.1	0.1	API27.01	
Paraneurachne muelleri	0.1	0.3		
Pimelea ammocharis	0.1	0.4	KJEM.13	
Pluchea tetranthera	0.1	0.2	APIR82.15	
Polygala galeocephala	0.1	0.1	API27.04	
Polymeria ambigua	0.1	0.2		
Portulaca oleracea	0.1	0.1		
Ptilotus astrolasius	2.5	0.4		
Ptilotus calostachyus	0	0.4		Supp
Ptilotus fusiformis	0.1	0.3		
Senna notabilis	0.1	0.3		
Sida arenicola	0.1	1.4	API26.04	
Sida echinocarpa	0.1	0.6		
Sida rohlenae subsp. *rohlenae*	0.1	0.2	APIR82.05	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	0.8	APIR82.10	
Sida sp. spiciform panicles (E. Leyland s.n. 14/8/90)	0.1	0.2	API24.02	
Solanum sp. indet	0.1	0.7	API18.01	
Streptoglossa bubakii	0.1	0.3		
Synaptantha tillaeacea	0.1	0.1	API24.04	
Tephrosia sp. B Kimberley Flora (C.A. Gardner 7300)	0.1	0.1	APIMN22.01	
Trianthema glossostigmum	0.1	0.1		
Tribulus hirsutus	0.1	0.1	KJEM.08	
Trigastrotheca molluginea	0.1	0.1		
Triodia schinzii	20	0.4	API76.05	

Alinta Transmission Line **Site API-026**

Date	30/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	653665 mE;	7713080 mN
	118.4752 E	-20.675374 S
Veg Condition	Very Good	
Soil	Sandy Clay Loam	
Rock Type	None Discernible	
Fire Age	3-5 yrs	
Habitat	Sand Plain	

Vegetation *Corymbia zygophylla* low open woodland over *Acacia ancistrocarpa* tall isolated shrubs over *Acacia stellaticeps* mid isolated shrubs *over Side rohlenae, Bonamia erecta* low sparse shrubland over *Triodia schinzii* low open hummock grassland over *Ptilotus fusiformis, Arivela uncifera, Goodenia microptera* low sparse herbland.

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia acradenia	0.1	1.4	API26.08	
Acacia acradenia	0.1	0.6	APIR16.01	
Acacia ancistrocarpa	1	2.5		
Acacia colei var. *colei*	0.1	0.3	APIR20.01	
Acacia inaequilatera	0.1	2		
Acacia pyrifolia var. *pyrifolia*	0.1	0.3		
Acacia sericophylla	0.1	1.7	APIR82.14	
Acacia sphaerostachya	0.1	1.7	API26.07	
Acacia stellaticeps	1	1	APIR82.01	
Aristida holathera var. *holathera*	0.1	0.3		
Arivela uncifera	0.5	0.2	API27.02	
Arivela viscosa	0.1	0.4		
Boerhavia coccinea	0.1	0.2		
Bonamia erecta	0.5	0.3	APIR82.07	
Bulbostylis barbata	0.1	0.1		
Carissa lanceolata	0.1	0.5	API48.01	
Cassytha filiformis	0.1	0	API81.05	
Chrysopogon fallax	0.1	0.4		
Corchorus elachocarpus	0.1	0.4	API29.06	
Corchorus incanus subsp. *incanus*	0.1	0.3	API76.10	
Corymbia zygophylla	6	5	KJEM.16	
Cullen martinii	0.1	0.5	API26.05	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Dodonaea coriacea	0.1	0.3	APIR34.01	
Duperreya commixta	0.1	0.1	APIR17.05	
Eragrostis eriopoda	0.1	0.3	APIR81.03	
Eriachne aristidea	0.1	0.2		
Euphorbia australis var. *subtomentosa*	0.1	0.1		
Euphorbia vaccaria var. *vaccaria*	0.1	0.2	API26.06	
Evolvulus alsinoides var. *decumbens*	0.1	0.1		
Goodenia forrestii	0.1	0.2	API29.02	
Goodenia microptera	0.1	0.4		
Hakea lorea subsp. *lorea*	0.1	0.8		
Hibiscus leptocladus	0.1	0.3	API29.01	
Indigofera monophylla	0.1	0.3		
Leptosema anomalum	0.1	0.2	API81.04	
Panicum australiense var. *australiense*	0.1	0.1	API27.01	
Paraneurachne muelleri	0.1	0.4		
Pimelea ammocharis	0.1	0.2	KJEM.13	
Polycarpaea longiflora	0.1	0.1		
Polygala galeocephala	0.1	0.1	API27.04	
Polymeria ambigua	0.1	0.1		
Portulaca oleracea	0.1	0.1		
Pterocaulon sphacelatum	0.1	0.1		
Ptilotus astrolasius	0.1	0.3		
Ptilotus axillaris	0.1	0.1		
Ptilotus exaltatus	0.1	0.1		
Ptilotus fusiformis	0.5	0.3		
Rhynchosia minima	0.1	0		
Scaevola parvifolia subsp. *pilbarae*	0.1	0.2		
Senna artemisioides subsp. *oligophylla*	0.1	0.5		
Senna notabilis	0.1	0.3		
Sida arenicola	0.1	1.2	API26.04	
Sida echinocarpa	0.1	0.3		
Sida rohlenae subsp. *rohlenae*	0.5	0.4	APIR82.05	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	0.4	API29.10	
Sida sp. spiciform panicles (E. Leyland s.n. 14/8/90)	0.1	0.6	API26.01	
Solanum phlomoides	0.1	0.4	API79.03	
Solanum sp. Indet	0.1	0.4	API18.01	
Streptoglossa bubakii	0.1	0.3		
Tephrosia sp. B Kimberley Flora (C.A. Gardner 7300)	0.1	0.2	APIMN22.01	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Tephrosia sp. Bungaroo Creek (M.E. Trudgen 11601)	0.1	0.4	API26.02	
Tribulus hirsutus	0.1	0.1	KJEM.08	
Trigastrotheca molluginea	0.1	0.2		
Triodia epactia	0.1	0.5	API18.02	
Triodia schinzii	20	0.4	API76.05	

Alinta Transmission Line **Site API-027**

Date	27/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	652821 mE;	7713610 mN
	118.4671 E	-20.670662 S
Veg Condition	Very Good	
Soil	Sandy Clay Loam	
Rock Type	None Discernible	
Fire Age	1-2 yrs	
Habitat	Sand Plain	
Vegetation	*Corymbia zygophylla, Corymbia candida* low isolated trees over *Hakea lorea* tall isolated shrubs over *Sida rohlenae, Sida arenicola, Indigofera monophylla* low isolated shrubs over *Triodia schinzii* low open hummock grassland over *Ptilotus fusiformis, Arivela uncifera* low sparse herbland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia acradenia	0.1	0.3	APIR16.01	
Acacia ancistrocarpa	0.1	0.3		
Acacia colei var. *colei*	0.1	0.2	APIR20.01	
Acacia sericophylla	0.1	2	APIR82.14	
Acacia stellaticeps	0.1	0.2	APIR82.01	
Amaranthus undulatus	0.1	0.4		
Aristida holathera var. *holathera*	0.1	0.3		
Arivela uncifera	0.1	0.3	API27.02	
Boerhavia coccinea	0.1	0.1		
Bonamia erecta	0.1	0.3	API27.03	
Bonamia pilbarensis	0.1	0.1		
Bulbostylis barbata	0.1	0.1		
Cassytha filiformis	0.1	0.1	APIR82.17	
Chrysopogon fallax	0.1	0.3		
Clerodendrum tomentosum	0.1	0.2	API27.06	
Corymbia candida subsp. *x lautifolia*	0.1	1	APIR82.03	
Corymbia zygophylla	7	5	KJEM.16	
Cynanchum floribundum	0.1	0.1		
Dodonaea coriacea	0.1	0.3	API27.05	
Duperreya commixta	0.1	0.1	APIR82.18	
Euphorbia australis var. *subtomentosa*	0.1	0.1		
Euphorbia vaccaria var. *vaccaria*	0.1	0.1	APIR20.02	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Goodenia microptera	0.1	0.3		
Grevillea pyramidalis	0.1	0.8		
Hakea lorea subsp. *lorea*	0.1	0.8		
Indigofera monophylla	0.1	0.3		
Panicum australiense var. *australiense*	0.1	0.1	API27.01	
Paraneurachne muelleri	0.1	0.3		
Polygala galeocephala	0.1	0.1	API27.04	
Portulaca oleracea	0.1	0.1		
Pterocaulon sphacelatum	0.1	0.2		
Ptilotus astrolasius	0.1	0.4		
Ptilotus fusiformis	0.5	0.3		
Senna notabilis	0.1	0.3		
Sida arenicola	0.5	0.7	KJEM.14	
Sida rohlenae subsp. *rohlenae*	1.5	0.4	APIR82.05	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	0.3	APIR82.10	
Solanum phlomoides	0.1	0.2	API20.01	
Streptoglossa bubakii	0.1	0.2		
Tribulus hirsutus	0.1	0.2	KJEM.08	
Trigastrotheca molluginea	0.1	0.1		
Triodia schinzii	15	0.4	API76.05	

Alinta Transmission Line **Site API-028**

Date	30/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	640916 mE;	7714631 mN
	118.3527 E	-20.662366 S
Veg Condition	Very Good	
Soil	Sandy Clay Loam	
Rock Type	None Discernible	
Fire Age	>10 yrs	
Habitat	Sand Plain	
Vegetation	*Corymbia candida* (and *Corymbia zygophylla* in wider landscape) low isolated trees over *Acacia colei, Acacia ancistrocarpa, Acacia melleodora, Acacia trachycarpa* tall open shrubland over *Acacia stellaticeps* mid sparse shrubland over *Triodia schinzii, Triodia epactia* mid open hummock grassland over *Eragrostis eriopoda, Eriachne obtusa* low sparse tussock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
?*Dolichandrone occidentalis*	0.1	0.4	API29.11	
Acacia ancistrocarpa	5	2.5		
Acacia colei var. *colei*	8	2.8	APIR20.01	
Acacia melleodora	1	2.3	KJEM.20	
Acacia sericophylla	0.1	2	APIR82.14	
Acacia stellaticeps	8	1	APIR82.01	
Acacia stellaticeps x trachycarpa	0.1	0.3	API28.02	
Acacia trachycarpa	2	3		
Aristida holathera var. *holathera*	0.1	0.3		
Cassytha filiformis	0.1	0	API81.05	
**Cenchrus ciliaris*	0.1	0.4		
Corchorus incanus subsp. *incanus*	0.1	0.4	API76.08	
Corymbia candida subsp. *x lautifolia*	0.5	3.5	APIR82.03	
Corymbia zygophylla	0	5.5	KJEM.16	Supp
Duperreya commixta	0.1	0	APIR82.18	
Eragrostis eriopoda	0.5	0.4	APIR81.03	
Eriachne obtusa	1	0.5	API81.02	
Euphorbia coghlanii	0.1	0.1	APIR82.13	
Evolvulus alsinoides var. *decumbens*	0.1	0.3		
Hakea lorea subsp. *lorea*	0.1	1.9		
Hibiscus leptocladus	0.1	0.3	API29.01	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Leptosema anomalum	0.1	0.2	API81.04	
Panicum australiense var. *australiense*	0.1	0.1	API28.01	
Pluchea tetranthera	0.1	0.2	APIR82.15	
Ptilotus astrolasius	0.1	0.3		
Rothia indica subsp. *australis*	0.1	0.1	API40.01	P3
Scaevola parvifolia subsp. *pilbarae*	0.1	0.2		
Tephrosia sp. B Kimberley Flora (C.A. Gardner 7300)	0.1	0.3	API41.01	
Trigastrotheca molluginea	0.1	0.1		
Triodia epactia	7	0.5	API18.02	
Triodia schinzii	0.5	18	API76.05	

Alinta Transmission Line **Site API-029**

Date	28/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Qudarat	50m x 50m
Location	MGA Zone 50	
	651917 mE;	7714784 mN
	118.4583 E	-20.660125 S
Veg Condition	Very Good	
Soil	Sandy Clay Loam	
Rock Type	None Discernible	
Fire Age	3-5 yrs	
Habitat	Sand Plain	
Vegetation	*Corymbia zygophylla, Corymbia candida* low isolated trees over *Acacia sericophylla* tall isolated shrubs over *Indigofera monophylla*, ?*Dolichandrone occidentalis, Bonamia erecta* low sparse shrubland over *Triodia schinzii* low open hummock grassland over Ptilotus fusiformis low sparse herbland.	
Notes	As in many other areas of the middle GNH section, fire has affected veg type. Previously Acacia open shrubland would have likely been the BFF.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
?Dolichandrone occidentalis	0.5	0.1	API29.11	
Abutilon lepidum	0.1	0.3	API29.07	
Acacia ancistrocarpa	0.1	0.5		
Acacia inaequilatera	0.1	1.4		
Acacia sericophylla	0.1	2	APIR82.14	
Acacia stellaticeps	0.1	0.2	APIR82.01	
Acacia trachycarpa	0.1	1.1		
**Aerva javanica*	0.1	0.4		
Aristida holathera var. *holathera*	0.1	0.4		
Arivela uncifera	0.1	0.3	API27.02	
Arivela viscosa	0.1	0.3		
Boerhavia coccinea	0.1	0.2		
Bonamia erecta	1	0.4	API76.06	
Bonamia media	0.1	0.1	API29.03	
Bulbostylis barbata	0.1	0.1		
Cassytha filiformis	0.1	0	API81.05	
Chrysopogon fallax	0.1	0.7		
Corchorus elachocarpus	0.5	0.4	API29.06	
Corymbia candida subsp. *x lautifolia*	0.5	6	APIR82.03	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Corymbia hamersleyana	0	2.5		Supp
Corymbia zygophylla	1	5	KJEM.16	
Dodonaea coriacea	0.1	0.1	API27.05	
Eragrostis eriopoda	0.1	0.4	APIR81.03	
Euphorbia australis var. *subtomentosa*	0.1	0.1		
Goodenia forrestii	0.1	0.3	API29.02	
Goodenia microptera	0.1	0.4		
Gossypium australe	0.1	0.4		
Hakea lorea subsp. *lorea*	1	1.8		
Hibiscus leptocladus	0.1	0.4	API29.01	
Indigofera colutea	0.1	0.2	API29.04	
Indigofera monophylla	0.5	0.4		
Leptosema anomalum	0.1	0.2	API81.04	
Panicum australiense var. *australiense*	0.1	0.1	API27.01	
Paraneurachne muelleri	0.1	0.3		
Pluchea tetranthera	0.1	0.3	APIR82.15	
Polycarpaea longiflora	0.1	0.1		
Polygala galeocephala	0.1	0.1	API27.04	
Polymeria ambigua	0.1	0.1	API29.08	
Portulaca oleracea	0.1	0.1		
Ptilotus astrolasius	0.1	0.3		
Ptilotus axillaris	0.1	0.1		
Ptilotus fusiformis	0.5	0.4		
Ptilotus obovatus	0.1	0.3		
Senna artemisioides subsp. *oligophylla*	0.1	1	KJEM.17	
Senna notabilis	0.1	0.3		
Sida rohlenae subsp. *rohlenae*	0.1	0.5	APIR82.05	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	0.6	API29.10	
Solanum sp. indet	0.1	0.5	API18.01	
Streptoglossa bubakii	0.1	0.2		
Synaptantha tillaeacea	0.1	0.1	API29.05	
Tephrosia sp. B Kimberley Flora (C.A. Gardner 7300)	0.1	0.1	APIMN22.01	
Tephrosia sp. NW Eremaean (S. van Leeuwen et al. PBS 0356)	0.1	0.3	KJEM.09	
Trianthema glossostigmum	0.1	0.1		
Tribulus hirsutus	0.1	0.1	KJEM.08	
Trigastrotheca molluginea	0.1	0.1		
Triodia schinzii	20	0.3	API76.05	

Alinta Transmission Line **Site API-031**

Date	28/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	652270 mE;	7716092 mN
	118.4616 E	-20.648280 S
Veg Condition	Excellent	
Soil	Sandy Clay Loam	
Rock Type	None Discernible	
Fire Age	>10 yrs	
Habitat	Sand Plain	
Vegetation	*Corymbia zygophylla* low isolated trees *over Acacia ancistrocarpa, Acacia sericophylla, Hakea lorea* tall open shrubland over *Acacia stellaticeps* mid open shrubland over *Triodia schinzii* mid hummock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia ancistrocarpa	25	3		
Acacia colei var. *colei*	0.1	2.1	APIR20.01	
Acacia inaequilatera	0.1	1.5		
Acacia sericophylla	0.5	1.6	APIR82.14	
Acacia sphaerostachya	0.1	1.6	API31.03	
Acacia stellaticeps	20	1.3	APIR82.01	
Aristida holathera var. *holathera*	0.1	0.3		
Boerhavia coccinea	0.1	0.1		
Bonamia erecta	0.1	0.5	API76.06	
Cassytha filiformis	0.1	0	API81.05	
Chrysopogon fallax	0.1	0.6		
Corymbia zygophylla	1	5.5	KJEM.16	
Eragrostis eriopoda	0.1	0.4	APIR81.03	
Eriachne pulchella subsp. *dominii*	0.1	0.1		
Hakea lorea subsp. *lorea*	1	2.5		
Indigofera monophylla	0.1	0.3		
Leptosema anomalum	0.1	0.3	API81.04	
Paraneurachne muelleri	0.5	0.3		
Portulaca oleracea	0.1	0.1		
Ptilotus astrolasius	0.1	0.2		
Scaevola spinescens	0.1	1		
Senna artemisioides subsp. *oligophylla*	0.1	0.3		
Senna glutinosa subsp. *glutinosa*	0.1	1.7		

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Sida arenicola	0.1	0.4	API31.02	
Sporobolus australasicus	0.1	0.1		
Trigastrotheca molluginea	0.1	0.1		
Triodia lanigera	0.1	0.3	API31.01	
Triodia schinzii	35	0.5	API76.05	

Alinta Transmission Line **Site API-032**

Date	29/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	641010 mE;	7718737 mN
	118.3533 E	-20.625271 S
Veg Condition	Excellent	
Soil	Sandy Clay Loam	
Rock Type	None Discernible	
Fire Age	5-10 yrs	
Habitat	Sand Plain	
Vegetation	*Eucalyptus victrix, Corymbia candida* low open woodland over *Acacia colei* tall isolated shrubs over *Carissa lanceolata, Acacia stellaticeps, Senna artesimioides* mid sparse shrubland over *Triodia epactia* hummock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia colei var. *colei*	1.5	2.8	APIR20.01	
Acacia stellaticeps	2	0.7	APIR82.01	
Afrohybanthus aurantiacus	0.1	0.2		
Aristida holathera var. *holathera*	0.1	0.3		
Cassytha filiformis	0.1	0.1	APIR82.17	
Chrysopogon fallax	0.1	0.3		
Clerodendrum tomentosum var. *lanceolatum*	2	1.6	API76.07	
Corymbia candida	1	3.5		
Cynanchum floribundum	0.1	0.1		
Eucalyptus victrix	12	8		
Fimbristylis dichotoma	0.1	0.1	API42.01	
Hakea lorea subsp. *lorea*	0.1	1.5		
Indigofera monophylla	0.5	0.5		
Pluchea tetranthera	0.1	0.5	APIR82.15	
Senna artemisioides subsp. *oligophylla*	0.1	1.5		
Trigastrotheca molluginea	0.1	0.2		
Triodia epactia	35	0.5	API18.02	

Alinta Transmission Line **Site API-033**

Date	30/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	643472 mE;	7716734 mN
	118.3771 E	-20.643178 S
Veg Condition	Excellent	
Soil	Sandy Clay Loam	
Rock Type	Ironstone,Quartz	
Fire Age	>10 yrs	
Habitat	Sand Plain	
Vegetation	*Triodia epactia, Triodia longiceps* mid hummock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia stellaticeps	0.1	0.8	APIR82.01	
Acacia synchronicia	0	1.5		Supp
Aristida holathera var. *holathera*	0.1	0.4		
Fimbristylis dichotoma	0.1	0.1	API42.01	
Grona filiformis	0.1	0.2	API33.01	
Indigofera linifolia	0.1	0.1	KJEM.06	
Panicum australiense var. *australiense*	0.1	0.2	API27.01	
Pluchea tetranthera	0.1	0.5	APIR82.15	
Triodia epactia	35	0.5	API18.02	
Triodia longiceps	10	0.6	API40.02	
Triodia schinzii	0.1	0.6	API76.05	

Alinta Transmission Line **Site API-036**

Date	28/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	651577 mE;	7717704 mN
	118.4548 E	-20.633778 S
Veg Condition	Excellent	
Soil	Sandy Clay Loam	
Rock Type	None Discernible	
Fire Age	5-10 yrs	
Habitat	Sand Plain	
Vegetation	*Corymbia zygophylla* low isolated trees over *Acacia ancistrocarpa, Acacia inaequilatera* tall sparse shrubland over *Acacia stellaticeps* mid open shrubland over *Bonamia erecta* low sparse shrubland over *Triodia epactia* mid hummock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia ancistrocarpa	4	2		
Acacia holosericea	0.1	2	API82.02	
Acacia inaequilatera	0.5	1.8		
Acacia sericophylla	0.1	1.7	APIR82.14	
Acacia sphaerostachya	0.1	1.8	API31.03	
Acacia stellaticeps	25	1.4	APIR82.01	
Bonamia erecta	0.5	0.4	APIR82.07	
Corymbia zygophylla	0.5	5	KJEM.16	
Hakea lorea subsp. *lorea*	0.1	1.6		
Indigofera monophylla	0.1	0.3		
Paraneurachne muelleri	0.1	0.4		
Ptilotus astrolasius	0.1	0.3		
Triodia epactia	35	0.5	API18.02	

Alinta Transmission Line **Site API-039**

Date	28/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	650528 mE;	7718723 mN
	118.4446 E	-20.624658 S
Veg Condition	Excellent	
Soil	Sandy Clay Loam	
Rock Type	None Discernible	
Fire Age	>10 yrs	
Habitat	Sand Plain	
Vegetation	*Corymbia zygophylla* low isolated trees over *Hakea lorea* tall isolated shrubs over *Acacia stellaticeps* low-mid shrubland over *Bonamia erecta* low sparse shrubland over *Triodia schinzii, Triodia epactia* mid open hummock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia ancistrocarpa	0.1	1.8		
Acacia colei var. *colei*	0.1	1.8	APIR20.01	
Acacia inaequilatera	0	4		Supp
Acacia sericophylla	0.1	1.7	APIR82.14	
Acacia sphaerostachya	0.1	1.6	API31.03	
Acacia stellaticeps	40	0.8	APIR82.01	
Bonamia erecta	0.5	0.5	API76.06	
Chrysopogon fallax	0.1	0.5		
Corymbia zygophylla	1	5	KJEM.16	
Eragrostis eriopoda	0.1	0.3	APIR81.03	
Euphorbia coghlanii	0.1	0.2	API19.01	
Hakea lorea subsp. *lorea*	1	2		
Indigofera monophylla	0.1	0.6		
Leptosema anomalum	0.1	0.2	API81.04	
Paraneurachne muelleri	0.1	0.3		
Pluchea tetranthera	0.1	0.3	APIR82.15	
Triodia epactia	1	0.5	API18.02	
Triodia schinzii	14	0.5	API76.05	

Alinta Transmission Line **Site API-040**

Date	28/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	650819 mE;	7719491 mN
	118.4474 E	-20.617695 S
Veg Condition	Excellent	
Soil	Sandy Clay Loam	
Rock Type	None Discernible	
Fire Age	5-10 yrs	
Habitat	Sand Plain	
Vegetation	*Triodia epactia, Triodia longiceps* mid hummock grassland.	
Notes	Surrounding area recently burnt <2 years, cashing patchy vegetation.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Bonamia erecta	0.1	0.2	API16.01	
Bulbostylis barbata	0.1	0.1		
Calandrinia pumila	0.1	0.1	API40.03	
Calandrinia sp. indet	0.1	0.1		
Eriachne obtusa	0.1	0.2	API81.02	
Indigofera monophylla	0.1	0.2		
Panicum australiense var. *australiense*	0.1	0.1	API27.01	
Pluchea tetranthera	0.1	0.5	APIR82.15	
Polycarpaea longiflora	0.1	0.1		
Portulaca cyclophylla	0.1	0.1		
Rothia indica subsp. *australis*	0.1	0.1	API40.01	P3
Senna notabilis	0.1	0.1		
Triodia epactia	25	0.5	API18.02	
Triodia longiceps	10	0.7	API40.02	

Alinta Transmission Line **Site API-041**

Date	29/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	641938 mE;	7719447 mN
	118.3621 E	-20.618786 S
Veg Condition	Excellent	
Soil	Sandy Loam	
Rock Type	None Discernible	
Fire Age	5-10 yrs	
Habitat	Sand Plain	
Vegetation	*Corymbia candida* low sparse woodland over *Acacia colei, Acacia ancistrocarpa* tall isolated shrubs over *Acacia stellaticeps* mid isolated shrubs over *Triodia epactia* mid hummock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Abutilon lepidum	0.1	0.2	API29.07	
Acacia ancistrocarpa	0.1	2		
Acacia colei var. *colei*	0.5	2.8	APIR20.01	
Acacia inaequilatera	0	3		Supp
Acacia stellaticeps	0.5	0.8	APIR82.01	
Aristida holathera var. *holathera*	0.1	0.2		
Boerhavia sp. indet	0.1	0.1	indet	
Carissa lanceolata	0.1	1.6	API48.01	
Cassytha filiformis	0.1	0.1	APIR82.17	
Chrysopogon fallax	0.1	0.3		
Corymbia candida	3	5		
Cucumis variabilis	0.1	0.1		
Cynanchum floribundum	0.1	0.1		
Duperreya commixta	0.1	0.1	APIR82.18	
Eucalyptus victrix	0.1	2		
Evolvulus alsinoides var. *villosicalyx*	0.1	0.1		
Fimbristylis dichotoma	0.1	0.1	API42.01	
Hakea lorea subsp. *lorea*	0	1.7		Supp
Indigofera monophylla	0.1	0.3		
Pimelea ammocharis	0.1	1.1	KJEM.13	
Pluchea tetranthera	0.1	0.3	APIR82.15	
Sida rohlenae subsp. *rohlenae*	0.1	0.8	APIR82.05	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	0.6	APIR82.10	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Tephrosia sp. B Kimberley Flora (C.A. Gardner 7300)	0.1	0.3	API41.01	
Triodia epactia	68	0.5	API18.02	
Triumfetta chaetocarpa	0.1	0.4	API76.01	

Alinta Transmission Line **Site API-042**

Date	28/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	650669 mE;	7720122 mN
	118.4459 E	-20.612011 S
Veg Condition	Very Good	
Soil	Sandy Clay Loam	
Rock Type	None Discernible	
Fire Age	5-10 yrs	
Habitat	Sand Plain	
Vegetation	*Triodia longiceps, Triodia epactia* mid open hummock grassland.	
Notes	Areas in surrounds were likely to have been Acacia stellaticeps low-mid shrubland a over a Triodia hummock grassland but have been recently.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Bulbostylis barbata	0.1	0.1		
Calandrinia pumila	0.1	0.1	API40.03	
Corchorus sp. indet	0.1	0.1		
Eriachne aristidea	0.1	0.2		
Eriachne obtusa	0.1	0.3	API81.02	
Fimbristylis dichotoma	0.1	0.2	API42.01	
Panicum australiense var. *australiense*	0.1	0.1	API27.01	
Pluchea tetranthera	0.1	0.5	APIR82.15	
Polycarpaea longiflora	0.1	0.1		
Senna notabilis	0.1	0.2		
Triodia epactia	10	0.5	API18.02	
Triodia longiceps	15	0.6	API40.02	

Alinta Transmission Line **Site API-044**

Date	29/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	642674 mE;	7720402 mN
	118.3691 E	-20.610102 S
Veg Condition	Very Good	
Soil	Sandy Clay Loam	
Rock Type	Ironstone	
Fire Age	5-10 yrs	
Habitat	Sand Plain	
Vegetation	*Eucalyptus victrix* low isolated trees over *Acacia colei* tall sparse shrubland over *Acacia stellaticeps, Pluchea tetranthera* mid sparse shrubland over *Triodia epactia* mid hummock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia ancistrocarpa	0	2.5		Supp
Acacia colei var. *colei*	4	2.5	APIR20.01	
Acacia stellaticeps	6	0.6	APIR82.01	
Chrysopogon fallax	0.1	0.3		
Corymbia candida	0	3.5		Supp
Eucalyptus victrix	1	10		
Fimbristylis dichotoma	0.1	0.1	API42.01	
Pluchea tetranthera	0.5	0.6	APIR82.15	
Triodia epactia	32	0.5	API18.02	
Triodia longiceps	0.1	0.5	API40.02	

Alinta Transmission Line **Site API-047**

Date	28/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	650348 mE;	7721579 mN
	118.4427 E	-20.598872 S
Veg Condition	Very Good	
Soil	Clay Loam	
Rock Type	None Discernible	
Fire Age	1-2 yrs	
Habitat	Other (minor depression)	
Vegetation	*Triodia epactia* low isolated clumps of hummock grasses over *Eriachne benthamii, Eriachne glauca* low sparse tussock grassland.	
Notes	Minor depression, NE corner slightly captured adjacent community (*Corymbia candidia* and *Senna notabilis*)	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia sp. indet	0.1	0.1		
Aeschynomene indica	0.1	0.3	API47.05	
Arivela viscosa	0.1	0.3		
Bulbostylis barbata	0.1	0.1		
Calandrinia pumila	0.1	0.1	(Coll)	
Corymbia candida	0.5	3		
Cyperus iria	0.1	0.1	API47.04	
Eragrostis cumingii	0.1	0.1	APIMN13.03	
Eragrostis speciosa	0.1	0.4	API47.02	
Eriachne benthamii	2.5	0.3	APIMN13.01	
Eriachne glauca var. *glauca*	2	0.2	APIR45.01	
Goodenia lamprosperma	0.1	0.4	APIMN13.02	
Hibiscus solanifolius	0.1	0.1	API47.03	
Marsilea hirsuta	0.1	0.1		
Paspalidium rarum	0.1	0.1	API47.01	
Portulaca cyclophylla	0.1	0.1		
Senna notabilis	0.1	0.1		
Triodia epactia	0.5	0.5	API18.02	

Alinta Transmission Line **Site API-048**

Date	29/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	644496 mE;	7722441 mN
	118.3864 E	-20.591548 S
Veg Condition	Excellent	
Soil	Sandy Clay Loam	
Rock Type	None Discernible	
Fire Age	>10 yrs	
Habitat	Sand Plain	
Vegetation	*Acacia colei, Acacia ancistrocarpa*, ? *Dolichandrone occidentalis* tall isolated clumps of shrubs over *Acacia stellaticeps* mid shrubland over *Triodia epactia* mid open hummock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
? *Dolichandrone occidentalis*	0.5	1.7	API29.11	
Acacia ancistrocarpa	0.5	2.5		
Acacia colei var. *colei*	0.5	3	APIR20.01	
Acacia inaequilatera	0.1	2		
Acacia stellaticeps	65	1.4	APIR82.01	
Bonamia erecta	0.1	0.3	APIR82.07	
Carissa lanceolata	0.1	3	API48.01	
Corchorus incanus subsp. *incanus*	0.1	0.3	API76.08	
Corymbia zygophylla	0	4.5	KJEM.16	
Duperreya commixta	0.1	0.1	APIR82.18	
Eragrostis eriopoda	0.1	0.3	APIR82.08	
Hakea lorea subsp. *lorea*	0.1	0.8		
Indigofera monophylla	0.1	0.3		
Pluchea tetranthera	0.1	0.2	APIR82.15	
Ptilotus astrolasius	0	0.4		
Senna artemisioides subsp. *oligophylla*	0.1	1		
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	0	0.3	API29.10	Supp
Solanum sp. indet	0	1	API18.01	Supp
Triodia epactia	20	0.5	API18.02	

Alinta Transmission Line **Site API-050**

Date	29/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	645086 mE;	7723024 mN
	118.3921 E	-20.586237 S
Veg Condition	Excellent	
Soil	Sandy Loam	
Rock Type	Ironstone	
Fire Age	5-10 yrs	
Habitat	Sand Plain	
Vegetation	?*Dolichandrone occidentalis* low isolated shrubs over Triodia epactia, Triodia longiceps mid hummock grassland over *Eriachne obtusa* isolated clumps of tussock grasses.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
?*Dolichandrone occidentalis*	0.25	0.4		
Eriachne obtusa	1	0.3	API81.02	
Pluchea tetranthera	0.5	0.5	APIR82.15	
Portulaca cyclophylla	0.1	0.1		
Trianthema triquetrum	0.1	0.1		
Triodia epactia	25	0.6	API18.02	
Triodia longiceps	15	0.5	API40.02	

Alinta Transmission Line **Site API-053**

Date	1/05/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	65022 mE;	7725048 mN
	118.4411 E	-20.567546 S
Veg Condition	Very Good	
Soil	Sandy Loam	
Rock Type	None Discernible	
Fire Age	3-5 yrs,5-10 yrs	
Habitat	Sand Plain	
Vegetation	*Corymbia candida* low isolated trees over *Acacia stellaticeps, Pluchea tetranthera* low sparse shrubland over *Triodia epactia, Triodia longiceps* low hummock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia inaequilatera	0.1	1		
Acacia sericophylla	0.1	1.3	APIR82.14	
Acacia stellaticeps	3	0.5	APIR82.01	
Aristida holathera var. *holathera*	0.1	0.2		
Bonamia erecta	0.1	0.1	APIR82.07	
Corchorus elachocarpus	0.1	0.3	API29.06	
Corymbia candida	0.1	1.8		
Dactyloctenium radulans	0.1	0.1		
Grevillea pyramidalis	0.1	1.2		
Indigofera monophylla	0.1	0.7		
Melaleuca lasiandra	0	1	API53.02	Supp
Pluchea ferdinandi-muelleri	0.1	0.3	API53.01	
Pluchea tetranthera	2	0.4	APIR82.15	
Polymeria ambigua	0.1	0.1		
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	0.3	APIR82.10	
Trianthema triquetrum	0.1	0.1		
Triodia epactia	32	0.4	API18.02	
Triodia longiceps	1	0.5	API40.02	

Alinta Transmission Line **Site API-056**

Date	1/05/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	650834 mE;	7725727 mN
	118.4470 E	-20.561362 S
Veg Condition	Very Good	
Soil	Sandy Clay Loam	
Rock Type	None Discernible	
Fire Age	5-10 yrs	
Habitat	Other	
Vegetation	*Corymbia candida* low isolated trees (on edges) over *Acacia colei* tall isolated shrubs (on edges) over *Triodia epactia* low isolated hummock grasses over *Eriachne benthamii, Eriachne glauca* low sparse tussock grassland.	
Notes	Open depression.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia colei var. *colei*	0.1	1	APIR20.01	
Aristida contorta	0.1	0.2		
Arivela viscosa	0.1	0.1		
Carissa lanceolata	1	1.2	API48.01	
Corymbia candida	0.5	5		
Eriachne benthamii	0.5	0.4	KJEM-Opp21	
Eriachne benthamii	0.5	0.5	APIMN13.01	
Eriachne glauca var. *glauca*	2	0.1	APIR45.01	
Goodenia lamprosperma	0.1	0.3	APIMN13.02	
Marsilea hirsuta	0.1	0.1		
Pluchea rubelliflora	0.1	0.1	API56.01	
Portulaca cyclophylla	0	0.1		Supp
Portulaca oleracea	0.1	0.1		
Senna notabilis	0.1	0.1		
Streptoglossa sp. indet	0.1	0.1	API56.02	
Triodia epactia	1	0.6	API18.02	

Alinta Transmission Line **Site API-060**

Date	1/05/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	654043 mE;	7728759 mN
	118.4775 E	-20.533718 S
Veg Condition	Very Good	
Soil	Silty Loam	
Rock Type	None Discernible	
Fire Age	5-10 yrs	
Habitat	Major Drainage Line	
Vegetation	*Eucalyptus camaldulensis* low open woodland over *Acacia trachycarpa* tall sparse shrubland over *Corchorus incanus* mid isolated shrubs over *Triodia epactia, Triodia lanigera* mid open hummock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia pyrifolia var. *pyrifolia*	0.1	1.6		
Acacia trachycarpa	5	3		
Acacia tumida var. *pilbarensis*	0.1	2.5	APIR17.01	
Aeschynomene indica	0.1	0.1	API47.05	
Afrohybanthus aurantiacus	0.1	0.3		
Aristida holathera var. *holathera*	0.1	0.4		
Arivela uncifera	0.1	0.5	API27.02	
Arivela viscosa	0.1	0.5		
Boerhavia coccinea	0.1	0.1		
Bulbostylis barbata	0.1	0.1		
**Cenchrus ciliaris*	0.1	0.3		
**Cenchrus setiger*	0.1	0.3		
Chloris pumilio	0.1	0.2	API60.01	
Corchorus incanus subsp. *incanus*	0.5	1.2	APIR82.06	
Corynotheca pungens	0.1	0.3	APIR17.04	
Cucumis variabilis	0.1	0.1		
Cynanchum floribundum	0.1	0.1		
Dactyloctenium radulans	0.1	0.1		
Dentella asperata	0.1	0.1	API17.05	
Duperreya commixta	0.1	0.1	APIR17.05	
Eragrostis eriopoda	0.1	0.3	APIR81.03	
Eriachne aristidea	0.1	0.3		
Eriachne obtusa	0.1	0.3	API81.02	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Eucalyptus camaldulensis	11	13		
Euphorbia coghlanii	0.1	0.2	APIR82.13	
Euphorbia vaccaria var. *vaccaria*	0.1	0.2	API17.02	
Goodenia lamprosperma	0.1	0.4		
Ipomoea muelleri	0.1	0.1		
Ipomoea polymorpha	0.1	0.2	API11.02	
Melaleuca argentea	0	4.5		Supp
Melaleuca glomerata	0.1	3.5		
Panicum australiense var. *australiense*	0.1	0.2	API28.01	
Polycarpaea longiflora	0.1	0.1		
Portulaca filifolia	0.1	0.1	API63.01	
Portulaca oleracea	0.1	0.1		
Pterocaulon sphacelatum	0.1	0.1		
Ptilotus fusiformis	0.1	0.3		
Senna notabilis	0.1	0.2		
Sida rohlenae subsp. *rohlenae*	0.1	0.3	APIR82.05	
Trianthema glossostigmum	0.1	0.2		
Triodia epactia	30	0.5	API18.02	
Triodia lanigera	10	0.5	API62.05	
Triumfetta chaetocarpa	0.1	1.4	API76.01	
Waltheria indica	0.1	0.4	APIR81.02	

Alinta Transmission Line **Site API-062**

Date	1/05/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	654168 mE;	7729623 mN
	118.4786 E	-20.525903 S
Veg Condition	Very Good	
Soil	Sand	
Rock Type	None Discernible	
Fire Age	5-10 yrs	
Habitat	Sand Dune	
Vegetation	*Acacia tumida, Acacia trachycarpa* tall open shrubland over *Triumfetta chaetocarpa, Corchorus incanus* mid open shrubland over *Triodia epactia* mid open hummock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Abutilon lepidum	0.1	0.2	API29.07	
Acacia pyrifolia var. *pyrifolia*	0.1	1.5		
Acacia trachycarpa	7	4.5		
Acacia tumida var. *pilbarensis*	6	7	API62.01	
**Aerva javanica*	0.1	0.3		
Aeschynomene indica	0.1	0.1	API47.05	
Afrohybanthus aurantiacus	0.1	0.3		
Aristida holathera var. *holathera*	0.1	0.3		
Arivela uncifera	0.1	0.3	API27.02	
Arivela viscosa	0.1	0.4		
Boerhavia coccinea	0.1	0.1		
Bulbostylis barbata	0.1	0.1		
Cajanus cinereus	0.1	1.6	KJEM.02	
**Cenchrus ciliaris*	1	0.3		
Corchorus incanus subsp. *incanus*	2.5	1.2	APIR82.06	
Corynotheca pungens	0.1	0.6	APIR17.04	
Crotalaria cunninghamii subsp. *sturtii*	0.1	0.4	API17.03	
**Cucumis melo*	0.1	0.1		
Dentella asperata	0.1	0.1	API17.05	
Eragrostis eriopoda	0.1	0.4	APIR81.03	
Eriachne aristidea	0.1	0.4		
Euphorbia australis var. *subtomentosa*	0.1	0.1		
Euphorbia coghlanii	0.1	0.2	API19.01	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Euphorbia vaccaria var. *vaccaria*	0.1	0.3	API17.02	
Goodenia lamprosperma	0.1	0.3		
Ipomoea polymorpha	0.1	0.2	API11.02	
**Malvastrum americanum*	0.1	0.3		
Melaleuca argentea	0.1	0		Overhang
Melaleuca linophylla	0.1	1.8		
Panicum australiense var. *australiense*	0.1	0.1	API28.01	
Paspalidium tabulatum	0.1	0.4	API62.03	
Polycarpaea longiflora	0.1	0.1		
Polygala galeocephala	0.1	0.1	API27.04	
Portulaca oleracea	0.1	0.1		
Ptilotus fusiformis	0.1	0.4		
Sida rohlenae subsp. *rohlenae*	0.1	0.1	APIR82.05	
Tribulopis angustifolia	0.1	0.2	API62.06	
Tribulus occidentalis	0.1	0.1	API62.04	
Triodia epactia	20	0.5	API18.02	
Triodia lanigera	20	0.5	API62.05	
Triumfetta chaetocarpa	1	1.7	API76.01	

Alinta Transmission Line **Site API-063**

Date	1/05/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	100m x 25m
Location	MGA Zone 50	
	655015 mE;	7729482 mN
	118.4867 E	-20.527103 S
Veg Condition	Very Good	
Soil	Sand	
Rock Type	None Discernible	
Fire Age	5-10 yrs	
Habitat	Sand Dune	
Vegetation	*Acacia trachycarpa, Acacia tumida, Petalostylis labicheoides* tall open woodland over *Triumfetta chaetocarpa, Corchorus incanus* mid isolated shrubs over *Triodia epactia* mid open hummock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Abutilon sp. Pritzelianum (S. van Leeuwen 5095)	0.1	0.4	KJEM-Opp1	P3
Acacia stellaticeps	0.1	0.3	APIR82.01	
Acacia trachycarpa	15	3.5		
Acacia trachycarpa x tumida var. *pilbarensis*	0.1	4	API63.02	
Acacia tumida var. *pilbarensis*	5	4	APIR17.01	
Aeschynomene indica	0.1	0.1	API47.05	
Afrohybanthus aurantiacus	0.1	0.4		
Aristida holathera var. *holathera*	0.1	0.4		
Arivela viscosa	0.1	0.4		
Boerhavia coccinea	0.1	0.1		
Bonamia erecta	0.1	0.2	API16.01	
Bonamia media	0.1	0.1	API63.03	
Bulbostylis barbata	0.1	0.1		
Cajanus cinereus	0.1	1.5	KJEM.02	
Corchorus incanus subsp. *incanus*	0.5	0.8	APIR82.06	
Corynotheca pungens	0.1	0.5	APIR17.04	
Cucumis variabilis	0.1	0.1		
Distimake davenportii	0.1	0.1	API63.04	
Duperreya commixta	0.1	0.1	APIR82.18	
Eragrostis eriopoda	1	0.3	APIR81.03	
Eriachne benthamii	0.1	0.4	KJEM-Opp22	
Eriachne obtusa	0.1	0.3	API81.02	
Eulalia aurea	0.1	0.4		

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Euphorbia vaccaria var. *vaccaria*	0.1	0.1	APIR20.02	
Evolvulus alsinoides var. *decumbens*	0.1	0.2		
Ipomoea polymorpha	0.1	0.2	API11.02	
Panicum australiense var. *australiense*	0.1	0.1	API28.01	
Petalostylis labicheoides	0.5	2.5		
Pluchea rubelliflora	0.1	0.3		
Portulaca filifolia	0.1	0.1	API63.01	
Sida rohlenae subsp. *rohlenae*	0.1	0.5	APIR82.05	
Trianthema glossostigmum	0.1	0.1		
Trigastrotheca molluginea	0.1	0.1		
Triodia epactia	12	0.5	API18.02	
Triumfetta chaetocarpa	0.5	1.6	API76.01	
Waltheria indica	0.1	1	APIR81.02	

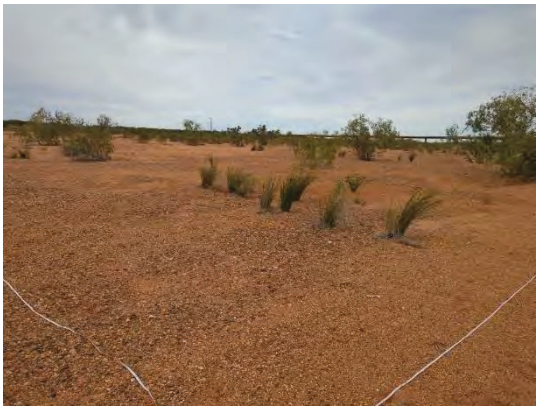
Alinta Transmission Line **Site API-065**

Date	2/05/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	656121 mE;	7730279 mN
	118.4973 E	-20.519814 S
Veg Condition	Excellent	
Soil	Sandy Clay Loam	
Rock Type	None Discernible	
Fire Age	5-10 yrs	
Habitat	Sand Plain	
Vegetation	*Acacia inaequilatera* tall sparse shrubland over *Acacia stellaticeps* low open shrubland over *Bonamia erecta* low sparse shrubland over *Triodia epactia, Triodia lanigera* mid hummock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia ancistrocarpa	0	3		Supp
Acacia holosericea	0.1	1.5	API82.02	
Acacia inaequilatera	8	3.5		
Acacia sericophylla	0.1	1.8	APIR82.14	
Acacia stellaticeps	12	0.8	APIR82.01	
Aeschynomene indica	0.1	0.1	API47.05	
Afrohybanthus aurantiacus	0.1	0.3		
Aristida holathera var. *holathera*	0.1	0.3		
Aristida inaequiglumis	0.1	0.5	API76.11	
Bonamia erecta	0.5	0.3	APIR82.07	
Bonamia media	0.1	0.1	APIR17.02	
Cassytha filiformis	0.1	0	API81.05	
**Cenchrus ciliaris*	0.1	0.3		
Chrysopogon fallax	0.1	0.4		
Corchorus incanus subsp. *incanus*	0.1	0.3	API76.10	
Cynanchum floribundum	0.1	0.1		
Duperreya commixta	0.1	0.1	APIR82.18	
Eragrostis eriopoda	0.1	0.3	APIR81.03	
Eriachne obtusa	0.1	0.4	API81.02	
Evolvulus alsinoides var. *decumbens*	0.1	0.2		
Grevillea pyramidalis	0.1	1.6		
Hakea lorea subsp. *lorea*	0.1	2		
Hibiscus leptocladus	0.1	0.3	API29.01	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Indigofera monophylla	0.1	0.5		
Owenia reticulata	0	6	API76.03	Supp
Panicum australiense var. *australiense*	0.1	0.1	API28.01	
Paraneurachne muelleri	0.1	0.3		
Ptilotus astrolasius	0.1	0.3		
Ptilotus clementii	0.1	0.2		
Senna artemisioides subsp. *oligophylla*	0	1.4		Supp
Sida echinocarpa	0.1	0.3		
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	0.4	APIR82.10	
Triodia epactia	25	0.6	API18.02	
Triodia lanigera	8	0.6	API62.05	
Triodia schinzii	0	0.6	API76.05	Supp
Waltheria indica	0.1	0.4	APIR81.02	

Alinta Transmission Line **Site API-066**



Date	1/05/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	654442 mE;	7730281 mN
	118.4812 E	-20.519933 S
Veg Condition	Excellent	
Soil	Sand	
Rock Type	River stones	
Fire Age	5-10 yrs	
Habitat	Major Drainage Line	
Vegetation	*Melaleuca argentea* low isolated trees over *Cyprus vaginatus* mid isolated sedges.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia pyrifolia var. *pyrifolia*	0.1	0.1		
Afrohybanthus aurantiacus	0.1	0.4		
Aristida holathera var. *holathera*	0.1	0.2		
Arivela viscosa	0.1	0.4		
**Cenchrus ciliaris*	0.1	0.4		
Cyperus vaginatus	0.5	0.9		
Eucalyptus camaldulensis	0	14		Supp
Euphorbia coghlanii	0.1	0.5	APIR82.13	
Goodenia lamprosperma	0.1	0.3		
Melaleuca argentea	3	5		
Melaleuca linophylla	0.1	0.7		
Nellica maderaspatensis	0.1	0.6		
Olearia fluvialis	0.1	0.3	KJEM.04	
Pluchea rubelliflora	0.1	0.1		
Ptilotus fusiformis	0.1	0.3		
Stemodia grossa	0	0.3		Supp
Trichodesma zeylanicum var. *zeylanicum*	0.1	0.2		

Alinta Transmission Line **Site API-067**

Date	2/05/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	656652 mE;	7731385 mN
	118.5023 E	-20.509784 S
Veg Condition	Very Good	
Soil	Sandy Clay Loam	
Rock Type	None Discernible	
Fire Age	3-5 yrs	
Habitat	Sand Plain	

Vegetation *Owenia reticulata* low isolated trees over *Acacia holosericea* tall isolated shrubs over *Acacia stellaticeps* low isolated shrubs over *Eragrostis eriopoda, Aristida holathera* low tussock grassland with *Triodia schinzii* mid isolated clumps of hummock grasses over *Bonamia media* low sparse herbland.

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Abutilon otocarpum	0.1	0.3		
Acacia holosericea	0.5	2.5	API82.02	
Acacia sericophylla	0.1	2	APIR82.14	
Acacia stellaticeps	0.5	0.8	APIR82.01	
**Aerva javanica*	0.1	0.5		
Aeschynomene indica	0.1	0.1	API47.05	
Amaranthus undulatus	0.1	0.2		
Aristida holathera var. *holathera*	5	0.4		
Boerhavia coccinea	0.1	0.1		
Bonamia erecta	0.1	0.3	API16.01	
Bonamia media	0.5	0.1	API63.04	
**Cenchrus ciliaris*	0.1	0.4		
Chrysopogon fallax	0.1	0.3		
Corchorus incanus subsp. *incanus*	0.1	0.6	API17.06	
Eragrostis eriopoda	25	0.4	APIR81.03	
Eriachne aristidea	0.1	0.2		
Eriachne mucronata	0.1	0.1	APO79.01	
Eriachne obtusa	0.1	0.4	API81.02	
Euphorbia vaccaria var. *vaccaria*	0.1	0.2	APIR20.02	
Evolvulus alsinoides var. *decumbens*	0.1	0.2		
Goodenia forrestii	0.1	0.1		
Gossypium australe	0.1	1		

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Grevillea pyramidalis	0.1	1		
Grona filiformis	0.1	0.1	API33.01	
Hakea lorea subsp. *lorea*	0.1	0.8		
Indigofera linifolia	0.1	0.1	KJEM.06	
Indigofera monophylla	0.1	0.4		
**Malvastrum americanum*	0.1	0.3		
Owenia reticulata	8	6	API76.03	
Paraneurachne muelleri	0.1	0.3		
Pimelea ammocharis	0.1	0.9	KJEM.13	
Senna notabilis	0.1	0.3		
Sida rohlenae subsp. *rohlenae*	0.1	0.5	APIR82.05	
Triodia schinzii	1	0.6	API76.05	
Triumfetta chaetocarpa	0.1	0.8	API76.01	
Waltheria indica	0.1	0.4	APIR81.02	

Alinta Transmission Line **Site API-071**

Date	2/05/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	657866 mE;	7733645 mN
	118.5137 E	-20.489264 S
Veg Condition	Very Good	
Soil	Clay Loam	
Rock Type	None Discernible	
Fire Age	>10 yrs	
Habitat	Claypan	
Vegetation	*Eriachne benthamii, Eriachne glauca* low sparse tussock grassland with *Triodia epactia* mid isolated clumps of hummock grasses over *Peplidium muelleri* low sparse herbland.	
Notes	Soil colour = beige. Patterning on aerial imagery and ground-truthing indicates a large claypan system interspersed with slightly raised "islands": of Triodia. *Corymbia candida* on edges of claypan depression (not capture directly within this quadrat).	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Aristida contorta	0.1	0.3		
Aristida holathera var. *holathera*	0.1	0.3		
Boerhavia coccinea	0.1	0.1		
Bulbostylis barbata	0.1	0.1		
Calandrinia pumila	0.1	0.1	API40.03	
Chloris pumilio	0.1	0.1	API60.01	
Corchorus incanus subsp. *incanus*	0	0.4	APIR82.06	Supp
Cyperus difformis	0.1	0.3	API71.03	
Cyperus squarrosus	0.1	0.1	API71.02	
Dactyloctenium radulans	0.1	0.1		
Eriachne aristidea	0.1	0.3		
Eriachne benthamii	2	0.5	APIMN13.01	
Eriachne glauca var. *glauca*	2.5	0.3	APIR45.01	
Eriachne obtusa	0.1	0.2	API81.02	
Marsilea hirsuta	0.1	0.1		
Paspalidium rarum	0.1	0.1	APIR81.04	
Peplidium muelleri	6	0.1	API71.01	
Portulaca cyclophylla	0.1	0.1		
Portulaca filifolia	0.1	0.4	API63.01	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Portulaca oleracea	0.1	0.1		
Senna notabilis	0.1	0.1		
Trianthema triquetrum	0.1	0.1		
Triodia epactia	2	0.6	API18.02	

Alinta Transmission Line **Site API-072**

Date	2/05/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	656781 mE;	7734057 mN
	118.5033 E	-20.485633 S
Veg Condition	Very Good	
Soil	Sandy Clay Loam	
Rock Type	Quartz,Ironstone	
Fire Age	5-10 yrs	
Habitat	Other	
Vegetation	*Owenia reticulata* low isolated trees over *Acacia inaequilatera, Acacia holosericea* tall isolated shrubs over *Acacia stellaticeps* low sparse shrubland over *Eragrostis eriopoda, Eriachne obtusa* low tussock grassland with *Triodia epactia* mid isolated clumps of grasses over *Bonamia media* low sparse herbland.	
Notes	Landform = low rise .	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
? *Dolichandrone occidentalis*	0.1	0.5	API29.11	
Abutilon otocarpum	0.1	0.3		
Acacia holosericea	0.5	3	API82.02	
Acacia inaequilatera	0.5	3.5		
Acacia sericophylla	0.1	2.2	APIR82.14	
Acacia stellaticeps	7	0.9	APIR82.01	
**Aerva javanica*	0.1	0.5		
Aeschynomene indica	0.1	0.1	API47.05	
Afrohybanthus aurantiacus	0.1	0.3		
Amaranthus undulatus	0.1	0.2		
Aristida holathera var. *holathera*	0.5	0.3		
Boerhavia coccinea	0.1	0.1		
Bonamia erecta	0.1	0.1	API27.03	
Bonamia media	0.5	0.1	API63.05	
Cassytha filiformis	0.1	0	API81.05	
**Cenchrus ciliaris*	0.1	0.4		
Chrysopogon fallax	0.1	0.4		
Corchorus incanus subsp. *incanus*	0.1	0.4	API76.10	
Cucumis variabilis	0.1	0		
Cynanchum floribundum	0.1	0		

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Eragrostis eriopoda	25	0.4	APIR81.03	
Eriachne helmsii	0.1	0.4	API72.03	
Eriachne obtusa	6	0.4	API81.02	
Evolvulus alsinoides var. *decumbens*	0.1	0.2		
Indigofera linifolia	0.1	0.1	KJEM.06	
Indigofera monophylla	0.1	0.4		
**Malvastrum americanum*	0.1	0.2		
Owenia reticulata	3	6	API76.03	
Panicum australiense var. *australiense*	0.1	0.1	API27.01	
Paraneurachne muelleri	0.1	0.3		
Portulaca filifolia	0.1	0.1	API63.01	
Portulaca oleracea	0.1	0.1		
Ptilotus polystachyus	0.1	0.2	API72.02	
Senna notabilis	0	0.2		Supp
Sida rohlenae subsp. *rohlenae*	0.1	0.4	APIR82.05	
Sida sp. L (A.M. Ashby 4202)	0.1	0.3	API72.01	
Solanum cleistogamum	0.1	0.3		
Trianthema glossostigmum	0.1	0.1		
Trigastrotheca molluginea	0.1	0.1		
Triodia epactia	0.5	0.5	API18.02	
Triumfetta chaetocarpa	0.1	0.5	API76.01	
Waltheria indica	0.1	0.3	APIR81.02	

Alinta Transmission Line **Site API-073**

Date	3/05/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	660250 mE;	7734671 mN
	118.5365 E	-20.479799 S
Veg Condition	Excellent	
Soil	Sandy Loam	
Rock Type	None Discernible	
Fire Age	5-10 yrs	
Habitat	Sand Plain	
Vegetation	*Acacia stellaticeps* mid open shrubland over *Triodia lanigera, Triodia epactia* low open hummock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia holosericea	0	1.6	API82.02	Supp
Acacia inaequilatera	0.1	1.9		
Acacia sericophylla	0.1	0.6	APIR82.14	
Acacia sphaerostachya	0	1.8	API26.07	Supp
Acacia stellaticeps	25	1.2	APIR82.01	
Aristida holathera var. *holathera*	0.1	0.3		
Carissa lanceolata	0	3	API48.01	Supp
Cassytha filiformis	0.1	0.1	APIR82.17	
Corchorus incanus subsp. *incanus*	0	0.7	API76.08	Supp
Corchorus sp. indet	0.1	0.1		
Dodonaea coriacea	0.1	0.5	APIR34.01	
Duperreya commixta	0.1	0.1	APIR82.18	
Eragrostis eriopoda	0.1	0.4	APIR81.03	
Evolvulus alsinoides var. *decumbens*	0.1	0.1		
Hakea lorea subsp. *lorea*	0	0.5		Supp
Indigofera monophylla	0.1	0.3		
Ptilotus astrolasius	0.1	0.3		
Ptilotus calostachyus	0	1.1		Supp
Ptilotus polystachyus	0	0.2	API72.02	Supp
Scaevola parvifolia subsp. *pilbarae*	0	0.1		Supp
Scaevola spinescens	0	1		Supp
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	0.4	APIR82.10	
Solanum cleistogamum	0	0.1	API73.01	
Triodia epactia	1	0.2	API18.02	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Triodia lanigera	25	0.4	API73.02	

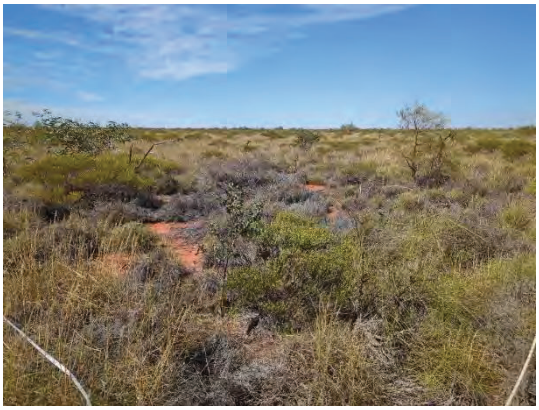
Alinta Transmission Line **Site API-076**

Date	26/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	661357 mE;	7737217 mN
	118.5469 E	-20.456706 S
Veg Condition	Very Good	
Soil	Sandy Clay Loam	
Rock Type	None Discernible	
Fire Age	3-5 yrs	
Habitat	Sand Plain	
Vegetation	*Acacia inaequilatera* tall isolated shrubs over *Acacia holosericea* mid open shrubland over *Acacia stellaticeps, Triumfetta chaetocarpa, Bonamia erecta* low sparse shrubland over *Triodia schinzii, Triodia epactia* mid sparse hummock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia holosericea	15	1.8	API82.02	
Acacia inaequilatera	0.5	2.5		
Acacia sericophylla	0.1	0.6	APIR82.14	
Acacia stellaticeps	10	0.4	APIR82.01	
Achyranthes aspera	0.1	0.3	API76.04	
Afrohybanthus aurantiacus	0.1	0.3		
Aristida holathera var. *holathera*	0.1	0.5		
Aristida inaequiglumis	0.1	0.6	API76.11	
Bonamia erecta	0.5	0.4	API76.06	
Chrysopogon fallax	0.1	0.6		
Clerodendrum tomentosum var. *lanceolatum*	0.1	1.2	API76.07	
Corchorus incanus subsp. *incanus*	0.1	0.6	API76.08	
Dolichandrone occidentalis	0.1	0.8	API76.02	
Duperreya commixta	0.1	0.1	APIR82.18	
Eragrostis eriopoda	0.1	0.6	APIR81.03	
Evolvulus alsinoides var. *villosicalyx*	0.1	0.1		
Grevillea pyramidalis	0.1	0.5		
Hibiscus leptocladus	0.1	0.8	API76.09	
Indigofera monophylla	0.1	0.3		
Owenia reticulata	0.1	4	API76.03	
Paraneurachne muelleri	0.1	0.3		
Ptilotus astrolasius	0.1	1		
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	1	APIR82.12	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Triodia epactia	1	0.3	API82.01	
Triodia schinzii	8	0.6	API76.05	
Triumfetta chaetocarpa	0.5	0.5	API76.01	

Alinta Transmission Line **Site API-077**



Date	3/05/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	659379 mE;	7737403 mN
	118.5279 E	-20.455188 S
Veg Condition	Very Good	
Soil	Sandy Loam	
Rock Type	None Discernible	
Fire Age	3-5 yrs,5-10 yrs	
Habitat	Sand Plain	
Vegetation	*Corymbia candida* low isolated trees over *Acacia stellaticeps, Acacia holosericea* mid open shrubland over *Triodia epactia* mid hummock grassland.	

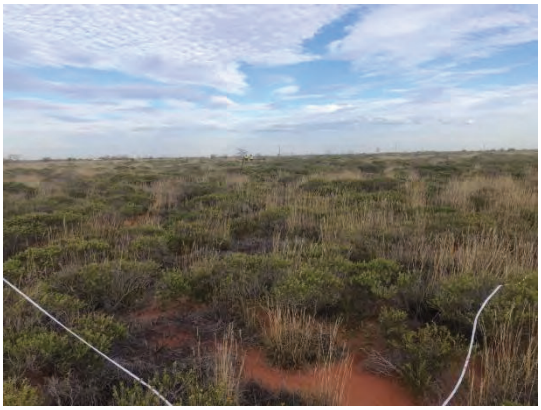
Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia colei var. *colei*	0.1	1.7	APIR20.01	
Acacia holosericea	0.5	1.7	API82.02	
Acacia inaequilatera	0.1	1		
Acacia sericophylla	0.1	1.8	APIR82.14	
Acacia stellaticeps	15	1.2	APIR82.01	
Afrohybanthus aurantiacus	0.1	0.4		
Aristida holathera var. *holathera*	0.1	0.3		
Cassytha filiformis	0.1	0.1	API81.05	
Chrysopogon fallax	0.1	0.3		
Corchorus incanus subsp. *incanus*	0.1	0.4	APIR82.06	
Corymbia candida	0	3.5		Supp
Corymbia hamersleyana	0	4.5		Supp
Duperreya commixta	0.1	0.1	APIR82.18	
Eragrostis eriopoda	0.1	0.3	APIR81.03	
Evolvulus alsinoides var. *decumbens*	0.1	0.2		
Indigofera monophylla	0.1	0.2		
Seringia nephrosperma	0.1	0.4	API77.01	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	0.7	APIR82.10	
Solanum sp. indet	0.1	0.3	API18.01	
Triodia epactia	50	0.5	API18.02	

Alinta Transmission Line **Site API-078**

Date	3/05/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	657927 mE;	7738444 mN
	118.5139 E	-20.445914 S
Veg Condition	Very Good	
Soil	Sandy Clay Loam	
Rock Type	Ironstone	
Fire Age	5-10 yrs	
Habitat	Sand Plain	
Vegetation	*Triodia epactia* low hummock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia colei var. *colei*	0.1	2.5	APIR20.01	
Aristida contorta	0.1	0.1		
Bulbostylis barbata	0.1	0.1		
Cynodon prostratus	0.1	0.1		
Eriachne aristidea	0.1	0.2		
Eriachne pulchella subsp. *dominii*	0.1	0.1		
Fimbristylis dichotoma	0.1	0.1	API42.01	
Pluchea tetranthera	0.1	0.5	APIR82.15	
Portulaca cyclophylla	0.1	0.1		
Portulaca filifolia	0.1	0.1	API63.01	
Sporobolus australasicus	0.1	0.1		
Triodia epactia	35	0.4	API18.02	

Alinta Transmission Line **Site API-079**



Date	26/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	661325 mE;	7738559 mN
	118.5464 E	-20.444585 S
Veg Condition	Excellent	
Soil	Sandy Clay Loam	
Rock Type	None Discernible	
Fire Age	>10 yrs	
Habitat	Sand Plain	
Vegetation	*Acacia stellaticeps* mid shrubland over *Triodia epactia, Triodia schinzii* low hummock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia inaequilatera	0.1	2		
Acacia stellaticeps	40	1.2	APIR82.01	
Aristida inaequiglumis	0.1	0.5	API76.11	
Bonamia erecta	0.1	0.3	API76.06	
Chrysopogon fallax	0.1	0.6		
Digitaria brownii	0.1	0.4	API79.02	
Duperreya commixta	0.1	0.1	APIR82.18	
Eriachne mucronata	0.1	0.4	APO79.01	
Eriachne obtusa	0.1	0.3	API81.02	
Eulalia aurea	0.1	0.5		
Indigofera monophylla	0.1	0.3		
Ptilotus astrolasius	0.1	0.5		
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	1	APIR82.10	
Solanum phlomoides	0.1	0.8	API79.03	
Triodia epactia	20	0.4	API82.01	
Triodia schinzii	0.5	0.4	API76.05	
Triumfetta chaetocarpa	0.1	0.3	API76.01	

Alinta Transmission Line **Site API-080**

Date	4/05/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	659300 mE;	7740289 mN
	118.5269 E	-20.429126 S
Veg Condition	Very Good	
Soil	Sandy Clay Loam	
Rock Type	None Discernible	
Fire Age	5-10 yrs	
Habitat	Sand Plain	
Vegetation	*Eucalyptus victrix* mid isolated trees over *Corymbia candida* low isolated trees over *Acacia holosericea* tall sparse shrubland over *Acacia stellaticeps* mid sparse shrubland over *Triodia epactia* mid hummock grassland.	
Notes	Area of banding / very minor depression in wider Triodia hummock community	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Abutilon lepidum	0.1	0.4	API29.07	
Acacia colei var. *colei*	0.1	1.5	APIR20.01	
Acacia holosericea	1	2.3	API82.02	
Acacia sericophylla	0.1	2.5	APIR82.14	
Acacia stellaticeps	4	1.2	APIR82.01	
Achyranthes aspera	0.1	0.4	APIR50.02	
Afrohybanthus aurantiacus	0.1	0.3		
Alternanthera angustifolia	0.1	0.1	API80.02	
Aristida holathera var. *holathera*	0.1	0.3		
Carissa lanceolata	0.1	1	API48.01	
Cassytha filiformis	0.1	0	API80.01	
Chrysopogon fallax	0.1	0.4		
Corchorus incanus subsp. *incanus*	0.1	1	API17.06	
Corymbia candida subsp. *x lautifolia*	1.5	4	APIR82.03	
Cyperus blakeanus	0.1	0.2	API81.01	
Duperreya commixta	0.1	0.1	API17.08	
Eragrostis eriopoda	0.1	0.4	APIR82.08	
Eragrostis speciosa	0.1	0.4	API47.02	
Eriachne obtusa	0.1	0.3	API81.02	
Eucalyptus victrix	2	12		
Goodenia lamprosperma	0.1	0.3	APIMN13.02	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Murdannia graminea	0.1	0.1	API80.03	
Panicum australiense var. *australiense*	0.1	0.1	API60.02	
Pluchea tetranthera	0.1	0.4	APIR82.15	
Rhynchosia minima	0.1	0		
Senna notabilis	0.1	0.2		
Sida rohlenae subsp. *rohlenae*	0.1	0.6	APIR82.05	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	1	APIR82.10	
Solanum cleistogamum	0.1	0.2		
Solanum sp. indet	0.1	0.3	API18.01	
Stylosanthes hamata	0.1	0.1	API09.05	
Triodia epactia	35	0.6	API18.02	

Alinta Transmission Line **Site API-081**

Date	26/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	660349 mE;	7741391 mN
	118.5368 E	-20.419087 S
Veg Condition	Excellent	
Soil	Sandy Clay Loam	
Rock Type	None Discernible	
Fire Age	>10 yrs	
Habitat	Sand Plain	
Vegetation	*Pluchea ferdinandi-muelleri* mid sparse shrubland over *Acacia stellaticeps* low open shrubland over *Triodia epactia* mid hummock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia holosericea	0.1	1.2	API82.02	
Acacia stellaticeps	15	0.4	APIR82.01	
Afrohybanthus aurantiacus	0.1	0.3		
Cassytha filiformis	0.1	0	API81.05	
Corymbia candida subsp. *x lautifolia*	0	1.8	APIR82.03	
Cyperus blakeanus	0.1	0.3	API81.01	
Duperreya commixta	0.1	0.1	APIR82.18	
Eriachne obtusa	0.1	0.2	API81.02	
Evolvulus alsinoides var. *villosicalyx*	0.1	0.1		
Leptosema anomalum	0.1	0.3	API81.04	
Pluchea ferdinandi-muelleri	2	1.4	API81.03	
Pluchea tetranthera	0.1	0.6	APIR82.15	
Trigastrotheca molluginea	0.1	0.1		
Triodia epactia	35	0.5	API82.01	

Alinta Transmission Line **Site API-082**

Date	26/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Quadrat	50m x 50m
Location	MGA Zone 50	
	659398 mE;	7741633 mN
	118.5277 E	-20.416984 S
Veg Condition	Excellent	
Soil	Sandy Clay Loam	
Rock Type	Ironstone,Quartz	
Fire Age	5-10 yrs	
Habitat	Sand Plain	
Vegetation	*Triodia longiceps, Triodia epactia* mid-low hummock grassland.	
Notes	Very low species diversity - see releve APIR82-02 for patches of denser vegetation.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Triodia epactia	20	0.4	API82.01	
Triodia longiceps	40	0.5	API82.02	

Alinta Transmission Line **Site APIMN-008**

Date 3/05/2023

Described by Kelby Jennings & Emma Marsh

Type Vegetation Mapping Note

Location MGA Zone 50

654093 mE; 7731226 mN

118.4778 E -20.511427 S

Veg Condition Very Good

Habitat Upper Bank / Dune (adjacent to major creekline)

Vegetation *Eucalyptus camaldulensis* mid isolated trees over *Acacia trachycarpa, Acacia tumida, Acacia pyrifolia* tall open shrubland over *Corchorus incanus* mid sparse shrubland over *Triodia epactia, Triodia longiceps* mid open hummock grassland over *Corynotheca pungens* low open herbland.

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia pyrifolia var. *pyrifolia*	0.1			
Acacia trachycarpa	0.1			
Acacia tumida var. *pilbarensis*	0.1		APIR17.01	
Aeschynomene indica	0.1		API47.05	
Afrohybanthus aurantiacus	0.1			
Arivela uncifera	0.1		API27.02	
Boerhavia coccinea	0.1			
Bulbostylis barbata	0.1			
Cajanus cinereus	0.1		KJEM.02	
Corchorus incanus subsp. *incanus*	0.1		APIR82.06	
Corynotheca pungens	0.1		APIR17.04	
Cynanchum floribundum	0.1			
Echinochloa colona	0.1		API09.04	
Eragrostis eriopoda	0.1		APIR81.03	
Eriachne obtusa	0.1		API81.02	
Eucalyptus camaldulensis	0.1			
Ipomoea polymorpha	0.1		API11.02	
Panicum australiense var. *australiense*	0.1		API28.01	
Paspalidium rarum	0.1		APIR81.04	
Ptilotus arthrolasius	0.1		KJEM22	
Trianthema glossostigmum	0.1			
Triodia epactia	0.1		API18.02	
Triodia longiceps	0.1		API40.02	

Alinta Transmission Line **Site APIMN-013**

Date 28/04/2023

Described by Kelby Jennings & Emma Marsh

Type Vegetation Mapping Note

Location MGA Zone 50

651054 mE; 7719511 mN

118.4496 E -20.617499 S

Veg Condition Very Good

Habitat Other

Vegetation *Corymbia candida* low isolated trees over *Eriachne benthamii* low sparse tussock grassland.

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Corymbia candida	1	5.5		
Eragrostis cumingii	0.1		APIMN13.03	
Eriachne benthamii	0.1	5	APIMN13.01	
Eriachne obtusa	0.1		API81.02	
Goodenia lamprosperma	0.1		APIMN13.02	
Marsilea hirsuta	0.1			

Alinta Transmission Line **Site APIMN-014**

Date 27/04/2023

Described by Kelby Jennings & Emma Marsh

Type Vegetation Mapping Note

Location MGA Zone 50

654792 mE; 7709369 mN

118.4864 E -20.708803 S

Veg Condition Very Good

Vegetation *Acacia inaequilatera* tall sparse shrubland over *Acacia acradenia, Acacia ancistrocarpa* low isolated shrubs over *Triodia epactia* low open hummock grassland.

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Abutilon sp. Pritzelianum (S. van Leeuwen 5095)	0.1		KJEM.11	P3
Acacia acradenia	0.5	1	APIR16.01	
Acacia ancistrocarpa	0.5	1		
Acacia colei var. *colei*	0.1	0.2	APIR20.01	
Acacia inaequilatera	4	3.5		
Acacia tumida var. *pilbarensis*	0.1	1.3	APIR17.01	
Aristida holathera var. *holathera*	2	0.4		
Bulbostylis barbata	0.1			
Chrysopogon fallax	0.1			
Corymbia zygophylla	0.1		KJEM.16	
Duperreya commixta	0.1		APIR82.18	
Eragrostis eriopoda	0.1	0.3	APIR81.03	
Euphorbia australis var. *subtomentosa*	0.1			
Euphorbia vaccaria var. *vaccaria*	0.1		APIR20.02	
Pimelea ammocharis	0.1		KJEM.13	
Pluchea tetranthera	0.1		APIR82.15	
Polycarpaea longiflora	0.1			
Ptilotus astrolasius	0.1			
Ptilotus axillaris	0.1			
Ptilotus fusiformis	0.1			
Senna notabilis	0.1	0.2		
Sida arenicola	0.1		KJEM.14	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	0.1		APIR82.10	
Solanum sp. indet	0.1		API18.01	
Trigastrotheca molluginea	0.1			
Triodia epactia	22	0.3	API18.02	

Alinta Transmission Line **Site APIMN-017**

Date 27/04/2023

Described by Kelby Jennings & Emma Marsh

Type Vegetation Mapping Note

Location MGA Zone 50

658259 mE; 7704206 mN

118.5201 E -20.755146 S

Veg Condition Excellent

Vegetation *Acacia tumida, Acacia trachycarpa* tall sparse shrubland over *Acacia pyrifolia* mid sparse shrubland over *Triodia epactia* mid open hummock grassland.

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia pyrifolia var. *pyrifolia*	3	2.3		
Acacia trachycarpa	1	2.5		
Acacia tumida var. *pilbarensis*	3	4	APIR17.01	
Cajanus cinereus	0.5	1.3	KJEM.02	
Triodia epactia	20	0.4	API18.02	

Alinta Transmission Line **Site APIMN-022**

Date 27/04/2023

Described by Kelby Jennings & Emma Marsh

Type Vegetation Mapping Note

Location MGA Zone 50

654766 mE; 7709370 mN

118.4861 E -20.708802 S

Habitat Sand plain

Veg Condition Very Good

Vegetation *Acacia inaequilatera* tall isolated shrubs over *Bonamia erecta* low sparse shrubland over *Triodia schinzii* low open hummock grassland over *Ptilotus fusiformis* low sparse herbland.

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Abutilon sp. Pritzelianum (S. van Leeuwen 5095)	0.1	1.6	KJEM.11	P3
Acacia ancistrocarpa	0.1			
Acacia inaequilatera	0.5	2.5		
Acacia stellaticeps	0.1		APIR82.01	
Acacia tumida var. *pilbarensis*	0.1		APIR17.01	
Aristida holathera var. *holathera*	0.1			
Aristida inaequiglumis	0.1		API76.11	
Arivela viscosa	0.1	0.7		
Bonamia erecta	1	0.5	API76.06	
Chrysopogon fallax	0.1			
Dentella asperata	0.1		API17.05	
Eragrostis eriopoda	0.1		APIR81.03	
Euphorbia vaccaria var. *vaccaria*	0.1		APIR20.02	
Grevillea wickhamii	0.1			
Hakea lorea subsp. *lorea*	0.1	0.7		
Hibiscus leptocladus	0.1		APIMN22.02	
Indigofera monophylla	0.1			
Paraneurachne muelleri	0.1			
Pimelea ammocharis	0.1		KJEM.13	
Ptilotus astrolasius	0.1			
Ptilotus fusiformis	0.5	0.4		
Senna notabilis	0.1			
Solanum phlomoides	0.1		API79.03	
Streptoglossa bubakii	0.1			
Tephrosia sp. B Kimberley Flora (C.A. Gardner 7300)	0.1		APIMN22.01	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Trianthema glossostigmum	0.1			
Triodia schinzii	28	0.4	API76.05	

Alinta Transmission Line **Site APIMN-030**

Date 28/04/2023

Described by Kelby Jennings & Emma Marsh

Type Vegetation Mapping Note

Location MGA Zone 50

652063 mE; 7715272 mN

118.4597 E -20.655703 S

Veg Condition Very Good

Habitat Sand Plain

Vegetation *Acacia inaequilatera* tall isolated shrubs over *Hakea lorea* mid sparse shrubland over *Indigofera monophylla* low isolated shrubs over *Triodia schinzii* low open hummock grassland over *Ptilotus fusiformis, Arivela uncifera* low sparse herbland.

Notes Very similar to API-029, just lacking trees in this spot, over all landscape Corymbia's are present.

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia ancistrocarpa	0.1			
Acacia inaequilatera	0.1			
Acacia sericophylla	0.1		APIR82.14	
Acacia stellaticeps	0.1		APIR82.01	
Arivela uncifera	0.1		API27.02	
Bonamia erecta	0.1		API76.06	
Bulbostylis barbata	0.1			
Corchorus elachocarpus	0.1		API29.06	
Euphorbia australis var. *subtomentosa*	0.1			
Goodenia microptera	0.1			
Hakea lorea subsp. *lorea*	0.1			
Panicum australiense var. *australiense*	0.1		API27.01	
Ptilotus astrolasius	0.1			
Ptilotus fusiformis	0.1			
Senna artemisioides subsp. *oligophylla*	0.1		KJEM.17	
Senna notabilis	0.1			
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	0.1		API29.10	
Solanum sp. indet	0.1		API18.01	
Streptoglossa bubakii	0.1			
Synaptantha tillaeacea	0.1		API29.05	
Trigastrotheca molluginea	0.1			
Triodia schinzii	0.1		API76.05	

Alinta Transmission Line **Site APIMN-033**

Date	30/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Vegetation Mapping Note	
Location	MGA Zone 50	
	644778 mE;	7718157 mN
	118.3895 E	-20.630224 S
Veg Condition	Excellent	
Habitat	Sand Plain	
Vegetation	*Acacia stellaticeps* mid shrubland over *Triodia schinzii, Triodia epactia* mid open hummock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia ancistrocarpa	0.1			
Acacia stellaticeps	0.1		APIR82.01	
Acacia synchronicia	0.1			
Eriachne obtusa	0.1		API81.02	
Pluchea tetranthera	0.1		APIR82.15	
Triodia epactia	0.1		API18.02	
Triodia schinzii	0.1		API76.05	

Alinta Transmission Line **Site APIMN-040**

Date	28/04/2023
Described by	Kelby Jennings & Emma Marsh
Type	Vegetation Mapping Note
Location	MGA Zone 50
	650828 mE; 7719395 mN
	118.4475 E -20.618562 S
Veg Condition	Excellent
Habitat	Sand Plain
Vegetation	*Hakea lorea* tall isolated shrubs over *Acacia stellaticeps* low-mid shrubland over *Triodia epactia* mid open hummock grassland.
Notes	Patch distinguishable on aerial (slightly darker).

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia stellaticeps	0.1		APIR82.01	
Aristida holathera var. *holathera*	0.1			
Aristida inaequiglumis	0.1		API76.11	
Bonamia erecta	0.1		APIR82.07	
Chrysopogon fallax	0.1			
Eragrostis eriopoda	0.1		APIR81.03	
Hakea lorea subsp. *lorea*	0.1			
Paraneurachne muelleri	0.1			
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	0.1		APIR82.10	
Triodia epactia	0.1		API18.02	
Triodia schinzii	0.1		API76.05	

Alinta Transmission Line **Site APIMN-045**

Date 28/04/2023

Described by Kelby Jennings & Emma Marsh

Type Vegetation Mapping Note

Location MGA Zone 50

649993 mE; 7720937 mN

118.4393 E -20.604705 S

Veg Condition Very Good

Habitat Drainage Area/ Floodplain

Vegetation *Acacia colei, Melaleuca lasiandra* tall open shrubland over *Triodia epactia* mid isolated clumps of hummock grasses.

Notes Shallow wide channel.

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia colei var. *colei*	25	4	APIR20.01	
Acacia sericophylla	0.1		APIR82.14	
Aristida holathera var. *holathera*	0.1			
Aristida inaequiglumis	0.1		API76.11	
Corymbia candida	0.5	4.5		
Eulalia aurea	0.1			
Melaleuca lasiandra	0.5	2.5	KJEM-Opp20	
Triodia epactia	10	0.5	API18.02	

Alinta Transmission Line **Site APIMN-062**

Date 1/05/2023

Described by Kelby Jennings & Emma Marsh

Type Vegetation Mapping Note

Location MGA Zone 50

654116 mE; 7729578 mN

118.4781 E -20.526310 S

Veg Condition Good

Vegetation *Eucalyptus camaldulensis* low open woodland over *Triodia epactia, Triodia lanigera* mid open hummock grassland.

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia tumida var. *pilbarensis*	0.1	5	API62.01	
Aerva javanica	0.1	0.5		
Cenchrus ciliaris	10	0.2		
Corchorus incanus subsp. *incanus*	0.1	0.5	APIR82.06	
Eucalyptus camaldulensis	20	10		
Melaleuca argentea	0.1	7		
Triodia epactia	8	0.6	API18.02	
Triodia lanigera	7	0.5	API62.05	

Alinta Transmission Line **Site APIMN-084**

Date	4/05/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Vegetation Mapping Notes	
Location	MGA Zone 50	
	657046 mE;	7741847 mN
	118.5051 E	-20.415248 S
Veg Condition	Very Good	
Habitat	Sand Plain	
Vegetation	*Owenia reticulata* low isolated trees over *Acacia holosericea* tall isolated shrubs over *Acacia stellaticeps* mid open shrubland over *Triodia epactia* mid open hummock grassland.	
Notes	Same as APIR-083 just more open and therefore slightly more species.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia holosericea	0.1		API82.02	
Acacia sericophylla	0.1		APIR82.14	
Acacia stellaticeps	0.1		APIR82.01	
Afrohybanthus aurantiacus	0.1			
Aristida holathera var. *holathera*	0.1			
Bonamia media	0.1		API29.03	
Chrysopogon fallax	0.1			
Corchorus incanus subsp. *incanus*	0.1		API17.06	
Duperreya commixta	0.1		APIR82.18	
Eragrostis eriopoda	0.1		APIR81.03	
Eriachne obtusa	0.1		API81.02	
Evolvulus alsinoides var. *decumbens*	0.1			
Indigofera monophylla	0.1			
Owenia reticulata	0.1		API76.03	
Paraneurachne muelleri	0.1			
Ptilotus fusiformis	0.1			
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	0.1		API29.10	
Solanum cleistogamum	0.1			
Trigastrotheca molluginea	0.1			
Triodia epactia	0.1		API18.02	
Triodia schinzii	0.1		API76.05	
Waltheria indica	0.1		APIR81.02	

Alinta Transmission Line **Site APIR-004**

Date	4/05/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Relevé	
Location	MGA Zone 50	
	653713 mE;	7730504 mN
	118.4742 E	-20.517977 S
Veg Condition	Very Good	
Soil	Clay Loam	
Rock Type	None Discernible	
Fire Age	>10 yrs	
Habitat	Major Drainage Line	
Vegetation	*Eucalyptus camaldulensis, Melaleuca argentea* mid open woodland over *Acacia trachycarpa, Acacia colei, Acacia tumida* tall sparse shrubland over *Triodia epactia* mid sparse tussock grassland with **Cenchrus ciliaris, *Cenchrus setiger* low open tussock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia ampliceps	0.1	1.6		
Acacia ancistrocarpa	0.1	1.7		
Acacia colei var. *colei*	0.1	0.5	APIR20.01	
Acacia pyrifolia var. *pyrifolia*	0.1	1.5		
Acacia trachycarpa	2	3		
Acacia tumida var. *pilbarensis*	0.5	2	APIR17.01	
Aeschynomene indica	0.1	0.1	API47.05	
Aristida holathera var. *holathera*	0.1	0.3		
Arivela viscosa	0.1	0.4		
Cajanus cinereus	0.1	2.5	KJEM.02	
Carissa lanceolata	0.1	0.5	API48.01	
Cassytha filiformis	0.1	0	API80.01	
**Cenchrus ciliaris*	12	0.4		
**Cenchrus setiger*	5	0.3		
Chloris pumilio	0.1	0.2	API60.01	
Corchorus incanus subsp. *incanus*	0.1	0.5	API76.10	
Corchorus tridens	0.1	0.1		
Cyperus vaginatus	0.1	0.6		
**Cyperus vorsteri*	0.1	0.7	API09.08	
Dactyloctenium radulans	0.1	0.1		
Eucalyptus camaldulensis	15	13		
Euphorbia australis var. *subtomentosa*	0.1	0.1		

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Euphorbia coghlanii	0.1	0.4	API19.01	
Indigofera oblongifolia	0.1	1.4	APIR04.01	
Ipomoea polymorpha	0.1	0.1	API11.02	
**Malvastrum americanum*	0.1	0.1		
Melaleuca argentea	8	11		
Melaleuca glomerata	0.1	2		
Nellica maderaspatensis	0.1	0.4		
Senna notabilis	0.1	0.1		
Sesbania cannabina	0.1	0.4		
Solanum sp. indet	0.1	0.1	API18.01	
Stemodia grossa	0.1	0.3		
Vigna lanceolata	0.1	0		
Waltheria indica	0.1	0.4	APIR81.02	

Alinta Transmission Line **Site APIR-005**

Date	4/05/2023	
Described by	KJ, EM	
Type	Relevé	
Location	MGA Zone 50	
	657887 mE;	7733795 mN
	118.5139 E	-20.487912 S
Veg Condition	Good	
Soil	Clay Loam	
Rock Type	None Discernible	
Fire Age	>10 yrs	
Habitat	Claypan	
Vegetation	*Corymbia candida* (on edges of depression) low isolated trees over *Eriachne benthamii, Eriachne glauca* low isolated clumps of tussock grasses with *Triodia epactia* isolated clumps of hummock grasses.	
Notes	Soil colour = beige.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Aeschynomene indica	0.1		API47.05	
Alternanthera angustifolia	0.1		API80.02	
Aristida contorta	0.1			
Arivela viscosa	0.1			
Boerhavia coccinea	0.1			
Carissa lanceolata	0.1		API48.01	
**Cenchrus ciliaris*	0.1			
**Cenchrus setiger*	0.1			
Corymbia candida subsp. *x lautifolia*	0.1		APIR82.03	
Cynodon prostratus	0.1			
Cyperus difformis	0.1		API71.03	
Dactyloctenium radulans	0.1			
Eragrostis cumingii	0.1		APIMN13.03	
Eriachne benthamii	0.1		APIMN13.01	
Eriachne glauca var. *glauca*	0.1		APIR45.01	
Goodenia lamprosperma	0.1		APIMN13.02	
Peplidium muelleri	0.1		API71.01	
Portulaca oleracea	0.1			
Salsola australis	0.1			
Trianthema triquetrum	0.1			
Triodia epactia	0.1		API18.02	

Alinta Transmission Line **Site APIR-007**

Date	3/05/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Relevé	
Location	MGA Zone 50	
	653174 mE;	7712140 mN
	118.4706 E	-20.683908 S
Veg Condition	Very Good	
Soil	Sandy Loam	
Rock Type	None Discernible	
Fire Age	3-5 yrs	
Habitat	Sand Plain	
Vegetation	*Corymbia zygophylla, Corymbia candida* low open woodland over *Acacia stellaticeps* mid isolated shrubs over *Bonamia erecta* low sparse shrubland over *Triodia epactia* low open hummock grassland over *Ptilotus fusiformis* low sparse herbland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Abutilon lepidum	0.1	0.2		
Acacia ancistrocarpa	0.1	0.1		
Acacia inaequilatera	0.1	0.6		
Acacia sericophylla	0.1	1.6	APIR82.14	
Acacia stellaticeps	0.5	0.8	APIR82.01	
Aristida holathera var. *holathera*	0.1	0.3		
Arivela uncifera	0.1	0.3	API27.02	
Boerhavia coccinea	0.1	0.1		
Bonamia erecta	0.5	0.3	API76.06	
Chrysopogon fallax	0.1	0.3		
Corchorus elachocarpus	0.1	0.3	API29.06	
Corymbia candida	1	4		
Corymbia zygophylla	15	4.5	KJEM.16	
Cucumis variabilis	0.1	0.1		
Duperreya commixta	0.1	0.1	APIR17.05	
Euphorbia australis var. *subtomentosa*	0.1	0.1		
Goodenia microptera	0.1	0.3		
Gossypium australe	0.1	0.5		
Indigofera monophylla	0.1	0.3		
Leptosema anomalum	0.1	0.1	API81.04	
Pluchea tetranthera	0.1	0.3	APIR82.15	
Polygala galeocephala	0.1	0.1	API27.04	
Portulaca oleracea	0.1	0.1		

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Ptilotus astrolasius	0.1	0.4		
Ptilotus fusiformis	0.1	0.3		
Senna artemisioides subsp. *oligophylla*	0.1	1		
Senna notabilis	0.1	0.2		
Sida arenicola	0.1	1.2	API26.04	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	0.5	API29.10	
Tephrosia sp. B Kimberley Flora (C.A. Gardner 7300)	0.1	0.1	APIMN22.01	
Tribulus hirsutus	0.1	0.1	KJEM.08	
Trigastrotheca molluginea	0.1	0.1		
Triodia schinzii	20	0.3	API76.05	

Alinta Transmission Line **Site APIR-015**

Date	27/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Relevé	
Location	MGA Zone 50	
	655414 mE;	7709626 mN
	118.4923 E	-20.706429 S
Veg Condition	Very Good	
Soil	Sandy Clay Loam	
Rock Type	None Discernible	
Fire Age	5-10 yrs	
Habitat	Sand Plain	
Vegetation	*Corymbia hamersleyana* low isolated trees over *Acacia acradenia, Acacia tumida, Acacia ancistrocarpa* tall shrubland over *Triodia epactia* mid hummock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia acradenia	20	2.4	APIR16.01	
Acacia ancistrocarpa	5	2		
Acacia inaequilatera	0.1	2.5		
Acacia sericophylla	0.1	2	APIR82.14	
Acacia tumida var. *pilbarensis*	10	2.3	APIR17.01	
Corymbia hamersleyana	0.5	5.5		
Triodia epactia	31	0.5	API18.02	

Alinta Transmission Line **Site APIR-016**

Date	27/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Relevé	
Location	MGA Zone 50	
	657846 mE;	7705236 mN
	118.5161 E	-20.745886 S
Veg Condition	Very Good	
Soil	Sand	
Rock Type	None Discernible	
Fire Age	5-10 yrs	
Habitat	Sand Plain	
Vegetation	*Acacia tumida* tall sparse shrubland over *Acacia ancistrocarpa, Acacia acradenia* mid shrubland over *Triodia epactia* low isolated clumps of hummock grasses.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia acradenia	35	1.6	APIR16.01	
Acacia ancistrocarpa	0.1			
Acacia pyrifolia var. *pyrifolia*	0.1	0.8		
Acacia sericophylla	0.1	1.6	APIR82.14	
Acacia trachycarpa	0.1	1.6	API16.02	
Acacia tumida var. *pilbarensis*	15	3.5	APIR17.01	
Aristida holathera var. *holathera*	0.1	0.3		
Boerhavia coccinea	0.1	0.1		
Bulbostylis barbata	0.1	0.1		
Duperreya commixta	0.1	0.1	APIR82.18	
Eragrostis eriopoda	0.1	0.5	APIR81.03	
Euphorbia vaccaria var. *vaccaria*	0.1	0.1	API17.02	
Indigofera linifolia	0.1	0.1	KJEM.06	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	0.4	APIR82.10	
Triodia epactia	0.1	0.52	API18.02	

Alinta Transmission Line **Site APIR-017**

Date	27/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Relevé	
Location	MGA Zone 50	
	658235 mE;	7704198 mN
	118.5199 E	-20.755225 S
Veg Condition	Very Good	
Soil	Sand	
Rock Type	None Discernible	
Fire Age	5-10 yrs	
Habitat	Sand Dune	
Vegetation	*Acacia tumida* tall open shrubland over *Triumfetta chaetocarpa* mid sparse shrubland over *Aristida holathera, Triodia schinzii* sparse mid tussock/hummock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia tumida var. *pilbarensis*	20	5	APIR17.01	
Afrohybanthus aurantiacus	0.1	0.6		
Aristida holathera var. *holathera*	2	0.2		
Bonamia media	0.1	0.1	APIR17.02	
Bulbostylis barbata	0.1	0.1		
Corchorus incanus subsp. *incanus*	0.1	0.7	APIR82.06	
Corynotheca pungens	0.1	0.3	APIR17.04	
Duperreya commixta	0.1	0.1	APIR82.18	
Eragrostis eriopoda	0.1	0.3	APIR81.03	
Eriachne obtusa	0.1	0.2	API81.02	
Euphorbia australis var. *subtomentosa*	0.1	0.1		
Polycarpaea longiflora	0.1	0.1		
Sida rohlenae subsp. *rohlenae*	0.1	0.5	APIR82.05	
Trianthema glossostigmum	0.1	0.1		
Trigastrotheca molluginea	0.1	0.2		
Triodia schinzii	0.5	0.5	APIR17.03	
Triumfetta chaetocarpa	1	1	API76.01	

Alinta Transmission Line **Site APIR-020**

Date	27/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Relevé	
Location	MGA Zone 50	
	656903 mE;	7706253 mN
	118.5069 E	-20.736778 S
Veg Condition	Very Good	
Soil	Sand	
Rock Type	None Discernible	
Fire Age	5-10 yrs	
Habitat	Sand Plain	
Vegetation	*Acacia ancistrocarpa, Acacia tumida* tall open shrubland over *Acacia colei* mid isolated shrubs over *Aristida holathera, Aristida inaequiglumis* low sparse tussock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Abutilon sp. Pritzelianum (S. van Leeuwen 5095)	0.1	0.5	KJEM.11	P3
Acacia ancistrocarpa	20	4.5		
Acacia colei var. *colei*	0.5	1.5	APIR20.01	
Acacia inaequilatera	0.1	4.5		
Acacia tumida var. *pilbarensis*	0.1	4	APIR17.01	
Aristida holathera var. *holathera*	1	0.3		
Aristida inaequiglumis	0.5	0.2	API76.11	
Boerhavia coccinea	0.1	0.1		
Chrysopogon fallax	0.1	0.4		
Eragrostis eriopoda	0.1	0.1	APIR81.03	
Eriachne obtusa	0.1	0.3	API81.02	
Euphorbia vaccaria var. *vaccaria*	0.1	0.1	APIR20.02	
Ptilotus calostachyus	0.1	0.1		
Senna notabilis	0.1	0.2		
Sida arenicola	0.1	0.3	KJEM.12	
Solanum phlomoides	0.1	0.5	API20.01	
Trigastrotheca molluginea	0.1	0.1		
Triodia epactia	0.1	0.5	API18.02	

Alinta Transmission Line **Site APIR-023**

Date	27/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Relevé	
Location	MGA Zone 50	
	655297 mE;	7709581 mN
	118.4912 E	-20.706847 S
Veg Condition	Very Good	
Soil	Sandy Clay Loam	
Rock Type	Ironstone, Quartz	
Fire Age	5-10 yrs	
Habitat	Sand Plain	
Vegetation	*Acacia inaequilatera, Acacia acradenia* tall open shrubland over *Triodia epactia* low open hummock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia acradenia	0.5	1.7	APIR16.01	
Acacia colei var. *colei*	0.1	1.7	APIR20.01	
Acacia inaequilatera	4	4.5		
Acacia tumida var. *pilbarensis*	0.5	2.2	APIR17.01	
Pluchea tetranthera	0.1	0.3	APIR82.15	
Portulaca oleracea	0.1	0.1		
Triodia epactia	40	0.4	API18.02	

Alinta Transmission Line **Site APIR-025**

Date	30/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Relevé	
Location	MGA Zone 50	
	653980 mE;	7711508 mN
	118.4784 E	-20.689555 S
Veg Condition	Very Good	
Soil	Sandy Clay Loam	
Rock Type	None Discernible	
Fire Age	3-5 yrs	
Habitat	Sand Plain	
Vegetation	*Corymbia zygophylla* isolated low trees over *Acacia colei, Acacia inaequilatera, Acacia acradenia* mid sparse shrubland over *Sida* sp. Pilbara (A.A. Mitchell PRP 1543), *Bonamia erecta, Senna notabilis* low sparse shrubland over *Triodia schinzii* low isolated clumps of hummock grasses over *Trigastrotheca mollaguniea* low sparse herbland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Abutilon sp. Pritzelianum (S. van Leeuwen 5095)	0.1		APIR25.01	P3
Acacia acradenia	0.1		API26.08	
Acacia ancistrocarpa	0.1			
Acacia colei var. *colei*	0.1		APIR20.01	
Acacia inaequilatera	0.1			
Acacia sericophylla	0.1		APIR82.14	
Aristida holathera var. *holathera*	0.1			
Arivela uncifera	0.1		API27.02	
Bonamia erecta	0.1		API27.03	
Corchorus elachocarpus	0.1		API29.06	
Corchorus incanus subsp. *incanus*	0.1		API76.10	
Corymbia hamersleyana	0.1			
Corymbia zygophylla	0.1		KJEM.16	
Cynanchum floribundum	0.1			
Duperreya commixta	0.1		APIR17.05	
Euphorbia australis var. *subtomentosa*	0.1			
Euphorbia vaccaria var. *vaccaria*	0.1		APIR20.02	
Goodenia microptera	0.1			
Gossypium australe	0.1			
Hakea lorea subsp. *lorea*	0.1			
Indigofera monophylla	0.1			

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Panicum australiense var. *australiense*	0.1		API27.01	
Paraneurachne muelleri	0.1			
Pimelea ammocharis	0.1		KJEM.13	
Polymeria ambigua	0.1		API29.08	
Portulaca oleracea	0.1			
Ptilotus astrolasius	0.1			
Ptilotus calostachyus	0.1			
Ptilotus fusiformis	0.1			
Scaevola parvifolia subsp. *pilbarae*	0.1			
Senna notabilis	0.1			
Sida arenicola	0.1		API26.04	
Sida echinocarpa	0.1			
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	0.1		APIR82.10	
Solanum sp. indet	0.1		API18.01	
Streptoglossa bubakii	0.1			
Tribulus hirsutus	0.1		KJEM.08	
Trigastrotheca molluginea	0.1			

Alinta Transmission Line **Site APIR-032**

Date	30/04/2023
Described by	Kelby Jennings & Emma Marsh
Type	Relevé
Location	MGA Zone 50
	642656 mE; 7716152 mN
	118.3693 E -20.648498 S
Veg Condition	Excellent
Soil	Sandy Clay Loam
Rock Type	None Discernible
Fire Age	5-10 yrs
Habitat	Sand Plain
Vegetation	*Corymbia candida, Corymbia zygophylla* low isolated trees over *Acacia ancistrocarpa* tall isolated clumps of shrubs over *Acacia stellaticeps* mid shrubland over *Triodia epactia, Triodia schinzii* low open hummock grassland.

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia ancistrocarpa	0.1			
Acacia colei var. *colei*	0.1		APIR20.01	
Acacia sericophylla	0.1		APIR82.14	
Acacia sphaerostachya	0.1		APIR32.01	
Acacia stellaticeps	0.1		APIR82.01	
Cassytha filiformis	0.1		APIR82.17	
Chrysopogon fallax	0.1			
Corymbia candida	0.1			
Corymbia zygophylla	0.1		KJEM.16	
Eragrostis eriopoda	0.1		APIR81.03	
Grevillea pyramidalis	0.1			
Leptosema anomalum	0.1		API81.04	
Pimelea ammocharis	0.1		KJEM.13	
Scaevola parvifolia subsp. *pilbarae*	0.1			
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	0.1		APIR82.10	
Triodia epactia	0.1		API18.02	
Triodia schinzii	0.1		API76.05	

Alinta Transmission Line **Site APIR-034**

Date	28/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Relevé	
Location	MGA Zone 50	
	651147 mE;	7717025 mN
	118.4507 E	-20.639946 S
Veg Condition	Excellent	
Soil	Sandy Clay Loam	
Rock Type	None Discernible	
Fire Age	5-10 yrs	
Habitat	Sand Plain	
Vegetation	*Corymbia opaca, Corymbia zygophylla* low isolated trees over *Acacia inaequilatera* tall isolated shrubs over *Acacia stellaticeps* low-mid shrubland over *Triodia schinzii* mid open hummock grassland.	
Notes	Burnt patch surrounded by burnt areas (3-5 years).	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia ancistrocarpa	0.1			
Acacia colei var. *colei*	0.1		APIR20.01	
Acacia inaequilatera	0.5	2.5		
Acacia stellaticeps	40	1	APIR82.01	
Bonamia erecta	0.1		API76.06	
Bonamia erecta	0.1		APIR82.07	
Corymbia opaca	0.5	5	KJEM-Opp18	
Corymbia zygophylla	0.5	6	KJEM.16	
Dodonaea coriacea	0.1		APIR34.01	
Eriachne obtusa	0.1		API81.02	
Gossypium australe	0.1			
Leptosema anomalum	0.1		API81.04	
Ptilotus astrolasius	0.1			
Seringia nephrosperma	0.1		KJEM.18	
Triodia schinzii	20	0.5	API76.05	

Alinta Transmission Line **Site APIR-035**

Date	30/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Relevé	
Location	MGA Zone 50	
	643598 mE;	7717385 mN
	118.3782 E	-20.637287 S
Veg Condition	Excellent	
Soil	Sandy Clay Loam	
Rock Type	None Discernible	
Fire Age	>10 yrs	
Habitat	Sand Plain	
Vegetation	*Acacia inaequilatera, Acacia colei* tall isolated shrubs over *Pluchea tetranthera* low isolated shrubs over *Triodia epactia, Triodia schinzii* mid hummock grassland.	
Notes	Interspersed with thick *A. colei* over *A. stellaticeps* banding and the occasional *H. lorea.*	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia colei var. *colei*	0.1		APIR20.01	
Acacia inaequilatera	0.1			
Acacia melleodora	0.1		KJEM.20	
Acacia stellaticeps	0.1		APIR82.01	
Cassytha filiformis	0.1		APIR82.17	
Chrysopogon fallax	0.1			
Duperreya commixta	0.1		APIR82.18	
Eragrostis eriopoda	0.1		APIR82.08	
Eriachne obtusa	0.1		API81.02	
Hakea lorea subsp. *lorea*	0.1			
Indigofera monophylla	0.1			
Pimelea ammocharis	0.1		KJEM.13	
Pluchea tetranthera	0.1		APIR82.15	
Sida arenicola	0.1		KJEM.12	
Triodia epactia	0.1		API18.02	
Triodia schinzii	0.1		API76.05	

Alinta Transmission Line **Site APIR-038**

Date	30/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Relevé	
Location	MGA Zone 50	
	644720 mE;	7718207 mN
	118.3889 E	-20.629775 S
Veg Condition	Very Good	
Soil	Sandy Loam	
Rock Type	None Discernible	
Fire Age	5-10 yrs	
Habitat	Claypan / depression	
Vegetation	*Triodia epactia* isolated clumps of hummock grasses over *Eriachne benthamii, Eriachne glauca* low open tussock grassland over *Portulaca cyclophylla, Trianthema triquetrum* low sparse herbland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Aristida inaequiglumis	0.1	0.4	API76.11	
Calandrinia polyandra	0.1	0.2	APIR38.01	
Calandrinia pumila	0.1	0.1	API40.03	
Eriachne aristidea	0.1	0.2		
Eriachne benthamii	2	0.4	APIMN13.01	
Eriachne glauca var. *glauca*	8	0.2	APIR45.01	
Marsilea hirsuta	0.1	0.1		
Panicum australiense var. *australiense*	0.1	0.1	API27.01	
Paspalidium basicladum	0.1	0.3	APIR38.02	
Portulaca cyclophylla	0.1	0.1		
Portulaca oleracea	0.1	0.1		
Senna notabilis	0.1	0.1		
Trianthema triquetrum	0.5	0.2		
Triodia epactia	0.5	0.7	API18.02	

Alinta Transmission Line **Site APIR-043**

Date	30/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Relevé	
Location	MGA Zone 50	
	646762 mE;	7720349 mN
	118.4084 E	-20.610264 S
Veg Condition	Excellent	
Soil	Sandy Clay Loam	
Rock Type	None Discernible	
Fire Age	5-10 yrs	
Habitat	Sand Plain	
Vegetation	*Acacia stellaticeps* mid-low shrubland over *Triodia schinzii* mid open hummock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
? *Dolichandrone occidentalis*	0.1		API29.11	
Acacia ancistrocarpa	0.1			
Acacia inaequilatera	0.1			
Acacia sericophylla	0.1		APIR82.14	
Acacia sphaerostachya	0.1		APIR32.01	
Acacia stellaticeps	45	1.1	APIR82.01	
Aristida inaequiglumis	0.1		API76.11	
Bonamia erecta	0.1		APIR82.07	
Carissa lanceolata	0.1		API48.01	
Chrysopogon fallax	0.1			
Hakea lorea subsp. *lorea*	0.1			
Indigofera monophylla	0.1			
Senna glutinosa subsp. *glutinosa*	0.1			
Triodia epactia	0.1		API18.02	
Triodia schinzii	28	0.5	API76.05	

Alinta Transmission Line **Site APIR-045**

Date	28/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Relevé	
Location	MGA Zone 50	
	649876 mE;	7720871 mN
	118.4382 E	-20.605303 S
Veg Condition	Very Good	
Soil	Clay Loam	
Rock Type	None Discernible	
Fire Age	5-10 yrs	
Habitat	Claypan	
Vegetation	*Acacia colei* (on banks) tall isolated shrubs over *Eriachne benthamii, Triodia epactia* (on banks) mid open tussock/hummock grassland over *Eriachne glauca, Marsilea hirsuta, Bergia perennis* low open tussock grassland/herbland.	
Notes	Minor depression.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia colei var. *colei*	0.1	2.5	APIR20.01	
Bergia perennis subsp. *perennis*	0.5	0.1	APIR45.02	
Eragrostis cumingii	0.1	0.1	APIMN13.03	
Eriachne benthamii	0.5	0.6	APIMN13.01	
Eriachne glauca var. *glauca*	2	0.1	APIR45.01	
Goodenia lamprosperma	0.1	0.4	APIMN13.02	
Marsilea hirsuta	1	0.1		
Sporobolus australasicus	0.1	0.1		
Triodia epactia	0.1	0.5	API18.02	

Alinta Transmission Line **Site APIR-046**

Date	30/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Relevé	
Location	MGA Zone 50	
	647560 mE;	7721421 mN
	118.4159 E	-20.600520 S
Veg Condition	Excellent	
Soil	Sandy Clay Loam	
Rock Type	None Discernible	
Fire Age	5-10 yrs	
Habitat	Sand Plain	
Vegetation	*Acacia stellaticeps* mid shrubland over *Triodia schinzii* mid open hummock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
? *Dolichandrone occidentalis*	0.1		API29.11	
Acacia ancistrocarpa	0.1			
Acacia sericophylla	0.1		APIR82.14	
Acacia sphaerostachya	0.1		APIR32.01	
Acacia stellaticeps	32	1.1	APIR82.01	
Aristida holathera var. *holathera*	0.1			
Chrysopogon fallax	0.1			
Corchorus elachocarpus	0.1		API29.06	
Corymbia zygophylla	0.1		KJEM.16	
Cyperus blakeanus	0.1		API81.01	
Duperreya commixta	0.1		APIR82.18	
Eragrostis eriopoda	0.1		APIR81.03	
Grevillea pyramidalis	0.1			
Indigofera monophylla	0.1			
Panicum australiense var. *australiense*	0.1		API28.01	
Ptilotus astrolasius	0.1			
Senna artemisioides subsp. *oligophylla*	0.1			
Trigastrotheca molluginea	0.1			
Triodia epactia	10	0.5	API18.02	
Triodia schinzii	15	0.5	API76.05	

Alinta Transmission Line **Site APIR-049**

Date	28/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Relevé	
Location	MGA Zone 50	
	649859 mE;	7722913 mN
	118.4379 E	-20.586866 S
Veg Condition	Very Good	
Soil	Sandy Clay Loam	
Rock Type	None Discernible	
Fire Age	5-10 yrs	
Habitat	Other	
Vegetation	*Acacia colei* tall shrubland over *Aristida inaequiglumis*, *Triodia epactia* mid isolated tussock/hummock grasses.	
Notes	Landform is open depression. One small section of the patch was impacted by recent fire (low intensity)	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia colei var. *colei*	35	3	APIR20.01	
Aristida holathera var. *holathera*	0.1	0.4		
Aristida inaequiglumis	0.5	0.5	API76.11	
Eragrostis speciosa	0.1	0.4	API47.02	
Eriachne glauca var. *glauca*	0.1	0.2	APIR45.01	
Pluchea tetranthera	0.1	0.5	APIR82.15	
Triodia epactia	0.1	0.5	API18.02	

Alinta Transmission Line **Site APIR-050**

Date	29/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Relevé	
Location	MGA Zone 50	
	645211 mE;	7723088 mN
	118.3932 E	-20.585643 S
Veg Condition	Excellent	
Soil	Sandy Loam	
Rock Type	None Discernible	
Fire Age	5-10 yrs	
Habitat	Sand Plain	
Vegetation	*Acacia colei, Grevillea pyramidalis* tall open shrubland over *Acacia stellaticeps* mid open shrubland over *Triodia epactia* mid hummock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia colei var. *colei*	11	3.5	APIR20.01	
Acacia inaequilatera	0.1	1.7		
Acacia stellaticeps	20	1.6	APIR82.01	
Achyranthes aspera	0.1	0.4	APIR50.02	
Aristida holathera var. *holathera*	0.1	0.3		
Chrysopogon fallax	0.1	0.3		
Corymbia hamersleyana	0.5	3		
Cullen stipulaceum	0.1	1.4	KJEM-Opp20	
Cynanchum floribundum	0.1	0.1		
Duperreya commixta	0.1	0.1	APIR82.18	
Eragrostis sp. indet	0.1			
Gossypium australe	0.1	0.3		
Grevillea pyramidalis	1	2.5		
Indigofera monophylla	0.1	1.4		
Pimelea ammocharis	0.1	0.7	KJEM.13	
Pluchea tetranthera	0.1	0.1	APIR82.15	
Solanum phlomoides	0.1	0.2	API79.03	
Triodia epactia	60	0.4	APIR50.01	

Alinta Transmission Line **Site APIR-056**

Date	1/05/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Relevé	
Location	MGA Zone 50	
	650624 mE;	7725526 mN
	118.4450 E	-20.563202 S
Veg Condition	Very Good	
Soil	Sandy Clay Loam	
Rock Type	None Discernible	
Fire Age	5-10 yrs	
Habitat	Sand Plain	
Vegetation	*Corymbia candida, Owenia reticulata* low isolated trees over *Acacia ancistrocarpa, Acacia inaequilatera, Acacia colei* tall open shrubland over *Acacia stellaticeps, Pluchea tetranthera* mid open shrubland over *Triodia epactia* low open hummock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia ancistrocarpa	8	2		
Acacia colei var. *colei*	0.5	1.8	APIR20.01	
Acacia inaequilatera	0.5	4		
Acacia sericophylla	0.1	2	APIR82.14	
Acacia stellaticeps	20	0.8	APIR82.01	
Aristida holathera var. *holathera*	0.1	0.3		
Corchorus elachocarpus	0.1	0.3	API29.06	
Corymbia candida	1	6		
Eragrostis eriopoda	0.1	0.4	APIR81.03	
Grevillea pyramidalis	0.1	0.8		
Indigofera monophylla	0.1	0.3		
Owenia reticulata	0.5	5	API76.03	
Pluchea tetranthera	0.5	0.6	APIR82.15	
Ptilotus astrolasius	0.1	0.3		
Triodia epactia	25	0.4	API18.02	
Triumfetta chaetocarpa	0.1	0.7	API76.01	

Alinta Transmission Line **Site APIR-059**

Date	1/05/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Relevé	
Location	MGA Zone 50	
	652181 mE;	7728556 mN
	118.4596 E	-20.535701 S
Veg Condition	Very Good	
Soil	Sandy Clay Loam	
Rock Type	None Discernible	
Fire Age	5-10 yrs	
Habitat	Sand Plain	
Vegetation	*Triodia epactia, Triodia longiceps* mid hummock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Carissa lanceolata	0.1		API48.01	
Dactyloctenium radulans	0.1			
Fimbristylis dichotoma	0.1		API42.01	
Portulaca cyclophylla	0.1			
Triodia epactia	0.1		API18.02	
Triodia longiceps	0.1		API40.02	

Alinta Transmission Line **Site APIR-060**

Date	29/04/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Relevé	
Location	MGA Zone 50	
	651090 mE;	7729617 mN
	118.4491 E	-20.526207 S
Veg Condition	Very Good	
Soil	Clay Loam	
Rock Type	None Discernible	
Fire Age	1-2 yrs,5-10 yrs	
Habitat	Other	
Vegetation	*Corymbia candida* (on edges) low open woodland over *Eriachne benthamii, Eriachne glauca* low open tussock grassland over *Triodia epactia* low isolated clumps of hummock grasses over *Ptilotus murrayi* low isolated herbs.	
Notes	Open depression, edges affected by fire, too small for quadrat.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia colei var. *colei*	1	0.7	APIR20.01	
Corchorus elachocarpus	0.5	0.4	API29.06	
Corymbia candida	2	4.5		
Cyperus iria	0.1	0.1	API47.04	
Eragrostis tenellula	0.1	0.2	APIR61.04	
Eriachne benthamii	4	0.5	APIMN13.01	
Eriachne glauca var. *glauca*	6	0.2	APIR45.01	
Eulalia aurea	0.1	2		
Goodenia lamprosperma	0.1	0.3	APIMN13.02	
Neptunia dimorphantha	0.1	0.3	APIR61.02	
Pluchea tetranthera	0.5	0.6	APIR82.15	
Portulaca oleracea	0.1	0.1		
Pterocaulon sphacelatum	0.1	0.4		
Ptilotus murrayi	0.1	0.1	APIR61.01	
Solanum cleistogamum	0.1	0.2		
Triodia epactia	5	0.4	API18.02	

Alinta Transmission Line **Site APIR-062**

Date	1/05/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Relevé	
Location	MGA Zone 50	
	654422 mE;	7729634 mN
	118.4810 E	-20.525781 S
Veg Condition	Excellent	
Soil	Sand	
Rock Type		
Fire Age	5-10 yrs	
Habitat	Major Drainage Line	
Vegetation	*Melaleuca argenta* low open woodland over *Melaleuca glomerata, Melaleuca linophylla* tall sparse shrubland over *Cyprus vaginatus* mid sparse sedgeland over *Eriachne benthamii* isolated clumps of tussock grasses over *Goodenia lamprosperma, Pluchea rubelliflora* low sparse herbland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Afrohybanthus aurantiacus	0.1	0.4		
Arivela viscosa	0.1	0.3		
Corchorus incanus subsp. *incanus*	0.1	0.3	APIR82.06	
Crotalaria cunninghamii subsp. *sturtii*	0.1	1.7	API17.03	
Cynanchum floribundum	0.1	0.1	KJEM.05	
Cyperus vaginatus	0.5	0.5		
Dentella asperata	0.1	0.1	API17.05	
Eriachne benthamii	0.5	0.4	KJEM-Opp23	
Eulalia aurea	0.1	0.4		
Euphorbia coghlanii	0.1	0.2	APIR82.13	
Euphorbia vaccaria var. *vaccaria*	0.1	0.2	API17.02	
Goodenia lamprosperma	0.5	0.3		
Ipomoea muelleri	0.1	0.1		
Melaleuca argentea	12	5		
Melaleuca glomerata	1.5	2.5		
Melaleuca linophylla	1	3.5		
Nellica maderaspatensis	0.1	0.4		
Pluchea rubelliflora	0.5	0.3		
Ptilotus fusiformis	0.1	0.4		
Stemodia grossa	0.1	0.3		
Trichodesma zeylanicum var. *zeylanicum*	0.1	0.6		
Triodia epactia	0.1	0.4	API18.02	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Waltheria indica	0.1	0.4	APIR81.02	

Alinta Transmission Line **Site APIR-063**

Date	1/05/2023
Described by	Kelby Jennings & Emma Marsh
Type	Relevé
Location	MGA Zone 50
	654442 mE; 7730283 mN
	118.481 E -20.519917 S
Veg Condition	Very Good
Soil	Sand
Rock Type	None Discernible
Fire Age	3-5 yrs,5-10 yrs
Habitat	Sand Dune
Vegetation	*Acacia trachycarpa, Acacia tumida* tall sparse shrubland over *Triumfetta chaetocarpa, Cajanus cinereus* mid open shrubland over *Triodia epactia* mid hummock grassland over *Eriachne obtusa* sparse tussock grassland.

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia trachycarpa	0.1	8		
Acacia tumida var. *pilbarensis*	2	3.5	APIR17.01	
Aeschynomene indica	0.1	0.1	API47.05	
Aristida holathera var. *holathera*	0.1	0.3		
Arivela viscosa	0.1	0.4		
Boerhavia coccinea	0.1	0.1		
Bonamia media	0.1	0.1	API63.03	
Cajanus cinereus	2	1.6	KJEM.02	
**Cenchrus ciliaris*	0.1	0.4		
Corchorus incanus subsp. *incanus*	0.1	0.5	APIR82.06	
Corynotheca pungens	0.1	0.4	APIR17.04	
Crotalaria cunninghamii subsp. *sturtii*	0.1	1.3	API17.03	
Eragrostis eriopoda	0.1	0.4	APIR81.03	
Eriachne obtusa	1	0.5	API81.02	
Portulaca filifolia	0.1	0.1	API63.01	
Trianthema glossostigmum	0.1	0.2		
Trichodesma zeylanicum var. *zeylanicum*	0.1	0.3		
Triodia epactia	8	0.5	API18.02	
Triumfetta chaetocarpa	4	1.9	API76.01	
Waltheria indica	0.1	0.4	APIR81.02	

Alinta Transmission Line **Site APIR-066**

Date	3/05/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Relevé	
Location	MGA Zone 50	
	656739 mE;	7707546 mN
	118.5052 E	-20.725107 S
Veg Condition	Excellent	
Soil	Sandy Loam	
Rock Type	None Discernible	
Fire Age	>10 yrs	
Habitat	Sand Plain	
Vegetation	*Acacia tumida, Acacia ancistrocarpa, Acacia acradenia* tall open shrubland over *Acacia colei* mid isolated shrubs over *Triodia epactia* mid sparse hummock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Abutilon sp. Pritzelianum (S. van Leeuwen 5095)	0.1	1.8	KJEM-Opp1	P3
Acacia acradenia	2	3	APIR16.01	
Acacia ancistrocarpa	4	4		
Acacia colei var. *colei*	0.5	1.8	APIR20.01	
Acacia inaequilatera	0.1	4		
Acacia trachycarpa	0.1	2.3		
Acacia tumida var. *pilbarensis*	8	3.5	APIR17.01	
Aristida holathera var. *holathera*	0.1	0.4		
Aristida inaequiglumis	0.1	0.4	API76.11	
Chrysopogon fallax	0.1	0.3		
Corchorus incanus subsp. *incanus*	0.1	0.5	APIR82.06	
Corymbia hamersleyana	0.1	5		
Corymbia zygophylla	0.5	5	KJEM.16	
Duperreya commixta	0.1	0.1	APIR82.18	
Eragrostis eriopoda	0.1	0.4	APIR81.03	
Eriachne obtusa	0.1	0.3	API81.02	
Paraneurachne muelleri	0.1	0.3		
Polycarpaea longiflora	0.1	0.1		
Sida arenicola	0.1	1.2	API26.04	
Sporobolus australasicus	0.1	0.1		
Triodia epactia	8	0.4	API18.02	

Alinta Transmission Line **Site APIR-068**

Date	2/05/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Relevé	
Location	MGA Zone 50	
	658164 mE;	7731899 mN
	118.5167 E	-20.505009 S
Veg Condition	Excellent	
Soil	Sandy Clay Loam	
Rock Type	None Discernible	
Fire Age	5-10 yrs	
Habitat	Sand Plain	
Vegetation	*Corymbia candida, Owenia reticulata* low isolated trees over *Acacia stellaticeps* low-mid open shrubland over *Triodia schinzii* low open hummock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia holosericea	0.1	1.5	API82.02	
Acacia inaequilatera	0.1	2		
Acacia stellaticeps	25	1.2	APIR82.01	
Afrohybanthus aurantiacus	0.1	0.3		
Aristida inaequiglumis	0.1	0.3	API76.11	
Bonamia erecta	0.1	0.3	APIR82.07	
Cassytha filiformis	0.1	0	API81.05	
Chrysopogon fallax	0.1	0.4		
Corymbia candida subsp. *x lautifolia*	0.5	4	APIR82.03	
Duperreya commixta	0.1	0	APIR82.18	
Eragrostis eriopoda	0.1	0.3	APIR82.08	
Eriachne obtusa	0.1	0.2	API81.02	
Hakea lorea subsp. *lorea*	0.1	1.8		
Indigofera monophylla	0.1	0.3		
Owenia reticulata	0.5	6	API76.03	
Ptilotus astrolasius	0.1	0.3		
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	0.5	APIR82.10	
Triodia schinzii	20	0.4	API76.05	

Alinta Transmission Line **Site APIR-069**

Date	2/05/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Relevé	
Location	MGA Zone 50	
	655600 mE;	7732375 mN
	118.4921 E	-20.500927 S
Veg Condition	Excellent	
Soil	Sandy Clay Loam	
Rock Type	None Discernible	
Fire Age	>10 yrs	
Habitat	Sand Plain	
Vegetation	*Acacia inaequilatera* tall isolated shrubs over *Pluchea tetranthera, Acacia stellaticeps* low isolated shrubs over *Triodia epactia, Triodia longiceps* mid hummock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Abutilon lepidum	0.1		API29.07	
Acacia inaequilatera	0.1			
Acacia stellaticeps	0.1		APIR82.01	
Aristida contorta	0.1			
Aristida holathera var. *holathera*	0.1			
Bulbostylis barbata	0.1			
Eriachne aristidea	0.1			
Euphorbia vaccaria var. *vaccaria*	0.1		APIR20.02	
Iseilema dolichotrichum	0.1		APIR69.01	
Pluchea ferdinandi-muelleri	0.1		API153.01	
Pluchea tetranthera	0.1		APIR82.15	
Polycarpaea longiflora	0.1			
Senna artemisioides subsp. *oligophylla*	0.1			
Senna notabilis	0.1			
Sporobolus australasicus	0.1			
Synaptantha tillaeacea	0.1		APIR69.02	
Trianthema triquetrum	0.1			
Triodia epactia	0.1		API18.02	
Triodia longiceps	0.1		API40.02	

Alinta Transmission Line **Site APIR-070**

Date	2/05/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Relevé	
Location	MGA Zone 50	
	658836 mE;	7733059 mN
	118.5231 E	-20.494477 S
Veg Condition	Very Good	
Soil	Sandy Clay Loam	
Rock Type	None Discernible	
Fire Age	5-10 yrs,3-5 yrs	
Habitat	Sand Plain	
Vegetation	*Corymbia candida, Corymbia zygophylla* low isolated trees over *Acacia inaequilatera, Hakea lorea* tall isolated shrubs over *Acacia stellaticeps* mid open shrubland over *Triodia epactia, Triodia schinzii* mid open hummock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia ancistrocarpa	0.1			
Acacia inaequilatera	0.1			
Acacia stellaticeps	0.1		APIR82.01	
Aristida inaequiglumis	0.1		API76.11	
Cassytha filiformis	0.1		API81.05	
Chrysopogon fallax	0.1			
Corchorus incanus subsp. *incanus*	0.1		API76.10	
Corymbia candida subsp. *x lautifolia*	0.1		APIR82.03	
Corymbia zygophylla	0.1		KJEM.16	
Eriachne obtusa	0.1		API81.02	
Hakea lorea subsp. *lorea*	0.1			
Leptosema anomalum	0.1		API81.04	
Owenia reticulata	0.1		API76.03	
Ptilotus astrolasius	0.1			
Triodia epactia	0.1		API18.02	
Triodia schinzii	0.1		API76.05	

Alinta Transmission Line **Site APIR-074**

Date	3/05/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Relevé	
Location	MGA Zone 50	
	659287 mE;	7734640 mN
	118.5272 E	-20.480158 S
Veg Condition	Very Good	
Soil	Sandy Loam	
Rock Type	None Discernible	
Fire Age	3-5 yrs	
Habitat	Sand Plain	
Vegetation	*Acacia stellaticeps* low shrubland over *Triodia lanigera, Triodia epactia* low sparse hummock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia holosericea	0.1	0.6	API82.02	
Acacia inaequilatera	0.1	2.5		
Acacia stellaticeps	35	0.4	APIR82.01	
Chrysopogon fallax	0.1	0.3		
Corymbia candida	0.1	2		
Duperreya commixta	0.1	0.1	APIR82.18	
Hakea lorea subsp. *lorea*	0.1	1		
Hibiscus leptocladus	0.1	1.4	API29.01	
Indigofera monophylla	0.1	0.2		
Leptosema anomalum	0.1	0.1	API81.04	
Paraneurachne muelleri	0.1	0.2		
Ptilotus astrolasius	0.1	0.2		
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	0.4	APIR82.10	
Triodia epactia	1	0.3	API18.02	
Triodia lanigera	2	0.3	API73.02	

Alinta Transmission Line **Site APIR-075**

Date	3/05/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Relevé	
Location	MGA Zone 50	
	658271 mE;	7735969 mN
	118.5174 E	-20.468237 S
Veg Condition	Very Good	
Soil	Sandy Loam	
Rock Type	None Discernible	
Fire Age	3-5 yrs	
Habitat	Sand Plain	
Vegetation	*Acacia holosericea* mid sparse shrubland over *Acacia stellaticeps* low shrubland over *Triodia epactia* low isolated hummock grasses.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia ancistrocarpa	0.1	0.7		
Acacia holosericea	2	1	API82.02	
Acacia inaequilatera	0.1	1.8		
Acacia sericophylla	0.1	2.3	APIR82.14	
Acacia sphaerostachya	0.1	0.4	APIR32.01	
Acacia stellaticeps	40	0.3	APIR82.01	
Chrysopogon fallax	0.1	0.2		
Owenia reticulata	0.1	5	API76.03	
Paraneurachne muelleri	0.1	0.2		
Ptilotus astrolasius	0.1	0.2		
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	0.3	APIR82.10	
Triodia epactia	1	0.2	API18.02	

Alinta Transmission Line **Site APIR-081**

Date	26/04/2023	
Described by	Kelby Jenninga & Emma Marsh	
Type	Relevé	
Location	MGA Zone 50	
	660287 mE;	7741201 mN
	118.5362 E	-20.420806 S
Veg Condition	Excellent	
Soil	Sandy Clay Loam	
Rock Type	None Discernible	
Fire Age	5-10 yrs	
Habitat	Other	
Vegetation	*Corymbia candida, Ehretia saligna* low isolated trees over *Acacia sericophylla, Acacia holosericea* tall isolated clumps of shrubs over *Acacia stellaticeps* mid shrubland over *Triodia epactia* mid sparse hummock grassland.	
Notes	Landform = very low rise (within undulating landscape).	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia holosericea	0.5	3.5	API82.02	
Acacia sericophylla	1	2	APIR82.14	
Acacia stellaticeps	35	1.4	APIR82.01	
Afrohybanthus aurantiacus	0.1			
Amaranthus undulatus	0.1		APIR81.05	
Corchorus incanus subsp. *incanus*	0.1	0.3	APIR82.06	
Corymbia candida subsp. *x lautifolia*	2	4	APIR82.03	
Duperreya commixta	0.1		APIR82.18	
Ehretia saligna	1	4	APIR81.01	
Eragrostis eriopoda	0.1		APIR81.03	
Evolvulus alsinoides var. *decumbens*	0.1			
Grevillea pyramidalis	0.1			
Paspalidium rarum	0.1		APIR81.04	
Ptilotus fusiformis	0.1			
Senna notabilis	0.1			
Sida rohlenae subsp. *rohlenae*	0.1	0.5	APIR82.05	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	0.1		APIR82.10	
Solanum cleistogamum	0.1		APIR82.04	
Triodia epactia	8	0.5	API82.01	
Waltheria indica	0.1		APIR81.02	

Alinta Transmission Line **Site APIR-082**

Date	26/04/2023
Described by	Kelby Jennings & Emma Marsh
Type	Relevé
Location	MGA Zone 50
	659344 mE; 7741516 mN
	118.5272 E -20.418041 S
Veg Condition	Very Good
Soil	Sandy Clay Loam
Rock Type	Ironstone
Fire Age	3-5 yrs
Habitat	Sand Plain
Vegetation	*Corymbia candida* low isolated trees over *Acacia holosericea* tall sparse shrubland over *Acacia stellaticeps* mid shrubland over *Triodia epactia* open hummock grassland.

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia holosericea	3	2.5	API82.02	
Acacia sericophylla	0.1		APIR82.14	
Acacia stellaticeps	40	1.2	APIR82.01	
Boerhavia coccinea	0.1			
Bonamia erecta	0.1		APIR82.07	
Cassytha filiformis	0.1		APIR82.17	
Cenchrus ciliaris	0.1			
Chrysopogon fallax	0.1			
Corchorus incanus subsp. *incanus*	0.1		APIR82.16	
Corymbia candida subsp. *x lautifolia*	1	3.5	APIR82.03	
Cucumis variabilis	0.1			
Duperreya commixta	0.1		APIR82.18	
Eragrostis eriopoda	0.1		APIR82.08	
Euphorbia coghlanii	0.1		APIR82.13	
Evolvulus alsinoides var. *villosicalyx*	0.1			
Hakea lorea subsp. *lorea*	0.1			
Paspalidium basicladum	0.1		APIR82.09	
Pluchea tetranthera	0.1		APIR82.15	
Ptilotus fusiformis	0.1			
Rhynchosia minima	0.1			
Sida rohlenae subsp. *rohlenae*	0.1		APIR82.05	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	0.1		APIR82.10	
Solanum cleistogamum	0.1		APIR82.04	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Triodia epactia	0.4	20	API82.01	

Alinta Transmission Line **Site APIR-083**

Date	4/05/2023	
Described by	Kelby Jennings & Emma Marsh	
Type	Relevé	
Location	MGA Zone 50	
	657821 mE;	7741674 mN
	118.5126 E	-20.416741 S
Veg Condition	Excellent	
Soil	Sandy Clay Loam	
Rock Type	None Discernible	
Fire Age	5-10 yrs	
Habitat	Sand Plain	
Vegetation	*Acacia stellaticeps* mid shrubland over *Triodia epactia* mid hummock grassland.	

Site Taxa	Cover (%)	Height (m)	Specimen #	Notes
Acacia colei var. *colei*	0.1	1.5	APIR20.01	
Acacia holosericea	0.1	2	API82.02	
Acacia sericophylla	0.1	1.8	APIR82.14	
Acacia stellaticeps	50	1.2	APIR82.01	
Afrohybanthus aurantiacus	0.1	0.3	APIR83.01	
Afrohybanthus aurantiacus	0.1	0.3		
Aristida holathera var. *holathera*	0.1	0.4		
Chrysopogon fallax	0.1	0.5		
Corchorus incanus subsp. *incanus*	0.1	1.1	API76.10	
Eragrostis eriopoda	0.1	0.4	APIR81.03	
Pluchea ferdinandi-muelleri	0.1	1	API53.01	
Senna notabilis	0.1	0.1		
Sida rohlenae subsp. *rohlenae*	0.1	0.2	APIR82.05	
Sida sp. L (A.M. Ashby 4202)	0.1	0.1	API72.01	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	0.1	0.4	APIR82.10	
Triodia epactia	70	0.6	API18.02	