

Native Vegetation Clearing Permit – Supporting Report

Flora, Vegetation and Fauna Habitat Assessment,
Siphons, Port Hedland

19th July 2024

RTIO-1058917



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Executive Summary

Rio Tinto, on behalf of Dampier Salt Limited (the **Proponent**), is proposing to undertake maintenance works of the siphons at the Port Hedland facility to improve flow capacity (the **Proposal**). Approval for clearing of native vegetation associated with the Proposal is required via a Native Vegetation Clearing Permit (**NVCP**) under Section 51A of the *Environmental Protection Act 1986 (EP Act)*. The study area covers 6.41 ha of native vegetation, unvegetated saline creeks and disturbed ground.

The study area was surveyed by Julijanna Hantzis and Alicia Michael on the 14th to the 16th November 2023, with subsequent targeted surveys conducted on the 16th April 2024. The Study Area was assessed in accordance with the *Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment* and *Environmental Factor Guideline – Flora and Vegetation (EPA, 2016a, 2016c)*. Fauna habitats were confirmed with reference to *Technical Guidance – Terrestrial vertebrate fauna surveys for environmental impact assessment* and *Environmental Factor Guideline – Terrestrial Fauna (EPA, 2016b, 2020)*.

One vegetation type was identified across one major landform, embankments, within the study area. The vegetation unit was described as *Tecticornia indica* subsp. *leiostachya* and *Trianthema turgidifolium* very open herbland with *Triodia epactia* very open hummock grassland and *Eragrostis* sp. and **Cenchrus ciliaris* very open tussock grassland. The vegetation occurring within the Study Area does not represent any PECs listed by DBCA or TECs listed under either the BC Act or EPBC Act.

A total of 36 taxa from 30 genera representing 14 families were recorded during the survey. The number of taxa recorded by the current study is reflective of the previously disturbed nature of the study area. No threatened flora species were recorded in the Study Area. One species of Priority flora, *Atriplex eremitis* (P1) was recorded during the survey. This species was not identified in the desktop assessment however was recorded within the survey area. No other Threatened or priority flora identified as part of the desktop assessment are considered likely to occur following the field survey.

Two broad fauna habitat types were recorded within the study area: 'chenopod shrubland; and 'tidal creeks/flats'. These fauna habitats are not considered to be restricted at a local or regional level. The previously disturbed nature of the Study Area and widespread nature of the surrounding habitat indicates the Study Area is of limited conservation significance.

No significant fauna species were detected during the field survey. Of the 72 significant fauna species identified during the desktop study, none are considered to have potential to occur based on the habitat present within the Study Area and the known ecology of each species.

None of the species identified in the desktop assessment were considered 'Likely' or 'Potential' to occur within the study area based on post field observations. The study area is heavily degraded and the remnant vegetation present is unlikely to support any species of conservation significance. It is unlikely the Proposal will negatively impact on the conservation status of any of these species at either a local or bioregional scale.

The Proposal was assessed against the 10 clearing principles as defined in Schedule 5 (Principles for Clearing Native Vegetation) of the *Environmental Protection Act 1986*. A specialist assessment against the 10 Clearing Principles determined that:

- Principles (a), (b), (c), (d), (e), (h), (i) and (j) are not at variance;

- Principles (f) and (g) are not likely to be at variance

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1. Introduction

1.1 Project background and Study Area location

Rio Tinto, on behalf of Dampier Salt Limited (the Proponent), is proposing to undertake maintenance works of the siphons at the Port Hedland facility to improve flow capacity (the Proposal). Approval for clearing of native vegetation associated with the Proposal is required via a Native Vegetation Clearing Permit (NVCP) under Section 51A of the Environmental Protection Act 1986 (EP Act).

Vegetation, flora and fauna assessments at the siphons of the Port Hedland facility (the study area) were required to address the 10 Clearing Principles as part of the NVCP application process.

The study area covers 6.41 ha of native vegetation, unvegetated saline creeks and disturbed ground, and is located approximately 6 km north east of Port Hedland, within the Pilbara region of Western Australia (WA) (Figure 1-1).

1.2 Scope of survey

This report describes the methodology employed for the flora, vegetation and fauna habitat assessment of the study area, and documents the results of the survey. In particular, this report identifies vegetation, flora and fauna habitats of conservation significance relevant to the study area.

This report is intended as a supporting document for an NVCP application by Rio Tinto and has been prepared on the basis of a review of existing information for the study area, combined with a site field survey.

This report includes a description of the:

- Local environment of the study area including flora, vegetation, fauna habitats, geology, landforms, and hydrology;
- Methods employed during the field survey;
- Locations and populations of conservation listed flora, including photographs and mapping;
- Vegetation types occurring in the study area, an assessment on their condition and conservation significance for the locality and sub-region, including mapping;
- Fauna habitats present, assessment of their significance for the locality and sub-region, including mapping; and
- Potential impacts of the Proposal on the local environment through application of the 10 clearing principles, as outlined in Schedule 5 of the EP Act.



Figure 1-1 Location of the Study Area

1.3 Limitations

Limitations of the current survey of the Study Area are summarised in **Table 1-1** below.

Table 1-1: Constraints and limitations of the current study.

Constraint	Limitation
Sources of information	The Pilbara bioregion has been relatively well surveyed, with increasing biological survey work occurring due to the resource expansion in the region. Numerous flora and fauna surveys have been conducted in the wider region and many within the Port Hedland region. Therefore, a suitable number of survey reports were available for contextual information. Sources of information were not considered a limitation in this assessment.
Scope of works	The survey requirements of a terrestrial flora, vegetation and fauna survey for a NVCP application were met. No quadrat sampling or fauna trapping was undertaken, however, relevés were undertaken to record the vegetation types in addition to foot traverses of the study area.
Completeness of survey	The study area was fully surveyed to the satisfaction of an equivalent flora and vegetation reconnaissance and targeted survey and basic fauna survey. No additional surveys were deemed necessary for the purpose of this assessment. Fungi and non-vascular flora (algae, mosses and liverworts) were not sampled.
Intensity of survey	The study area was surveyed by targeted traverses on foot. Habitats with potential to support conservation listed species were searched. All vegetation and fauna habitat types were inspected.
Timing, weather, season, cycle	The survey was conducted during November 2023. This is outside of the recommended survey timing for vegetation surveys within the Eremaean Botanical Province, that extends from March through to June. A targeted flora survey was conducted in April 2024. The study area had been previously disturbed and the vegetation assessed was predominantly that which had colonised the artificial landforms (embankments alongside the drainage channel). Conditions encountered in the study area were regarded as sub-average conditions, with limited rainfall in the preceding three months of both the November and the April surveys. Flora specimens that could not be identified in the field were provided to Steven Dillon (Western Australian Herbarium Taxonomist) for identification.
Disturbances	The study area had been previously cleared at the time of development. There have been no major recent fires (< 2 years) within the study area.
Resources	The biologists undertaking the surveys and subsequent reports as part of the studies were suitably qualified to identify flora and fauna. Julijanna Hantzis (field studies and report writing) has more than seven years of experience as a botanist/biologist in Western Australia, with significant experience working in the Eremaean province. Alicia Michael (field studies and report writing) has more than 15 years of experience as an ecologist working across Australia. Steven Dillon, Senior Taxonomist from the Western Australian Herbarium, completed the plant specimen identifications. Resources were not considered a limitation in this assessment.
Accessibility / remoteness	The study area was accessible by vehicle and was adequately traversed on foot. No parts of the study area were inaccessible.

1.4 Climate

The closest meteorological station providing rainfall data is the Port Hedland Airport weather station (Station ID: 004032) located approximately 4.4 km south west of the study area. For Port Hedland Airport the mean annual rainfall for the period 1942 to 2024 is 313.5 mm, with most precipitation occurring between January and March, coinciding with the cyclone season (Figure 1-2).

Port Hedland Airport received 0.2 mm of rainfall in the three months preceding the 2023 survey (August 2022 – October 2023), which is 6.4 mm below the long-term average of 6.6 mm for the same time period and 31.8 mm of rainfall in the three months preceding the 2024 survey (January 2024 – March 2024), which is 172.2 mm below the long-term average of 204 mm for the same time period (BOM, 2024). Therefore, seasonal conditions prior to the survey were considered below average. Given the disturbed nature of the study area, it is considered that survey conditions were adequate.

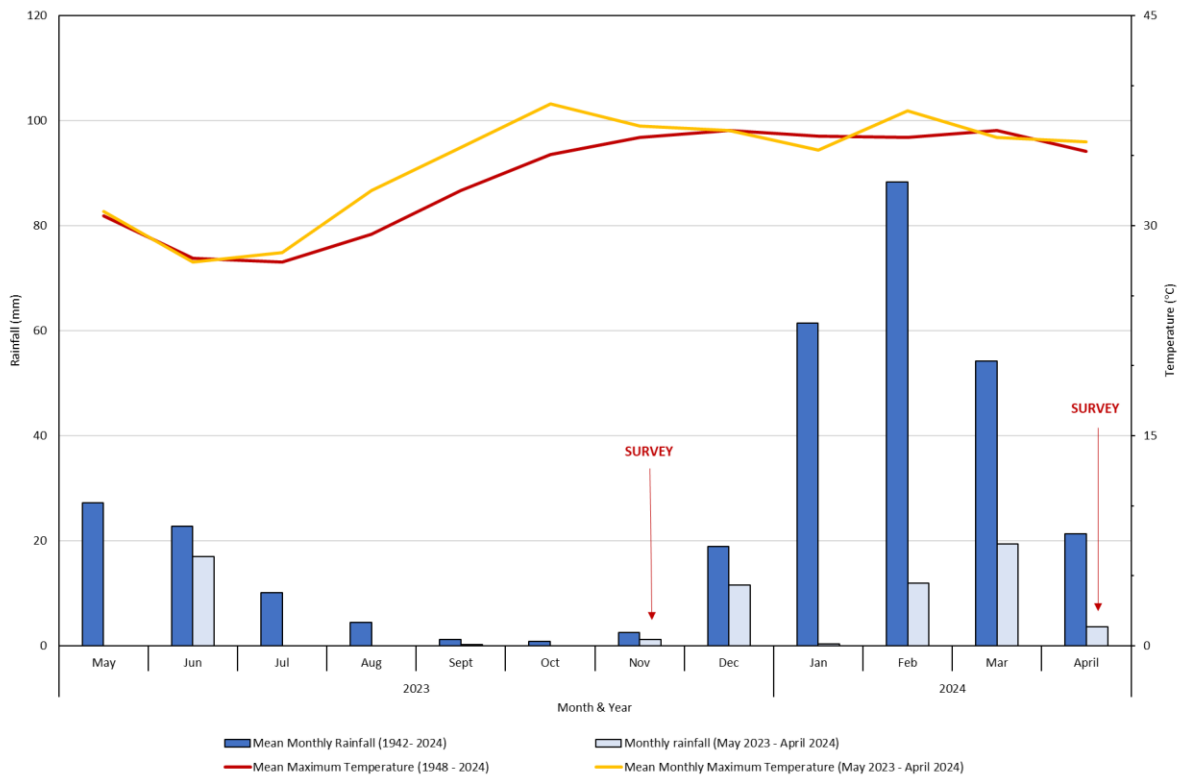


Figure 1-2 Comparison of rainfall and temperatures at Port Hedland, December 2022-November 2023 (BOM, 2024).

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1.5 Geology and soils

Soil-landscape zones of Western Australia have been mapped at a scale of 1:1,000,000 by Tille (2006). These zones describe broad soil and landscape characteristics. The study area lies within the Karratha Coast Zone. This zone is characterised by coastal mudflats (with sandy coastal plains and some hills) on marine deposits over the Pilbara Craton with tidal soils, calcareous loamy earths, salt lake soils and red/brown non-cracking clays.

The study area was comprised of two major geological units based on 1:250,000 scale map sheet series (DMIRS, 2024) (Figure 1-3). These geological units were:

- Tf: Tidal flat deposits; silt and mud in intertidal and supratidal flats and lagoons.
- A1f: Alluvial deposits on floodplains; unconsolidated. Sand, silt, clay, and gravel adjacent to main drainage channels.

The geological units represented within the study area are shown in Figure 1-3.

1.6 Surface hydrology and groundwater

The study area lies within the Port Hedland Coast catchment (DWER, 2018) and the Ashburton groundwater subarea of the Pilbara (DWER, 2024). The Siphons study area is located on coastal mudflats dissected by tidal creeks that are periodically inundated. The study area does not lie within any DoW Water Reserves.

1.7 Land systems

Land system (rangeland) mapping is based on regional patterns in topography, soils and vegetation (Christian, 1953). The most recent land system mapping of the Pilbara bioregion, in which the study area lies, was completed by van Vreeswyk *et al.* (2004). The mapping classifies the Pilbara region into 102 land systems.

The study area is located within two of the 102 land systems described for the Pilbara region (van Vreeswyk, 2004). The land systems and their extent within the study area are presented below (Table 1-2) (Figure 1-4):

- The **Littoral Land System (286Li)** consists of bare coastal mudflats (unvegetated), samphire flats, sandy islands, coastal dunes and beaches, supporting samphire low shrublands, sparse acacia shrublands and mangrove forests.
- The **River Land System (281Ri)** consists of 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.

Table 1-2: Land Systems occurring within the Study Area.

Land System (Map code)	Total area (ha) in Pilbara bioregion	Area (ha) in study area	Proportion (%) of study area	Study area proportion (%) of land system extent
Littoral (286Li)	157,700	2.03	34.4	<0.01
River (281Ri)	408,800	3.87	76.03	<0.01

1.8 IBRA bioregions and subregions

The Interim Biogeographic Regionalisation of Australia (**IBRA7**) recognises 89 bioregions (DCCEEW, Department of Climate Change, Energy, the Environment and Water 2024a). The study area is located in the Pilbara (**PIL**) bioregion as defined by IBRA. The Pilbara bioregion has been further subdivided into four subregions: Chichester (**PIL1**); Fortescue Plains (**PIL2**); Hamersley (**PIL3**); and Roebourne (**PIL4**).

The study area falls within the Roebourne sub-region and is described by Kendrick (2001) as:

- 'Quaternary alluvial and older colluvial coastal and subcoastal plains with a grass savannah of mixed bunch and hummock grasses, and dwarf shrub steppe of *Acacia stellaticeps* or *A. pyrifolia* and *A. inaequilatera*. Uplands are dominated by *Triodia* hummock grasslands. Ephemeral drainage lines support *Eucalyptus victrix* or *Corymbia hamersleyana* woodlands. Samphire, *Sporobolus* and mangal occur on marine alluvial flats and river deltas. Resistant linear ranges of basalts occur across the coastal plains, with minor exposures of granite. Islands are either Quaternary sand accumulations, or composed of basalt or limestone, or combinations of any of these three.'

1.9 Beard's regional vegetation mapping

Vegetation type and extent has been mapped at a regional scale by Beard (1975) who categorised vegetation into broad vegetation associations. Based on this mapping at a scale of 1:1,000,000, the Department of Agriculture and Food WA (**DAFWA**) has compiled a list of vegetation extent and types across WA (Shepherd, 2002). The study area falls within two vegetation associations.

- Abydos Plain_127 - Bare areas: mud flats.
- Abydos Plain_589 - Mosaic: Short bunch grassland - savanna / grass plain (Pilbara) / Hummock grasslands, grass steppe; soft spinifex.
- Abydos Plain_647 - Hummock grasslands, dwarf-shrub steppe; *Acacia translucens* over soft spinifex

Given the broad nature of Beard's mapping; this vegetation association is only broadly applicable to the vegetation types occurring in the study area.

1.10 Pre-European vegetation extent

The pre-European and current extent of native vegetation associations in Western Australia has been interpreted by Shepherd *et al.* (2002) using data from Beard's (1975) regional vegetation mapping and other vegetation mapping, as well as satellite imagery and orthophoto interpretation.

Shepherd *et al.* (2002) identified the Pilbara bioregion as having largely intact native vegetation owing to the lack of intensive agricultural land use practices. Although the native vegetation remains widespread and largely intact, the floristic composition and structural characteristics have almost certainly changed since European settlement by grazing and altered fire regimes (Shepherd *et al.* 2002).

Table 1-3 and Figure 1-5 present the pre-European and current extent of the two Beard mapping units across their range, as well as the extent in the study area.

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Table 1-3: Beard's mapping unit occurring within the study area, its current and pre-European extent within the Pilbara bioregion and its extent across the study area

Beard's mapping unit (Shepherd vegetation association)	Pre-European extent (ha)^	Current extent (ha)^	Extent (ha) within study area (Proportion of current extent)
Abydos Plain_127	101,141.49	91,969.46	2.46 (<0.01)
Abydos Plain_589	598,844.80	596,965.26	1.90 (<0.01))
Abydos Plain_647	188,741.12	184,615.29	2.04 (<0.01)

1.11 Conservation areas and environmentally sensitive areas

Environmentally Sensitive Areas (**ESAs**) are defined in the *Environmental Protection (Environmentally Sensitive Areas) Notice 2005* under section 51B of the WA State EP Act. ESAs include areas declared as: World Heritage; included on the Register of the National Estate; defined wetlands; vegetation containing rare (Threatened) flora; Threatened Ecological Communities (**TEC**); and Bush Forever sites.

The study area does not lie within any ESAs. The nearest ESA is 16.6 km north east of the study area, the Leslie (Port Hedland) Saltfields System, listed within A Directory of Important Wetlands in Australia (Figure 1-6).

1.12 Significant Vegetation

Priority Ecological Communities (**PECs**) are possible TECs that do not meet survey criteria or are not adequately defined to be considered for inclusion in the TEC list by the DBCA - Parks and Wildlife Service (**Parks and Wildlife**), and are ranked as Priorities 1, 2 and 3 (1 being the highest).

The nearest PEC to the study area was the 'Eighty Mile Land System'. The buffer boundary of this Priority 3 Ecological Community is located 21.9 km to the north west of the study area. The proposal is not expected to impact the environmental values of this PEC, or any others.



Figure 1-3: Geology of the Study Area.

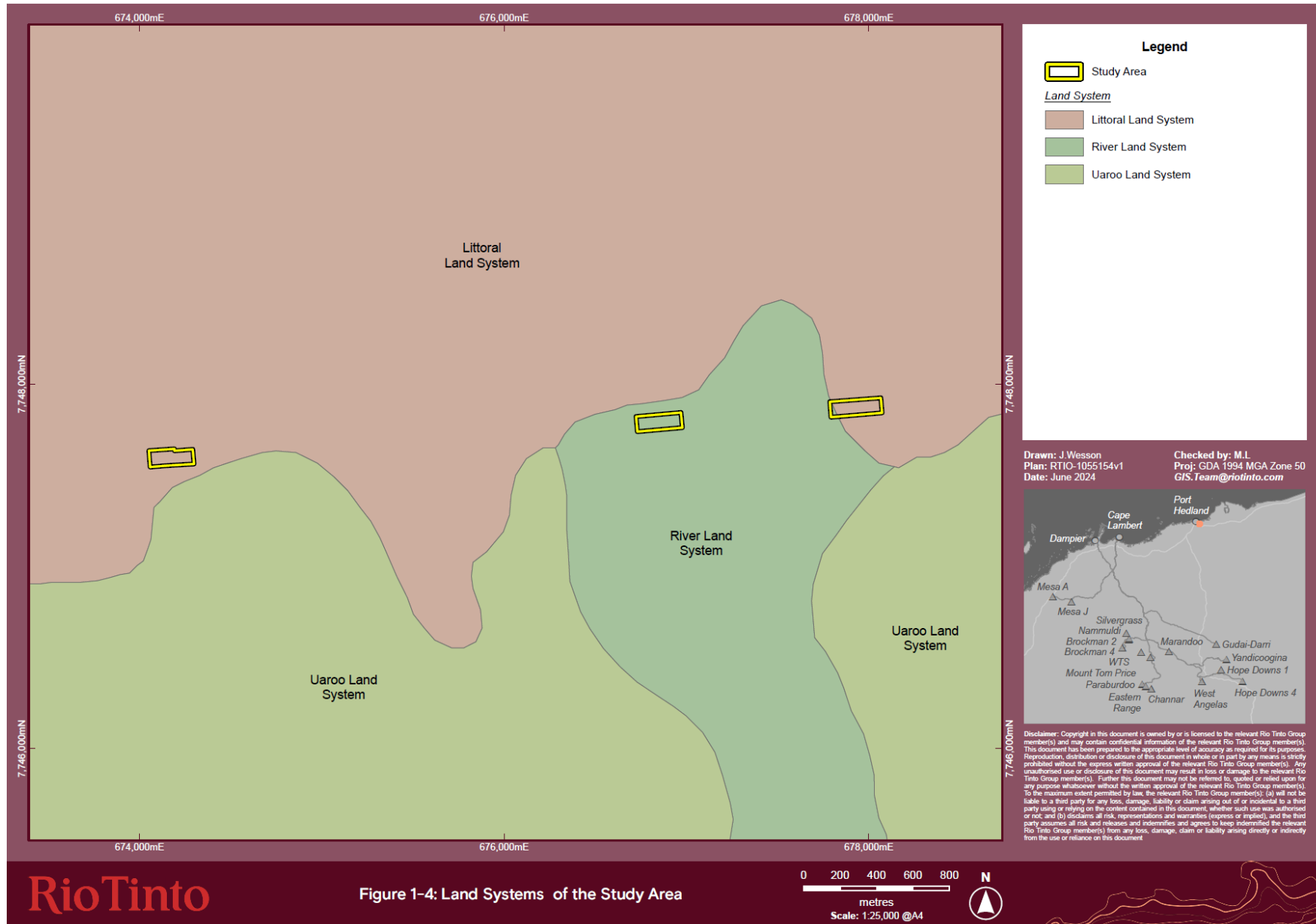


Figure 1-4 Land systems of the Study Area.

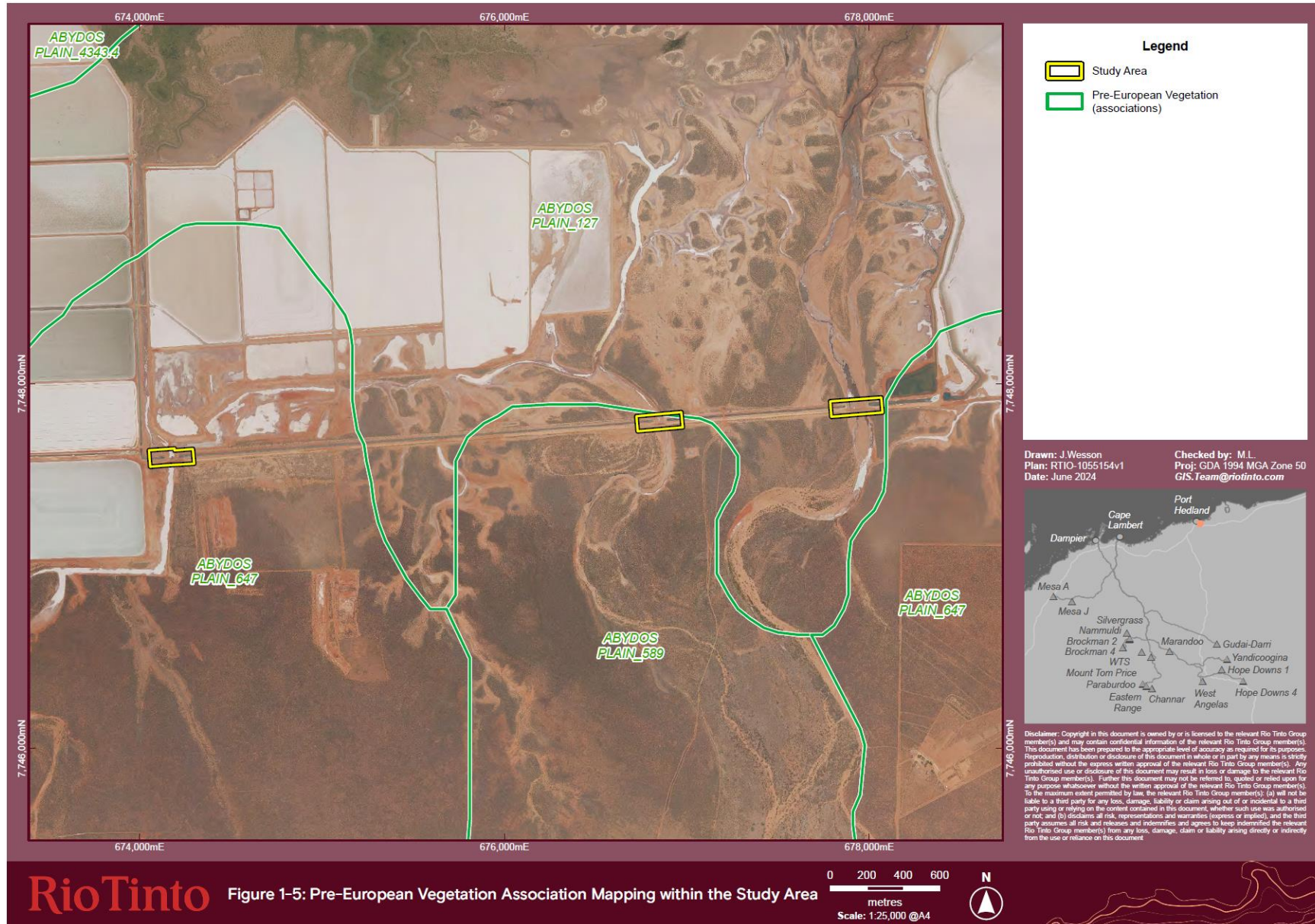


Figure 1-5 Beard’s / Shepherd’s vegetation associations in proximity to the Study Area.

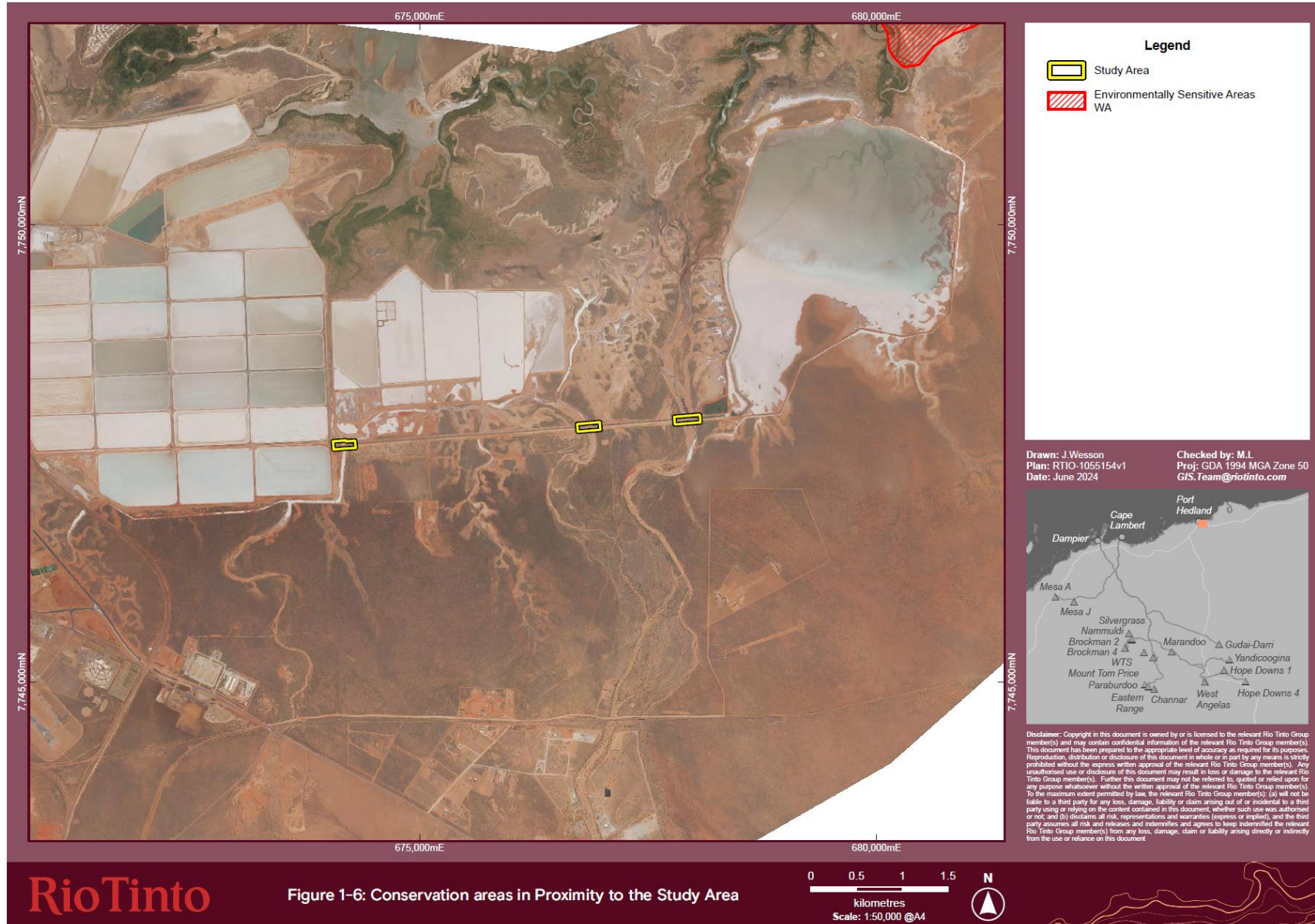


Figure 1-6 Environmentally sensitive areas in proximity to the Study Area.

2. Methodology

This report has been compiled following a desktop assessment and field visit undertaken by RTIO botanist and ecologist. The Study Area was assessed in accordance with the *Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment* and *Environmental Factor Guideline – Flora and Vegetation* (EPA, 2016a, 2016c). Fauna habitats were confirmed with reference to *Technical Guidance – Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment* and *Environmental Factor Guideline – Terrestrial Fauna* (EPA, 2016b, 2020).

2.1 Literature review

A literature review was undertaken of publicly available flora and fauna reports previously conducted in the vicinity of the Study Area (Figure 2-1 and Figure 2-2). The findings of these surveys and database search results were used to determine the potential presence of significant species, vegetation associations and fauna habitats within the Study Area. The following reports were primarily reviewed as part of the literature review:

Two previous flora and vegetation surveys have been utilised as part of this flora and vegetation desktop assessment (ENV Australia (2011b), Biota Environmental Sciences (2006a)). Two previous fauna survey reports were utilised as part of the fauna desktop assessment ((ENV, 2011a), (Biota, 2006b)).

A summary of the findings of this report is presented in **Table 2-1** and **Table 2-2**. These reports have been consulted as part of the literature review to determine conservation significant taxa that may occur within the survey area, as well as flora, vegetation types, and ecological communities.

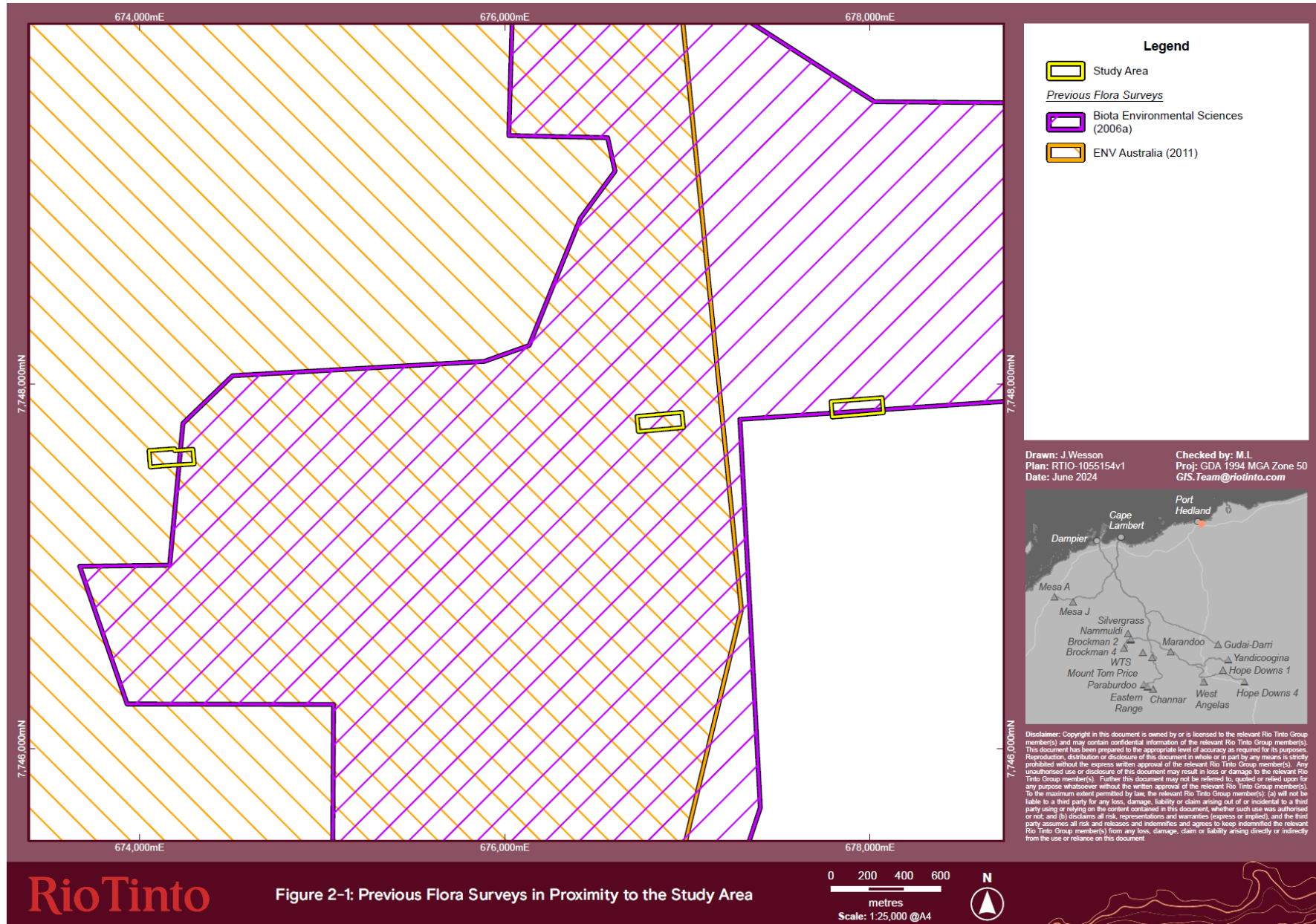


Figure 2-1 Previous flora surveys in proximity to the Study Area.

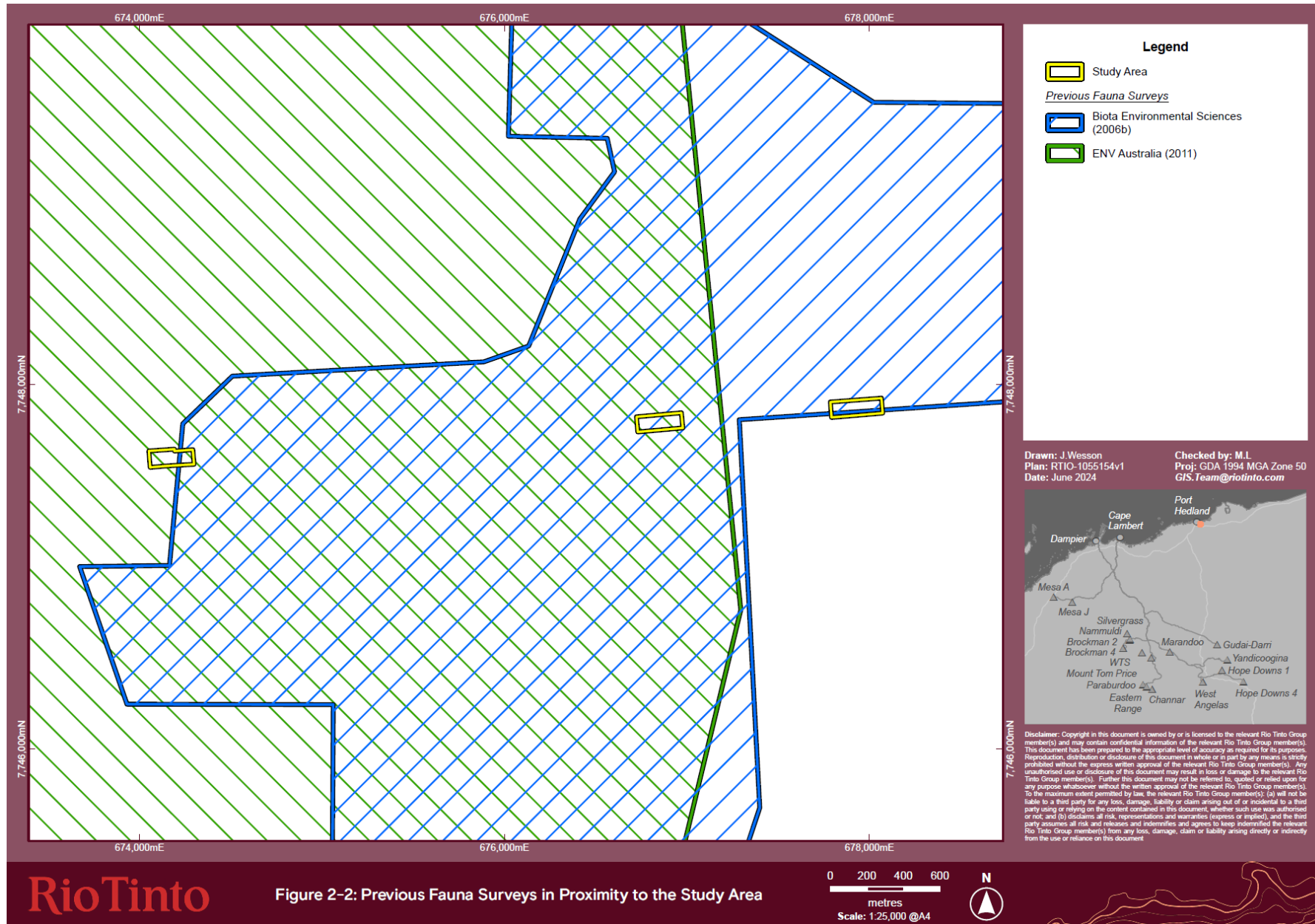


Figure 2-2 Previous fauna surveys conducted in the vicinity of the Study Area

Table 2-1: Summary of previous flora & vegetation survey reports.

Report and level of survey	Size (ha)	Number of taxa	Significant flora	Weeds	Vegetation of significance
ENV Australia (2011) Port Hedland Regional Flora Assessment	80,870	338	Four Priority flora species recorded: <i>Abutilon</i> sp. <i>Pritzelianum</i> (Priority 3), <i>Euploca mutica</i> (Priority 3), <i>Tephrosia rosea</i> var. Port Hedland (Priority 1) and <i>Gomphrena pusilla</i> (Priority 2)	Twelve introduced species recorded	No TECs or PECs
Biota Environmental Sciences (2006) Port Hedland Solar Saltfield Expansion	1,536	193	One Priority flora was recorded at the time of survey <i>Abutilon trudgenii</i> ms. This species has since been reclassified to <i>Abutilon</i> sp. Pilbara (W.R. Barker 2025) and this species is not a Priority species.	Eight introduced species recorded	No TECs or PECs

Table 2-2: Summary of previous fauna habitat reports.

Report and level of survey	Size (ha)	Number of taxa	Significant fauna	Fauna habitat	Fauna habitat of significance
ENV Australia (2011) Port Hedland Regional Fauna Assessment	80,870	108	29 Migratory species and 8 Listed species recorded 17 Listed species likely to occur <ul style="list-style-type: none"> 4 Listed species with potential to occur 	Five major habitats recorded: <ul style="list-style-type: none"> Beach/Dunal Tidal Flats Mangroves Riverine Sandplain 	Beach/Dunal, Tidal Flats, Mangroves and Riverine habitats were all considered of high habitat value.
Biota Environmental Sciences (2006) Port Hedland Solar Saltfield Expansion Fauna Survey	1,536	83	Two priority fauna recorded – one was the Australian Bustard (<i>Ardeotis australis</i>) and this species is no longer classified as a Priority species. <ul style="list-style-type: none"> Two priority fauna with potential to occur. 	Four major habitats: <ul style="list-style-type: none"> undulating sandy plain consisting of <i>Acacia</i> low shrubland over <i>Triodia</i> hummock grassland; floodplain consisting of <i>Acacia</i> open shrubland over buffel grass. tidal saline flats consisting of samphire low shrubland. heathland on limestone ridges. 	No habitats identified as significant.

2.2 Database searches

Database searches were completed to generate a list of species and communities previously recorded within, and in the vicinity of, the Study Area, with an emphasis on species and communities of significance and introduced species. Seven database searches were conducted based on either the Study Area polygon or a central Study Area coordinate and are provided in Table 2-3 below.

Table 2-3: Database searches conducted for the desktop assessment.

Custodian	Database Name	Buffer	Date of Receipt
ALA (2024)	Atlas of Living Australia	50 km	03/05/2024
DBCA (2024e)	Threatened and Priority Flora Database	20 km	03/05/2024
Western Australian Herbarium (1998-)	Western Australian Herbarium Specimen Database	20 km	03/05/2024
DBCA (2024c)	Threatened and Priority Ecological Communities Database	100 km	30/04/2024
DBCA (2024a)	Dandjoo biodiversity data platform	20 km	07/05/2024
DBCA (2024d)	Threatened and Priority Fauna Database	20 km	07/05/2024
DCCEEW (2024)	Protected Matters Search Tool	50 km	29/04/2024

2.3 Likelihood of occurrence assessment

2.3.1 Flora

The results of the database searches were used to create a list of conservation significant flora (BC Act and priority flora) previously recorded or with potential to occur within the study area. The likelihood of conservation significant flora occurring within the study area were assessed through consideration of available habitats in the study area and each species' ecology in accordance with the criteria outlined at Appendix 2.

The likelihood of conservation significant flora species occurring within study areas were determined prior to the field survey based on the location of database records, availability of potentially suitable habitat and knowledge of the species ecology (section 3.1.2). This list was then updated following the field survey to better reflect the habitats observed.

2.3.2 Fauna

A likelihood of occurrence assessment was performed to identify habitats within the study area for which fauna listed under the current BC Act may have specific dependence (DBCA, 2018b). For the purpose of this study, 'specific dependence' is defined as core habitat including roosting, denning, shelter and breeding habitat.

The likelihood of conservation significant fauna species (BC Act) occurring within the study area was determined prior to the field survey based on the location of database records, availability of potentially suitable habitat and knowledge of the species ecology (section 3.1.4) in accordance with the criteria outlined in Appendix 2. This list was then updated following the field survey to better reflect the habitats. Exclusively marine fauna were excluded from the likelihood assessment as the study area does not contain marine habitat and is therefore not able to support these species.

2.4 Field survey

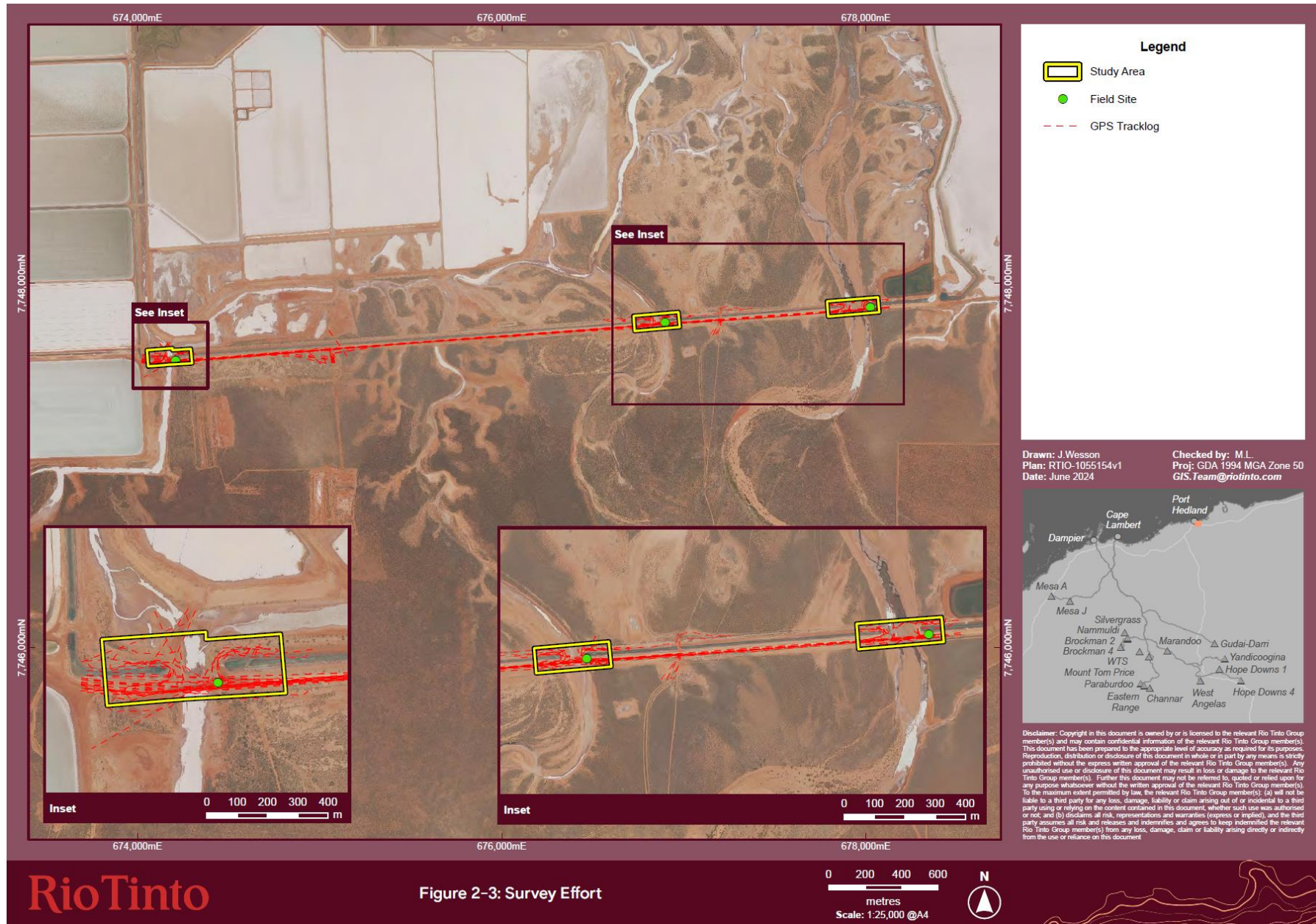
The study area was assessed in accordance with the Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment and Environmental Factor Guideline – Flora and

Vegetation (EPA, 2016a, 2016c). Fauna habitats were confirmed with reference to Technical Guidance – Terrestrial vertebrate fauna surveys for environmental impact assessment and Environmental Factor Guideline – Terrestrial Fauna (EPA, 2016b, 2020).

The study area was surveyed by Rio Tinto Botanist Julijanna Hantzis and Rio Tinto Ecologist Alicia Michael on the 14th to the 16th of November 2023. Relevés, typically 50 x 50 m in size (to represent an approximate 2,500 m²) were established within study area. A total of 3 relevés were surveyed in the Study Area. The co-ordinates of each relevé from the study are presented in Appendix 4, and track logs presented in Figure 2-3. At each relevé site, the location was recorded, and photographs were taken. Data was collected on the flora species present, including percentage cover and average height; site slope; aspect; topography; soil texture and colour; and landform type and habitat features.

A targeted survey was conducted on the 16th of April 2024 encompassing the entire study area. Targeted surveys were undertaken to identify the location of priority flora species *Atriplex eremitis* and any additional flora species that were not observed during the November survey.

Locations of significant flora, weeds and other observations were recorded opportunistically. Where populations of significant flora were encountered; estimates of density or numbers of individuals, habitats and associated flora were recorded. Density or numbers of individuals of introduced flora species were also recorded.



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Figure 2-3: Survey Effort



Figure 2-3 Survey effort within the Study Area

2.5 Vegetation, descriptions, condition assessment and mapping

Vegetation descriptions for the study area were based on Specht (1970) with modification by Aplin (1979) (Appendix 4). Descriptions were taken at relevés and during traverses where changes in the vegetation structure were observed. A photograph of each vegetation type, and a location using a hand-held GPS (WGS84 datum) was taken. Assessment of the overall condition of each vegetation type was made based on Trudgen (1988)(Appendix 4).

The mapping data gathered in the field was used to prepare a final map of vegetation, utilising rectified colour digital air photography as the background. The vegetation boundaries were digitised on-screen using ArcGIS Pro 3.0.3. The resulting polygons were attributed with the relevant information including the vegetation type, description and condition. Point locations of each relevé recorded were also uploaded into ArcGIS Pro, together with visual photographs which were used to assist with the finalising of vegetation boundaries.

2.6 Other vegetation of significance

Vegetation not legally protected or classified as part of regulatory ratings may still be regarded as being of significance. Vegetation that may fall under this category includes (but is not limited to) vegetation supporting elevated floristic diversity, habitats supporting numerous significant species, ecosystems at risk (Desmond, 2001). novel floristic associations, groundwater dependant ecosystems, uncommon vegetation, and associations on novel landforms. Vegetation associations or biological features assigned a significance classification are, for the purpose of this document, considered to be of elevated significance when compared to all other identified associations or features that are common or widespread and therefore well represented.

2.7 Flora identification

An interim species list was compiled in the field covering common species identified with confidence by the botanists. Voucher samples of unknown or potentially significant flora were taken and pressed and dried in the field. Each sample was assigned a unique sample number.

Flora samples collected in the field were identified using relevant taxonomic publications and compared to collections at the Western Australian Herbarium (**WAH**). Sample identifications were conducted by Western Australian Herbarium senior taxonomist Steven Dillon (WAH). Nomenclature was aligned with the Western Australian Plant Census (DBCA, 2024b).

2.8 Fauna habitat assessment

Broad fauna habitats were identified and mapped based on landforms and vegetation associations identified during the current survey. Habitats were then assessed for their potential to support species of significance, considering relevant State and Commonwealth guidelines to support identification of 'potential' habitat. Supporting evidence such as sightings, the presence of microhabitats was recorded throughout the Study Area. Representative traverses were also completed throughout all habitats present within the Study Area. Fauna habitats were assessed and mapped as per Factor Guideline and Technical Guidance for Terrestrial Fauna (EPA, 2016b, 2020).

2.9 Opportunistic fauna records

Opportunistic fauna sightings were recorded whilst traversing the Study Area with a focus on significant species and supporting evidence (i.e. scats). Potential fauna assemblages were based on the desktop review of previous surveys in the area and database searches.

3. Results

3.1 Desktop assessment results

3.1.1 Flora diversity

The desktop assessment returned a total of 554 flora species from 232 genera and 81 families (**Table 3-1**). Of these, 13 are considered to be of conservation significance, while 71 species are considered alien to Western Australia. The genera with the highest species richness was *Acacia* (27 species) and *Gomphrena* (13 species), *Tephrosia* (13 species) and *Euphorbia* (13 species). The family with the highest species richness was Fabaceae (107 species), followed by Poaceae (89 species) and Malvaceae (39 species).

Table 3-1: Summary of flora species returned from the desktop assessment.

Flora group	Number of potential species
Families	77
Genera	230
Species	546
Significant	13
Weeds	71

3.1.2 Significant flora returned by desktop assessment

For the purposes of the desktop assessment, the assessment was based upon the results of the DBCA and TPFL database searches with a 20km buffer applied to the study area. The desktop assessment returned a total of eight conservation significant flora species (Figure 3-1, **Appendix 4**); one Priority 1 species; one Priority 2 species; five Priority 3 species; and one Priority 4 flora species. The PMST database search did not return any listed flora species. No significant flora species have been recorded within the Study Area previously, two species were considered 'likely' to occur, five had the 'potential' to occur, and two species were considered 'unlikely' to occur based on the criteria in **Appendix 2 (Appendix 4)**.

The likelihood rating of significant flora returned by the database search was later updated post-field assessment (**Appendix 4**), including factors such as if there was suitable habitat present within the Study Area; whether that species was likely to have been overlooked during the survey (e.g. a large perennial versus a small annual life form), or if the species was unlikely to be present due to unsuitable survey timing and conditions.

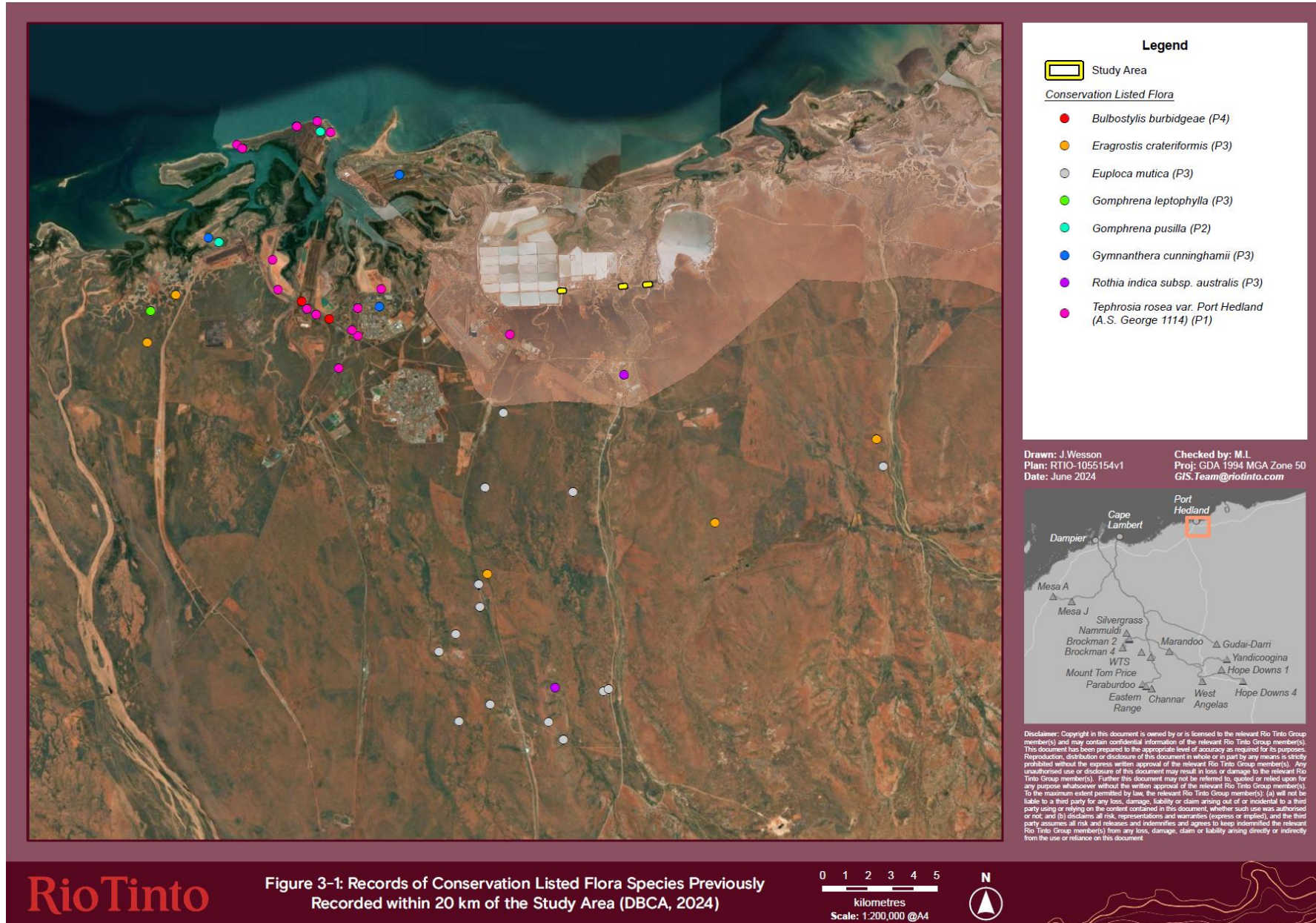


Figure 3-1 Significant flora previously recorded nearby to the Study Area.

3.1.3 Fauna diversity

Table 3-2 presents a summary of terrestrial vertebrate fauna taxa returned by the database searches. A consolidated list of all fauna taxa identified in the desktop assessment is provided in **Appendix 1**. Due to the proximity of the Study Area to the coastline, marine taxa such as cetaceans, pinnipeds and fish were excluded from the database results as none of these groups have potential to occur within the Study Area.

Table 3-2: Summary of terrestrial fauna species returned by the database searches.

Fauna group	Number of potential species
Amphibians	12
Reptiles	111
Avifauna	238
Mammals	43
Significant	63
Total	404

3.1.4 Significant fauna returned by desktop study

For the purposes of the desktop assessment, the assessment was based upon the results of the DBCA and TPFL database searches with a 20km buffer applied to the study area. Sixty-three conservation listed fauna species were returned by the database search (Figure 3-2, **Appendix 4**), 58 from DBCA Threatened and Priority Fauna Search and an additional five from the PMST search :

- Four Critically Endangered fauna taxa.
- Four Endangered fauna taxa.
- Eight Vulnerable fauna taxa.
- Forty-six Migratory fauna taxa.
- One Priority 1 fauna taxon.
- No Priority 2 fauna taxon.
- One Priority 3 fauna taxon.
- Five Priority 4 fauna taxon.
- One Other Specially Protected fauna taxon

*Note that species can fall under multiple categories listed above

No conservation listed species have been recorded within the study area. No species were considered 'likely' to occur within the study area, three species were considered to have 'potential' to occur within the study area, one species as having potential to occur for dispersal only, 45 species as having potential to occur for foraging only and 18 species were considered 'unlikely' to occur, based on the criteria used to assess the pre-field likelihood of occurrence (**Appendix 2; Appendix 4**).

The likelihood rating of significant fauna returned by the database search was later updated post field assessment (**Appendix 4**) including factors such as if there was suitable habitat present within the Study Area or if the taxa may not have been present (e.g. the Study Area was not surveyed at a suitable time).

A large number of returned species are migratory wading species. These species may occasionally forage within the tidal creeks that run through the study area. This habitat type within the study area does not support vegetation, and so would not be impacted by vegetation removal associated with this proposal.

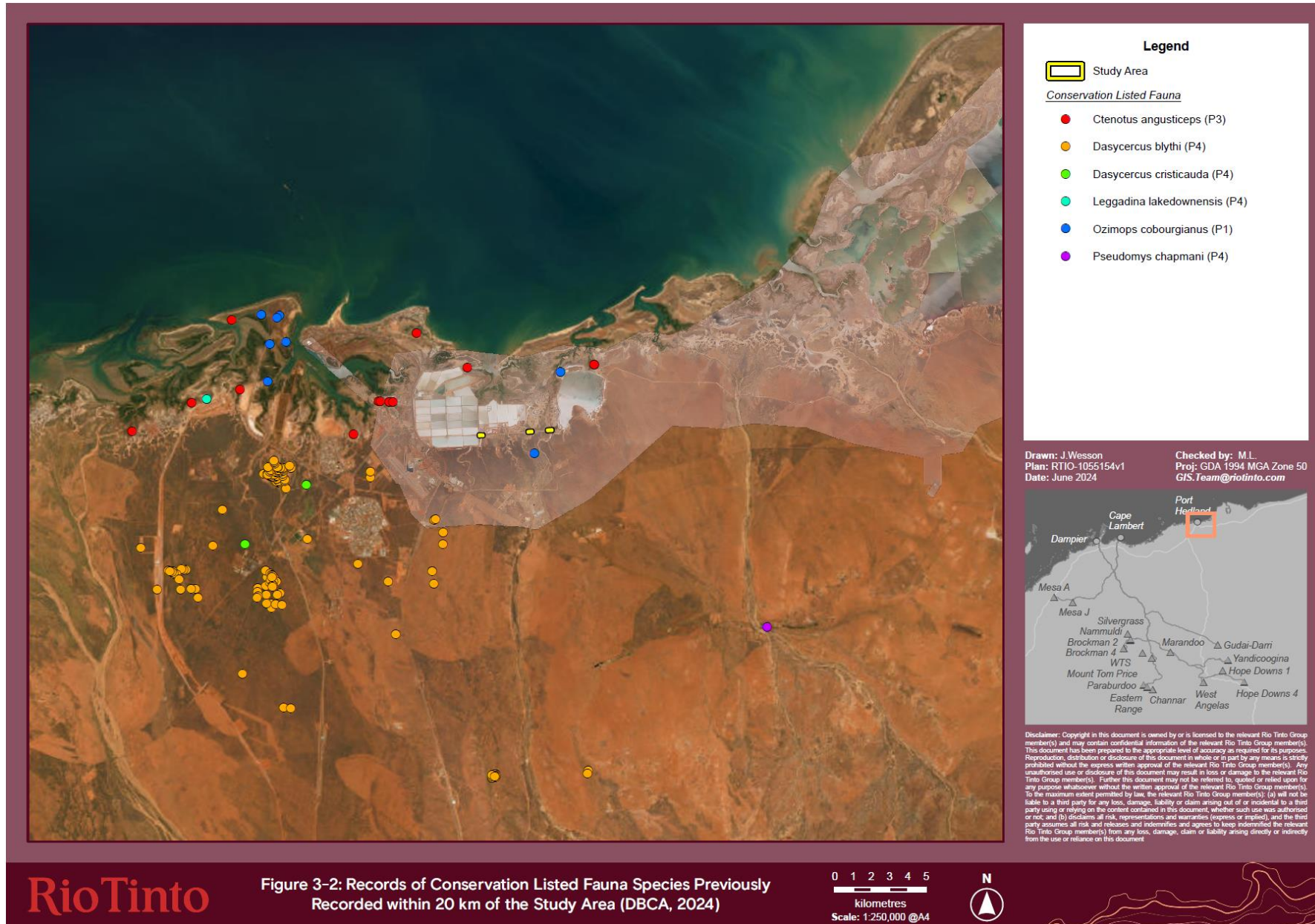


Figure 3-2 Significant fauna previously recorded nearby to the Study Area.

3.2 Field results

3.2.1 Vegetation of the Study Area

One vegetation type (TiITtTeCc) was identified across one major landform within the study area. The vegetation is not considered significant based on the criteria of the EPA (2016c). The vegetation type is summarised in Table 3-3 and is described in detail on the following pages, accompanied by vegetation mapping (Figure 3-3).

Table 3-3: Vegetation types of the study area.

Unit	Vegetation description	Extent (ha) within study area	Proportion (%) within study area
Vegetation of embankments			
TiITtTeCc	<i>Tecticornia indica</i> subsp. <i>leiostachya</i> and <i>Trianthema turgidifolium</i> very open herbland with <i>Triodia epactia</i> very open hummock grassland and <i>Eragrostis</i> sp. and <i>Cenchrus ciliaris</i> very open tussock grassland.	1.59	24.81
Saline Creek	Unvegetated Saline Creek	1.65	25.74
CL	Previously cleared areas (e.g. tracks)	3.17	49.45
Grand Total		6.41	100.00

3.2.2 Detailed vegetation description

TiITtTeCc	<i>Tecticornia indica</i> subsp. <i>leiostachya</i> and <i>Trianthema turgidifolium</i> very open herbland with <i>Triodia epactia</i> very open hummock grassland and <i>Eragrostis</i> sp. and <i>Cenchrus ciliaris</i> very open tussock grassland.
Landform and soils	This unit was recorded from tidal soil. This unit was recorded from coastal plains, cliffs, dunes, mudflats and beaches with various vegetation, from the Littoral Land System.
Distribution	This unit was recorded throughout the study area. It was recorded from 1.59 ha (33.40%).
Associated species	<u>Trees:</u> N/A <u>Shrubs:</u> <i>Acacia ampliceps</i> <u>Low shrubs:</u> N/A <u>Grasses:</u> <i>Panicum decompositum</i> , <i>Eragrostis</i> sp. <u>Herbs:</u> <i>Neobassia astrocarpa</i>
Conservation listed flora	<i>Atriplex eremitis</i> (Priority 1) was recorded as an isolated species (<0.5 % cover) at two relevés sampled for this unit. Targeted surveys resulted in 79 individuals of <i>Atriplex eremitis</i> being located in the 500m linear road corridor leading up to siphon two and 1.3km between siphon two and siphon three search areas (Figure 3-5).
Weeds	* <i>Cenchrus ciliaris</i> , * <i>Aerva javanica</i> , * <i>Indigofera oblongifolia</i> , * <i>Calotropis procera</i>
Condition	Poor to Degraded – previously cleared, weed species and grazing from introduced species observed.
Sampling sites	Relevés: DLS1, DSL2, DSL3
Fire and disturbance	This unit has not been affected by significant recent fire. There was significant disturbance recorded, with existing infrastructure, tracks and a number of weed species present.



3.2.3 Vegetation condition

The majority of vegetation within the study area was rated as being in Completely Degraded condition (Trudgen, 1988), in the form of previously cleared tracks and infrastructure for operation. Only 0.38 ha of the study area was ranked as being in Poor condition and 1.21 ha of the study area was ranked as being in Degraded condition. Scattered introduced (weed) flora species were recorded within the study area; however, their presence did not significantly influence the vegetation condition, as the condition is mostly attributed to the level of previous disturbance. Figure 3-4 presents the condition mapping for the study area, whilst **Table 3-4** presents the extent of the condition of vegetation mapped within the study area.

Table 3-4: Vegetation condition of the Study Area.

Condition	Area (ha)	Proportion (%) of Study Area
Poor	0.38	7.98
Degraded	1.21	25.42
Completely Degraded	3.17	66.60
Total	4.76	100.00

3.2.4 Vegetation of significance

The vegetation within the Study Area does not correspond to any listed Threatened Ecological Communities under the EPBC or BC Act and none are consistent with any Priority Ecological Communities listed by DBCA (2024c). The vegetation within the Study Area is also not considered representative of any Ecosystems at Risk identified by Desmond (2001). The vegetation is not considered significant based on the criteria of the EPA (2016c).

3.2.5 Native flora

A total of 36 taxa from 30 genera representing 14 families were recorded during the current survey (Table 3-5, Appendix 6).

The most taxon-rich families were: Fabaceae (10 taxa); Chenopodiaceae (five taxa); and Poaceae (five taxa). The most species rich genera were: *Acacia* (three taxa); *Tecticornia* (two taxa); *Swainsona* (two taxa); *Solanum* (two taxa); and *Indigofera* (two taxa). The dominant plant groups are consistent with other surveys of the broader locality. The species recorded within the current study area are consistent to those found within the surrounding vegetation during adjacent surveys (Biota, 2006a; ENV, 2011b).

Table 3-5: Summary of flora richness recorded during survey.

Flora group	Number recorded
Families	14
Genera	30
Species	36
Priority species	1
Weeds	4

3.2.6 Significant flora

No Threatened flora species were recorded during the study. One Priority flora species was recorded within the study area *Atriplex eremitis* (Priority 1) (Figure 3-5).

Atriplex eremitis is a low erect perennial shrub to 30 cm, usually occurring on saline plains amongst disturbed soil. It is generally associated with tussock grassland associated with *Eragrostis xerophila* and **Cenchrus ciliaris*, occurring as a component of a sub-unit of the Anna Land System, composed of level sand plains and a mosaic of saline plains (Van Vreeswyk 2004). *Atriplex eremitis* has a range of approximately 387 km on Florabase within the Pilbara and Dampierland regions (Western Australian Herbarium, 1998-) and 422 km from the Rio Tinto database.

This species was recorded from multiple locations during the study (Figure 3-5), within vegetation type TiltTeCc and CD, recorded from previous disturbance along roads and tracks, as well as limestone rockpiles. This species has a total population count of 79 plants, within the Rio Tinto database (Figure 3-5). There are seven specimens of *Atriplex eremitis* within the collections at the WAH (Western Australian Herbarium, 1998-).

The desktop study, utilising previous survey results, a Florabase database search, an EPBC Protected Matters search, and searches of the Rio Tinto database, identified eight conservation listed species as occurring within a 20 km radius of the study area (Section 3.1.2).

None of the eight conservation listed species identified by the database search were recorded within the study area (Section 3.2.6) and were deemed unlikely to exist within the study area. Three of which were perennial shrubs and were unlikely to have been overlooked during the survey. An additional three of which are annual herbs, one annual tussock grass and one annual sedge, however these species' preferred habitats were not evident within the study area.

3.2.7 Unconfirmed flora

Three taxon recorded in the study area, *Eragrostis* sp., *Swainsona* sp. and *Triumfetta* sp. were unable to be described to species level, due to poor collection material and/or lack of diagnostic characteristics. It is considered, however, these specimens are unlikely to represent any species of conservation significance as the habitat supporting the priority species of these genus' were not found within the study area. The study area was well traversed as part of the Targeted surveys in April and no additional priority flora were identified. These unconfirmed species are likely to represent species already included in taxa noted during the Survey.

3.2.8 Introduced flora

Four introduced (weed) species were recorded from the study area, **Aerva javanica*, **Calotropis procera*, **Cenchrus ciliaris* and **Indigofera oblongifolia* (Table 3-6) (Appendix 9).

The ranking of these weed species as per the Parks and Wildlife Weed Prioritisation process (DBCWA, 2024f) is shown in Table 3-6.

**Calotropis procera* is listed as a Declared Pest under the *State Biosecurity and Agriculture Management Act 2007* (BAM Act).

Strict weed hygiene protocols should be implemented during clearing of vegetation and subsequent earthworks to minimise the introduction and spread of weeds to or from the study area.

Table 3-6: Introduced species recorded in the study area and Parks and Wildlife weed prioritisation ranking.

Species	Ranking (DBCA, 2024f)
<i>*Aerva javanica</i>	High/Rapid
<i>*Cenchrus ciliaris</i>	High/Rapid
<i>*Indigofera oblongifolia</i>	Unknown
<i>*Calotropis procera</i>	Unknown/ Declared Pest

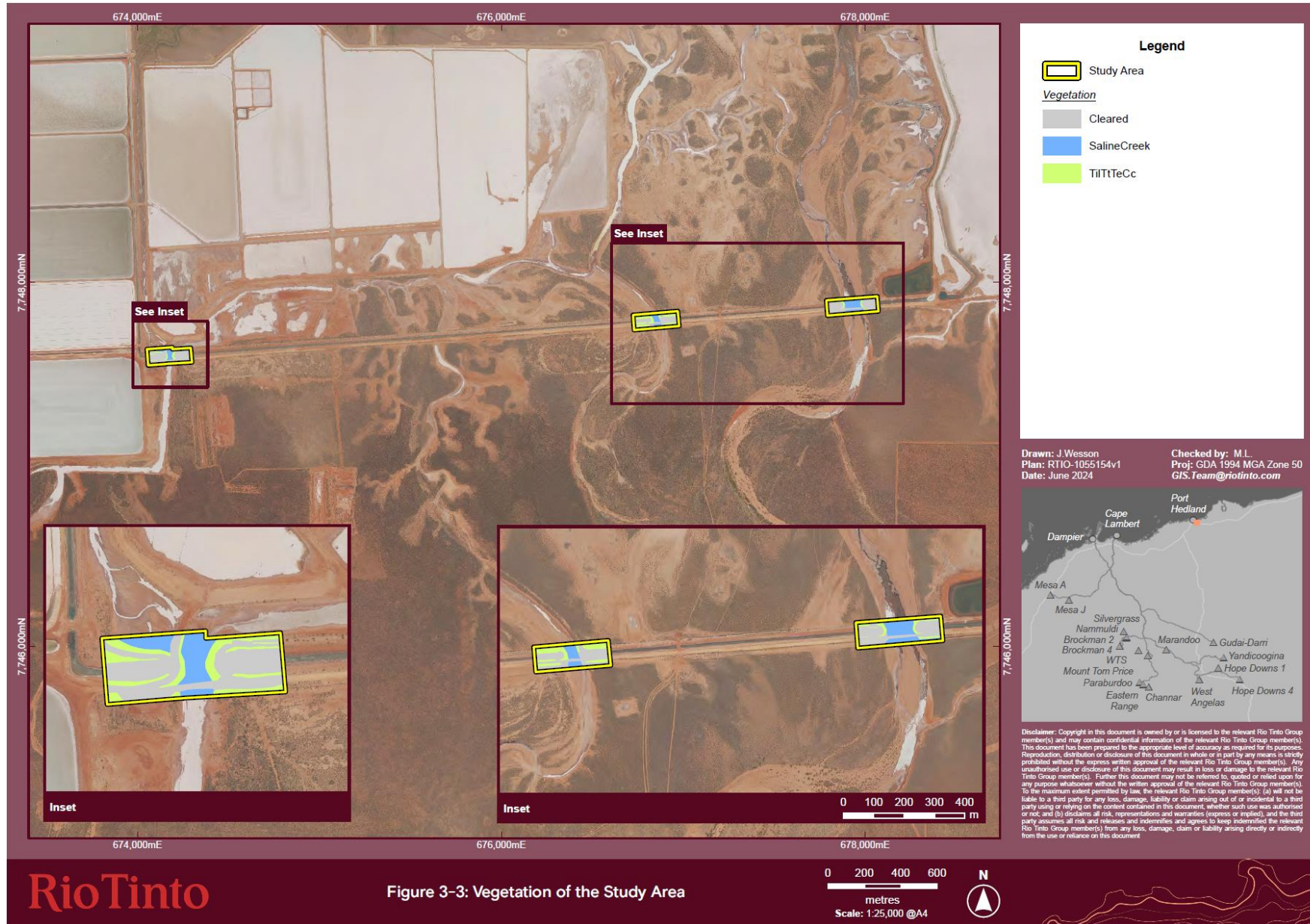


Figure 3-3 Vegetation of the study area



Figure 3-4 Vegetation condition of the study area.



Figure 3-5 Conservation significant flora recorded within the study area.

3.2.9 Fauna habitat of the Study Area

Two broad fauna habitat types were described from the study area. The fauna habitat types recorded are described below, accompanied by mapping of the habitat types (Table 3-7, Figure 3-6).

'Completely Disturbed' was the most widespread fauna habitat across the study area (3.17 ha, 49.38%), whilst 'Chenopod shrubland' was the least widespread fauna habitat recorded from the study area (1.59 ha, 24.82%).

Table 3-7: List of habitat types within the Study Area.

Habitat	Fauna habitat description	Significant microhabitat	Extent (ha) within Study Area	Proportion (%) within Study Area
Chenopod shrubland	<i>Tecticornia indica subsp. leiostachya</i> low shrubland over <i>Triodia epactia</i> hummock grassland. The landform is predominantly located on the constructed embankment either side of the Brine transfer channel. In areas the habitat is degraded and dominated by Buffel Grass (<i>Cenchrus ciliaris</i>).	None recorded	1.59	24.82
Tidal Creek/flats	Varying in water permanency, this habitat type lacks vegetation and associated microhabitats and is often inundated with saline water.	None recorded	1.65	25.79
Completely Disturbed	Areas where the natural vegetation and microhabitat have been disturbed (tracks, pads etc.). This habitat contains previously disturbed areas with some natural vegetation regrowth. Where natural regrowth has occurred, the habitat appears to be in degraded or completely degraded condition.	None recorded	3.17	49.38
Total			6.41	100.00

3.2.10 Fauna habitats of significance

None of the fauna habitats occurring within the study area correspond to any ecosystems listed as Threatened under the EPBC Act and none are consistent with ecosystems listed as TECs by DBCA (2024a). None of the fauna habitats occurring within the study area are representative of listed PECs by DBCA Wildlife(2024a).

Tidal creeks provide potential foraging habitat for a range of conservation significant and migratory birds. However, the habitat is common throughout the surrounding area and within the study area the habitat type is subject to disturbance associated with the access track that runs parallel. As such is not considered that the area of habitat within the study area is of significance for any conservation significant or migratory species. The tidal creek habitat type comprises no native vegetation, and so will not be impacted by vegetation removal associated with this clearing permit application.

3.2.11 Fauna

A total of five fauna species were opportunistically recorded during the survey, which are summarised in Table 3-8. Two of the species are introduced.

Table 3-8: Fauna species recorded within the Study Area.

Group	Species	Common Name	Observation type
Mammals	<i>Felis catus</i>	Cat	Tracks
	<i>Canis canidae</i>	Dog	Tracks
Birds	<i>Artamus leucorhynchus</i>	White-breasted Woodswallow	Direct
	<i>Merops ornatus</i>	Rainbow bee-eater	Direct
Reptiles	<i>Varanus</i> sp.	Goanna	Tracks

No evidence of fauna species of conservation significance was recorded during the current study.

The desktop study, utilising previous survey results and various database searches identified forty-eight conservation significant fauna species that may occur within the vicinity of the study area. The majority of the study area supports completely disturbed habitat. The likelihood of their occurrence is discussed in detail in Section 3.1.3 and is presented in Appendix 3. The initial likelihood of occurrence rating was based on pre-field information, mainly nearby records and species distributions.

The revised likelihood rating was conducted post field work and included a review of the habitats recorded in the study area and their suitability. Given that half of the study area is completely disturbed and the remainder of the vegetation within the study area has been assessed as in degraded to poor condition it is considered unlikely that the study area provides suitable habitat for any species of conservation significance. No suitable nesting or roosting habitat for species identified as potentially present in the study area was identified, with only a very sparse occurrence of *Acacia ampliceps* over samphire shrubland. (**Appendix 4**)

Further review of habitat requirements for *Ctenotus angusticeps*, also indicates this species is unlikely to be present within the study area. This species has a close association with the vegetation type: *Tecticornia halocnemoides* subsp. *tenuis* and *Suaeda arbusculoides* on clayey soils with a mixed herb and grass cover of *Muellerolimon salicorniaceum* and *Sporobolus virginicus* on sandy soils, fringing mangrove communities (Maryan et al., 2013). This vegetation type was not present within the study area and as such it is considered unlikely that *Ctenotus angusticeps* would occur within the study area. .

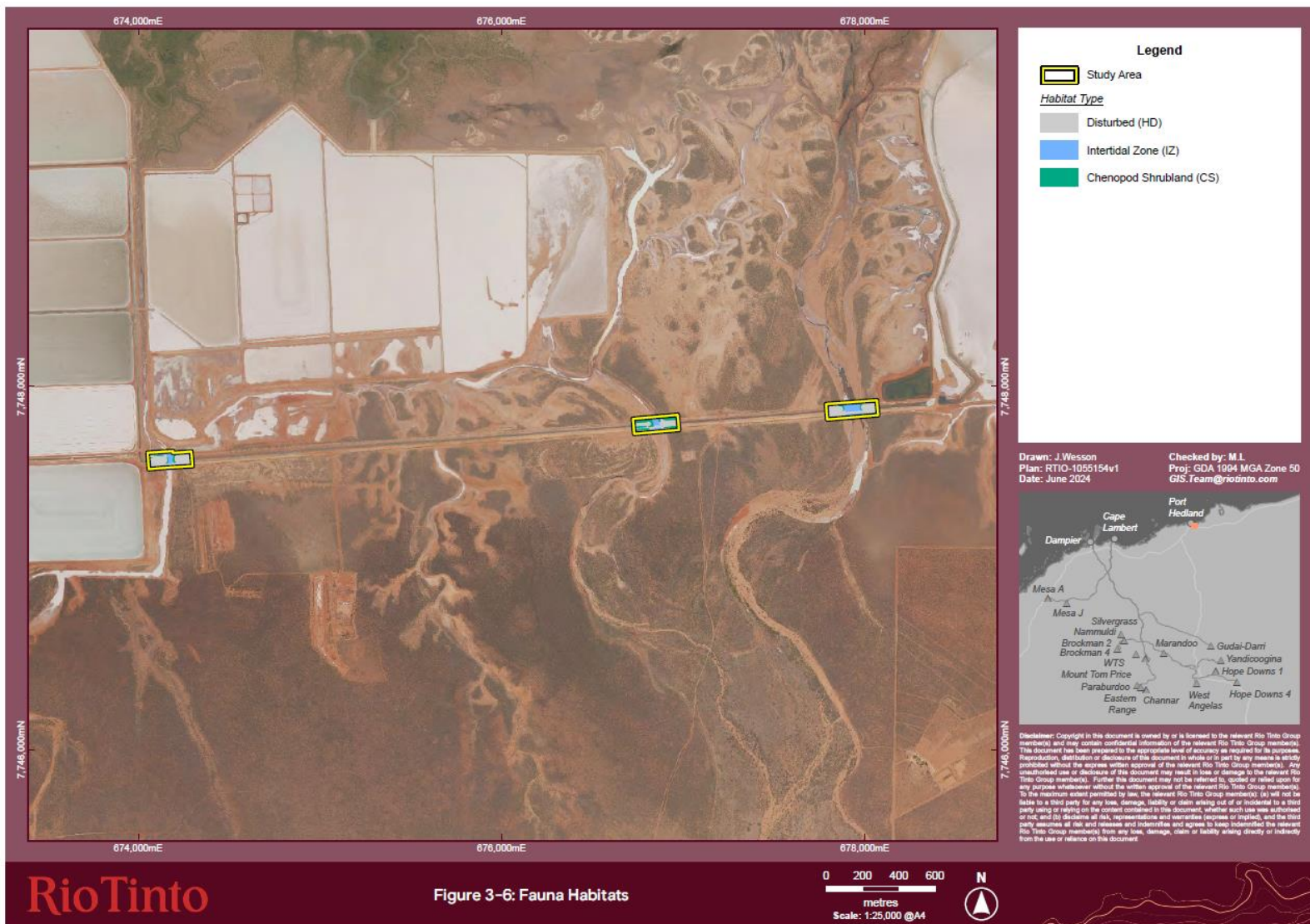


Figure 3-6 Fauna habitats within the study area.

4. Statement addressing the 10 clearing principles

Rio Tinto on behalf of Dampier Salt Limited, is proposing to undertake maintenance works of the siphons at the Port Hedland facility to improve flow capacity (the **Proposal**). Approval for clearing of native vegetation associated with the Proposal is required via a Native Vegetation Clearing Permit (**NVCP**) under Section 51A of the *Environmental Protection Act 1986 (EP Act)*. The study area covers 6.41 ha of native vegetation, unvegetated saline creeks and disturbed ground.

Based on specialist assessment of the study area and discussion below, it is deemed that:

- Principles (a), (b), (c), (d), (e), (h), (i) and (j) are not at variance;
- Principles (f) and (g) are not likely to be at variance

4.1 Principle (a) Comprises high level of biological diversity.

Native vegetation should not be cleared if it comprises a high level of biological diversity.

The Pilbara is one of Australia's 15 National Biodiversity Hotspots (DBCA, 2023) and is a secondary centre of endemism and species richness for *Acacia*, *Triodia*, *Corymbia* and *Sida* in Western Australia ((Maslin & Van Leeuwen, 2008), (Kendrick & Stanley, 2001)).

The study area occurs within the Roebourne sub-region of the Pilbara bioregion. The Roebourne sub-region is described as: 'Quaternary alluvial and older colluvial coastal and subcoastal plains with a grass savannah of mixed bunch and hummock grasses, and dwarf shrub steppe of *Acacia stellaticeps* or *A. pyrifolia* and *A. inaequilatera*. Uplands are dominated by *Triodia* hummock grasslands. Ephemeral drainage lines support *Eucalyptus victrix* or *Corymbia hamersleyana* woodlands. Samphire, *Sporobolus* and mangal occur on marine alluvial flats and river deltas. Resistant linear ranges of basalts occur across the coastal plains, with minor exposures of granite. Islands are either Quaternary sand accumulations, or composed of basalt or limestone, or combinations of any of these three.' (Kendrick & Stanley, 2001)

One vegetation type was described from the study area. Vegetation type TiltTeCc was described from the embankments of the saline creek. This vegetation type is not listed as a TEC under either the EPBC Act or under the State listing maintained by DBCA. This vegetation type does not represent a PEC under the State listing maintained by DBCA.

The vegetation type identified within the study area is considered to be of low conservation value and is widely distributed both locally and throughout the Roebourne sub-region.

A total of 36 taxa from 30 genera representing 14 families were recorded during the survey. The number of taxa recorded by the current study was what was expected when compared with similar sized previous surveys of the Port Hedland locality.

No species of Threatened Flora were recorded during the study, or were expected to occur within the study area. One species of Priority flora, *Atriplex eremitis* (P1) was recorded during the survey. The study area and surrounding area was thoroughly and adequately searched for priority flora. Seventy-nine individuals of *Atriplex eremitis* were recorded during the study both inside and outside of the proposed development envelope.

Two broad fauna habitat types were recorded within the study area: 'chenopod shrubland; and 'tidal creeks/flats'. These fauna habitats are not considered to be restricted at a local or regional level.

Based on specialist assessment, the proposal is considered not at variance to this principle.

4.2 Principle (b) Potential impact to any significant habitat for native fauna.

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

Greater than half of the study area is completely disturbed and the remainder of the vegetation within the study area has been assessed as in degraded to poor condition. The vegetation within the application area is considered unlikely to provide suitable habitat for any species of conservation significance. No suitable nesting or roosting habitat for species identified as potentially present in the study area was identified, with only a very sparse occurrence of *Acacia ampliceps* over samphire shrubland.

It is considered unlikely the Proposal will negatively impact on the conservation status of any conservation significant species, on either a local or regional scale.

Based on specialist assessment, the proposal is considered not at variance to this principle.

4.3 Principle (c) Potential impact to any rare flora.

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

No Threatened flora species were recorded in the Study Area, and none are considered likely to occur following the field survey. No Threatened flora species were identified by the database searches as occurring within 50 km of the Study Area.

One Priority one species was identified within the study area, *Atriplex eremitis*. *Atriplex eremitis* is a low erect perennial shrub to 30 cm, usually occurring on saline plains amongst disturbed soil. It is generally associated with tussock grassland associated with *Eragrostis xerophila* Domin and the introduced *Cenchrus ciliaris* L. occurring as a component of a sub-unit of the Anna land system composed of level sand plains and a mosaic of saline plains (Van Vreeswyk 2004). This species has a total population count of 79 plants, within the Rio Tinto database (Figure 3.5). There are seven specimens of *Atriplex eremitis* within the collections at the WAH

Fifteen individuals of *Atriplex eremitis* fall within the direct impact footprint for the proposed works on the siphons, with an additional six individuals located within five meters of the planned disturbance. The remaining 59 individuals of *Atriplex eremitis* are not proposed to be impacted through this application. Additionally, field observations of *Atriplex eremitis* and notes on WA Herbarium records (WAH 1998-) indicated this species occurs on disturbed ground. There is potential that the proposed disturbance associated with the proposal may create additional suitable habitat for the species.

Based on specialist assessment, the proposal is considered not at variance to this principle.

4.4 Principle (d) Presence of any threatened ecological communities.

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

There are no Parks and Wildlife or Commonwealth listed TECs within or adjacent to the study area.

Based on specialist assessment, the proposal is considered not at variance to this principle.

4.5 Principle (e) Significance as a remnant of native vegetation in the area that has been extensively cleared.

Native vegetation should not be cleared if it is significant as remnant vegetation in an area that has been extensively cleared.

The majority of the Roebourne region has not been extensively cleared. However grazing, inappropriate fire regimes and weed invasion have greatly altered the vegetation in some areas. The study area lies within three of Beard's mapping units – Abydos Plain 127, Abydos Plain 589 and Abydos Plain 647.

The current extent of the Beard (1975) mapping units Abydos Plain 127, Abydos Plain 589 and Abydos Plain 647 has been estimated to be over 90% of their pre-European extent remaining. Vegetation types within the study area would not represent remnant stands of extensively cleared vegetation.

Based on specialist assessment, the proposal is considered not at variance to this principle.

4.6 Principle (f) Impact on any watercourse and/or wetlands.

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

Minor ephemeral unvegetated natural creeklines that flow after significant rainfall events transect the study area. These flow lines are not considered to be significant watercourses or wetlands. The unvegetated saline creeks intersecting the study area will only be temporarily impacted while maintenance works are completed and then will be rehabilitated to their existing form as to not impact drainage and surface water flow.

Based on specialist assessment, the proposal is considered not at variance to this principle.

4.7 Principle (g) Potential to cause appreciable land degradation.

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

The study area lies within the Littoral Land System and the River Land System. These Land Systems are generally not prone to degradation and are generally not susceptible to erosion unless vegetation is removed. Due to the existing disturbance that has occurred surrounding the area subject to this application, there are areas devoid of vegetation such as the existing access roads and siphon channel. However, due to the small proposed additional clearing within this study area, the likelihood of exacerbating erosion to the River Land System or the Littoral Land System is highly unlikely. The proposed clearing will occur on land that has previously been cleared and is therefore will not cause any further land degradation. The proposal is not expected to result in soil erosion, additional nutrient export, water-logging/flooding, acidification, salinization or deep subsoil compaction.

Based on specialist assessment, the proposal is considered not at variance to this principle.

4.8 Principle (h) Potential to impact on the environmental values of adjacent or nearby conservation areas.

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

The Study Area does not lie within any DBCA managed lands or ESAs.

Based on specialist assessment, the proposal is considered not at variance to this principle.

4.9 Principle (i) Potential deterioration in the quality of surface or underground water.

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

No permanent or semi-permanent water features occur in or adjacent to the study area. Given the small scale of Proposal, there is no reason to expect that the Proposal would affect groundwater quality in the region.

Based on specialist assessment, the proposal is considered not at variance to this principle.

4.10 Principle (j) Potential of clearing to cause, or exacerbate, the incidence or intensity of flooding.

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

Local flooding occurs seasonally in the Pilbara region as a result of cyclonic activity and sporadic thunderstorm activity. The small scale of cleared proposed is not expected to exacerbate the incidence or intensity of flooding in the area.

Based on specialist assessment, the proposal is considered not at variance to this principle.

5. Conclusions

Rio Tinto on behalf of Dampier Salt Limited, is proposing to undertake maintenance works of the siphons at the Port Hedland facility to improve flow capacity. The study area covers 6.41 ha of native vegetation, unvegetated saline creeks and disturbed ground. Vegetation, flora and fauna assessments at the siphons (study area) was required to address the 10 Clearing Principles as part of the NVCP application process.

The study area was surveyed by Julijanna Hantzis and Alicia Michael on the 14th to the 16th November 2023, with subsequent targeted surveys conducted on the 16th April 2024. The Study Area was assessed in accordance with the *Technical Guidance – Flora and Vegetation Surveys for Environmental Impact Assessment* and *Environmental Factor Guideline – Flora and Vegetation (EPA, 2016a, 2016c)*. Fauna habitats were confirmed with reference to *Technical Guidance – Terrestrial vertebrate fauna surveys for environmental impact assessment* and *Environmental Factor Guideline – Terrestrial Fauna (EPA, 2016b, 2020)*.

One vegetation type was identified across one major landform, embankments, within the study area. The vegetation unit was described as *Tecticornia indica* subsp. *leiostachya* and *Trianthema turgidifolium* very open herbland with *Triodia epactia* very open hummock grassland and *Eragrostis* sp. and **Cenchrus ciliaris* very open tussock grassland. The vegetation occurring within the Study Area does not represent any PECs listed by DBCA or TECs listed under either the BC Act or EPBC Act.

A total of 36 taxa from 30 genera representing 14 families were recorded during the survey. The number of taxa recorded by the current study is reflective of the previously disturbed nature of the study area. No threatened flora species were recorded in the Study Area. One species of Priority flora, *Atriplex eremitis* (P1) was recorded during the survey. This species was not identified in the desktop assessment however was recorded within the survey area. No other Threatened or priority flora identified as part of the desktop assessment are considered likely to occur following the field survey.

Two broad fauna habitat types were recorded within the study area: 'chenopod shrubland; and 'tidal creeks/flats'. These fauna habitats are not considered to be restricted at a local or regional level. The previously disturbed nature of the Study Area and widespread nature of the surrounding habitat indicates the Study Area is of limited conservation significance.

No significant fauna species were detected during the field survey. Of the 72 significant fauna species identified during the desktop study, none are considered to have potential to occur based on the habitat present within the Study Area and the known ecology of each species.

None of the species identified in the desktop assessment were considered 'Likely' or 'Potential' to occur within the study area based on post field observations. The study area is heavily degraded and the remnant vegetation present is unlikely to support any species of conservation significance. It is unlikely the Proposal will negatively impact on the conservation status of any of these species at either a local or bioregional scale.

The Proposal was assessed against the 10 clearing principles as defined in Schedule 5 (Principles for Clearing Native Vegetation) of the *Environmental Protection Act 1986*. A specialist assessment against the 10 Clearing Principles determined that:

- Principles (a), (b), (c), (d), (e), (h), (i) and (j) are not at variance;
- Principles (f) and (g) are not likely to be at variance

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7. Appendices

Appendix 1: Results of database searches.

Table 1: Flora Species

- A: ALA (2024) Occurrence Search.
- B: DBCA (2024a) Dandjoo Biodiversity Platform.
- C: DBCA (2024e) TPFL Database.
- D: Western Australian Herbarium (1998-) WA Herbarium Database.
- E: DCCEE, Department of Climate Change, Energy, the Environment and Water (2024) Protected Matters Search Tool.
- F: (Biota, 2006a) Port Hedland Solar Saltfield Expansion Botanical Survey

Table 2: Fauna Species

- A: ALA (2024) Occurrence Search.
- B: DBCA (2024a) Dandjoo Biodiversity Platform.
- C: DBCA (2024d) Threatened and Priority Fauna Database.
- D: (DCCEE, Department of Climate Change, Energy, the Environment and Water 2024b) Protected Matters Search Tool.
- E: (Biota, 2006b) Port Hedland Solar Saltfield Expansion Fauna Survey

Family	Species	Status	Introduced	A	B	C	D	E	F
Acanthaceae	<i>Avicennia marina</i>			X	X				
	<i>Avicennia marina subsp. marina</i>			X	X				
Aizoaceae	<i>Trianthema cusackianum</i>			X	X				
	<i>Trianthema pilosum</i>			X	X				
	<i>Trianthema portulacastrum</i>		*	X	X				
	<i>Trianthema triquetrum</i>			X	X				
	<i>Trianthema turgidifolium</i>			X	X				X
Amaranthaceae	<i>Achyranthes aspera</i>				X				
	<i>Aerva javanica</i>		*	X	X				X
	<i>Alternanthera angustifolia</i>			X	X				
	<i>Alternanthera nana</i>			X	X				
	<i>Amaranthus clementii</i>			X	X				
	<i>Amaranthus mitchellii</i>			X	X				
	<i>Amaranthus undulatus</i>			X	X				X
	<i>Gomphrena affinis subsp. pilbarensis</i>			X	X				
	<i>Gomphrena breviflora</i>			X					
	<i>Gomphrena canescens</i>			X	X				
	<i>Gomphrena canescens subsp. canescens</i>			X	X				
	<i>Gomphrena celosioides</i>			*	X	X			
	<i>Gomphrena cucullata</i>		P3				X		
	<i>Gomphrena cunninghamii</i>				X	X			
	<i>Gomphrena leptoclada</i>				X	X			
	<i>Gomphrena leptoclada subsp. leptoclada</i>				X	X			
	<i>Gomphrena leptophylla</i>		P3		X			X	
	<i>Gomphrena pusilla</i>		P2		X			X	
	<i>Gomphrena sordida</i>				X	X			X
	<i>Gomphrena tenella</i>				X	X			
	<i>Ptilotus astrolasius</i>				X	X			
	<i>Ptilotus axillaris</i>				X	X			X
	<i>Ptilotus calostachyus</i>				X	X			X
	<i>Ptilotus divaricatus</i>				X				
	<i>Ptilotus exaltatus</i>				X	X			X
	<i>Ptilotus fusiformis</i>				X	X			X
<i>Ptilotus murrayi</i>				X	X				
<i>Ptilotus nobilis</i>					X				

	<i>Ptilotus obovatus</i>		X	X		
	<i>Ptilotus polystachyus</i>		X	X		
	<i>Ptilotus villosiflorus</i>		X	X		
	<i>Pupalia lappacea</i>	*	X	X		
	<i>Surreya diandra</i>		X	X		x
Anacardiaceae	<i>Mangifera indica</i>	*	X			
Apocynaceae	<i>Calotropis procera</i>	*		X		
	<i>Carissa lanceolata</i>		X			
	<i>Cynanchum floribundum</i>		X	X		X
	<i>Cynanchum viminalis subsp. australe</i>			X		
	<i>Gymnanthera cunninghamii</i>	P3	X		X	X
Araliaceae	<i>Trachymene oleracea</i>			X		
Arecaceae	<i>Cocos nucifera</i>	*	X			
	<i>Washingtonia filifera</i>	*		X		
Asparagaceae	<i>Yucca aloifolia</i>	*		X		
Asphodelaceae	<i>Aloe vera</i>	*		X		
	<i>Aloe vera var. officinalis</i>	*		X		
Asteraceae	<i>Apowollastonia hamersleyensis</i>			X		
	<i>Calocephalus knappii</i>		X	X		
	<i>Calotis hispidula</i>		X	X		
	<i>Chrysocephalum apiculatum subsp. pilbarensis</i>		X	X		
	<i>Cyanthillium cinereum var. cinereum</i>	*	X	X		
	<i>Erigeron bonariensis</i>	*	X	X		
	<i>Flaveria trinervia</i>	*	X	X		
	<i>Lactuca serriola</i>	*		X		
	<i>Pluchea ferdinandi-muelleri</i>		X	X		
	<i>Pluchea rubelliflora</i>		X	X		X
	<i>Pluchea tetranthera</i>		X	X		X
	<i>Pseudognaphalium luteoalbum</i>	*	X	X		
	<i>Pterocaulon intermedium</i>		X	X		
	<i>Pterocaulon serrulatum var. velutinum</i>		X	X		
	<i>Pterocaulon sphacelatum</i>		X	X		X
	<i>Sonchus oleraceus</i>	*		X		
	<i>Streptoglossa bubakii</i>			X		X
	<i>Streptoglossa cylindriceps</i>		X	X		
	<i>Streptoglossa decurrens</i>			X		

	<i>Streptoglossa odora</i>		X	X	
	<i>Symphytotrichum squamatum</i>	*	X	X	
	<i>Tridax procumbens</i>	*	X	X	
Bignoniaceae	<i>Dolichandrone occidentalis</i>		X	X	
Boraginaceae	<i>Ehretia saligna</i>			X	
	<i>Euploca conocarpum</i>		X		X
	<i>Euploca cunninghamii</i>		X		X
	<i>Euploca mutica</i>	P3	X		X
	<i>Euploca pachyphylla</i>		X	X	X
	<i>Euploca vestita</i>		X	X	
	<i>Heliotropium crispatum</i>		X	X	X
	<i>Trichodesma zeylanicum</i>		X		
Brassicaceae	<i>Lepidium platypetalum</i>			X	
Byblidaceae	<i>Byblis filifolia</i>		X	X	
	<i>Byblis pilbarana</i>		X	X	
Cabombaceae	<i>Cabomba caroliniana</i>	*	X		
Cactaceae	<i>Opuntia stricta</i>	*		X	
Campanulaceae	<i>Wahlenbergia tumidifructa</i>		X	X	X
Capparaceae	<i>Capparis spinosa subsp. nummularia</i>		X	X	
	<i>Capparis umbonata</i>			X	
Caryophyllaceae	<i>Polycarpaea corymbosa</i>			X	X
	<i>Polycarpaea holtzei</i>			X	
	<i>Polycarpaea involucrata</i>		X		
	<i>Polycarpaea longiflora</i>		X		
Casuarinaceae	<i>Allocasuarina distyla</i>	*	X		
	<i>Allocasuarina thuyoides</i>		X		
	<i>Allocasuarina torulosa</i>	*	X		
Celastraceae	<i>Stackhousia intermedia</i>		X	X	
Centrolepidaceae	<i>Centrolepis banksii</i>		X	X	
Chenopodiaceae	<i>Atriplex codonocarpa</i>		X	X	X
	<i>Atriplex eremitis</i>	P1			X
	<i>Atriplex semilunaris</i>		X	X	
	<i>Dissocarpus paradoxus</i>		X		
	<i>Dysphania plantaginella</i>		X	X	X
	<i>Dysphania rhadinostachya</i>			X	
	<i>Dysphania rhadinostachya subsp. rhadinostachya</i>		X	X	X

	<i>Enchylaena tomentosa</i>		X	
	<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>	X	X	X
	<i>Neobassia astrocarpa</i>	X	X	X
	<i>Rhagodia eremaea</i>	X	X	X
	<i>Salicornia quinqueflora</i>	X		
	<i>Salsola australis</i>	X	X	
	<i>Sclerolaena bicornis</i> var. <i>bicornis</i>	X	X	
	<i>Sclerolaena densiflora</i>		X	
	<i>Sclerolaena glabra</i>	X	X	
	<i>Sclerolaena hostilis</i>	X	X	
	<i>Suaeda arbusculoides</i>	X	X	
	<i>Tecticornia auriculata</i>	X	X	
	<i>Tecticornia halocnemoides</i>	X	X	
	<i>Tecticornia halocnemoides</i> subsp. <i>longispicata</i>	X	X	
	<i>Tecticornia halocnemoides</i> subsp. <i>tenuis</i>	X	X	X
	<i>Tecticornia indica</i>		X	
	<i>Tecticornia indica</i> subsp. <i>bidens</i>	X	X	
	<i>Tecticornia indica</i> subsp. <i>leiostachya</i>	X	X	X
	<i>Tecticornia pruinosa</i>	X	X	
	<i>Tecticornia pterygosperma</i> subsp. <i>denticulata</i>	X	X	
	<i>Threlkeldia diffusa</i>	X	X	
Cleomaceae	<i>Arivela uncifera</i>	X	X	
	<i>Arivela viscosa</i>	X	X	X
Commelinaceae	<i>Commelina ensifolia</i>	X	X	X
	<i>Murdannia graminea</i>	X	X	
Convolvulaceae	<i>Bonamia alatisemina</i>	X	X	
	<i>Bonamia erecta</i>	X	X	
	<i>Bonamia linearis</i>	X	X	X
	<i>Bonamia media</i>	X	X	
	<i>Bonamia rosea</i>	X	X	X
	<i>Distimake davenportii</i>	X	X	
	<i>Distimake dissectus</i>	*	X	X
	<i>Distimake dissectus</i> var. <i>dissectus</i>	*		X
	<i>Evolvulus alsinoides</i> var. <i>decumbens</i>	X	X	
	<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	X	X	X
	<i>Ipomoea muelleri</i>	X	X	X

	<i>Ipomoea pes-caprae</i>		X	X		
	<i>Ipomoea pes-caprae subsp. brasiliensis</i>		X	X		
	<i>Ipomoea polymorpha</i>		X	X		X
	<i>Operculina aequisepala</i>		X	X		
	<i>Polymeria ambigua</i>		X	X		X
	<i>Polymeria calycina</i>			X		
Cucurbitaceae	<i>Citrullus amarus</i>	*	X	X		
	<i>Citrullus colocynthis</i>	*		X		
	<i>Coccinia grandis</i>	*	X	X		
	<i>Cucumis melo</i>			X		
	<i>Cucumis variabilis</i>		X	X		
	<i>Trichosanthes cucumerina var. cucumerina</i>		X	X		
Cymodoceaceae	<i>Halodule uninervis</i>		X			
Cyperaceae	<i>Abildgaardia oxystachya</i>		X			X
	<i>Bulbostylis barbata</i>		X	X		X
	<i>Bulbostylis burbridgeae</i>	P4	X		X	X
	<i>Cyperus bulbosus</i>		X	X		
	<i>Cyperus iria</i>		X	X		
	<i>Cyperus ixiocarpus</i>		X	X		
	<i>Cyperus leptocarpus</i>		X	X		
	<i>Cyperus polystachyos</i>	*	X	X		
	<i>Cyperus squarrosus</i>			X		X
	<i>Cyperus stolonifer</i>	*	X			
	<i>Cyperus vaginatus</i>		X	X		X
	<i>Fimbristylis dichotoma</i>			X		X
	<i>Fimbristylis rara</i>		X	X		
	<i>Schoenoplectiella lateriflora</i>		X	X		
Droseraceae	<i>Drosera burmanni</i>		X			
	<i>Drosera finlaysoniana</i>		X			
Elatinaceae	<i>Bergia ammannioides</i>			X		
	<i>Bergia henshallii</i>		X	X		
	<i>Bergia pedicellaris</i>		X			
Euphorbiaceae	<i>Adriana tomentosa</i>		X	X		
	<i>Adriana tomentosa var. tomentosa</i>		X	X		
	<i>Euphorbia australis</i>			X		X
	<i>Euphorbia australis var. subtomentosa</i>		X	X		

	<i>Euphorbia biconvexa</i>		X	X	
	<i>Euphorbia clementii</i>	P3			X
	<i>Euphorbia hirta</i>	*	X	X	
	<i>Euphorbia hyssopifolia</i>	*	X		
	<i>Euphorbia maculata</i>	*	X		
	<i>Euphorbia myrtoides</i>		X	X	
	<i>Euphorbia psilosperma</i>		X	X	
	<i>Euphorbia tannensis subsp. eremophila</i>		X	X	X
	<i>Euphorbia tirucalli L.</i>	*		X	
	<i>Euphorbia trigonosperma</i>		X	X	
	<i>Euphorbia vaccaria var. vaccaria</i>		X	X	
	<i>Jatropha gossypifolia</i>	*	X		
	<i>Mallotus nesophilus</i>		X		
Fabaceae	<i>Acacia acradenia</i>		X		
	<i>Acacia adoxa var. adoxa</i>		X	X	
	<i>Acacia ampliceps</i>		X	X	X
	<i>Acacia ancistrocarpa</i>		X	X	
	<i>Acacia bivenosa</i>		X	X	X
	<i>Acacia browniana var. endlicheri</i>		X	X	
	<i>Acacia colei</i>		X	X	
	<i>Acacia colei var. colei</i>		X	X	X
	<i>Acacia coriacea subsp. pendens</i>			X	
	<i>Acacia cowleana</i>		X		
	<i>Acacia inaequilatera</i>		X	X	X
	<i>Acacia ligulata</i>		X		
	<i>Acacia maitlandii</i>		X	X	
	<i>Acacia monticola</i>		X	X	
	<i>Acacia orthocarpa</i>		X	X	X
	<i>Acacia pyrifolia</i>		X	X	
	<i>Acacia pyrifolia var. pyrifolia</i>		X	X	
	<i>Acacia robeorum</i>		X		
	<i>Acacia sclerosperma subsp. sclerosperma</i>		X	X	
	<i>Acacia sericophylla</i>			X	
	<i>Acacia sphaerostachya</i>		X	X	
	<i>Acacia stellaticeps</i>		X	X	X
	<i>Acacia synchronicia</i>		X		

<i>Acacia trachycarpa</i>		X	X	X
<i>Acacia translucens</i>		X		
<i>Acacia tumida var. pilbarensis</i>		X	X	
<i>Acacia tumida var. tumida</i>		X	X	
<i>Albizia lebbeck</i>	*	X	X	
<i>Alysicarpus muelleri</i>		X	X	
<i>Cajanus cinereus</i>		X	X	
<i>Cajanus marmoratus</i>		X	X	
<i>Cajanus pubescens</i>		X	X	
<i>Canavalia rosea</i>		X	X	
<i>Clitoria ternatea</i>	*	X	X	
<i>Crotalaria cunninghamii</i>		X	X	X
<i>Crotalaria cunninghamii subsp. sturtii</i>		X	X	
<i>Crotalaria dissitiflora</i>		X		
<i>Crotalaria dissitiflora subsp. benthamiana</i>		X		
<i>Crotalaria ramosissima</i>		X	X	X
<i>Crotalaria spectabilis</i>		X		
<i>Cullen leucanthum</i>		X	X	X
<i>Cullen martinii</i>		X		
<i>Cullen stipulaceum</i>		X	X	
<i>Desmodium scorpiurus</i>		X		
<i>Glycine tomentella</i>		X	X	
<i>Grona filiformis</i>		X	X	X
<i>Indigostrum parviflorum</i>		X	X	
<i>Indigofera chamaeclada subsp. pubens</i>		X	X	
<i>Indigofera colutea</i>		X	X	X
<i>Indigofera hirsuta</i>			X	X
<i>Indigofera hochstetteri</i>	*	X	X	
<i>Indigofera linifolia</i>		X	X	
<i>Indigofera linnaei</i>		X	X	
<i>Indigofera monophylla</i>		X	X	X
<i>Indigofera oblongifolia</i>	*	X	X	X
<i>Indigofera sessiliflora</i>		X	X	X
<i>Indigofera trita</i>		X	X	X
<i>Isotropis atropurpurea</i>		X	X	
<i>Kennedia stirlingii</i>		X	X	

<i>Leptosema anomalum</i>		X	X	
<i>Leucaena leucocephala</i>	*	X	X	
<i>Macroptilium atropurpureum</i>	*	X		
<i>Neptunia dimorphantha</i>			X	X
<i>Neptunia monosperma Benth.</i>			X	
<i>Neptunia scutata</i>		X		
<i>Parkinsonia aculeata</i>	*	X	X	
<i>Petalostylis labicheoides</i>		X		
<i>Rhynchosia minima</i>		X	X	X
<i>Rothia indica subsp. australis</i>	P3	X		X
<i>Senna artemisioides subsp. oligophylla</i>			X	
<i>Senna bicapsularis</i>	*		X	
<i>Senna curvistyla</i>		X	X	
<i>Senna glutinosa</i>		X	X	X
<i>Senna glutinosa subsp. glutinosa</i>		X	X	
<i>Senna notabilis</i>		X	X	X
<i>Senna occidentalis</i>	*	X	X	
<i>Senna stricta</i>		X		
<i>Senna symonii</i>			X	
<i>Senna venusta</i>		X	X	X
<i>Sesbania cannabina</i>		X	X	X
<i>Sesbania formosa</i>		X	X	
<i>Stylosanthes guianensis var. guianensis</i>	*	X	X	
<i>Stylosanthes hamata</i>	*	X	X	
<i>Swainsona formosa</i>		X		
<i>Swainsona pterostylis</i>		X	X	
<i>Tephrosia brachyodon var. longifolia</i>			X	
<i>Tephrosia coriacea</i>		X		
<i>Tephrosia forrestiana</i>		X	X	
<i>Tephrosia leptoclada</i>		X	X	X
<i>Tephrosia purpurea</i>		X	X	
<i>Tephrosia rosea</i>		X	X	
<i>Tephrosia rosea var. clementii</i>		X		
<i>Tephrosia rosea var. Fortescue creeks (M.I.H.Brooker 2186)</i>		X		
<i>Tephrosia rosea var. Port Hedland (A.S.George 1114) P1</i>		X		X

	<i>Tephrosia rosea</i> var. <i>rosea</i>	X	X	
	<i>Tephrosia simplicifolia</i>	X	X	
	<i>Tephrosia</i> sp. <i>B Kimberley Flora (C.A.Gardner 7300)</i>	X	X	X
	<i>Tephrosia</i> sp. <i>Bungaroo Creek (M.E.Trudgen 11601)</i>	X	X	
	<i>Tephrosia</i> sp. <i>D Kimberley Flora (R.D.Royce 1848)</i>	X	X	
	<i>Tephrosia supina</i>		X	
	<i>Tephrosia uniovulata</i>		X	
	<i>Vachellia farnesiana</i>	*	X	
	<i>Vigna lanceolata</i> var. <i>lanceolata</i>	X	X	
	<i>Zornia albiflora</i> Mohlenbr.		X	
	<i>Zornia chaetophora</i>	X		
	<i>Zornia muelleriana</i>	X	X	
Frankeniaceae	<i>Frankenia ambita</i>	X	X	X
Goodeniaceae	<i>Goodenia armitiana</i>	X	X	
	<i>Goodenia forrestii</i>	X	X	X
	<i>Goodenia lamprosperma</i>		X	
	<i>Goodenia microptera</i>	X	X	X
	<i>Goodenia muelleriana</i>	X	X	
	<i>Goodenia nuda</i>	X	X	
	<i>Goodenia stobbsiana</i>	X	X	
	<i>Goodenia triodiophila</i>		X	X
	<i>Lechenaultia subcymosa</i>		X	
	<i>Scaevola amblyanthera</i>	X		
	<i>Scaevola amblyanthera</i> var. <i>centralis</i>	X	X	X
Gyrostemonaceae	<i>Codonocarpus cotinifolius</i>	X	X	X
Haloragaceae	<i>Gonocarpus ephemerus</i>	X	X	
	<i>Halragis gossei</i>	X	X	X
Hemerocallidaceae	<i>Corynotheca micrantha</i>		X	
	<i>Corynotheca pungens</i>	X	X	
	<i>Tricoryne corynothecoides</i>		X	X
Hydrocharitaceae	<i>Halophila decipiens</i>	X		
	<i>Halophila ovalis</i>	X		
	<i>Najas pseudograminea</i>	X		
	<i>Najas tenuifolia</i>	X		
	<i>Thalassia hemprichii</i>	X		
Lamiaceae	<i>Clerodendrum tomentosum</i> var. <i>lanceolatum</i>	X	X	

	<i>Quoya zonalis</i>	T		X	
Lauraceae	<i>Cassytha capillaris</i>			X	X
	<i>Cassytha filiformis</i>		X	X	X
Loganiaceae	<i>Mitrasacme connata</i>		X	X	
	<i>Mitrasacme exserta</i>		X	X	
Loranthaceae	<i>Amyema preissii</i>		X		
Lythraceae	<i>Ammannia muelleri</i>		X	X	
	<i>Ammannia multiflora</i>			X	
	<i>Rotala diandra</i>		X		
Malvaceae	<i>Abutilon amplum</i>		X	X	
	<i>Abutilon hannii</i>		X		
	<i>Abutilon lepidum</i>		X	X	X
	<i>Abutilon otocarpum</i>		X	X	X
	<i>Abutilon oxycarpum</i> subsp. <i>Prostrate</i> (A.A.Mitchell PRP 1266)		X	X	
	<i>Abutilon</i> sp. <i>Pritzelianum</i> (S.van Leeuwen 5095)	P3	X		X
	<i>Abutilon australiense</i>		X	X	
	<i>Abutilon</i> sp. <i>Pilbara</i> (W.R. Barker 2025)				X
	<i>Adansonia gregorii</i>		X		
	<i>Corchorus carnarvonensis</i>		X		
	<i>Corchorus elachocarpus</i>		X	X	
	<i>Corchorus incanus</i>		X	X	
	<i>Corchorus incanus</i> subsp. <i>incanus</i>		X	X	X
	<i>Corchorus laniflorus</i>		X	X	
	<i>Corchorus tridens</i>		X	X	
	<i>Corchorus walcottii</i>		X	X	
	<i>Gossypium australe</i>		X	X	
	<i>Gossypium hirsutum</i>	*	X	X	
	<i>Gossypium robinsonii</i>		X	X	
	<i>Hibiscus austrinus</i> var. <i>austrinus</i>		X		
	<i>Hibiscus brachychlaenus</i>		X	X	
	<i>Hibiscus goldsworthii</i>		X	X	
	<i>Hibiscus leptocladus</i>		X	X	X
	<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>			X	
	<i>Melhania oblongifolia</i>		X	X	X
	<i>Seringia exastia</i>		X	X	

	<i>Seringia nephrosperma</i>	X	X	
	<i>Sida aff. fibulifera</i>	X		X
	<i>Sida arsinata</i>	X	X	
	<i>Sida clementii</i>	X	X	X
	<i>Sida echinocarpa</i>		X	
	<i>Sida fibulifera</i>		X	
	<i>Sida rohlenae subsp. rohlenae</i>		X	
	<i>Sida sp. Pilbara (A.A. Mitchell PRP 1543)</i>		X	
	<i>Sida sp. Rabbit Flat (B.J. Carter 626)</i>	X		
	<i>Triumfetta micracantha</i>	X	X	
	<i>Triumfetta ramosa</i>	X	X	X
	<i>Waltheria indica</i>	X	X	X
	<i>Waltheria virgata</i>		X	
Marsileaceae	<i>Marsilea drummondii</i>	X	X	
	<i>Marsilea exarata</i>	X		
	<i>Marsilea hirsuta</i>	X	X	
Menispermaceae	<i>Tinospora smilacina</i>	X	X	X
Molluginaceae	<i>Hypertelis cerviana</i>	X	X	
	<i>Trigastrotheca molluginea</i>	X	X	X
Moraceae	<i>Ficus aculeata var. indecora</i>	X		
	<i>Ficus brachypoda</i>	X	X	
Myrtaceae	<i>Corymbia aspera</i>		X	
	<i>Corymbia candida</i>	X	X	
	<i>Corymbia candida subsp. candida</i>	X	X	
	<i>Corymbia candida subsp. x lautifolia</i>	X	X	
	<i>Corymbia deserticola subsp. deserticola</i>	X	X	
	<i>Corymbia flavescens</i>	X	X	
	<i>Corymbia hamersleyana</i>	X	X	X
	<i>Corymbia zygophylla</i>	X	X	
	<i>Eucalyptus camaldulensis subsp. obtusa</i>	X		
	<i>Eucalyptus victrix</i>		X	X
	<i>Melaleuca argentea</i>	X	X	X
	<i>Melaleuca cajuputi</i>	X		
	<i>Melaleuca lasiandra</i>	X	X	
	<i>Osbornia octodonta</i>	X	X	
Nyctaginaceae	<i>Boerhavia coccinea</i>	X	X	X

Papaveraceae	<i>Argemone ochroleuca subsp. ochroleuca</i>	*	X		
Phrymaceae	<i>Mimulus gracilis</i>			X	
	<i>Uvedalia linearis</i>			X	
	<i>Uvedalia linearis var. linearis</i>		X	X	
Phyllanthaceae	<i>Nellica maderaspatensis</i>		X	X	X
Pittosporaceae	<i>Pittosporum angustifolium</i>		X		
Plantaginaceae	<i>Stemodia grossa</i>			X	X
	<i>Stemodia lathraia</i>		X	X	
	<i>Stemodia viscosa</i>			X	
Plumbaginaceae	<i>Muellerolimon salicorniaceum</i>		X	X	
Poaceae	<i>Alloteropsis semialata</i>			X	
	<i>Andropogon gayanus</i>	*	X		
	<i>Aristida contorta</i>		X	X	
	<i>Aristida holathera</i>			X	
	<i>Aristida holathera var. holathera</i>		X	X	X
	<i>Aristida hygrometrica</i>		X	X	
	<i>Aristida inaequiglumis</i>		X	X	
	<i>Bothriochloa ewartiana</i>		X	X	
	<i>Cenchrus ciliaris</i>	*	X	X	X
	<i>Cenchrus setaceus</i>	*	X		
	<i>Cenchrus setiger</i>	*	X	X	X
	<i>Chloris barbata</i>	*	X	X	X
	<i>Chloris pectinata</i>			X	
	<i>Chloris virgata</i>	*	X	X	
	<i>Chrysopogon fallax</i>		X	X	X
	<i>Cymbopogon ambiguus</i>			X	
	<i>Cymbopogon bombycinus</i>		X	X	
	<i>Cynodon dactylon</i>	*		X	
	<i>Cynodon radiatus</i>	*	X	X	
	<i>Dactyloctenium aegyptium</i>	*	X	X	
	<i>Dactyloctenium radulans</i>		X	X	X
	<i>Digitaria ammophila</i>			X	
	<i>Digitaria brownii</i>		X	X	
	<i>Digitaria ciliaris</i>	*	X	X	
	<i>Diplachne fusca</i>			X	
	<i>Diplachne fusca subsp. fusca</i>		X	X	

<i>Elytrophorus spicatus</i>		X	X		
<i>Enneapogon caeruleus</i>		X	X		X
<i>Enneapogon lindleyanus</i>		X	X		
<i>Enneapogon polyphyllus</i>		X	X		
<i>Enneapogon purpurascens</i>		X	X		X
<i>Enneapogon robustissimus</i>		X			
<i>Enteropogon ramosus</i>		X	X		
<i>Eragrostis cilianensis</i>	*		X		
<i>Eragrostis crateriformis</i>	P3	X		X	X
<i>Eragrostis cumingii</i>		X	X		X
<i>Eragrostis curvula</i>	*		X		
<i>Eragrostis dielsii</i>		X	X		X
<i>Eragrostis elongata</i>		X	X		
<i>Eragrostis eriopoda</i>		X	X		X
<i>Eragrostis falcata</i>		X	X		X
<i>Eragrostis pilosa</i>	*	X	X		
<i>Eragrostis speciosa</i>		X	X		
<i>Eragrostis xerophila</i>			X		
<i>Eragrostis nightingaleae</i>		X	X		
<i>Eriachne aristidea</i>		X	X		X
<i>Eriachne ciliata</i>		X	X		
<i>Eriachne filiformis</i>		X			
<i>Eriachne gardneri</i>		X			
<i>Eriachne glauca var. glauca</i>		X			
<i>Eriachne helmsii</i>		X	X		X
<i>Eriachne melicacea</i>		X	X		
<i>Eriachne mucronata</i>			X		
<i>Eriachne obtusa</i>		X	X		X
<i>Eriachne pulchella</i>		X	X		
<i>Eulalia aurea</i>		X			X
<i>Iseilema membranaceum</i>		X			
<i>Lamarckia aurea</i>	*	X	X		
<i>Melinis repens</i>	*		X		
<i>Panicum decompositum</i>		X	X		X
<i>Panicum australiense</i>		X	X		X
<i>Panicum australiense var. australiense</i>		X	X		

	<i>Paraneurachne muelleri</i>		X		X
	<i>Paspalidium clementii</i>	X	X		
	<i>Paspalidium rarum</i>	X	X		X
	<i>Paspalum fasciculatum</i>	X			
	<i>Perotis rara</i>	X	X		X
	<i>Pseudochaetochloa australiensis</i>	X	X		
	<i>Schizachyrium fragile</i>	X	X		X
	<i>Setaria dielsii</i>	X			
	<i>Setaria sphacelata</i>	X			
	<i>Setaria surgens</i>	X			
	<i>Sorghum plumosum</i>	X			
	<i>Spinifex longifolius</i>	X	X		
	<i>Sporobolus australasicus</i>	X	X		
	<i>Sporobolus virginicus</i>	X			X
	<i>Themeda avenacea</i>	X	X		
	<i>Triodia basedowii</i>		X		
	<i>Triodia epactia</i>	X	X		
	<i>Triodia lanigera</i>	X	X		
	<i>Triodia longiceps</i>	X	X		
	<i>Triodia scariosa</i>	X			
	<i>Triodia schinzii</i>	X	X		X
	<i>Triodia secunda</i>	X	X		X
	<i>Triraphis mollis</i>	X	X		
	<i>Urochloa holosericea subsp. velutina</i>	X	X		
	<i>Whiteochloa airoides</i>		X		
	<i>Whiteochloa cymbiformis</i>	X	X		X
	<i>Xerochloa imberbis</i>	X	X		
Polygalaceae	<i>Polygala galeocephala</i>	X	X		
	<i>Rumex vesicarius</i>		X		
Portulacaceae	<i>Calandrinia papillata</i>		X		
	<i>Calandrinia pentavalvis</i>	X	X		
	<i>Calandrinia polyandra</i>		X		X
	<i>Calandrinia ptychosperma</i>		X		X
	<i>Calandrinia pumila</i>	X	X		
	<i>Calandrinia quadrivalvis</i>	X			
	<i>Calandrinia stagnensis</i>	X	X		X

	<i>Calandrinia tepperiana</i>		X	
	<i>Portulaca australis</i>		X	
	<i>Portulaca decipiens</i>		X	X
	<i>Portulaca oleracea</i>		X	X
	<i>Portulaca pilosa</i>	*		X
Primulaceae	<i>Aegiceras corniculatum</i>		X	
Proteaceae	<i>Grevillea pyramidalis</i>		X	X
	<i>Grevillea pyramidalis</i> subsp. <i>leucadendron</i>		X	X
	<i>Grevillea refracta</i> subsp. <i>refracta</i>		X	X
	<i>Grevillea wickhamii</i> subsp. <i>aprica</i>		X	X
	<i>Grevillea wickhamii</i> subsp. <i>hispidula</i>		X	X
	<i>Hakea lorea</i>			X
	<i>Hakea lorea</i> subsp. <i>lorea</i>		X	
Rhizophoraceae	<i>Bruguiera exaristata</i>		X	X
	<i>Ceriops australis</i>		X	X
	<i>Ceriops tagal</i>			X
	<i>Rhizophora stylosa</i>		X	X
Ricciaceae	<i>Riccia crinita</i>		X	X
	<i>Riccia crystallina</i>		X	X
Rubiaceae	<i>Synaptantha tillaeacea</i> var. <i>tillaeacea</i>		X	
Santalaceae	<i>Santalum lanceolatum</i>		X	X
Sapindaceae	<i>Dodonaea coriacea</i>		X	X
Scrophulariaceae	<i>Myoporum montanum</i>		X	X
Solanaceae	<i>Nicotiana benthamiana</i>			X
	<i>Nicotiana bilybara</i>		X	
	<i>Nicotiana occidentalis</i>		X	X
	<i>Nicotiana occidentalis</i> subsp. <i>occidentalis</i>		X	
	<i>Physalis angulata</i>	*	X	X
	<i>Solanum diversiflorum</i>		X	X
	<i>Solanum nigrum</i>	*		X
	<i>Solanum phlomoides</i>		X	X
Stylidiaceae	<i>Stylidium desertorum</i>		X	
Tamaricaceae	<i>Tamarix aphylla</i>	*		X
Thymelaeaceae	<i>Pimelea ammocharis</i>		X	X
Typhaceae	<i>Typha domingensis</i>			X
Udoteaceae	<i>Udotea argentea</i>			X

Verbenaceae	<i>Phyla nodiflora var. nodiflora</i>	*	X	X	
Violaceae	<i>Afrohybanthus aurantiacus</i>		X	X	
	<i>Hybanthus aurantiacus</i>			X	
Zygophyllaceae	<i>Tribulopsis angustifolia</i>		X	X	X
	<i>Tribulus cistoides</i>		X		
	<i>Tribulus hirsutus</i>		X	X	X
	<i>Tribulus macrocarpus</i>		X		
	<i>Tribulus occidentalis</i>		X	X	
	<i>Tribulus terrestris</i>	*	X		

Family	Scientific Name	Common Name	WA	EPBC	A	B	C	D	E
Acanthizidae	<i>Acanthiza uropygialis</i>	Chestnut-rumped Thornbill			X				
	<i>Gerygone magnirostris</i>	Large-billed Gerygone			X				
	<i>Gerygone tenebrosa</i>	Dusky Gerygone			X	X			
	<i>Smicrornis brevirostris</i>	Weebill			X	X			
Accipitridae	<i>Accipiter cirrocephalus</i>	Collared Sparrowhawk			X				
	<i>Accipiter fasciatus</i>	Brown Goshawk			X	X			
	<i>Aquila audax</i>	Wedge-tailed Eagle			X	X			
	<i>Circus approximans</i>	Swamp Harrier			X	X			
	<i>Circus assimilis</i>	Spotted Harrier			X	X			
	<i>Elanus axillaris</i>	Black-shouldered Kite			X	X			
	<i>Haliaeetus leucogaster</i>	White-bellied Sea-eagle			X	X			
	<i>Haliastur indus</i>	Brahminy Kite			X	X			X
	<i>Haliastur sphenurus</i>	Whistling Kite			X	X			
	<i>Hieraaetus morphnoides</i>	Little Eagle			X	X			
	<i>Lophoictinia isura</i>	Square-tailed Kite			X				
	<i>Milvus migrans</i>	Black Kite			X	X			
	<i>Pandion haliaetus</i>	Osprey		MI	MI	X		X	X
Acrocephalidae	<i>Acrocephalus australis</i>	Australian Reed Warbler			X				
Aegothelidae	<i>Aegotheles cristatus</i>	Australian owl-nightjar				X			
Agamidae	<i>Ctenophorus caudicinctus</i>	Ring-tailed Dragon			X	X			
	<i>Ctenophorus isolepis</i>	Central Military Dragon			X	X			X
	<i>Ctenophorus nuchalis</i>	Central Netted Dragon			X	X			X
	<i>Ctenophorus reticulatus</i>	Western Netted Dragon			X	X			
	<i>Ctenophorus scutulatus</i>	Lozenge-marked Dragon			X	X			
	<i>Diporiphora paraconvergens</i>	Grey-striped Western Desert Dragon			X	X			
	<i>Diporiphora vescus</i>	Northern Pilbara Tree Dragon			X	X			
	<i>Diporiphora winneckeii</i>	Canegrass Dragon				X			
	<i>Gowidon longirostris</i>	Long-nosed Dragon			X	X			
	<i>Lophognathus horneri</i>	Horner's Dragon			X				
	<i>Lophognathus longirostris</i>	Long-nosed Dragon							X
	<i>Pogona minor minor</i>	Western Bearded Dragon			X	X			
Alaudidae	<i>Mirafra javanica</i>	Horsfield's Bushlark			X	X			X
Alcedinidae	<i>Dacelo leachii</i>	Blue-winged Kookaburra			X				
	<i>Todiramphus chloris</i>	Collared Kingfisher			X	X			
	<i>Todiramphus pyrrhopygius</i>	Red-backed Kingfisher			X	X			

	<i>Todiramphus sanctus</i>	Sacred Kingfisher			X	X	
Anatidae	<i>Anas castanea</i>	Chestnut Teal			X		
	<i>Anas gracilis</i>	Grey Teal			X	X	
	<i>Anas superciliosa</i>	Pacific Black Duck			X	X	
	<i>Aythya australis</i>	Hardhead			X	X	
	<i>Chenonetta jubata</i>	Australian Wood Duck			X		
	<i>Cygnus atratus</i>	Black Swan			X	X	
	<i>Dendrocygna arcuata</i>	Wandering Whistling-duck			X		
	<i>Dendrocygna eytoni</i>	Plumed Whistling-duck			X	X	
	<i>Malacorhynchus membranaceus</i>	Pink-eared Duck			X	X	
	<i>Spatula querquedula</i>	Garganey	MI	MI	X		
	<i>Spatula rhynchotis</i>	Australasian Shoveler			X		
Anhingidae	<i>Anhinga melanogaster</i>	Darter				X	
	<i>Anhinga novaehollandiae</i>	Australasian Darter			X		
Apodidae	<i>Apus pacificus</i>	Fork-tailed Swift	MI	MI	X		X
Ardeidae	<i>Ardea alba</i>	Great Egret			X		
	<i>Ardea intermedia</i>	Intermediate Egret			X		
	<i>Ardea pacifica</i>	White-necked Heron			X	X	
	<i>Bubulcus ibis</i>	Cattle Egret			X	X	
	<i>Butorides striata</i>	Striated Heron			X	X	
	<i>Egretta garzetta</i>	Little Egret			X	X	
	<i>Egretta novaehollandiae</i>	White-faced Heron			X	X	
	<i>Egretta sacra</i>	Eastern Reef Egret			X	X	
	<i>Nycticorax caledonicus australasiae</i>	Torresian Nankeen Night-heron			X	X	
Artamidae	<i>Artamus cinereus</i>	Black-faced Woodswallow			X	X	X
	<i>Artamus cinereus melanops</i>	Inland Black-faced Woodswallow			X	X	
	<i>Artamus leucorhynchus</i>	White-breasted Woodswallow			X	X	X
	<i>Artamus personatus</i>	Masked Woodswallow			X	X	
	<i>Artamus superciliosus</i>	White-browed Woodswallow			X	X	
	<i>Cracticus nigrogularis</i>	Pied Butcherbird			X	X	
	<i>Gymnorhina tibicen</i>	Australian Magpie			X		
Bovidae	<i>Bos (Bos) taurus</i>	*European Cattle			X		
	<i>Capra hircus</i>	*Goat			X		
Burhinidae	<i>Burhinus grallarius</i>	Bush Stone-curlew			X	X	
	<i>Esacus magnirostris</i>	Beach Stone-curlew			X	X	

Cacatuidae	<i>Cacatua sanguinea</i>	Little Corella			X	X		
	<i>Eolophus roseicapilla</i>	Galah			X	X		
	<i>Nymphicus hollandicus</i>	Cockatiel			X	X		
Campephagidae	<i>Coracina novaehollandiae</i>	Black-faced Cuckoo-shrike			X	X		X
	<i>Lalage tricolor</i>	White-winged Triller			X			
Canidae	<i>Canis familiaris</i>	*Dog				X		X
	<i>Vulpes vulpes</i>	*Fox			X	X		X
Caprimulgidae	<i>Eurostopodus argus</i>	Spotted Nightjar				X		
Carphodactylidae	<i>Nephrurus levis</i>	Three-lined Knob-tail			X	X		
Casuariidae	<i>Dromaius novaehollandiae</i>	Emu			X	X		X
Charadriidae	<i>Charadrius leschenaultii</i>	Greater Sand Plover	VU	VU & MIX			X	X
	<i>Charadrius melanops</i>	Black-fronted Dotterel				X		
	<i>Charadrius mongolus</i>	Lesser Sand Plover	EN	EN & MIX			X	
	<i>Charadrius ruficapillus</i>	Red-capped Plover			X	X		
	<i>Charadrius veredus</i>	Oriental Plover	MI	MI	X		X	X
	<i>Elseyornis melanops</i>	Black-fronted Dotterel			X			
	<i>Erythrogonys cinctus</i>	Red-kneed Dotterel			X	X		
	<i>Pluvialis fulva</i>	Pacific Golden Plover	MI	MI	X		X	
	<i>Pluvialis squatarola</i>	Grey Plover	MI	VU & MIX			X	
	<i>Vanellus miles</i>	Masked Lapwing			X			
Ciconiidae	<i>Ephippiorhynchus asiaticus</i>	Black-necked Stork			X	X		
Climacteridae	<i>Climacteris melanurus melanurus</i>	Northern Black-tailed Treecreeper			X			
Columbidae	<i>Columba livia</i>	Rock Dove			X			
	<i>Geopelia cuneata</i>	Diamond Dove			X	X		X
	<i>Geopelia humeralis</i>	Bar-shouldered Dove			X	X		
	<i>Geopelia placida</i>	Peaceful Dove			X			
	<i>Geopelia striata placida</i>	Peaceful Dove				X		X
	<i>Geophaps plumifera</i>	Spinifex Pigeon			X	X		
	<i>Ocyphaps lophotes</i>	Crested Pigeon			X	X		X
	<i>Phaps chalcoptera</i>	Common Bronzewing			X			
	<i>Phaps histrionica</i>	Flock Bronzewing			X			
Corvidae	<i>Corvus bennetti</i>	Little Crow				X		
	<i>Corvus coronoides</i>	Australian Raven			X			
	<i>Corvus orru</i>	Torresian Crow			X	X		
Cuculidae	<i>Cacomantis pallidus</i>	Pallid Cuckoo			X	X		

	<i>Centropus phasianinus</i>	Pheasant Coucal			X	X		
	<i>Chalcites basalis</i>	Horsfield's Bronze-cuckoo			X			
	<i>Chrysococcyx osculans</i>	Black-eared Cuckoo						X
Dasyuridae	<i>Dasyurus hallucatus</i>	Northern Quoll	EN	EN	X		X	
	<i>Dasyercus cristicauda</i>	Crest-tailed Mulgara	P4				X	
	<i>Dasyercus blythi</i>	Brush-tailed Mulgara	P4		X		X	
	<i>Antechinomys laniger</i>	Kultarr			X	X		
	<i>Dasykaluta rosamondae</i>	Little Red Antechinus			X	X		X
	<i>Ningauai timealeyi</i>	Pilbara ninguai					X	
	<i>Planigale ingrami</i>	Long-tailed planigate					X	
	<i>Pseudantechinus woolleyae</i>	Woolley's false antechinus					X	
	<i>Sminthopsis macroura</i>	Stripe-faced Dunnart						
	<i>Sminthopsis youngsoni</i>	Lesser Hairy-footed Dunnart			X	X		X
Dicaeidae	<i>Dicaeum hirundinaceum</i>	Mistletoebird			X			
Diplodactylidae	<i>Diplodactylus conspicillatus</i>						X	
	<i>Diplodactylus laevis</i>	Desert Fat-tailed Gecko			X	X		
	<i>Lucasium woodwardi</i>	Pilbara Ground Gecko						
	<i>Lucasium stenodactylus</i>	Crowned Gecko			X	X		
	<i>Lucasium woodwardi</i>				X			
	<i>Strophurus ciliaris</i>	Northern Spiny-tailed Gecko			X	X		
	<i>Strophurus elderi</i>	Jewelled Gecko			X	X		
	<i>Strophurus jeanae</i>	Southern Phasmid Gecko			X	X		
	<i>Strophurus strophurus</i>	Western Spiny-tailed Gecko			X	X		
	<i>Strophurus wellingtonae</i>	Western Shield Spiny-tailed Gecko			X	X		
Elapidae	<i>Acanthophis pyrrhus</i>	Desert Death Adder			X	X		
	<i>Acanthophis wellsei</i>	Pilbara Death Adder					X	
	<i>Brachyuropsis approximans</i>	North-western Shovel-nosed Snake					X	
	<i>Demansia psammophis</i>							X
	<i>Demansia reticulata</i>	Yellow-faced Whipsnake			X			
	<i>Demansia rufescens</i>	Rufous Whipsnake			X	X		
	<i>Demansia torquata</i>						X	
	<i>Ephalophis greyi</i>	Mangrove Seasnake			X			
	<i>Furina ornata</i>	Moon Snake			X	X		
	<i>Hydrelaps darwiniensis</i>	Black-ringed Mangrove Snake			X	X		
	<i>Pseudechis australis</i>	Mulga Snake			X	X		X
	<i>Pseudonaja mengdeni</i>	Western Brown Snake			X	X		

	<i>Pseudonaja modesta</i>	Ringed Brown Snake			X	X		
	<i>Pseudonaja nuchalis</i>					X		
	<i>Simoselaps anomalus</i>	Desert Banded Snake			X	X		X
	<i>Suta fasciata</i>	Rosen's Snake			X	X		
	<i>Suta punctata</i>	Little Spotted Snake			X	X		
Emballonuridae	<i>Saccolaimus flaviventris</i>	Yellow-bellied sheath-tailed bat				X		
	<i>Taphozous georgianus</i>	Common Sheath-tail Bat						
Estrildidae	<i>Emblema pictum</i>	Painted Finch			X	X		
	<i>Heteromunia pectoralis</i>	Pictorella Mannikin			X	X		
	<i>Neochmia ruficauda</i>	Star Finch			X			
	<i>Taeniopygia guttata</i>	Zebra Finch			X	X		X
Falconidae	<i>Falco berigora</i>	Brown Falcon			X	X		
	<i>Falco cenchroides</i>	Nankeen Kestrel			X	X		X
	<i>Falco hypoleucos</i>	Grey Falcon	VU		X		X	X
	<i>Falco longipennis</i>	Australian Hobby			X	X		
	<i>Falco peregrinus</i>	Peregrine Falcon	OS		X		X	
	<i>Falco subniger</i>	Black Falcon			X			
Felidae	<i>Felis catus</i>	*Cat			X	X		
Fregatidae	<i>Fregata ariel</i>	Lesser Frigatebird	MI	MI	X		X	
Gekkonidae	<i>Diplodactylus stenodactylus</i>							X
	<i>Gehyra australis</i>	Northern Dtella			X			
	<i>Gehyra incognita</i>	Northern Pilbara Cryptic Gehyra			X	X		
	<i>Gehyra media</i>	Medium Pilbara Spotted Rock Gehyra			X	X		
	<i>Gehyra montium</i>	Centralian Dtella			X	X		
	<i>Gehyra pilbara</i>					X		X
	<i>Gehyra punctata</i>	Spotted Dtella			X	X		
	<i>Gehyra purpurascens</i>	Purplish Dtella			X			X
	<i>Gehyra variegata</i>	Tree Dtella			X	X		X
	<i>Hemidactylus frenatus</i>	*House Gecko			X	X		
	<i>Heteronotia binoei</i>	Bynoe's Gecko			X	X		X
	<i>Rhynchoedura ornata</i>							X
Glareolidae	<i>Glareola maldivarum</i>	Oriental Pratincole	MI	MI	X		X	
	<i>Stiltia isabella</i>	Australian Pratincole			X			
Gruidae	<i>Antigone rubicunda</i>	Brolga			X			
Haematopodidae	<i>Haematopus fuliginosus</i>	Sooty Oystercatcher			X	X		
e	<i>Haematopus longirostris</i>	Australian Pied Oystercatcher			X	X		

Hirundinidae	<i>Cheramoeca leucosterna</i>	White-backed Swallow			X	X		
	<i>Hirundo ariel</i>					X		
	<i>Hirundo neoxena</i>	Welcome Swallow			X	X		
	<i>Hirundo nigricans</i>					X		
	<i>Hirundo rustica</i>	Barn Swallow	MI	MI	X		X	X
	<i>Petrochelidon ariel</i>	Fairy Martin			X	X		
	<i>Petrochelidon nigricans</i>	Tree Martin			X	X		
Homalopsidae	<i>Fordonia leucobalia</i>	White-bellied Mangrove Snake			X	X		
Laridae	<i>Chlidonias hybrida</i>	Whiskered Tern			X			
	<i>Chlidonias leucopterus</i>	White-winged Black Tern	MI	MI	X		X	
	<i>Chroicocephalus novaehollandiae</i>	Silver Gull			X			
	<i>Gelochelidon macrotarsa</i>	Australian Gull-billed Tern			X			
	<i>Gelochelidon nilotica</i>	Gull-billed Tern	MI	MI	X		X	X
	<i>Hydroprogne caspia</i>	Caspian Tern	MI	MI	X		X	
	<i>Larus novaehollandiae</i>							
	<i>Larus pacificus</i>	Pacific Gull			X			
	<i>Onychoprion anaethetus</i>	Bridled Tern	MI	MI	X		X	
	<i>Sterna bengalensis</i>	Lesser Crested Tern				X		
	<i>Sterna dougallii</i>	Roseate Tern	MI	MI	X			
	<i>Sterna hirundo</i>	Common Tern	MI	MI	X		X	
	<i>Sterna hybrida</i>					X		
	<i>Sternula albifrons</i>	Little Tern	MI	MI	X		X	
	<i>Sternula nereis nereis</i>	Australian Fairy Tern	VU	VU	X		X	
	<i>Thalasseus bengalensis</i>	Lesser Crested Tern			X			
	<i>Thalasseus bergii</i>	Crested Tern	MI	MI	X		X	
Leporidae	<i>Oryctolagus cuniculus</i>	*Rabbit			X	X		
Limnodynastidae	<i>Neobatrachus aquilonius</i>	Northern Burrowing Frog			X	X		
e	<i>Neobatrachus sutor</i>	Shoemaker frog						
	<i>Notaden nicholli</i>	Desert Spadefoot			X	X		X
Locustellidae	<i>Cincloramphus cruralis</i>	Brown Songlark			X	X		
	<i>Cincloramphus mathewsi</i>	Rufous Songlark			X	X		X
	<i>Poodytes carteri</i>	Spinifexbird			X	X		
	<i>Poodytes gramineus</i>	Little Grassbird			X			
Macropodidae	<i>Lagostrophus fasciatus fasciatus</i>	Banded Hare-Wallaby	VU	VU			X	
	<i>Macropus rufus</i>	Red Kangaroo					X	

	<i>Osphranter robustus</i>	Common Wallaroo			X	X	
Maluridae	<i>Malurus assimilis</i>	Purple-backed Fairy-wren			X		X
	<i>Malurus leucopterus</i>	White-winged Fairy-wren			X	X	X
Megadermatidae	<i>Macroderma gigas</i>	ghost bat	VU	VU			X
Meliphagidae	<i>Certhionyx variegatus</i>	Pied Honeyeater			X		
	<i>Epthianura aurifrons</i>	Orange Chat					
	<i>Epthianura tricolor</i>	Crimson Chat			X	X	
	<i>Gavicalis virescens</i>	Singing Honeyeater			X	X	
	<i>Lichmera indistincta</i>	Brown Honeyeater			X	X	
	<i>Manorina flavigula</i>	Yellow-throated Miner			X	X	
	<i>Ptilotula keartlandi</i>	Grey-headed Honeyeater			X	X	
	<i>Ptilotula penicillata</i>	White-plumed Honeyeater			X	X	
	<i>Sugomel niger</i>	Black Honeyeater			X		
Meropidae	<i>Merops ornatus</i>	Rainbow Bee-eater			X	X	X
Molossidae	<i>Ozimops cobourgianus</i>	northern coastal free-tailed bat	P1				X
	<i>Chaerephon jobensis</i>	Northern Mastiff Bat			X	X	
Monarchidae	<i>Grallina cyanoleuca</i>	Magpie-lark			X	X	X
Motacillidae	<i>Anthus australis</i>	Australian Pipit			X	X	X
	<i>Motacilla flava similima</i>						
	<i>Motacilla alba</i>	White Wagtail			X		
	<i>Motacilla flava</i>	Yellow Wagtail	MI	MI			X
	<i>Motacilla tschutschensis</i>	Eastern Yellow Wagtail			X		
Muridae	<i>Leggadina lakedownensis</i>	Lakeland Downs Mouse	P4				X
	<i>Pseudomys chapmani</i>	western pebble-mound mouse, ngadji	P4				X
	<i>Mus musculus domesticus</i>	*Western House Mouse			X	X	X
	<i>Notomys alexis</i>	Spinifex Hopping Mouse				X	X
	<i>Pseudomys hermannsburgensis</i>	Sandy Inland Mouse				X	
	<i>Pseudomys delicatulus</i>	Little Native Mouse				X	X
	<i>Pseudomys desertor</i>	Desert Mouse				X	X
	<i>Pseudomys hermannsburgensis</i>	Sandy Inland Mouse			X	X	
	<i>Pseudomys nanus</i>	Western Chestnut Mouse					
Myobatrachidae	<i>Limnodynastes spenceri</i>	Spencer's Burrowing Frog			X	X	X
	<i>Uperoleia glandulosa</i>	Glandular Toadlet			X	X	
	<i>Uperoleia russelli</i>	Northwest Toadlet					
	<i>Uperoleia talpa</i>	Mole Toadlet					

Numididae	<i>Numida meleagris</i>	Helmeted Guineafowl			X		
Oceanitidae	<i>Oceanites oceanicus</i>	Wilson's Storm-petrel	MI	MI	X		X
Oreoicidae	<i>Oreoica gutturalis</i>	Crested Bellbird			X		
Otididae	<i>Ardeotis australis</i>	Australian Bustard			X	X	X
Pachycephalidae	<i>Colluricincla harmonica</i>	Grey Shrike-thrush			X		
	<i>Pachycephala lanioides</i>	White-breasted Whistler			X	X	
	<i>Pachycephala melanura</i>	Mangrove Golden Whistler			X	X	
	<i>Pachycephala rufiventris</i>	Rufous Whistler				X	X
Pardalotidae	<i>Pardalotus rubricatus</i>	Red-browed Pardalote			X	X	X
Pardalotidae	<i>Pardalotus striatus</i>	Striated Pardalote			X		
Passeridae	<i>Passer montanus</i>	Eurasian Tree Sparrow			X	X	
Pelecanidae	<i>Pelecanus conspicillatus</i>	Australian Pelican			X	X	
Pelodryadidae	<i>Cyclorana australis</i>	Giant Frog			X	X	
	<i>Cyclorana maini</i>	Main's Frog			X	X	
	<i>Litoria caerulea</i>	Green Tree Frog			X	X	
	<i>Litoria rothii</i>	Roths Tree Frog					
	<i>Litoria rubella</i>	Little Red Tree Frog			X	X	
Petauridae	<i>Petaurus breviceps</i>	Sugar Glider			X		
Petroicidae	<i>Eopsaltria pulverulenta</i>						X
	<i>Melanodryas cucullata</i>	Hooded Robin			X		
	<i>Peneothello pulverulenta</i>	Mangrove Robin			X	X	
	<i>Petroica goodenovii</i>	Red-capped Robin			X		
Phalacrocoracidae	<i>Microcarbo melanoleucos</i>	Little Pied Cormorant			X		
	<i>Phalacrocorax carbo</i>	Great Cormorant			X		
	<i>Phalacrocorax melanoleucos</i>	Little Pied Cormorant					
	<i>Phalacrocorax sulcirostris</i>	Little Black Cormorant			X		
	<i>Phalacrocorax varius</i>	Pied Cormorant			X	X	
Phasianidae	<i>Coturnix ypsilophora</i>				X	X	
	<i>Pavo cristatus</i>	Indian Peafowl			X		
	<i>Synoicus ypsilophora</i>	Brown Quail			X		
Podargidae	<i>Podargus strigoides</i>	Tawny Frogmouth			X	X	
Podicipedidae	<i>Poliiocephalus poliocephalus</i>	Hoary-headed Grebe			X		
	<i>Tachybaptus novaehollandiae</i>	Australasian Grebe			X	X	
Pomatostomidae	<i>Pomatostomus temporalis</i>	Grey-crowned Babbler			X		
Psittacidae	<i>Barnardius zonarius</i>	Australian Ringneck			X		

	<i>Melopsittacus undulatus</i>	Budgerigar		X	X	
Psittaculidae	<i>Platycercus spurius</i>	Red capped parrot			X	
Pteropodidae	<i>Pteropus alecto</i>	Black Flying-fox		X		
Ptilonorhynchidae	<i>Chlamydera guttata</i>	Western Bowerbird		X	X	
Pygopodidae	<i>Delma butleri</i>	Unbanded Delma		X	X	
	<i>Delma haroldi</i>					X
	<i>Delma nasuta</i>	Sharp-snouted Delma		X		
	<i>Delma pax</i>	Peace Delma		X	X	X
	<i>Delma tincta</i>	Excitable Delma		X	X	X
	<i>Lialis burtonis</i>	Burton's Snake-lizard		X	X	
	<i>Pygopus nigriceps</i>	Western Hooded Scaly-foot		X	X	
Pythonidae	<i>Antaresia childreni</i>	Children's Python		X		
	<i>Antaresia perthensis</i>	Pygmy Python		X	X	
	<i>Aspidites ramsayi</i>					
	<i>Aspidites melanocephalus</i>	Black-headed Python		X	X	
	<i>Aspidites ramsayi</i>	Woma		X	X	
Rallidae	<i>Fulica atra</i>	Eurasian Coot		X		
	<i>Hypotaenidia philippensis</i>	Buff-banded Rail		X		
	<i>Porphyrio porphyrio melanotus</i>	Australasian Purple Swamphen		X		
	<i>Porzana fluminea</i>	Australian Spotted Crake		X		
	<i>Tribonyx ventralis</i>	Black-tailed Native-hen		X		
	<i>Zapornia pusilla</i>	Baillon's Crake		X		
Recurvirostridae	<i>Cladorhynchus leucocephalus</i>	Banded Stilt		X	X	
	<i>Himantopus himantopus</i>	Black-winged Stilt		X	X	
	<i>Recurvirostra novaehollandiae</i>	Red-necked Avocet		X		
Rhinonycteridae	<i>Rhinonycteris aurantia</i> (Pilbara Pilbara Leaf-nosed Bat form)		VU	VU		X
Rhipiduridae	<i>Rhipidura leucophrys</i>	Willie Wagtail		X	X	
	<i>Rhipidura albiscapa</i>	Grey Fantail		X		
	<i>Rhipidura phasiana</i>	Mangrove Grey Fantail		X	X	
Scincidae	<i>Ctenotus angusticeps</i>	Priority	P3			
	<i>Ctenotus angusticeps</i>	Airlie Island Ctenotus	P3	X		X
	<i>Carlia munda</i>	Shaded-litter Rainbow-skink		X	X	
	<i>Carlia triacantha</i>	Desert Rainbow-skink		X	X	X
	<i>Cryptoblepharus buchananii</i>	Buchanan's Snake-eyed Skink		X	X	
	<i>Ctenotus colletti</i>	Buff-tailed Finesnout Ctenotus		X		

	<i>Ctenotus duricola</i>	Pilbara Ctenotus			X	X		
	<i>Ctenotus grandis</i>					X		X
	<i>Ctenotus hanloni</i>	Nimble Ctenotus			X	X		
	<i>Ctenotus helenae</i>	Clay-soil Ctenotus			X	X		
	<i>Ctenotus inornatus</i>					X		
	<i>Ctenotus pantherinus</i>	Leopard Ctenotus			X	X		X
	<i>Ctenotus piankai</i>	Pianka's Ctenotus			X	X		X
	<i>Ctenotus robustus</i>	Robust Ctenotus			X			
	<i>Ctenotus rufescens</i>	Rufous Finesnout Ctenotus			X	X		X
	<i>Ctenotus saxatilis</i>	Stony-soil Ctenotus			X	X		X
	<i>Ctenotus serventyi</i>	North-western Sandy-loam Ctenotus			X	X		X
	<i>Egernia depressa</i>	Pygmy Spiny-tailed Skink			X	X		
	<i>Eremiascincus fasciolatus</i>	Thick-tailed Skink			X	X		X
	<i>Eremiascincus isolepis</i>	Northern Bar-lipped Skink			X	X		
	<i>Eremiascincus musivus</i>	Mosaic Desert Skink			X	X		
	<i>Eremiascincus pallidus</i>	Western Narrow-banded Skink			X	X		
	<i>Lerista timida</i>	Dwarf Three-toed Slider			X	X		
	<i>Lerista baynesi</i>							X
	<i>Lerista bipes</i>	Two-toed Lerista			X	X		X
	<i>Lerista clara</i>	Sharp-blazed Three-toed Slider			X	X		
	<i>Lerista jacksoni</i>				X	X		
	<i>Lerista muelleri</i>					X		X
	<i>Menetia greyii</i>	Grey's Menetia			X	X		X
	<i>Morethia ruficauda</i>	Fire-tailed Skink				X		X
	<i>Notoscincus ornatus</i>	Ornate Soil-crevice Skink			X			
	<i>Proablepharus reginae</i>	Western soil-crevice skink				X		
	<i>Tiliqua multifasciata</i>	Centralian Blue-tongue			X	X		X
Scolopacidae	<i>Actitis hypoleucos</i>	Common Sandpiper	MI	MI	X		X	X
	<i>Arenaria interpres</i>	Ruddy Turnstone	MI	VU & MIX			X	
	<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	MI	VU & MIX			X	X
	<i>Calidris alba</i>	Sanderling	MI	MI	X		X	X
	<i>Calidris canutus</i>	Red Knot	EN	VU & MIX			X	X
	<i>Calidris falcinellus</i>	Broad-billed Sandpiper			X			
	<i>Calidris ferruginea</i>	Curlew Sandpiper	CR	CR & MIX			X	X
	<i>Calidris melanotos</i>	Specially Protected - Migratory	MI	MI	X		X	X
	<i>Calidris minuta</i>	Little Stint			X			

	<i>Calidris ruficollis</i>	Red-necked Stint	MI	MI	X	X	
	<i>Calidris subminuta</i>	Long-toed Stint	MI	MI	X	X	
	<i>Calidris tenuirostris</i>	Great Knot	CR	VU & MIX		X	
	<i>Gallinago megala</i>	Swinhoe's Snipe	MI	MI	X		
	<i>Gallinago stenura</i>	Pin-tailed Snipe	MI	MI	X	X	
	<i>Limicola falcinellus</i>	broad-billed sandpiper	MI	MI		X	
	<i>Limnodromus semipalmatus</i>	Asian Dowitcher	MI	VU & MIX		X	X
	<i>Limosa lapponica</i>	Bar-tailed Godwit	MI	MI	X	X	X
	<i>Limosa lapponica menzbieri</i>	Bar-tailed Godwit (Northern Siberian)	CR	CR & MI		X	X
	<i>Limosa limosa</i>	Black-tailed Godwit	MI	EN & MIX		X	
	<i>Numenius madagascariensis</i>	Eastern Curlew	CR	CR & MIX		X	X
	<i>Numenius minutus</i>	Little Curlew	MI	MI	X	X	
	<i>Numenius phaeopus</i>	Whimbrel	MI	MI	X	X	
	<i>Phalaropus lobatus</i>	red-necked phalarope	MI	MI		X	
	<i>Tringa stagnatilis</i>	Marsh Sandpiper			X		
	<i>Tringa brevipes</i>	Grey-tailed Tattler	MI & P4	MI	X	X	
	<i>Tringa glareola</i>	wood sandpiper	MI	MI	X	X	
	<i>Tringa nebularia</i>	common greenshank	MI	EN & MIX		X	x
	<i>Tringa stagnatilis</i>	marsh sandpiper	MI	MI		X	
	<i>Tringa totanus</i>	Common Redshank	MI	MI	X		
	<i>Xenus cinereus</i>	Terek Sandpiper	MI	VU & MIX		X	
Strigidae	<i>Ninox novaeseelandiae</i>	Southern Boobook			X		
Sulidae	<i>Sula dactylatra bedouti</i>				X		
	<i>Sula leucogaster</i>	Brown Booby	MI	MI	X	X	
Tachyglossidae	<i>Tachyglossus aculeatus</i>	Short-beaked Echidna					
Threskiornithidae	<i>Platalea flavipes</i>	Yellow-billed Spoonbill			X		
	<i>Platalea regia</i>	Royal Spoonbill			X		
	<i>Plegadis falcinellus</i>	Glossy Ibis	MI	MI	X	X	
	<i>Threskiornis moluccus</i>	Australian White Ibis			X	X	
	<i>Threskiornis spinicollis</i>	Straw-necked Ibis			X	X	
Thylacomyidae	<i>Macrotis lagotis</i>	Bilby	VU	VU	X	X	
Turnicidae	<i>Turnix velox</i>	Little Button-quail			X	X	X
Typhlopidae	<i>Anilius ammodytes</i>	Sand-diving Blind Snake			X	X	
	<i>Anilius grypus</i>	Long-beaked Blind Snake			X	X	
	<i>Anilius pilbarensis</i>	Pilbara Blind Snake			X	X	X
	<i>Indotyphlops braminus</i>	*Flowerpot Blind Snake			X	X	

Tytonidae	<i>Tyto javanica</i>	Eastern Barn Owl	X	X	
Varanidae	<i>Varanus brevicauda</i>	Short-tailed Pygmy Goanna; Short-tailed Pygmy Monitor		X	X
	<i>Varanus acanthurus</i>	Ridge-tailed Monitor	X	X	X
	<i>Varanus bushi</i>	Pilbara Monitor		X	
	<i>Varanus eremius</i>	Pygmy Desert Monitor	X	X	X
	<i>Varanus flavirufus</i>	Sand Goanna			X
	<i>Varanus giganteus</i>	Perentie		X	
	<i>Varanus gouldii</i>	Gould's Goanna	X	X	
	<i>Varanus panoptes</i>	Argus Monitor		X	
	<i>Varanus pilbarensis</i>	Pilbara Rock Monitor		X	
Vespertilionidae	<i>Chalinolobus gouldii</i>	Gould's Wattled Bat		X	
	<i>Nyctophilus arnhemensis</i>	Arnhem Long-eared Bat	X	X	
	<i>Nyctophilus geoffroyi</i>	Lesser Long-eared Bat	X	X	
	<i>Scotorepens greyii</i>	Little Broad-Nosed Bat		X	
	<i>Vespadelus finlaysoni</i>	Finlayson's Cave Bat	X	X	X
Zosteropidae	<i>Zosterops lateralis</i>	Silvereeye	X		
	<i>Zosterops luteus</i>	Yellow White-eye	X	X	X

Appendix 2: Likelihood of occurrence criteria for flora and fauna species

Likelihood of occurrence criteria for flora and fauna species:

- Likelihood: Previously recorded

The species has previously been recorded within Study Area from DEC database search results and/or from previous surveys of the Study Area, and/or the species has been confirmed through a current vouchered specimen at WA Herbarium.

- Likelihood: Likely

The species has not previously been recorded from within the Study Area. However:

- The species has been recorded in proximity (<5 km) to the Study Area, and occurs in similar habitat to that which occurs within the Study Area.
- Core habitat and suitable landforms for the species occurs within the Study Area either year-round or seasonally. In relation to fauna species, this could be that a host plant is seasonally present on site, or habitat features such as caves are present that may be used during particular times during its life cycle e.g. for breeding. In relation to both flora and fauna species, it may be there are seasonal wetlands present.

There is a medium to high probability that a species uses the Study Area.

- Likelihood: Potential

The species has not previously been recorded from within the Study Area. However:

- Targeted surveys may locate the species based on records occurring in proximity to the Study Area (5-15 km) and suitable habitat occurring in the Study Area.
- The Study Area has been assessed as having potentially suitable habitat through habitat modelling.
- The species is known to be cryptic and may not have been detected despite extensive surveys.
- The species is highly mobile and has an extensive foraging range so may not have been detected during previous surveys.

The species has been recorded in the Study Area by a previous consultant survey or there is historic evidence of species occurrence within the Study Area. However:

- Doubt remains over taxonomic identification, or the majority of habitat does not appear suitable (although presence cannot be ruled out due to factors such as species ecology or distribution).
- Coordinates are doubtful.

- Likelihood: Unlikely

The species has been recorded locally through DEC database searches. However, it has not been recorded within the Study Area and:

- It is unlikely to occur due to the site lacking critical habitat, having at best marginally suitable habitat, and/or being severely degraded.

- It is unlikely to occur due to few historic record/s and no other current collections in the local area.

The species has been recorded within the bioregion based on literature review but has not been recorded locally or within the Study Area through DEC database searches.

The species has not been recorded in the Study Area despite adequate survey efforts, such as a standardised methodology or targeted searching within potentially suitable habitat.

- Likelihood: Nil

The species is not known to occur within the IBRA bioregion based on current literature and distribution.

The Study Area lacks important habitat for a species that has highly selective habitat requirements. The species has been historically recorded within Study Area or locally; however it is considered locally extinct due to significant habitat changes such as land clearing and/or introduced predators.

Appendix 3: Likelihood of occurrence assessment results.

Species	Status	TPFL	Distance to nearest record (km)	Habitat	Flowering time	Likelihood of occurrence and discussion (pre-field)	Likelihood of occurrence and discussion post field
<i>Tephrosia rosea</i> var. Port Hedland (A.S. George 1114)	P1	X	3	Pale red/yellow/brown sand, loam. Sand plains, coastal taxon, along ephemeral sandy rivers.	Jul - Oct	Likely This taxon was recorded less than 5 km from the study area and its preferred habitat may occur within the study area.	Unlikely The preferred broad habitat for this species was present within the survey area. However, the area is heavily degraded and was well searched for all priority species and it is unlikely this species was overlooked.
<i>Gomphrena pusilla</i>	P2	X	9	Fine beach sand. Behind foredune, littoral or near-littoral species. Limestone.	Mar - Apr or Jun	Unlikely This taxon was recorded greater than 5 km from the study area and its preferred habitat is unlikely to occur within the study area.	Unlikely The preferred habitat for this species was not present within the survey area. Additionally, the area is heavily degraded and was well searched for all priority species and it is unlikely this species was overlooked.
<i>Eragrostis crateriformis</i>	P3	X	12	Clayey loam or brown clay. Creek banks, depressions.	Jan - Jul	Unlikely This taxon was recorded greater than 5 km from the study area and its preferred habitat is unlikely to occur within the study area.	Unlikely The preferred habitat for this species was not present within the survey area. Additionally, the area is heavily degraded and was well searched for all priority species and it is unlikely this species was overlooked.
<i>Euploca mutica</i>	P3	X	6	Sandy soils, red sit sand soil. Flats, plains, rocky slopes, low lying floodplain, flat carcareous plains. Quartz and granite.	Aug	Likely This taxon was recorded less than 5 km from the study area and its preferred habitat may occur within the study area.	Unlikely The preferred broad habitat for this species was present within the survey area. However, the area is heavily degraded and was well searched for all priority species and it is unlikely this species was overlooked.
<i>Gomphrena leptophylla</i>	P3	X	18	Sand, sandy to clayey loam, granite, quartzite. Open flats, sandy creek beds, floodplains, edges salt pans & marshes, stony hillsides.	Mar - Sep	Potential This taxon was recorded greater than 5 km from the study area and its preferred habitat may occur within the study area.	Unlikely The preferred habitat for this species was present within the survey area. However, the area is heavily degraded and was well searched for all priority species and it is unlikely this species was overlooked.
<i>Gymnanthera cunninghamii</i>	P3	X	8	Sandy soils. In areas surrounding permanent and semi-permanent watercourses, also among rocks on the Burrup peninsula.	Apr or Dec	Potential This taxon was recorded greater than 5 km from the study area and its preferred habitat may occur within the study area.	Unlikely The preferred habitat for this species was not present within the survey area. Additionally, the area is heavily degraded and was well searched for all priority species and it is unlikely this species was overlooked.
<i>Rothia indica</i> subsp. <i>australis</i>	P3	X	1	Sandy soils. Sandhills and sandy flats.	Apr - Aug	Likely This taxon was recorded less than 5 km from the study area and its preferred habitat is likely to occur within the study area.	Unlikely The preferred broad habitat for this species was present within the survey area. However, the area is heavily degraded and was well searched for all priority species and it is unlikely this species was overlooked.
<i>Bulbostylis burbidgeae</i>	P4	X	10	Granitic soils. Granite outcrops, cliff bases, under rock overhangs, rock crevices, creeklines.	Mar or Jun - Aug	Unlikely This taxon was recorded greater than 5 km of the study area and its preferred habitat is unlikely to occur within the study area.	Unlikely The preferred habitat for this species was not present within the survey area. Additionally, the area is heavily degraded and was well searched for all priority species and it is unlikely this species was overlooked.
<i>Atriplex eremitis</i>	P1			saline plains amongst disturbed soil.	August	Nil Not recorded in the pre-survey likelihood assessment	Recorded Recorded during survey in existing disturbance along saline creeks.

Scientific Name	Common Name	Conservation Code		Source			Distance to Nearest Record (km)	Habitat and discussion	Likelihood of Occurrence	Post survey Likelihood of occurrence
		State	Federal	DBCA	RTIO	PMST				
Birds										
<i>Actitis hypoleucos</i>	Common Sandpiper	MI	MI	X		X	3.73	The Common Sandpiper has been recorded in estuaries and deltas of streams, as well as on banks farther upstream; around lakes, pools, billabongs, reservoirs, dams and claypans, and occasionally piers and jetties. The species generally forages in shallow water and on bare soft mud at the edges of wetlands. They sometimes venture into grassy areas adjoining wetlands (Higgins & Davies 1996). This taxon perches on branches, posts, boats (Morcombe, 2003).	Potential (foraging only) This species was recorded less than 5 km from the study area and potential foraging habitat is present within the study area. Species breeds in Europe and Asia in the Australian winter.	Unlikely No suitable habitat recorded within study area.
<i>Arenaria interpres</i>	Ruddy turnstone	MI	MI	X		X	3.71	In Australasia, the Ruddy Turnstone is mainly found on coastal regions with exposed rock coast lines or coral reefs (Menkhorst et al., 2017). It also lives near platforms and shelves, often with shallow tidal pools and rocky, shingle or gravel beaches. It can, however, be found on sand, coral or shell beaches, shoals, cays and dry ridges of sand or coral. It has occasionally been sighted in estuaries, harbours, bays and coastal lagoons, among low saltmarsh or on exposed beds of seagrass, around sewage ponds and on mudflats (Department of Climate Change, Energy, the Environment and Water, 2023).	Potential (foraging only) This species was recorded less than 5 km from the study area and potential foraging habitat is present within the study area. Species breeds in east Siberia and West Alaska in the Australian winter.	Unlikely No suitable habitat recorded within study area..
<i>Calidris acuminata</i>	Sharp-tailed Sandpiper	MI	MI	X		X	3.52	In Australasia, the Sharp-tailed Sandpiper prefers muddy edges of shallow fresh or brackish wetlands, with inundated or emergent sedges, grass, saltmarsh or other low vegetation. This includes lagoons, swamps, lakes and pools near the coast, and dams, waterholes, soaks, bore drains and bore swamps, saltpans and hypersaline saltlakes inland. They also occur in saltworks and sewage farms. They use flooded paddocks, sedgeland and other ephemeral wetlands, but leave when they dry (Department of Climate Change, Energy, the Environment and Water, 2023).	Potential (foraging only) This species was recorded less than 5 km from the study area and potential foraging habitat is present within the study area. Species breeds in Siberia in the Australian winter.	Unlikely No suitable habitat recorded within study area.
<i>Calidris alba</i>	Sanderling	MI	MI	X		X	4.08	In Australia, the Sanderling is almost always found on the coast, mostly on open sandy beaches exposed to open sea-swell, as well as on exposed sandbars and spits and shingle banks, where they forage amongst rotting seaweed and in the wave-wash zone. They may also occur on beaches that may contain wave-washed rocky outcrops (Department of Climate Change, Energy, the Environment and Water, 2023; Higgins & Davies 1996; Menkhorst et al., 2017).	Potential (foraging only) This species was recorded less than 5 km from the study area and potential foraging habitat is present within the study area. Species breeds in Siberia in the Australian winter.	Unlikely No suitable habitat recorded within study area.
<i>Calidris canutus</i>	Red Knot	EN	EN & MI	X		X	3.67	The Red Knot inhabits tidal mudflats, sandflats, beaches, saltmarshes, flooded pasture and ploughed land (Pizzey & Knight 2012). It does not breed in Australia.	Potential (foraging only) This species was recorded less than 5 km from the study area and potential foraging habitat is present within the study area. Species breeds in the far northern hemisphere in the Australian winter.	Unlikely No suitable habitat recorded within study area.
<i>Calidris ferruginea</i>	Curlew Sandpiper	CR	CR & MI	X		X	4.01	The Curlew Sandpiper prefers habitats such as tidal mudflats, saltmarsh, salt fields, fresh, brackish or saline wetlands and sewerage ponds (Pizzey & Knight, 2012). It is also found at lagoons and mangroves, as well as beaches, rocky shores and around lakes, dams and floodwaters. The Curlew Sandpiper does not breed in Australia (BirdLife International, 2023).	Potential (foraging only) This species was recorded less than 5 km from the study area and potential foraging habitat is present within the study area. Species breeds in Siberia and Alaska in the Australian winter.	Unlikely No suitable habitat recorded within study area.
<i>Calidris melanotos</i>	Pectoral Sandpiper	MI	MI	X		X	3.99	In Australasia, the Pectoral Sandpiper prefers shallow fresh to saline wetlands. The species can be found at coastal lagoons, estuaries, bays, swamps, lakes, inundated grasslands, saltmarshes, river pools, creeks, floodplains and artificial wetlands. Although this species is usually found in coastal or near coastal habitat, it can occasionally be found further inland. It prefers wetlands that have open fringing mudflats and low, emergent or fringing vegetation, such as grass or	Potential (foraging only) This species was recorded less than 5 km from the study area and potential foraging habitat is present within the study area. The species is an uncommon migrant to Australia. Species breeds in Siberia and American Arctic in the Australian winter.	Unlikely No suitable habitat recorded within study area.

Scientific Name	Common Name	Conservation Code		Source			Distance to Nearest Record (km)	Habitat and discussion	Likelihood of Occurrence	Post survey Likelihood of occurrence
		State	Federal	DBCA	RTIO	PMST				
								samphire (Department of Climate Change, Energy, the Environment and Water, 2023).		
<i>Calidris ruficollis</i>	Red-necked Stint	MI	MI	X		X	3.71	In Australasia, the Red-necked Stint is mostly found in coastal areas, including sheltered inlets, bays, lagoons and estuaries with intertidal mudflats, often near spits, islets and banks and, sometimes, on protected sandy or coralline shores (Morcombe, 2003). Occasionally they have been recorded on exposed or ocean beaches, and sometimes on stony or rocky shores, reefs or shoals. They also occur in saltworks and sewage farms; saltmarsh; ephemeral or permanent shallow wetlands near the coast or inland, including lagoons, lakes, swamps, riverbanks, waterholes, bore drains, dams, soaks pools in saltflats, flooded paddocks or damp grasslands. They have occasionally been recorded on dry gibber plains, with little or no perennial vegetation (Department of Climate Change, Energy, the Environment and Water, 2023; Higgins & Davies 1996).	Potential (foraging only) This species was recorded less than 5 km from the study area and potential foraging habitat is present within the study area. The species is an uncommon migrant to Australia. Species breeds in Siberia and American Arctic in the Australian winter.	Unlikely No suitable habitat recorded within study area.
<i>Calidris subminuta</i>	Long-toed Stint	MI	MI	X		X	7.89	In Australia, the preferred habitat of the Long-toed Stint includes tussocky, weedy margins of shallow coastal and inland wetlands, sewerage ponds and tidal mudflats (Pizzey & Knight 2012). They prefer shallow freshwater or brackish wetlands including lakes, swamps, river floodplains, streams, lagoons and sewage ponds. The species is also fond of areas of muddy shoreline, growths of short grass, weeds, sedges, low or floating aquatic vegetation, reeds, rushes and occasionally stunted samphire (Department of Climate Change, Energy, the Environment and Water, 2023).	Potential (foraging only) This species was recorded greater than 5 km from the study area and potential foraging habitat is present within the study area. Species breeds in northern Asia in the Australian winter.	Unlikely No suitable habitat recorded within study area.
<i>Calidris tenuirostris</i>	Great Knot	CR	CR & MI	X		X	3.74	The Great Knot prefers sheltered coastal habitats with large intertidal mudflats or sandflats, including inlets, bays, harbours, estuaries and lagoons. At high tide gather with other shore birds on beaches or open sites with a damp substrate (Menkhorst et al., 2017). They are occasionally found on exposed reefs or rock platforms, shorelines with mangrove vegetation, ponds in saltworks, at swamps near the coast, salt lakes and non-tidal lagoons. Great Knots rarely occur on inland lakes and swamps (Higgins & Davies 1996).	Potential (foraging only) This species was recorded less than 5 km from the study area and potential foraging habitat is present within the study area. Species breeds in Siberia in the Australian winter.	Unlikely No suitable habitat recorded within study area.
<i>Charadrius leschenaultii</i>	Greater Sand Plover, Large Sand Plover	VU	VU & MI	X		X	3.75	In the non-breeding grounds in Australasia, the Greater Sand Plover is almost entirely coastal, inhabiting littoral and estuarine habitats, where it mainly forages for small crustaceans (Menkhorst et al., 2017). It occurs on sheltered sandy, shelly or muddy beaches, large intertidal mudflats, sandbanks, salt-marshes, estuaries, coral reefs, rocky islands rock platforms, tidal lagoons and dunes near the coast (Marchant & Higgins 1993). This taxon roosts on beaches at high tide, usually in association with other small waders (Menkhorst et al., 2017).	Potential (foraging only) This species was recorded less than 5 km from the study area and potential foraging habitat is present within the study area. Species breeds in Turkey and eastwards through Central Asia in the Australian winter.	Unlikely No suitable habitat recorded within study area.
<i>Charadrius mongolus</i>	Lesser Sand Plover	EN	EN & MI	X		X	3.74	The Lesser Sand Plover inhabits wide beaches, tidal mudflats, saltmarsh, wide and sparsely vegetated margins of shallow saline and freshwater wetlands, paddocks with sparse vegetation, ploughed fields and airfields (Pizzey & Knight 2012). It tolerates muddy substrates (Menkhorst et al., 2017). This species does not breed in Australia (Department of Climate Change, Energy, the Environment and Water, 2023).	Potential (foraging only) This species was recorded less than 5 km from the study area and potential foraging habitat is present within the study area. Species breeds predominantly in Siberia in the Australian winter.	Unlikely No suitable habitat recorded within study area.
<i>Charadrius veredus</i>	Oriental Plover	MI	MI	X		X	7.73	Immediately after the Oriental Plover arrives in their non-breeding grounds in northern Australia, they spend a few weeks in coastal habitats such as estuarine mudflats and sandbanks, on sandy or rocky ocean beaches or nearby reefs, or in near-coastal grasslands, before dispersing further inland (Department of Climate Change, Energy, the Environment and Water, 2023). Thereafter they usually	Potential (foraging only) This species was recorded greater than 5 km from the study area and potential foraging habitat is present within the study area. Species breeds predominantly in Mongolia and parts of eastern China in the Australian winter.	Unlikely No suitable habitat recorded within study area.

Scientific Name	Common Name	Conservation Code		Source			Distance to Nearest Record (km)	Habitat and discussion	Likelihood of Occurrence	Post survey Likelihood of occurrence
		State	Federal	DBCA	RTIO	PMST				
								inhabit flat, open, semi-arid or arid grasslands, where the grass is short and sparse, and interspersed with hard, bare ground, such as claypans, dry paddocks, playing fields, lawns and cattle camps, or open areas that have been recently burnt (Menkhorst et al., 2017).		
<i>Chlidonias leucopterus</i>	White-winged Black Tern	MI	MI	X			6.44	In their non-breeding grounds of Australia the species mostly inhabits fresh, brackish or saline, and coastal or subcoastal wetlands. White-winged Black Terns have been observed in tidal wetlands, such as harbours, bays, estuaries and lagoons, and their associated tidal sandflats and mudflats. Terrestrial wetlands, including swamps, lakes, billabongs, rivers, floodplains, reservoirs, saltworks, sewage ponds and outfalls are also inhabited. Wetlands may be open, or with floating emergent or marginal vegetation. They rarely occur on inland wetlands in Australia (Department of Climate Change, Energy, the Environment and Water, 2023).	Potential (foraging only) This species was recorded greater than 5 km from the study area and potential foraging habitat is present within the study area. Species breeds in northern Eurasia in the Australian winter.	Unlikely No suitable habitat recorded within study area.
<i>Erythrorichis radiatus</i>	Red Goshawk	VU	VU			X	>50	The Red Goshawk occurs in coastal and sub-coastal areas in wooded and forested lands of tropical and warm-temperate Australia (Marchant & Higgins 1993). Riverine forests are also used frequently. The Red Goshawk nests in large trees, frequently the tallest and most massive in a tall stand, and nest trees are invariably within one km of permanent water (Department of Climate Change, Energy, the Environment and Water, 2023).	Unlikely This taxon was recorded greater than 50 km of the study area and its preferred habitat is unlikely to occur within the study area.	Unlikely No suitable habitat recorded within study area.
<i>Falco hypoleucos</i>	Grey Falcon	VU		X		X	4.12	The Grey Falcon is a wide roaming species and prefers habitats such as lightly treed inland plains, gibber deserts, sand ridges, pastoral lands, timbered watercourses. They are seldom in the driest deserts (Pizzey & Knight, 2012).	Potential (foraging only) This taxon was recorded less than 5 km from the study area and its foraging habitat has potential to occur within the study area. The Sandplain habitat lacks trees for use as nest sites for this species.	Unlikely No suitable habitat recorded within study area.
<i>Falco peregrinus</i>	Peregrine Falcon	OS		X			10.6	The Peregrine Falcon occupies most environments with suitable nest sites: cliff faces are preferred, including man-made ones, and it commonly uses stick nests built by other species (Menkhorst et al., 2017).	Potential (foraging only) This taxon was recorded greater than 5 km of the study area and its preferred habitat may occur within the study area. Species nest in abandoned stick nest of other birds of prey and on cliff faces, generally at the top of a tall tree. Suitable nesting sites are not present within the study area.	Unlikely No suitable habitat recorded within study area.
<i>Fregata ariel</i>	Lesser Frigatebird	MI	MI	X		X	3.94	The Lesser Frigatebird occurs in tropical and sub-tropical seas, coasts and islands, breeding on islands and cays off tropical northern Australia (Pizzey & Knight 2012). They can be seen near the shore prior to cyclonic events but will often disperse again once the event abates.	Unlikely Though recorded within 5 km, this species is predominantly aerial over water.	Unlikely No suitable habitat recorded within study area.
<i>Gallinago stenura</i>	Pin-tailed Snipe	MI	MI	X			7.47	During non-breeding period, the Pin-tailed Snipe occurs most often in or at the edges of shallow freshwater swamps, ponds and lakes with emergent, sparse to dense cover of grass/sedge or other vegetation. The species is also found in drier, more open wetlands such as claypans in more arid parts of species' range. It is also commonly seen at sewage ponds; not normally in saline or inter-tidal wetlands (Higgins & Davies 1996)	Potential (foraging only) This species was recorded less than 5 km from the study area and potential foraging habitat is present within the study area. Species breeds in northern Russia in the Australian winter.	Unlikely No suitable habitat recorded within study area.
<i>Gelochelidon nilotica</i>	Gull-billed Tern	MI	MI	X			3.85	The Gull-billed Tern is strictly coastal, at high tide it often roosts with other terns or shorebirds (Menkhorst et al., 2017).	Potential (foraging only) This species was recorded less than 5 km from the study area and potential foraging habitat is present within the study area. Species breeds outside of Australia in the Australian winter	Unlikely No suitable habitat recorded within study area.

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<i>Glareola maldivarum</i>	Oriental Pratincole	MI	MI	X			5.19	In non-breeding grounds in Australia, the Oriental Pratincole usually inhabits open plains, floodplains or short grassland (including farmland or airstrips), often with extensive bare areas (Morcombe, 2003). They often occur near terrestrial wetlands, such as billabongs, lakes or creeks, and artificial wetlands such as reservoirs, saltworks and sewage farms, especially around the margins. The species also occurs along the coast, inhabiting beaches, mudflats and islands, or around coastal lagoons (Department of Climate Change, Energy, the Environment and Water, 2023).	Potential (foraging only) This species was recorded greater than 5 km from the study area and potential foraging habitat is present within the study area. Species breeds in Asia in the Australian winter	Unlikely No suitable habitat recorded within study area.
<i>Hirundo rustica</i>	Barn Swallow	MI	MI	X		X	3.53	In Australia, the Barn Swallow is recorded in open country in coastal lowlands, often near water, towns and cities, and often congregates in areas with high densities of flying insects (Menkhorst et al., 2017). Barn Swallows are often sighted perched on overhead wires and also in or over freshwater wetlands, paperbark Melaleuca woodland, mesophyll shrub thickets and tussock grassland (Schodde & Mason 1999; Department of Climate Change, Energy, the Environment and Water, 2023).	Potential (foraging only) This species was recorded less than 5 km from the study area and potential foraging habitat is present within the study area. Species breeds across the northern Hemisphere in the Australian winter	Unlikely No suitable habitat recorded within study area.
<i>Hydroprogne caspia</i>	Caspian Tern	MI	MI	X			3.88	The Caspian Tern inhabits sheltered coastal embayments (harbours, lagoons, inlets, bays, estuaries and river deltas), particularly those with sandy or muddy margins. They also occur on near-coastal or inland terrestrial wetlands that are either fresh or saline, especially lakes (including ephemeral lakes), waterholes, reservoirs, rivers and creeks and use artificial wetlands, including reservoirs, sewage ponds and saltworks. In offshore areas the species prefers sheltered situations, particularly near islands, and is rarely seen beyond reefs (Higgins & Davis 1996; Department of Climate Change, Energy, the Environment and Water, 2023).	Potential (foraging only) This species was recorded less than 5 km from the study area and potential foraging habitat is present within the study area. Species is a colonial nest breeder. Given the small size and location of the study area, breeding would not be supported.	Unlikely No suitable habitat recorded within study area.
<i>Limicola falcinellus</i>	Broad-billed Sandpiper	MI	MI	X		X	3.96	The Broad-billed Sandpiper occurs in sheltered parts of the coast, favouring estuarine mudflats but occasionally occur on saltmarshes, shallow freshwater lagoons, saltworks and sewage farms, and in areas with large soft intertidal mudflats which may have shell or sandbanks nearby. They occasionally occur on reefs or rocky platforms and have been recorded in creeks, swamps and lakes near the coast, particularly those with bare mudflats or sand exposed by receding water. They often favour mud among, or fringed by, mangroves, particularly on the seaward side and sometimes occur in estuaries edged by saltmarsh. They are rarely recorded inland (Department of Climate Change, Energy, the Environment and Water, 2023).	Potential (foraging only) This species was recorded less than 5 km from the study area and potential foraging habitat is present within the study area. Species breeds across in Europe and Siberia in the Australian winter	Unlikely No suitable habitat recorded within study area.
<i>Limnodromus semipalmatus</i>	Asian Dowitcher	MI	MI	X		X	8.70	The Asian Dowitcher occurs in sheltered coastal environments, such as embayments, coastal lagoons, estuaries and tidal creeks. They are known to frequent shallow water and exposed mudflats or sandflats. In Australia, the Port Hedland Saltworks provides crucial habitat for the species. The species is commonly found in the round ponds and channels of saltworks and sewage farms. It is also found at near-coastal swamps and lakes (Higgins & Davies 1996).	Potential (foraging only) This species was recorded greater than 5 km from the study area and potential foraging habitat is present within the study area. Species breeds across in Siberia and Manchuria in the Australian winter	Unlikely No suitable habitat recorded within study area.
<i>Limosa lapponica</i>	Bar-tailed Godwit	MI	MI	X		X	3.77	The Bar-tailed Godwit inhabits tidal mudflats, estuaries, sewage ponds, shallow river margins, brackish or saline inland lakes, flooded pastures and airfields (Menkhorst et al., 2017; Pizzey & Knight 2012). This species does not breed in Australia (Department of Climate Change, Energy, the Environment and Water, 2023).	Potential (foraging only) This species was recorded less than 5 km from the study area and potential foraging habitat is present within the study area. Species breeds across in the Arctic in the Australian winter	Unlikely No suitable habitat recorded within study area.
<i>Limosa lapponica menzbieri</i>	Bar-tailed Godwit (Northern Siberian)	CR	CR	X		X	4.23	The Northern Siberian Bar-tailed Godwit habitat includes tidal mudflats, estuaries, sewage ponds, shallow river margins,	Potential (foraging only)	Unlikely

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								brackish or saline inland lakes, flooded pastures and airfields (Menkhorst et al., 2017; Pizzey & Knight 2012). This species does not breed in Australia (BirdLife International, 2023).	This species was recorded less than 5 km from the study area and potential foraging habitat is present within the study area. Species breeds across in the Arctic in the Australian winter	No suitable habitat recorded within study area.
<i>Limosa limosa</i>	Black-tailed Godwit	MI	MI	X		X	3.96	In Australia the Black-tailed Godwit has a primarily coastal habitat environment. The species is commonly found in sheltered bays, estuaries and lagoons with large intertidal mudflats or sandflats, or spits and banks of mud, sand or shell-grit; occasionally recorded on rocky coasts or coral islets. It has also been recorded in shallow and sparsely vegetated, near-coastal, wetlands; such as saltmarsh, saltflats, river pools, swamps, lagoons (including in sewage farms and saltworks) and floodplains. There are a few inland records, around shallow, freshwater and saline lakes, swamps, dams and bore-overflows (Department of Climate Change, Energy, the Environment and Water, 2023; Higgins & Davies 1996; Menkhorst et al., 2017).	Potential (foraging only) This species was recorded less than 5 km from the study area and potential foraging habitat is present within the study area. Species breeds across in the Europe and Asia in the Australian winter	Unlikely No suitable habitat recorded within study area.
<i>Motacilla cinerea</i>	Grey Wagtail	MI	MI				>50	The Grey Wagtail can be found in Australia near running water and in disused quarries. It is also found in sandy, rocky streams in escarpments and rainforests, sewage ponds, ploughed fields and airfields (Morcombe, 2003; Pizzey & Knight 2012).	Unlikely This taxon was recorded greater than 50 km of the study area and its preferred habitat is unlikely to occur within the study area.	Unlikely No suitable habitat recorded within study area.
<i>Motacilla flava</i>	Yellow Wagtail	MI	MI				10.6	The Yellow Wagtail occupies a range of damp or wet habitats with low vegetation, from damp meadows, marshes, waterside pastures, sewage farms and bogs to damp steppe and grassy tundra. This taxon has an extremely large range, extending from Europe, east through Siberia to west Asia and northwestern China; and south through the Arabian Peninsula to Egypt (BirdLife International, 2023).	Potential This taxon was recorded greater than 5 km of the study area and its preferred habitat may occur within the study area.	Unlikely No suitable habitat recorded within study area.
<i>Numenius madagascariensis</i>	Eastern Curlew	CR	CR & MI	X			3.76	The Eastern Curlew can be found at estuaries, tidal mudflats, sandpits, saltmarshes, mangroves and bare grasslands near water (Menkhorst et al., 2017). They are occasionally found on fresh or brackish lakes (Pizzey & Knight 2012).	Potential (foraging only) This species was recorded less than 5 km from the study area and potential foraging habitat is present within the study area. Species breeds across in the northern hemisphere in the Australian winter	Unlikely No suitable habitat recorded within study area.
<i>Numenius minutus</i>	Little Curlew	MI	MI	X			3.47	The Little Curlew is most often found feeding in short, dry grassland and sedgeland, including dry floodplains and blacksoil plains, which have scattered, shallow freshwater pools or areas seasonally inundated. They can also be found in open woodlands with a grassy or burnt understorey, dry saltmarshes, coastal swamps, mudflats or sandflats of estuaries or beaches on sheltered coasts, mown lawns, gardens, recreational areas, ovals, racecourses and verges of roads and airstrips are also used (Department of Climate Change, Energy, the Environment and Water, 2023; Higgins & Davies 1996)	Potential (foraging only) This species was recorded less than 5 km from the study area and potential foraging habitat is present within the study area. Species breeds across in Siberia in the Australian winter	Unlikely No suitable habitat recorded within study area.
<i>Numenius phaeopus</i>	Whimbrel	MI	MI	X			3.75	The Whimbrel is often found on the intertidal mudflats of sheltered coasts, harbours, lagoons, estuaries and river deltas, often those with mangroves, but also open, unvegetated mudflats. It is occasionally found on sandy or rocky beaches, on coral or rocky islets, or on intertidal reefs and platforms. It has been infrequently recorded using saline or brackish lakes near coastal areas. It also used saltflats with saltmarsh, or saline grasslands with standing water left after high spring-tides, and in similar habitats in sewage farms and saltfields (Department of Climate Change, Energy, the Environment and Water, 2023; Higgins & Davies 1996; Menkhorst et al., 2017).	Potential (foraging only) This species was recorded less than 5 km from the study area and potential foraging habitat is present within the study area. Species breeds across in Siberia in the Australian winter	Unlikely No suitable habitat recorded within study area.

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<i>Oceanites oceanicus</i>	Wilson's Storm-petrel	MI	MI	X			10.23	The Wilson's Storm-Petrel spends much of its life at sea and, in the non-breeding season, the birds are mainly seen in tropical and subtropical waters. In pack-ice, the species rests on ice-floes and flies in the shelter of floes during gales. Outside of the breeding season, the Wilson's Storm-Petrel roosts on the sea surface. On migration in the Indian and Pacific Oceans, the species remains far out to sea; although first-year birds may follow the coasts of southern continents. Birds often congregate and feed at ocean fronts, and are occasionally sighted inshore. Breeding does not occur in Australia (Department of Climate Change, Energy, the Environment and Water, 2023).	Unlikely This taxon was recorded greater than 5 km of the study area and its preferred habitat is unlikely to occur within the study area	Unlikely No suitable habitat recorded within study area.
<i>Onychoprion anaethetus</i>	Bridled Tern	MI	MI	X			17.46	The Bridled Tern occupies tropical and subtropical seas, breeding on islands, including vegetated coral cays, rocky continental islands and rock stacks. Bridled Terns are only rarely found in inshore continental waters and along mainland coastlines, though the species is reported to breed on the mainland of far southern Western Australia (Department of Climate Change, Energy, the Environment and Water, 2023; Morcombe, 2003).	Unlikely This taxon was recorded greater than 5 km of the study area and its preferred habitat is unlikely to occur within the study area	Unlikely No suitable habitat recorded within study area.
<i>Pandion haliaetus</i>	Osprey	MI	MI	X		X	3.75	The Osprey occurs in littoral and coastal habitats and terrestrial wetlands of tropical and temperate Australia as well as offshore islands. It is most often found in coastal areas but occasionally travels inland along major rivers, particularly in northern Australia (Morcombe, 2003). This taxon requires extensive areas of open fresh, brackish or saline water for foraging and frequent a variety of wetland habitats including inshore waters, reefs, bays, coastal cliffs, beaches, estuaries, mangrove swamps, broad rivers, reservoirs and large lakes and waterholes (Department of Climate Change, Energy, the Environment and Water, 2023).	Potential (foraging only) This taxon was recorded greater than 5 km of the study area and its preferred habitat may occur within the study area. Species nest in abandoned stick nest of other birds of prey and on cliff faces, generally at the top of a tall tree. Suitable nesting sites are not present within the study area.	Unlikely No suitable habitat recorded within study area.
<i>Phalaropus lobatus</i>	Red-necked Phalarope	MI	MI	X		X	19.46	The Red-necked Phalarope is a regular at the Port Hedland Saltworks and Rottnest Island, Western Australia. During non-breeding period the Red-necked Phalarope occurs mainly at sea. In Australia it is recorded at both inland and coastal lakes/swamps, including highly saline waters and artificial wetlands notably saltfields (Higgins & Davies 1996).	Potential (foraging only) This taxon was recorded greater than 5 km of the study area and its preferred habitat may occur within the study area. Species breeds across in the northern hemisphere in the Australian winter	Unlikely No suitable habitat recorded within study area.
<i>Plegadis falcinellus</i>	Glossy Ibis	MI	MI	X			7.48	The Glossy Ibis inhabits fresh water marshes at the edges of lakes and rivers, lagoons, flood-plains, wet meadows, swamps, reservoirs, sewage ponds, rice-fields and cultivated areas under irrigation. The species is occasionally found in coastal locations such as estuaries, deltas, saltmarshes and coastal lagoons (Department of Climate Change, Energy, the Environment and Water, 2023; Menkhorst et al., 2017).	Potential (foraging only) This taxon was recorded greater than 5 km of the study area and its preferred habitat may occur within the study area. Species breeds on the east coast of Australia.	Unlikely No suitable habitat recorded within study area.
<i>Pluvialis fulva</i>	Pacific Golden Plover	MI	MI	X		X	4.01	The Pacific Golden Plover does not breed in Australia but in its non-breeding grounds usually inhabits coastal habitats such as beaches, mudflats and sandflats (sometimes in vegetation such as mangroves, low saltmarsh such as Sarcocornia, or beds of seagrass) in sheltered areas including harbours, estuaries and lagoons, and also in evaporation ponds in saltworks. The species is also sometimes recorded on islands, sand and coral cays and exposed reefs and rocks. They are less often recorded in terrestrial habitats, usually wetlands such as fresh, brackish or saline lakes, billabongs, pools, swamps and wet claypans, especially those with muddy margins and often with submerged vegetation or short emergent grass (Department of Climate Change, Energy, the Environment and Water, 2023; Menkhorst et al., 2017).	Potential (foraging only) This species was recorded less than 5 km from the study area and potential foraging habitat is present within the study area. Species breeds in Alaska in the Australian winter	Unlikely No suitable habitat recorded within study area.

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<i>Pluvialis squatarola</i>	Grey Plover	MI	MI	X		X	3.96	In non-breeding grounds in Australia, the Grey Plover occurs almost entirely in coastal areas, where it usually inhabits sheltered embayments, estuaries and lagoons with mudflats and sandflats, and occasionally on rocky coasts with wave-cut platforms or reef-flats, or on reefs within muddy lagoons. They also occur around terrestrial wetlands such as near-coastal lakes and swamps, or salt-lakes. The species is also very occasionally recorded further inland, where they occur around wetlands or salt-lakes (Department of Climate Change, Energy, the Environment and Water, 2023; Menkhorst et al., 2017).	Potential (foraging only) This species was recorded less than 5 km from the study area and potential foraging habitat is present within the study area. Species breeds in the northern hemisphere in the Australian winter	Unlikely No suitable habitat recorded within study area.
<i>Rostratula australis</i>	Australian Painted Snipe	EN	EN				>50	The Australian Painted Snipe is usually found in shallow inland wetlands, either freshwater or brackish, that are either permanently or temporarily filled. Suitable wetlands usually support a mosaic of low, patchy vegetation, as well as lignum and canegrass (BirdLife International, 2023). The Australian Painted Snipe can use modified habitats, such as low-lying woodlands converted to grazing pasture, sewage farms, dams, bores and irrigation schemes (Marchant & Higgins, 1993), however they do not necessarily breed in such habitats.	Unlikely This taxon was recorded greater than 50 km of the study area and its preferred habitat is unlikely to occur within the study area.	Unlikely No suitable habitat recorded within study area.
<i>Sterna hirundo</i>	Common Tern	MI	MI	X			6.41	The Common Tern is a non-breeding migrant to Australia. Common Terns are marine, pelagic and coastal. In Australia, they are recorded in all marine zones, but are commonly observed in near-coastal waters, both on ocean beaches, platforms and headlands and in sheltered waters, such as bays, harbours and estuaries with muddy, sandy or rocky shores. Occasionally they are recorded in coastal and near-coastal wetlands, either saline or freshwater, including lagoons, rivers, lakes, swamps and saltworks. Sometimes they occur in mangroves or saltmarsh and, in bad weather, in coastal sand-dunes or coastal embayments (Department of Climate Change, Energy, the Environment and Water, 2023).	Potential (foraging only) This species was recorded greater than 5 km from the study area and potential foraging habitat is present within the study area. Species breeds in the northern hemisphere in the Australian winter	Unlikely No suitable habitat recorded within study area.
<i>Sternula albifrons</i>	Little Tern	MI	MI	X		X	6.41	The Little Tern forages over sheltered waters and roosts on exposed sandbars, spits or beaches. Nests in colonies in open sandy setting, sloe to tideline (Menkhorst et al., 2017).	Potential (foraging only) This species was recorded greater than 5 km from the study area and potential foraging habitat is present within the study area. Species breeds in the northern hemisphere and the east coast of Australia in the Australian winter	Unlikely No suitable habitat recorded within study area.
<i>Sternula nereis nereis</i>	Fairy Tern	VU	VU	X			13.68	The Australian Fairy Tern inhabit coastal waters, bays, inlets, saline or brackish lakes, saltfields, and sewage ponds near the coast (Morcombe, 2003; Pizzey & Knight 2012).	Potential (foraging only) This species was recorded greater than 5 km from the study area and potential foraging habitat is present within the study area. Species is a colonial nest breeder. Given the disturbed nature of the study area, breeding would not be supported.	Unlikely No suitable habitat recorded within study area.
<i>Sula leucogaster</i>	Brown Booby	MI	MI	X			15.26	The Brown Booby uses both marine and terrestrial habitat. The species occurs in, but is not restricted to, tropical waters of all major oceans, often staying close to breeding islands. The species is known to approach mainland coastlines more than other boobies and has been recorded in coastal waters, harbours and estuaries and near offshore islands but seldom flying over land (Marchant & Higgins, 1993).	Unlikely This taxon was recorded greater than 5 km of the study area and seldom flies over land.	Unlikely No suitable habitat recorded within study area.
<i>Thalasseus bergii</i>	Crested Tern	MI	MI	X			3.67	The Crested Tern inhabits coastal areas, including ocean beaches, offshore islands, extending out to the deeper pelagic waters. It is also found inshore on estuaries, bays, harbours, coastal lagoons, and inland on major rivers, occasionally on saline lakes, salt ponds near coast (Morcombe, 2003).	Potential (foraging only) This species was recorded less than 5 km from the study area and potential foraging habitat is present within the study area.	Unlikely No suitable habitat recorded within study area.

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									Species is a colonial nest breeder. Given the disturbed nature of the study area, breeding would not be supported.	
<i>Tringa brevipes</i>	Grey-tailed Tattler	MI & P4	MI	X		X	3.74	The Grey-tailed Tattler is often found on sheltered coasts with reefs and rock platforms or with intertidal mudflats (Menkhorst et al., 2017). It can also be found at intertidal rocky, coral or stony reefs as well as platforms and islets that are exposed at low tide. It has been found around shores of rock, shingle, gravel or shells and also on intertidal mudflats in embayments, estuaries and coastal lagoons, especially fringed with mangrove (Department of Climate Change, Energy, the Environment and Water, 2023).	Potential (foraging only) This species was recorded less than 5 km from the study area and potential foraging habitat is present within the study area. Species breeds in Siberia in the Australian winter	Unlikely No suitable habitat recorded within study area.
<i>Tringa glareola</i>	Wood Sandpiper	MI	MI	X		X	3.52	The Wood Sandpiper prefers well-vegetated, shallow, freshwater wetlands, such as swamps, billabongs, lakes, pools and waterholes (Menkhorst et al., 2017). They also frequent inundated grasslands, short herbage or wooded floodplains, where floodwaters are temporary or receding, and irrigated crops (Pizzey & Knight 2012).	Unlikely Though recorded less than 5 km from the study area this species prefers freshwater wetlands, and so is unlikely to be present within the study area..	Unlikely No suitable habitat recorded within study area.
<i>Tringa nebularia</i>	Common Greenshank	MI	MI	X		X	3.69	The Common Greenshank is found in a wide variety of inland wetlands and sheltered coastal habitats of varying salinity (Morcombe, 2003). Preferred habitats include embayments, harbours, river estuaries, deltas and lagoons and are recorded less often in round tidal pools, rock-flats and rock platforms. The species uses both permanent and ephemeral terrestrial wetlands, including swamps, lakes, dams, rivers, creeks, billabongs, waterholes and inundated floodplains, claypans and saltflats. It will also use artificial wetlands, including sewage farms and saltworks dams, inundated rice crops and bores (Department of Climate Change, Energy, the Environment and Water, 2023).	Potential (foraging only) This species was recorded less than 5 km from the study area and potential foraging habitat is present within the study area. Species breeds in the northern hemisphere in the Australian winter	Unlikely No suitable habitat recorded within study area.
<i>Tringa stagnatilis</i>	Marsh Sandpiper	MI	MI	X		X	3.97	The Marsh Sandpiper lives in permanent or ephemeral wetlands of varying salinity, including swamps, lagoons, billabongs, salt pans, saltmarshes, estuaries, pools on inundated floodplains, and intertidal mudflats, sewage farms and saltworks (Menkhorst et al., 2017). They are recorded less often at reservoirs, waterholes, soaks, bore-drain swamps and flooded inland lakes (Department of Climate Change, Energy, the Environment and Water, 2023).	Potential (foraging only) This species was recorded less than 5 km from the study area and potential foraging habitat is present within the study area. Species breeds in the northern hemisphere in the Australian winter.	Unlikely No suitable habitat recorded within study area.
<i>Xenus cinereus</i>	Terek Sandpiper	MI	MI	X		X	3.76	The Terek Sandpiper has been recorded foraging on open, soft wet intertidal mudflats or in sheltered estuaries, embayments, harbours or lagoons. The species has also been recorded on islets, mudbanks, sandbanks and spits, and near mangroves and occasionally in samphire. They are less often seen on sandy or shingle beaches, or on rock or coral reefs or platforms, Terek Sandpipers are occasionally sighted around drying sewage ponds and salt pans if surrounded by mudflats. The birds are often observed roosting amongst mangroves but have also been observed roosting in dead trees and tangled driftwood (Department of Climate Change, Energy, the Environment and Water, 2023; Menkhorst et al., 2017).	Potential (foraging only) This species was recorded less than 5 km from the study area and potential foraging habitat is present within the study area. Species breeds in the northern hemisphere in the Australian winter	Unlikely No suitable habitat recorded within study area.
Mammals										
<i>Dasyercus blythi</i>	Brush-tailed Mulgara	P4		X			6.30	The Brush-tailed Mulgara predominantly occurs in hummock grasslands (<i>Triodia</i> spp.) and shrublands on sandy soils (Menkhorst and Knight, 2021).	Potential This taxon was recorded greater than 5 km of the study area and its preferred habitat may occur within the study area.	Unlikely No suitable habitat recorded within study area.
<i>Dasyercus cristicauda</i>	Crest-tailed Mulgara, Minyiminnyi	P4		X			9.89	The Crest-tailed Mulgara occurs on sand dunes with a sparse cover of Sandhill Canegrass (<i>Zygochloa paradoxa</i>) or areas around salt lakes with Nitre Bush (<i>Nitraria billardieri</i>). The	Unlikely	Unlikely No suitable habitat recorded within study area.

Scientific Name	Common Name	Conservation Code		Source			Distance to Nearest Record (km)	Habitat and discussion	Likelihood of Occurrence	Post survey Likelihood of occurrence
		State	Federal	DBCA	RTIO	PMST				
								Crest-tailed Mulgara maintains complicated, extensive burrows with multiple entrances. The burrows are predominantly on the eastern side of dunes. The Crest-tailed Mulgara is an opportunistic or non-specialist carnivore, feeding on a range of invertebrates, lizards and small mammals. It forages along the dune crests and flanks, with forays down onto swales. They have also been observed eating plant food (fruits and seeds). Home range and movement data are limited, but the species is probably sedentary (Department of Climate Change, Energy, the Environment and Water, 2023).	The current distribution for this species is within the Sandy Desert in central Australia and its distribution does not extend to the study area. The taxonomy of this species and its distribution was confused with the Brush-tailed Mulgara, hence the previous records in the vicinity.	
<i>Dasyurus hallucatus</i>	Northern Quoll	EN	EN	X		X	7.77	The Northern Quoll occupies a diverse range of habitats including rocky areas, eucalypt forest, woodlands, rainforests, sandy lowlands and beaches, shrubland, grasslands and desert (Threatened Species Scientific Committee, 2005). Habitat generally encompasses some form of rocky area for denning purposes with surrounding vegetated habitats used for foraging and dispersal. Dens are made in rock crevices, tree holes or occasionally termite mounds (Threatened Species Scientific Committee, 2005). In the Pilbara region, the species appears to prefer the Rocklea, Macroy and Robe land systems (Biota Environmental Services, 2008). The Northern Quoll has also been recorded in other land systems which comprise sandstone and dolomite hills and ridges, shrublands, sandy plains, clay plans and tussock grasslands and coastal fringes including dunes islands and beaches (Biota Environmental Services, 2008).	Potential (dispersal only) This taxon was recorded greater than 5 km of the study area. However, the Chenopod Shrubland habitat does not support any rockpiles or large trees that would support den sites for the species.	Unlikely No suitable habitat recorded within study area.
<i>Lagostrophus fasciatus fasciatus</i>	Banded Hare Wallaby	VU	VU	X			3.98	extant wild subpopulations are found only on Bernier (approximately 44 km ²) and Dorre Islands(53 km ²). The last specimen of banded hare-wallabies collected from the mainland in WA occurred in 1906. Banded hare-wallabies have been observed to shelter under dense thickets of vegetation, in particular, <i>Acacia ligulata</i> , <i>Acacia coriacea</i> , <i>Acacia tetragonophylla</i> , <i>Scaevola spinescens</i> and <i>Alectryon oleifolius</i> on the sandplain, and <i>Diplolaena grandiflora</i> and western rosewood on the dunes or dune/travertine interface. They are often seen in heath and patches of <i>Triodia</i> (spinifex) habitat within the heath (DCCEW, 2023).	Unlikely Species is no longer known from the mainland. The record is historical.	Unlikely No suitable habitat recorded within study area.
<i>Leggadina lakedownensis</i>	Northern short-tailed mouse	P4		X			14.82	The Northern Short-tailed Mouse occurs on a variety of habitats most of which are seasonally inundated sandy-clay soils. In the Pilbara this species occurs in spinifex and tussock grasslands and are strongly correlated with cracking clay communities or heavily clay laden soils supporting tussock grasslands (Van Dyck and Strahan, 2008). Additionally, this taxon is associated with spinifex and tussock grasslands, samphire, sedgeland, Acacia shrublands, tropical Eucalyptus and Melaleuca woodlands and stony ranges (Van Dyck, Gynther and Baker, 2013).	Potential This taxon was recorded greater than 5 km of the study area. The Sandplain habitat lacks the heavy/ cracking clay based substrates that this species prefers.	Unlikely No suitable habitat recorded within study area.
<i>Macroderma gigas</i>	Ghost Bat	VU	VU	X		X	17.59	The Ghost Bat is patchily distributed across the northern half of Australia. This species requires undisturbed roost sites which are often complex and contain multiple entrances; it has been known to utilise old abandoned mine shafts (Menkhorst & Knight, 2021).	Potential (foraging only) This taxon was recorded greater than 5 km of the study area. However, suitable roosting habitat (deep caves) do not occur within the study area.	Unlikely No suitable habitat recorded within study area.
<i>Macrotis lagotis</i>	Bilby, Dalgyte, Ninu	VU	VU	X		X	11.38	The Bilby inhabits a variety of habitats including acacia shrublands and hummock grassland, stony downs country of cracking clays, desert sandplains and dune fields sometimes containing laterite (Menkhorst & Knight, 2021; Van Dyck & Strahan, 2008).	Unlikely This taxon was recorded greater than 5 km of the study area. Preferred habitat is not present within the study area.	Unlikely No suitable habitat recorded within study area.

Scientific Name	Common Name	Conservation Code		Source			Distance to Nearest Record (km)	Habitat and discussion	Likelihood of Occurrence	Post survey Likelihood of occurrence
		State	Federal	DBCA	RTIO	PMST				
<i>Ozimops cobourgianus</i>	North-western Free-tailed Bat	P1		X			1.19	The North-western Free-tailed Bat occupies tree hollows of the mangrove species <i>Avicennia marina</i> , but no other types of roost site are known (Menkhorst and Knight, 2021).	Potential (foraging only) This taxon was recorded less than 5 km of the study area. However, suitable roosting habitat does not occur within the study area.	Unlikely No suitable habitat recorded within study area.
<i>Pseudomys chapmani</i>	Western Pebble-mound Mouse, Ngadji	P4		X			15.89	The Western Pebble-mound Mouse is found on stony hillsides with hummock grassland (Menkhorst & Knight, 2021). This species favors scree and stony plains habitat where it constructs conspicuous, extensive mounds of small stones. The pebble-mounds are found on gently sloping hills where the ground is stony with continuous small pebbles.	Unlikely One record within 20km of the study area and its preferred habitat is unlikely to occur within the study area	Unlikely No suitable habitat recorded within study area.
<i>Rhinonictoris aurantia (Pilbara form)</i>	Pilbara Leaf-nosed Bat	VU	VU	X		X	15.73	The Pilbara Leaf-nosed Bat (PLNB) inhabits abandoned mine shafts, granite rock pile terrain of the east Pilbara and caves formed in gorges that dissect sedimentary geology in the west Pilbara (Van Dyck & Strahan, 2008). During the dry season, the PLNB roosts in deep, warm, humid caves or mines and forages nearby, while during the wet season, it is more widespread and may not require caves for roosting (Menkhorst & Knight, 2021). The PLNB forages low in open habitats, including grasslands and along roads.	Potential (foraging only) This taxon was recorded greater than 5 km of the study area. However, suitable roosting habitat (deep caves) does not occur within the study area.	Unlikely No suitable habitat recorded within study area.
Reptiles										
<i>Ctenotus angusticeps</i>	Airlie Island Ctenotus, Northwestern Coastal Ctenotus	P3		X			3.66	The Airlie Island Ctenotus is found in coastal mudflats vegetated with samphire (Wilson and Swan, 2017).	Potential This taxon was recorded greater than 5 km of the study area and its preferred habitat may occur within the study area.	Unlikely No suitable habitat recorded within study area.
<i>Liasis olivaceus barroni</i>	Pilbara Olive Python					X	>50km	The Pilbara Olive Python is found in arid to subhumid areas of northern Australia, it is often encountered along watercourses, especially those associated with rocky areas (Wilson & Swan, 2017). The preferred habitat of this taxon includes escarpments, gorges and water holes in the ranges of the Pilbara region (Wilson & Swan, 2017). Individuals are usually recorded in close proximity to water and rock outcrops that attract suitably sized prey species (Pearson, 1993). Males have been recorded travelling up to 4 km to locate mates during the breeding season (Tutt, Mitchell, Brace, & Pearson, 2002).	Unlikely This taxon was recorded greater than 50 km from the study area and its preferred habitat is not present within the study area.	Unlikely No suitable habitat recorded within study area.

A = ALA (2024) Occurrence Search, B = DBCA (2024a) Dandjoo Biodiversity Platform. C = DBCA (2024e) Threatened and Priority Fauna Database, D = DCCEEW (2024b) Protected Matters Search Tool. Nearest records are only calculated for species with records available in the DBCA (2024e) Threatened and Priority Fauna Database, as ALA (2024), Dandjoo (2024) and PMST (2024) do not provide specific locations of significant fauna.

Appendix 4: Vegetation structural classification and condition rating scale

Vegetation structural classification[^]

Stratum	70 - 100%	30 – 70%	10 – 30%	2 – 10%	< 2%
Trees over 30 m	Tall closed forest	Tall open forest	Tall woodland	Tall open woodland	Scattered tall trees
Trees 10-30 m	Closed forest	Open forest	Woodland	Open woodland	Scattered trees
Trees under 10 m	Low closed forest	Low open forest	Low woodland	Low open woodland	Scattered low trees
Shrubs over 2 m	Tall closed scrub	Tall open scrub	Tall shrubland	Tall open shrubland	Scattered tall shrubs
Shrubs 1-2 m	Closed heath	Open heath	Shrubland	Open shrubland	Scattered shrubs
Shrubs under 1 m	Low closed heath	Low open heath	Low shrubland	Low open shrubland	Scattered low shrubs
Hummock grasses	Closed hummock grassland	Hummock grassland	Open hummock grassland	Very open hummock grassland	Scattered hummock grasses
Grasses, Sedges, Herbs	Closed tussock grassland / sedgeland / herbland	Tussock grassland / sedgeland / herbland	Open tussock grassland / sedgeland / herbland	Very open tussock grassland / sedgeland / herbland	Scattered tussock grasses / sedges / herbs

[^]Based on Muir (1977) and Aplin (1979) modification of the vegetation classification system of Specht (1970).

Vegetation condition scale rating for use on Eremaean surveys[^]

Rating	Description
Excellent	Pristine or nearly so; no obvious signs of 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 activities 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 activities 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.

[^]Based on Trudgen (1988) as presented in EPA Technical Guidance EPA (2016c)

Appendix 5: Field sites within the Study Area

Site	Type	Easting (mE)	Northing (mN)
DSL_01	Relevé	674206	7747574
DSL_02	Relevé	676895	7747785
DSL_03	Relevé	678023	7747866

Appendix 6: Flora species recorded within the Study Area

Family	Species	Status
Aizoaceae	<i>Trianthena turgidifolium</i>	
Amaranthaceae	<i>Aerva javanica</i>	*
	<i>Gomphrena sordida</i>	
Apocynaceae	<i>Calotropis procera</i>	*
Asteraceae	<i>Streptoglossa bubakii</i>	
Chenopodiaceae	<i>Atriplex eremitis</i>	P1
	<i>Neobassia astrocarpa</i>	
	<i>Salsola australis</i>	
	<i>Tecticornia halocnemoides</i> subsp. <i>tenuis</i>	
	<i>Tecticornia indica</i> subsp. <i>leiostachya</i>	
Cleomaceae	<i>Arivela viscosa</i>	
Convolvulaceae	<i>Ipomoea muelleri</i>	
	<i>Operculina aequisepala</i>	
Euphorbiaceae	<i>Euphorbia</i> sp.	
Fabaceae	<i>Acacia ampliceps</i>	
	<i>Acacia bivenosa</i>	
	<i>Acacia stellaticeps</i>	
	<i>Indigofera trita</i>	
	<i>Indigofera oblongifolia</i>	*
	<i>Senna notabilis</i>	
	<i>Sesbania cannabina</i>	
	<i>Swainsona pterostylis</i>	
	<i>Swainsona</i> sp.	
	<i>Tephrosia rosea</i>	
Frankeniaceae	<i>Frankenia ambita</i>	
Malvaceae	<i>Corchorus incanus</i> subsp. <i>incanus</i>	
	<i>Sida rohlenae</i> subsp. <i>rohlenae</i>	
	<i>Triumfetta</i> sp.	
Poaceae	<i>Aristida latifolia</i>	
	<i>Cenchrus ciliaris</i>	*
	<i>Eragrostis</i> sp.	
	<i>Panicum decompositum</i>	
	<i>Triodia epactia</i>	
Scrophulariaceae	<i>Myoporum monatum</i>	
Solanaceae	<i>Solanum cleistogamum</i>	

Family	Species	Status
	<i>Solanum diversiflorum</i>	

Note: * indicates an introduced species

Appendix 7: Framework for significance ranking of flora and fauna species1. *Environment Protection and Biodiversity Conservation Act 1999* (Commonwealth)

The *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) affords protection to species, populations and ecological communities threatened at a national level or to species listed as migratory under various international agreements (for example, CAMBE, JAMBA, RoKAMBA, and Bonn Convention). Threatened flora and fauna may be listed under section 178 of the EPBC Act in any one of the following categories:

- Extinct
- Extinct in the wild
- Critically Endangered (CE)
- Endangered (EN)
- Vulnerable (VU)
- Conservation dependent

Under the EPBC Act, a proposal which is likely to have a significant impact on threatened species, populations, or ecological communities or migratory species must be referred to the Commonwealth Minister for the Environment. A significant impact is determined through application of Significant Impact Criteria (Department of the Environment 2013).

2. *Environmental Protection Act 1986* (WA)

The *Environmental Protection Act 1986* (EP Act) is the primary legislative Act dealing with the protection of the environment in Western Australia. The EP Act allows the Environmental Protection Authority (EPA) to prevent, control, and abate pollution and environmental harm, for the conservation, preservation, protection, enhancement and management of the environment and for matters incidental to or connected with the foregoing.

Part IV of the EP Act is administered by the EPA and makes provisions for the EPA to undertake environmental impact assessment of significant proposals, strategic proposals and land use planning schemes.

Part V of the EP Act is administered by the Department of Water and Environmental Regulation (DWER). Clearing of native vegetation in Western Australia requires a permit from the DWER, unless exemptions apply. Applications for clearing permits are assessed by the Department and decisions are made to grant or refuse the application in accordance with the Act. When making a decision the assessment considers clearing against the ten clearing principles as specified in Schedule 5 of the EP Act:

- a) Native vegetation should not be cleared if it comprises a high level of biodiversity.
- b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a significance habitat for fauna indigenous to Western Australia.
- c) Native vegetation should not be cleared if it includes, or is necessary, for the continued existence of rare flora.
- d) Native vegetation should not be cleared if it comprises the whole or part of native vegetation in an area that has been extensively cleared.

- e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.
- f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.
- g) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.
- h) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation. GHD | 613523400 Water Corporation
- i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.
- j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence of flooding.

Exemptions for clearing include clearing that is a requirement of a written law or authorised under certain statutory processes (listed in Schedule 6 of the EP Act) and exemptions for prescribed low impact day-to-day activities (prescribed in the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004*); these exemptions do not apply in environmentally sensitive areas (ESAs).

3. *Biodiversity Conservation Act 2016 (WA)*

On 1 January 2019, the *Biodiversity Conservation Act 2016 (BC Act)* and *Biodiversity Conservation Regulations 2018* replaced both the *Wildlife Conservation Act 1950* and the *Sandalwood Act 1929* and their associated regulations. The BC Act is administered by the Department of Biodiversity Conservation and Attractions (DBCA).

The BC Act provides for the conservation and protection of biodiversity and biodiversity components, as well as the promotion of the ecologically sustainable use of biodiversity components in Western Australia.

All native flora in Western Australia were protected under the state *Wildlife Conservation Act 1950*, and now under the BC Act. Under the BC Act, native flora can be specially protected, listed as Threatened (Critically Endangered, Endangered or Vulnerable) or Extinct in Western Australia. Threatened flora listings are reviewed annually and are published in the *Wildlife Conservation (Rare Flora) Notice 2018*. Flora species that may be rare or threatened in Western Australia, but have not been adequately surveyed for, are included in a supplementary Priority Flora list.

These conservation codes are attached below.

4. *Biosecurity and Agriculture Management Act 2007 (WA)*

The *Biosecurity and Agriculture Management Act 2007 (BAM Act)* and associated regulations are administered by the Department of Agriculture and Food Western Australia (DAFWA) and replace the repealed *Agriculture and Related Resources Protection Act 1976*. The main purposes of the BAM Act and its regulations are to:

- Prevent new animal and plant pests (vermin and weeds) and diseases from entering WA;

- Manage the impact and spread of those pests already present in the state;
- Safely manage the use of agricultural and veterinary chemicals; and
- Increased control over the sale of agricultural products that contain violative chemical residues

The Western Australian Organism List (WAOL) is a database providing the status of organisms which have been categorised under the BAM Act 2007. A Declared Pest is a prohibited organism or an organism for which a declaration under Section 22(2) of the Act is in force. Declared Pests may be assigned a control category as follows: C1 (exclusion), C2 (eradication) and C3 (management). The category may apply to part or all of Western Australia, and all landholders are obliged to comply with the specific category of control. Categories of control are defined below.

DAFWA Categories for Declared Pests under the BAM Act 2007

Control class code	Description
C1 (Exclusion)	Organisms which should be excluded from part or all of Western Australia.
C2 (Eradication)	Organisms which should be eradicated from part or all of Western Australia.
C3 (Management)	Organisms that 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 as having a harmful impact under certain circumstances, where their subsequent control requirements are determined by a Plan or other legislative arrangements under the Act.

Categories used under the EPBC Act and BC Act.

Status	Code	Description
Extinct	EX	There is no reasonable doubt that the last member of the species has died.
Critically Endangered	CR	Taxa that are facing an extremely high risk of extinction in the wild in the immediate future.
Endangered	EN	Taxa that are facing a very high risk of extinction in the wild in the near future
Vulnerable	VU	Taxa that are facing a high risk of extinction in the wild in the medium-term

Definitions and criteria for Priority species allocated by the DBCA.

Status	Code	Description
Priority 1	P1	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	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	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	(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.

Appendix 8: Conservation listed flora recorded during survey

Taxon	WA Listing	Easting	Northing	Number of Individuals
<i>Atriplex eremitis</i>	P1	676896	7747787	1
<i>Atriplex eremitis</i>	P1	678024	7747868	1
<i>Atriplex eremitis</i>	P1	677981	7747887	1
<i>Atriplex eremitis</i>	P1	677983	7747878	2
<i>Atriplex eremitis</i>	P1	678001	7747865	1
<i>Atriplex eremitis</i>	P1	677796	7747841	2
<i>Atriplex eremitis</i>	P1	677503	7747817	1
<i>Atriplex eremitis</i>	P1	677339	7747805	1
<i>Atriplex eremitis</i>	P1	677339	7747805	1
<i>Atriplex eremitis</i>	P1	677333	7747805	1
<i>Atriplex eremitis</i>	P1	676339	7747729	1
<i>Atriplex eremitis</i>	P1	676279	7747724	1
<i>Atriplex eremitis</i>	P1	676926	7747772	1
<i>Atriplex eremitis</i>	P1	676959	7747821	1
<i>Atriplex eremitis</i>	P1	676982	7747822	1
<i>Atriplex eremitis</i>	P1	676981	7747822	1
<i>Atriplex eremitis</i>	P1	676980	7747822	1
<i>Atriplex eremitis</i>	P1	676978	7747823	1
<i>Atriplex eremitis</i>	P1	676977	7747823	1
<i>Atriplex eremitis</i>	P1	677508	7747819	1
<i>Atriplex eremitis</i>	P1	677514	7747818	1
<i>Atriplex eremitis</i>	P1	677517	7747819	1
<i>Atriplex eremitis</i>	P1	677324	7747802	4

<i>Atriplex eremitis</i>	P1	677243	7747791	3
<i>Atriplex eremitis</i>	P1	677164	7747791	1
<i>Atriplex eremitis</i>	P1	676281	7747734	1
<i>Atriplex eremitis</i>	P1	676783	7747764	1
<i>Atriplex eremitis</i>	P1	676791	7747763	1
<i>Atriplex eremitis</i>	P1	676922	7747774	1
<i>Atriplex eremitis</i>	P1	676925	7747774	1
<i>Atriplex eremitis</i>	P1	676926	7747774	2
<i>Atriplex eremitis</i>	P1	676959	7747819	1
<i>Atriplex eremitis</i>	P1	676962	7747819	1
<i>Atriplex eremitis</i>	P1	676987	7747822	1
<i>Atriplex eremitis</i>	P1	677055	7747824	1
<i>Atriplex eremitis</i>	P1	676916	7747818	1
<i>Atriplex eremitis</i>	P1	676913	7747824	1
<i>Atriplex eremitis</i>	P1	676915	7747826	1
<i>Atriplex eremitis</i>	P1	676907	7747832	3
<i>Atriplex eremitis</i>	P1	676925	7747850	1
<i>Atriplex eremitis</i>	P1	676926	7747847	1
<i>Atriplex eremitis</i>	P1	676926	7747846	1
<i>Atriplex eremitis</i>	P1	676926	7747844	2
<i>Atriplex eremitis</i>	P1	676927	7747843	1
<i>Atriplex eremitis</i>	P1	676929	7747839	1
<i>Atriplex eremitis</i>	P1	676906	7747835	1
<i>Atriplex eremitis</i>	P1	676747	7747808	1

<i>Atriplex eremitis</i>	P1	676723	7747806	1
<i>Atriplex eremitis</i>	P1	676977	7747822	1
<i>Atriplex eremitis</i>	P1	676913	7747825	1
<i>Atriplex eremitis</i>	P1	676907	7747833	1
<i>Atriplex eremitis</i>	P1	676906	7747832	1
<i>Atriplex eremitis</i>	P1	676880	7747815	1
<i>Atriplex eremitis</i>	P1	676719	7747802	1
<i>Atriplex eremitis</i>	P1	676718	7747802	1
<i>Atriplex eremitis</i>	P1	677143	7747834	1
<i>Atriplex eremitis</i>	P1	677187	7747837	1
<i>Atriplex eremitis</i>	P1	677183	7747840	1
<i>Atriplex eremitis</i>	P1	677177	7747842	1
<i>Atriplex eremitis</i>	P1	677141	7747838	5
<i>Atriplex eremitis</i>	P1	677139	7747838	1
<i>Atriplex eremitis</i>	P1	677135	7747837	1
<i>Atriplex eremitis</i>	P1	676978	7747821	2
<i>Atriplex eremitis</i>	P1	676975	7747821	1
<i>Atriplex eremitis</i>	P1	676881	7747821	1

Appendix 9: Introduced (weed) species recorded during survey

Species	Easting (mE)	Northing (mN)	Number of Individuals
* <i>Aerva javanica</i>	676896	7747787	1
* <i>Calotropis procera</i>	678024	7747868	1
* <i>Cenchrus ciliaris</i>	674253	7747624	1
* <i>Cenchrus ciliaris</i>	676896	7747787	1
* <i>Cenchrus ciliaris</i>	678024	7747868	1
* <i>Indigofera oblongifolia</i>	676896	7747787	1
* <i>Indigofera oblongifolia</i>	678024	7747868	1
* <i>Indigofera oblongifolia</i>	678024	7747868	1
* <i>Indigofera oblongifolia</i>	678011	7747867	12
* <i>Indigofera oblongifolia</i>	677853	7747888	1
* <i>Indigofera oblongifolia</i>	677854	7747891	2
* <i>Indigofera oblongifolia</i>	677851	7747886	3
* <i>Indigofera oblongifolia</i>	677859	7747888	1
* <i>Indigofera oblongifolia</i>	677861	7747885	3
* <i>Indigofera oblongifolia</i>	678031	7747856	3
* <i>Indigofera oblongifolia</i>	678020	7747855	5
* <i>Indigofera oblongifolia</i>	677845	7747888	1
* <i>Indigofera oblongifolia</i>	677828	7747885	2
* <i>Indigofera oblongifolia</i>	677837	7747885	3
* <i>Indigofera oblongifolia</i>	677863	7747886	1
* <i>Indigofera oblongifolia</i>	677863	7747860	4
* <i>Indigofera oblongifolia</i>	677841	7747838	1
* <i>Indigofera oblongifolia</i>	677848	7747840	4
* <i>Indigofera oblongifolia</i>	677857	7747840	2
* <i>Indigofera oblongifolia</i>	678020	7747855	5
* <i>Indigofera oblongifolia</i>	678014	7747854	2
* <i>Indigofera oblongifolia</i>	677840	7747885	1
* <i>Indigofera oblongifolia</i>	677853	7747892	1
* <i>Indigofera oblongifolia</i>	677860	7747839	1
* <i>Indigofera oblongifolia</i>	677319	7747804	1
* <i>Indigofera oblongifolia</i>	677275	7747799	1
* <i>Indigofera oblongifolia</i>	677241	7747794	1
* <i>Indigofera oblongifolia</i>	674228	7747625	1
* <i>Indigofera oblongifolia</i>	674238	7747622	1

Species	Easting (mE)	Northing (mN)	Number of Individuals
<i>*Indigofera oblongifolia</i>	677488	7747815	1
<i>*Indigofera oblongifolia</i>	674229	7747619	1
<i>*Indigofera oblongifolia</i>	674238	7747615	1
<i>*Indigofera oblongifolia</i>	674238	7747615	1
<i>*Indigofera oblongifolia</i>	674243	7747619	7
<i>*Indigofera oblongifolia</i>	674071	7747547	1
<i>*Indigofera oblongifolia</i>	674071	7747547	1
<i>*Indigofera oblongifolia</i>	674150	7747552	1
<i>*Indigofera oblongifolia</i>	676938	7747771	2
<i>*Indigofera oblongifolia</i>	676945	7747771	3
<i>*Indigofera oblongifolia</i>	676949	7747772	1
<i>*Indigofera oblongifolia</i>	677038	7747823	1
<i>*Indigofera oblongifolia</i>	676905	7747836	1
<i>*Indigofera oblongifolia</i>	676906	7747838	1
<i>*Indigofera oblongifolia</i>	676906	7747839	1
<i>*Indigofera oblongifolia</i>	676928	7747839	1
<i>*Indigofera oblongifolia</i>	676905	7747839	5
<i>*Indigofera oblongifolia</i>	676886	7747834	1
<i>*Indigofera oblongifolia</i>	676913	7747837	1
<i>*Indigofera oblongifolia</i>	676911	7747838	2
<i>*Indigofera oblongifolia</i>	676910	7747839	1
<i>*Indigofera oblongifolia</i>	676912	7747840	1
<i>*Indigofera oblongifolia</i>	676910	7747841	2
<i>*Indigofera oblongifolia</i>	676912	7747844	1
<i>*Indigofera oblongifolia</i>	676913	7747846	2
<i>*Indigofera oblongifolia</i>	676914	7747846	1
<i>*Indigofera oblongifolia</i>	676915	7747847	1
<i>*Indigofera oblongifolia</i>	676917	7747846	1
<i>*Indigofera oblongifolia</i>	676918	7747846	1
<i>*Indigofera oblongifolia</i>	677153	7747837	1