6. Flora and Vegetation Survey Report

Native Vegetation Clearing Permit – Supporting Report

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

3 December 2024

RTIO-1094821

Dampier Salt Limited

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Document Status

				Approved for issue	
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Executive Summary

Rio Tinto, on behalf of Dampier Salt Limited (the **Proponent**), is proposing to undertake maintenance works of the intakes at the Port Hedland Operations 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 0.71 ha of native vegetation, plus 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, Environmental Factor Guideline – Flora and Vegetation* and *Environmental Factor Guideline- Benthic Communities and Habitats* (EPA, 2016a, 2016b, 2016d). Fauna habitats were confirmed with reference to *Technical Guidance – Terrestrial vertebrate fauna surveys for environmental impact assessment* and *Environmental Factor Guideline – Terrestrial Fauna* (EPA, 2016c, 2020).

One vegetation type was identified across one major landform, embankments, within the study area. The vegetation type was described as *Avicennia marina* subsp. *marina* open to closed forest over *Tecticornia indica* subsp. *leiostachya* sparse samphire shrubs. The vegetation occurring within the study area does not represent any Priority Ecological Communities listed by the Department of Biodiversity Conservation and Attractions or Threatened Ecological Communities listed under either the Biodivserity Conservation Act 2016 or Environment Protection and Biodiversity Conservation Act 1999.

A total of 22 taxa from 21 genera, representing 11 families were recorded during the survey. The number of taxa recorded by the current survey 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 within the existing disturbed area, along the side of a track. Only one individual was recorded. 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: ‘Mangroves; and ‘Intertidal Zone’. 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 60 significant fauna species identified during the desktop study, 40 species are considered to have potential to occur based on the habitat present within the study area.

Forty migratory shorebird species identified in the desktop assessment were considered ‘Likely’ or ‘Potential’ to occur within the study area based on post field observations. Due to the small footprint of the proposed clearing, the previous disturbance to the area proposed to be cleared and the abundance of more suitable habitat in the surrounding area, the migratory shorebirds of the area are not considered to be reliant upon the Survey Area or the habitats it supports. 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), (g), (i) and (j) are not at variance; and
- Principles (f) and (h) may 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 intakes 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 intakes 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 0.71 ha of regrown native vegetation, unvegetated saline creeks and disturbed ground, and is located approximately 30.15 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. Four 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. However, given the majority of the survey area is regularly inundated this was not considered a constraint. Three species were unable to be identified to species level during the November survey, an Eragrostis, an Atriplex and a Swainsona. All three taxa are considered to be annuals or perennials, and are unlikely to represent species of significance based off taxonomic features of the specimens and the likelihood of occurrence table. A targeted flora survey was conducted in April 2024, within the recommended survey timing. Flora specimens that could not be identified in the field were provided to Steven Dillon (Western Australian Herbarium Taxonomist) for identification.
Disturbances	Much of 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 Pilbara region. 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 30.15 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. The Port Hedland airport received 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; *Climate Data Online*, 2024). Therefore, seasonal conditions prior to the survey were considered below average. Given the survey area is regularly inundated, it is considered the conditions were appropriate for survey.

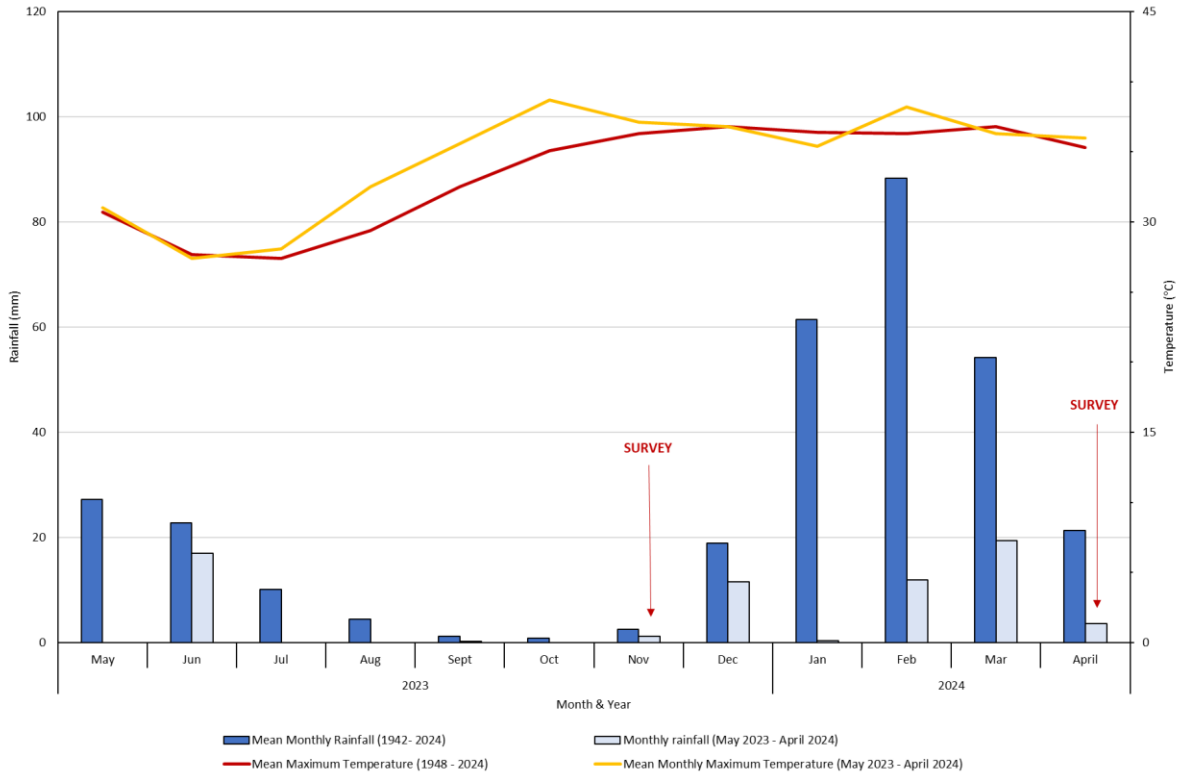

Figure 1-2 Comparison of rainfall and temperatures at Port Hedland, December 2022-November 2023 (BOM, 2024).

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 one major geological units based on 1:250,000 scale map sheet series (DEMIRS, 2023) (Figure 1-3). The geological units is:

- Tf: Tidal flat deposits; silt and mud in intertidal and supratidal flats and lagoons.

The remainder of the study area is mapped as Ocean.

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 Intakes study area is located on coastal mudflats dissected by tidal creeks that are periodically inundated. The study area does not lie within any Department of Water (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 one 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.

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	0.71	100.0	<0.001

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.

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 Beard mapping unit across its range, as well as the extent in the study area.

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	0.99 (<0.001)

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 lies within an ESA representing the Leslie (Port Hedland) Saltfields System, listed within A Directory of Nationally 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 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 1.0 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.

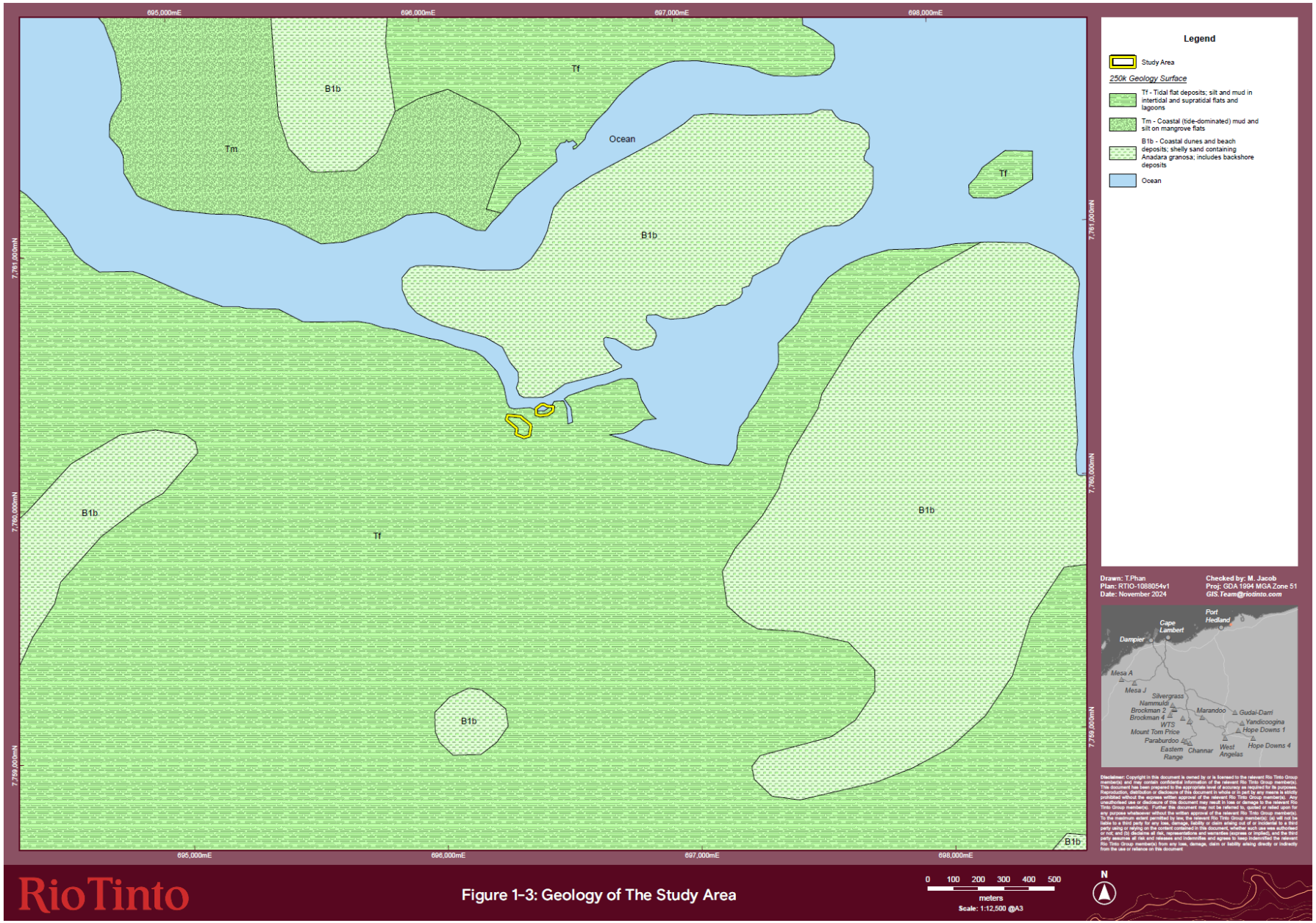

Figure 1-3: Geology of the study area.

Figure 1-4 Land systems of the study area.

Figure 1-5 Beard's / Shepherd's vegetation associations in proximity to the study area.

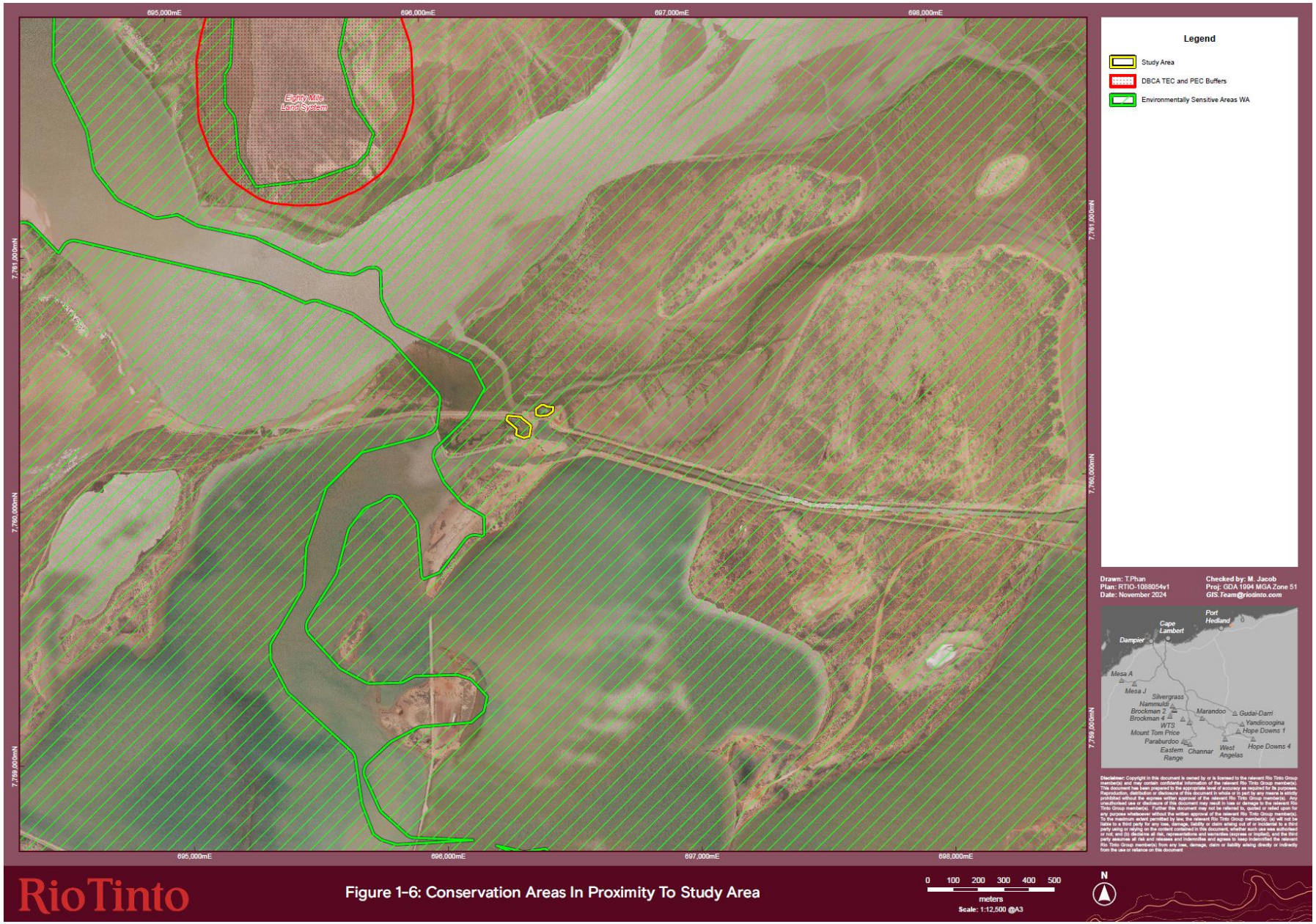

Figure 1-6 Environmentally sensitive areas in proximity to the study area.

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, Environmental Factor Guideline – Flora and Vegetation* and *Environmental Factor Guideline- Benthic Communities and Habitats* (EPA, 2016a, 2016b, 2016d). Fauna habitats were confirmed with reference to *Technical Guidance – Terrestrial Vertebrate Fauna Surveys for Environmental Impact Assessment* and *Environmental Factor Guideline – Terrestrial Fauna* (EPA, 2016c, 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 environmental review linked to the approval of the extension of the salt ponds in the vicinity of the survey area was completed in 1990, Leslie Salt Project Extension of Salt Ponds, Port Hedland.

The following reports were primarily reviewed as part of the literature review:

Four previous flora and vegetation surveys have been utilised as part of the flora and vegetation desktop assessment (Rio Tinto (2024a), Rio Tinto (2024b), ENV Australia (2011b), Biota Environmental Sciences (2006a)). Four previous fauna survey reports were utilised as part of the fauna desktop assessment ((Rio Tinto (2024a), (Rio Tinto, 2024b) (ENV, 2011a), (Biota, 2006b)).

A summary of the findings of these reports are 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.

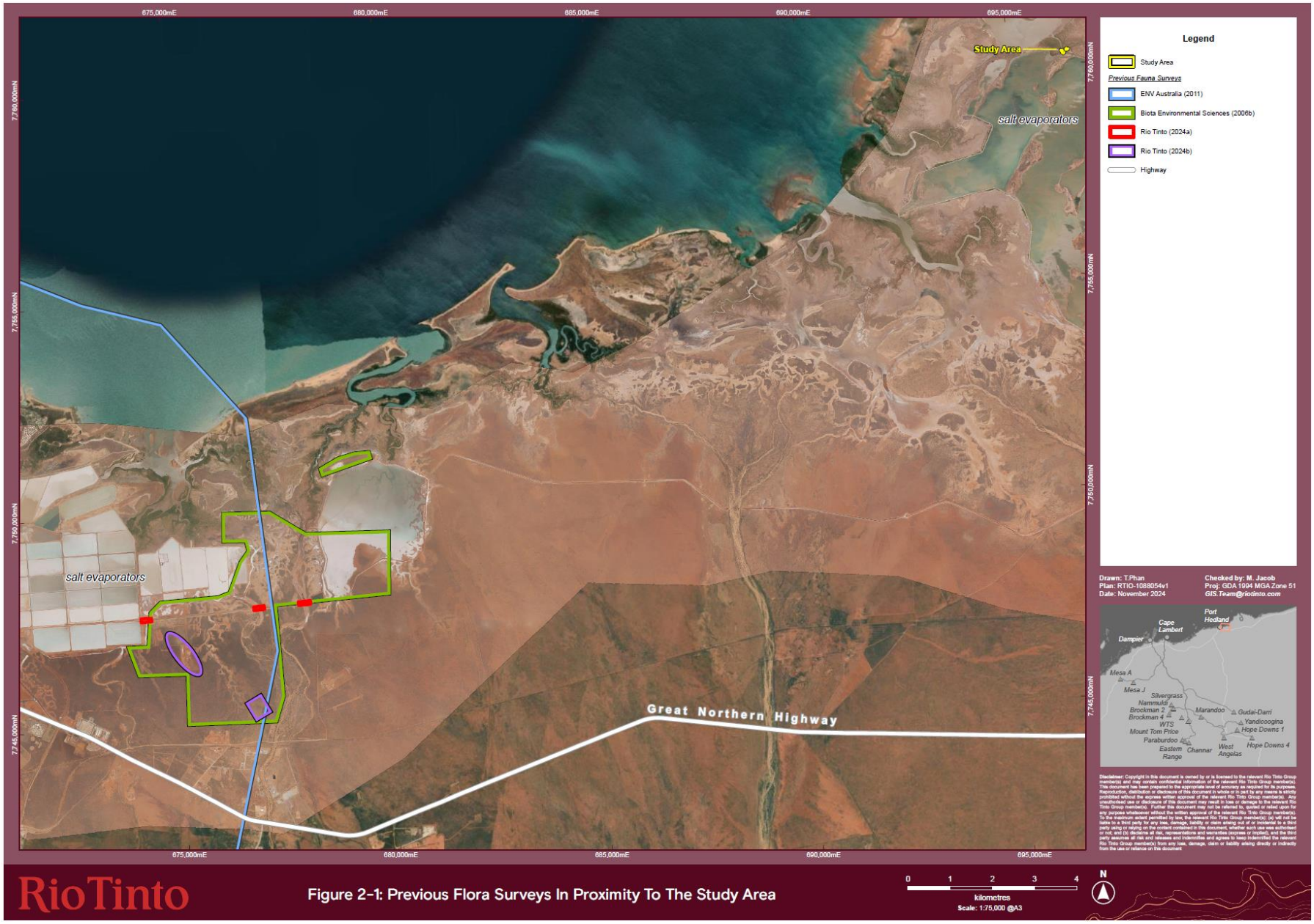

Figure 2-1 Previous flora surveys in proximity to the study area.

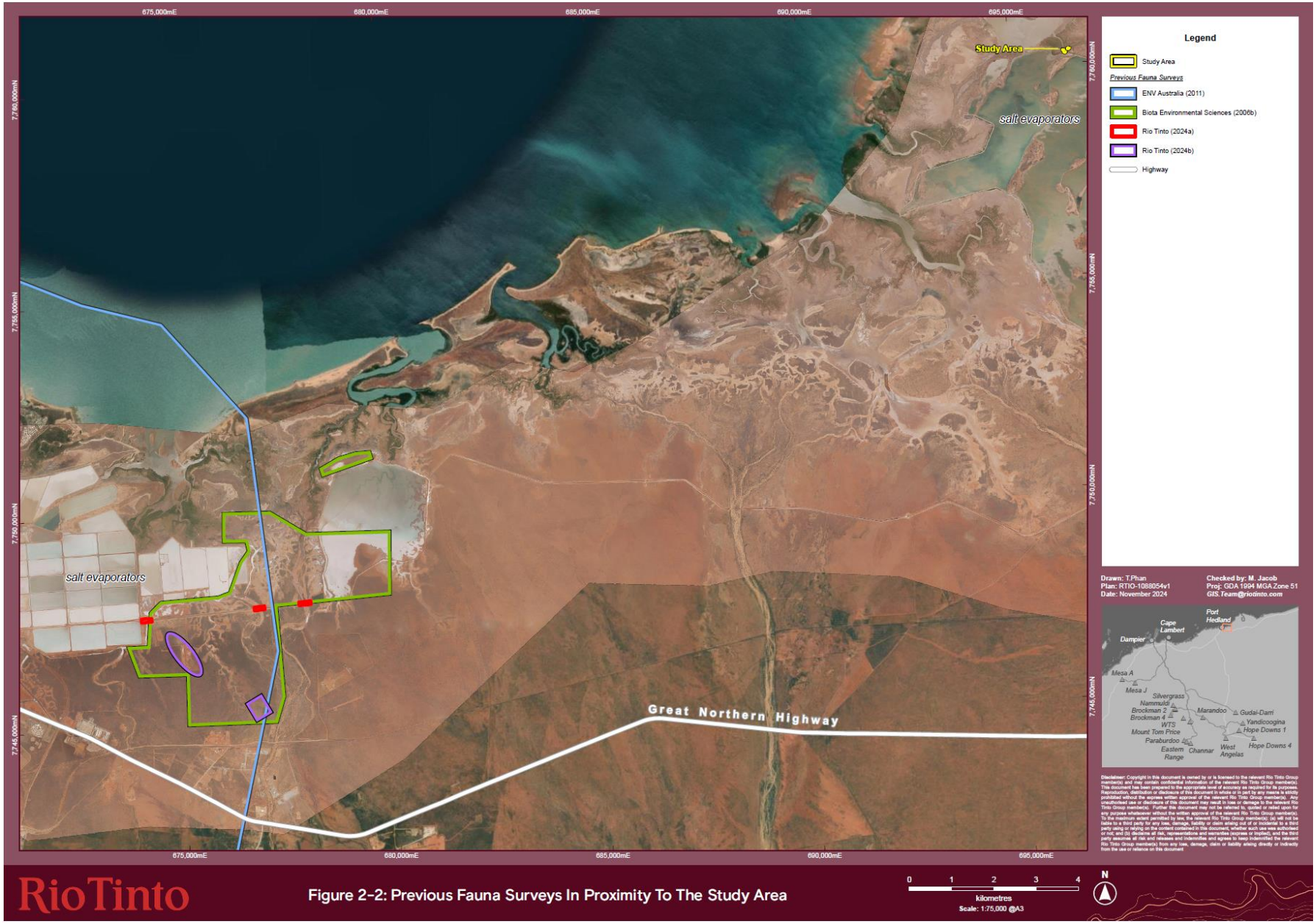

Figure 2-2 Previous fauna surveys conducted in the vicinity of the study area

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
Rio Tinto (2024b) Flora, Vegetation and Fauna Habitat Assessment, Siphons	6.41	36	One priority flora species recorded: *Atriplex eremitis* (P1)	Four introduced species recorded	No TECs or PECs
Rio Tinto (2024a) Flora, Vegetation and Fauna Habitat Assessment for CPS 5333	74.82	32	No significant flora recorded	Three introduced species recorded	No TECs or PECs
ENV Australia (2011) Port Hedland Regional Flora Assessment	80,870	338	Four Priority flora species recorded: *Abutilon* sp. Pritzelianum (Priority 3), *Euploca mutica* (Priority 3), *Tephrosia rosea* var. Port Hedland (Priority 1) and *Gomphrena pusilla* (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 *Abutilon trudgenii* ms. This species has since been reclassified to *Abutilon* 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
Rio Tinto (2024b) Flora, Vegetation and Fauna Habitat Assessment, Siphons	6.41	5	No significant fauna recorded	Two major habitats recorded: • Chenopod shrubland • Tidal creeks/flats	No habitats identified as significant.
Rio Tinto (2024a) Flora, Vegetation and Fauna Habitat Assessment for CPS 5333	74.82	14	No significant fauna recorded	One major habitats recorded: • Sandy plain	No habitats identified as significant.
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 4 Listed species with potential to occur	Five major habitats recorded: • 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 (*Ardeotis australis*) and this species is no longer classified as a Priority species. • Two priority fauna with potential to occur.	Four major habitats: • undulating sandy plain consisting of Acacia low shrubland over Triodia hummock grassland; • floodplain consisting of Acacia 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. Rio Tinto requested a 20km buffer for the WA Herbarium and DBCA database searches, however, was provided with a 100km buffer from DBCA.

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	100 km	03/05/2024
Western Australian Herbarium (1998-)	Western Australian Herbarium Specimen Database	100 km	03/05/2024
DBCA (2024c)	Threatened and Priority Ecological Communities Database	100 km	30/04/2024
DBCA (2024a)	Dandjoo biodiversity data platform	50 km	07/05/2024
DBCA (2024d)	Threatened and Priority Fauna Database	30 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. The desktop assessment for flora was undertaken by Rio Tinto Julijanna Hantzis, with over seven years experience conducting surveys in the Pilbara.

2.3.2 Fauna

A likelihood of occurrence assessment for conservation significant fauna species was performed by assessing the likely presence of suitable habitat in the survey area and reviewing the recent records and distribution of the species.

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 and their quality. Exclusively marine fauna were removed from the likelihood assessment as the study area does not contain marine habitat and is therefore not able to support these species. The desktop assessment for fauna was undertaken by Rio Tinto Zoologist Shane McAdam, with over 15 years of experience conducting surveys in the Pilbara.

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, 2016b, 2016d). Fauna habitats were confirmed with reference to Technical Guidance – Terrestrial vertebrate fauna surveys for environmental impact assessment and Environmental Factor Guideline – Terrestrial Fauna (EPA, 2016c, 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 m^2) were established within study area. A total of two 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 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.

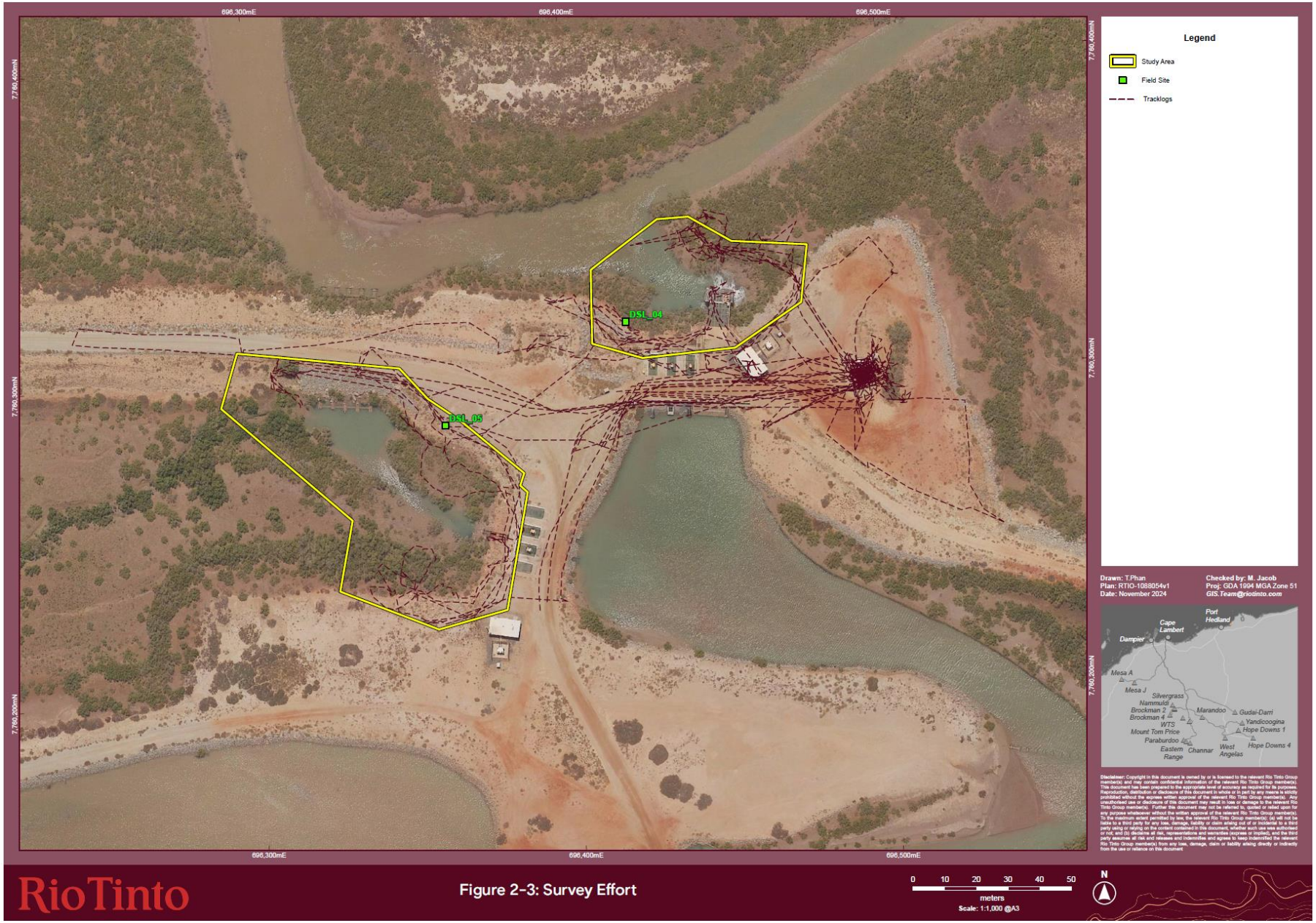

Figure 2-3 Survey effort within the study area

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 (GDA 94 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 site 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. Specimen 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. 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, 2016c, 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 782 flora species from 273 genera and 84 families (**Table 3-1**). Of these, 25 are considered to be of conservation significance, while 69 species are considered alien to Western Australia. The genera with the highest species richness were *Acacia* (41 species), *Tephrosia* (23), *Ptilotus* (19 species) and *Cyperus* (19 species). The family with the highest species richness was Fabaceae (146 species), followed by Poaceae (123 species) and Malvaceae (61 species).

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

Flora group	Number of potential species
Families	84
Genera	273
Species	782
Significant	25
Weeds	69

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 100 km buffer applied to the study area. The desktop assessment returned a total of 26 conservation significant flora species (Figure 3-1, **Appendix 4);** one Threatened species; six Priority 1 species; one Priority 2 species; 16 Priority 3 species; and two Priority 4 flora species. The Protected Matters Search Tool (PMST) database search did not return any listed flora species. No significant flora species have been recorded within the study area previously, one species was considered ‘likely’ to occur, five had the ‘potential’ to occur, and 20 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.

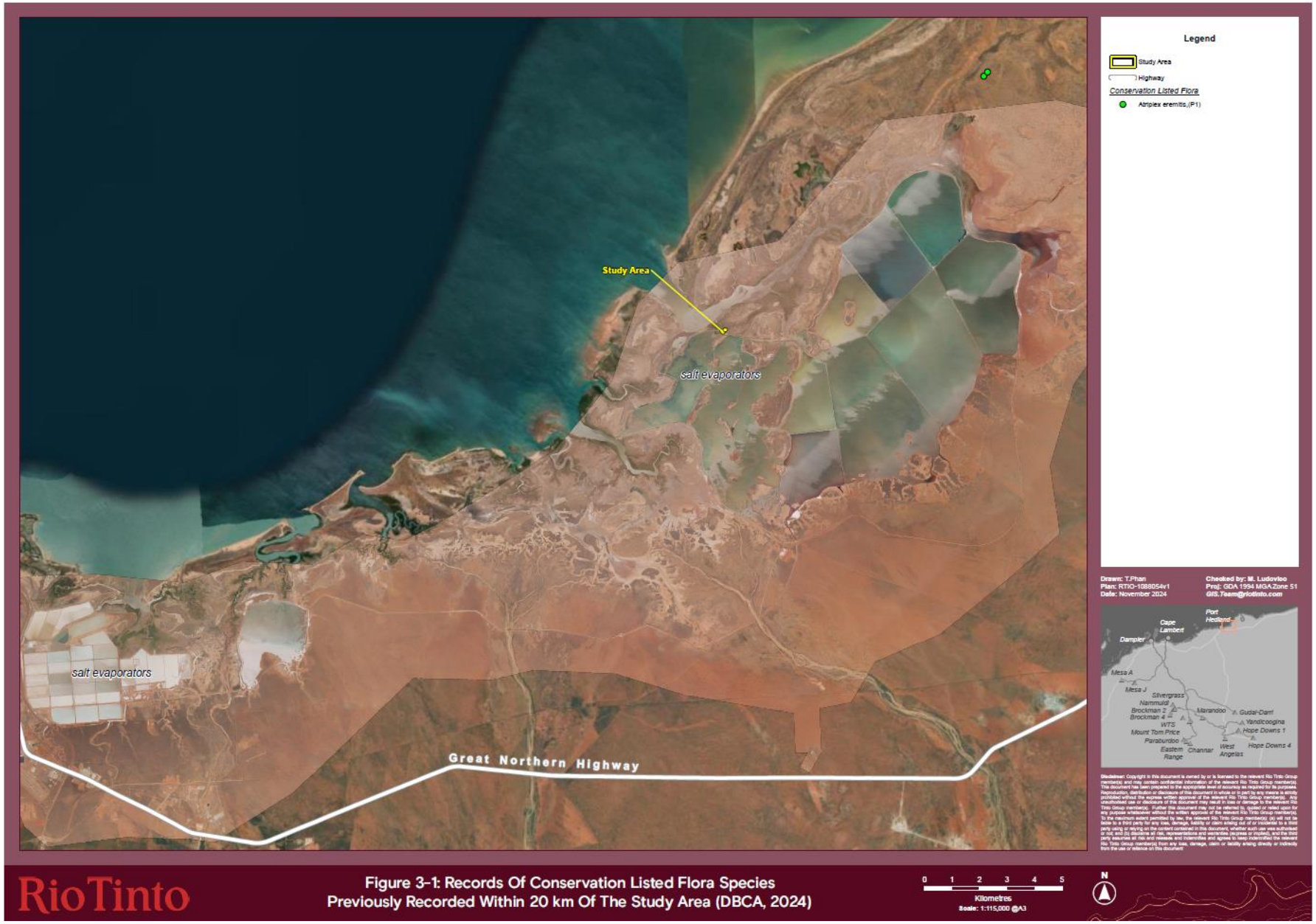

Figure 3-1 Significant flora previously recorded nearby to the study area.

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, a number of marine taxa such as cetaceans, pinnipeds and fish were returned in the database search. Marine taxa have been 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	14
Reptiles	142
Avifauna	310
Mammals	50
Significant	58
Total	516

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 30 km buffer applied to the study area. Sixty conservation listed fauna species were returned by the database search (Figure 3-2**, Appendix 1**), 53 from DBCA Threatened and Priority Fauna Search and an additional eight from the PMST search:

- Four Critically Endangered fauna taxa.
- Seven Endangered fauna taxa.
- Eight Vulnerable fauna taxa.
- Forty-five Migratory fauna taxa.
- One Priority 1 fauna taxon.
- No Priority 2 fauna taxon.
- One Priority 3 fauna taxon.
- Three Priority 4 fauna taxa.

*Note that species can fall under multiple categories listed above

Twenty eight migratory listed species have previously been recorded within the study area with additional 12 migratory species recorded within close proximity to the study area. As a consequence 40 species were considered ‘likely’ to occur within the study area, 1 species was considered to have ‘potential’ to occur within the study area and 19 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 2**) including factors such as if there was suitable habitat present within the study area or if the taxa may not have been present.

The majority of returned species are migratory shorebird species. These species may occasionally forage within the small area of tidal creek that runs through the study area.

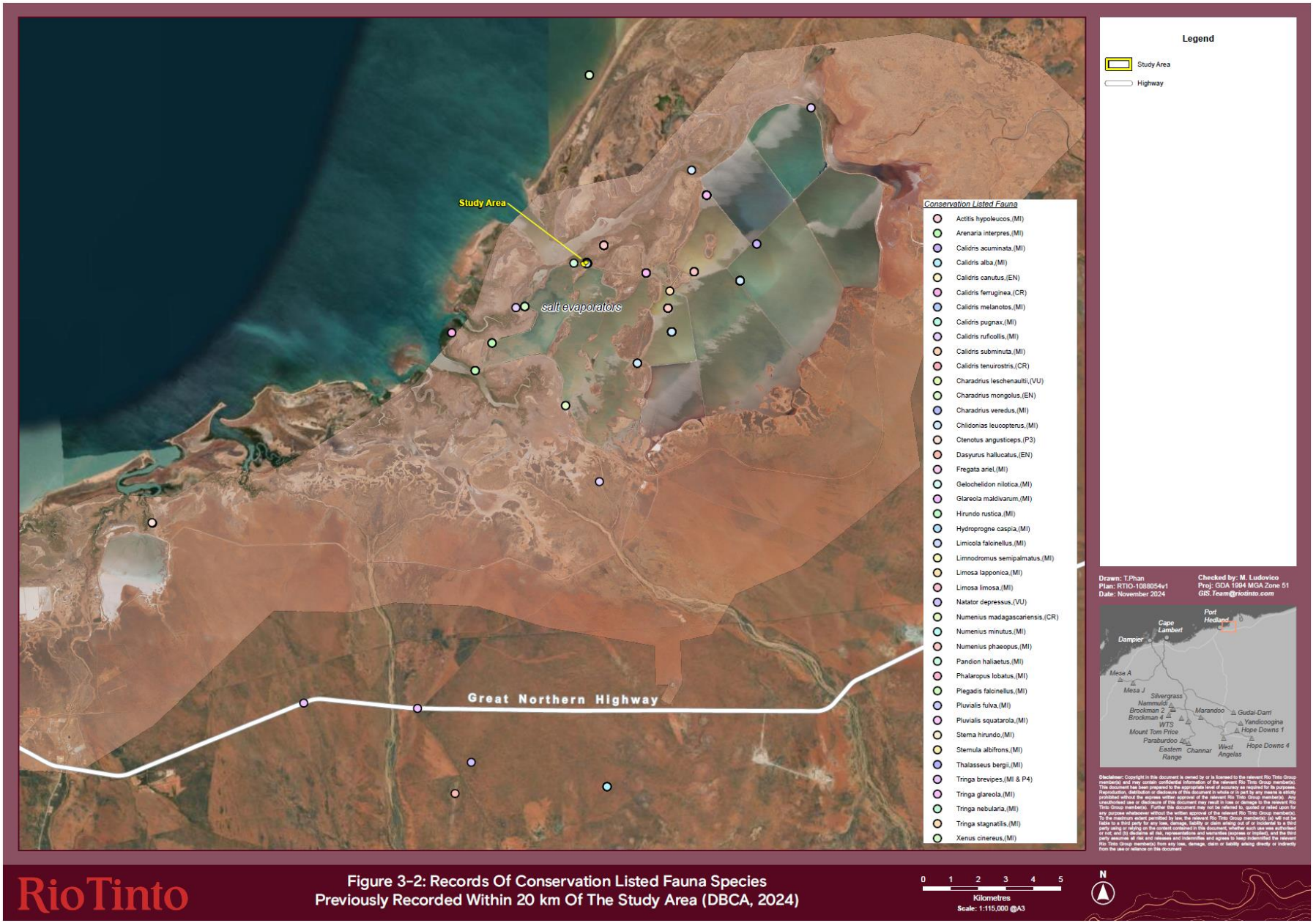

Figure 3-2 Significant fauna previously recorded nearby to the study area.

3.2 Field results

3.2.1 Vegetation of the study area

One vegetation type (AmmTil) was identified across one major landform within the study area. The vegetation is not considered significant based on the criteria of the EPA (2016d). 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			
AmmTil	*Avicennia marina* subsp*. marina* open to closed forest over *Tecticornia indica* subsp*. leiostachya* sparse samphire shrubs	0.38	53.52
Saline Creek	Unvegetated Saline Creek	0.11	15.49
CL	Previously cleared areas (e.g. tracks)	0.22	30.99
	Grand Total	**0.71**	**100.00**

3.2.2 Detailed vegetation description

AmmTil	***Avicennia marina* subsp*. marina* open to closed forest over *Tecticornia indica* subsp*. leiostachya* sparse samphire shrubs**
Landform and soils	This unit was recorded from tidal soil. This unit consists of bare coastal mudflats (unvegetated), samphire flats, sandy islands, coastal dunes and beaches, supporting samphire low shrublands, sparse acacia shrublands and mangrove forests, from the Littoral Land System.
Distribution	This unit was recorded throughout the study area. It was recorded from 0.38 ha (53.52%).
Associated species	Trees: *Avicennia marina* subsp*. marina* Shrubs: N/A Low shrubs: N/A Grasses: *Cenchrus ciliaris* Herbs: *Batis argillicola*, *Sesuvium portulacastrum* subsp. *portulacastrum*, *Suaeda arbusculoides, Swainsona* sp., and *Trianthema turgidifolium*
Conservation listed flora	*Atriplex eremitis* (Priority 1) was recorded as an isolated species (<0.5 % cover) in the previously cleared areas adjacent to this vegetation unit. Targeted surveys resulted in no additional individuals of *Atriplex eremitis* being located within the survey boundary (**Error! Reference source not found.**).
Weeds	**Cenchrus ciliaris*
Condition	Very good – previously cleared, weed species observed.
Sampling sites	Relevés: DLS4 and DSL5
Fire and disturbance	This unit has not been affected by significant recent fire. There was significant disturbance recorded, with existing infrastructure, tracks and a weed species present.
Photo	

3.2.3 Vegetation condition

The majority of vegetation within the study area (0.38ha, 53.52%) was rated as being in Very Good condition (Trudgen, 1988), in the form of mangrove woodlands. Only 0.22 ha (30.99%) of the study area was ranked as Completely Degraded. Scattered individuals of an introduced (weed) flora species was recorded within the study area; however, its 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
Very good	0.38	53.52
Completely Degraded	0.22	30.99
Bare Area - Mudflat	0.11	15.49
Total	**0.71**	**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 unit AmmTil contains mangroves. The mangroves within the study area do not represent mangroves designated “Regionally Significant” as per EPA (2001). However, the mangroves within the study area, although not “regionally significant” are still regarded as important and of high conservation value ((EPA, 2001)).

3.2.5 Native flora

A total of 22 taxa from 21 genera representing 11 families were recorded during the current survey (Table 3-5, Appendix 6).

The most taxon-rich families were: Chenopodiaceae (eight taxa); Aizoaceae (two taxa); Amaranthaceae (two taxa); Fabaceae (two taxa) and Poaceae (two taxa). The most species rich genera was: *Atriplex* (two taxa).

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

Flora group	Number recorded
Families	11
Genera	21
Species	22
Priority species	1
Weeds	1

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 3-3).

Atriplex eremitis (P1) 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*, known to occur in the sub-unit of the Anna Land System, of the Kimberly region, composed of level sand plains and a mosaic of saline plains (Van Vreeswyk 2004)((Cranfield, 2008)). *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.

The *Atriplex eremitis* (P1) was detected on the first survey conducted in November of 2023, however was not detected on the targeted survey trip over the same area in April 2024. One individual of this species was recorded from one location during the study (Figure 3-3), within the previous disturbance area. This species has a total population count of 79 plants, within the Rio Tinto database (Figure 3-3). There are seven specimens of *Atriplex eremitis* within the collections at the WAH (Western Australian Herbarium, 1998-). *Atriplex eremitis* appears to be associated with disturbance and it is possible that the works associated with this proposal may create additional habitat for this species to occur within.

The desktop study, utilising previous survey results, a Florabase database search, an EPBC Protected Matters search, and searches of the Rio Tinto database, identified 26 conservation listed species, including one threatened species and 25 priority species as occurring within a 100 km radius of the study area (Section 3.1.2).

One threatened flora species was identified in the database search as occurring within 100km of the study area. *Quoya zonalis* was recorded over 99km to the south-west of the study area. The preferred habitat of the species is rocky steep hill slopes near cliffs, ironstone, granite and conglomerate. The preferred habitat for *Quoya zonalis* was not present within the study area, the study area was searched for all priority species and it is unlikely that it was overlooked.

None of the remaining 24 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.

3.2.7 Flora of other significance

Batis argillicola was identified within the survey area. *Batis argillicola* is a monoecious shrub that grows on tidal flats behind mangroves. This species is identified as a range extension as the closest previously known record was from 446km to the north west in the Kimberly Region. This species was present growing under the *Avicennia marina* both within the outside the study area. This species is recorded from similar landforms to existing records and it is likely that is had not previously been detected due to limited surveys in proximity to the study area.

3.2.8 Unconfirmed flora

Three taxon recorded in the study area, *Atriplex* sp., *Eragrostis* sp. and *Swainsona* sp. were unable to be described to species level, due to poor collection material and/or lack of diagnostic characteristics. It is considered, the *Eragrostis* sp. and *Swainsona* sp. 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 *Atriplex* sp. could not be described to species level by the sponsored taxonomist however was identified in the field as being morphologically different to the *Atriplex eremitis* that was also collected on the survey by the Botanist who has over seven years' experience conducting botanical surveys in the Pilbara. It is therefore highly unlikely that the *Atriplex* sp. that was unable to be described to species level is a species of conservation significance. 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.

3.2.9 Introduced flora

One introduced (weed) species was recorded from the study area, **Cenchrus ciliaris* (Appendix 9).

Cenchrus ciliaris is a high impact weed with rapid invasiveness as per the Parks and Wildlife Weed Prioritisation process (DBCA, 2024f). This species was not listed as a Declared Pest under the State *Biosecurity and Agriculture Management Act 2007* (BAM Act), under category C3 (Management) (Department of Primary Industries and Regional Development 2017.

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.

Figure 3-3 Vegetation and conservation significant flora of the study area

Figure 3-4 Vegetation condition of the study area.

3.2.10 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 3-6, Figure 3-5).

'Mangroves' was the most widespread fauna habitat across the study area (0.38 ha, 53.52%), whilst 'Intertidal Zone' was the least widespread fauna habitat recorded from the study area (0.11 ha, 15.49%).

Table 3-6: List of habitat types within the study area.

Habitat	Fauna habitat description	Significant microhabitat	Extent (ha) within study area	Proportion (%) within study area
Mangroves	Groves of *Avicennia* spp. found on the mudflats and surrounding tidal creeks. Canopy provides shelter and roosts for birds; Old stands of Mangroves contain tree hollows; Sand for burrowing.	None recorded	0.38	53.52
Intertidal Zone	Varying in water permanency, this habitat type lacks vegetation and associated microhabitats and is often inundated with saline water.	None recorded	0.11	15.49
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	0.22	30.99
Total			0.71	100.00

3.2.11 Fauna habitats of significance

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

The survey area is a very small portion of the Leslie (Port Hedland) Saltfields System (code: WA068) which is considered an Important Wetland in Australia by the Department of Climate Change, Environment and Climate Change (DCCEEW 2024).

The Leslie (Port Hedland) Saltfields System comprises a large saltfield (established 1969), fringing coastal flats, and tidal and mudflats between the saltfields and the Indian Ocean and is approximately 13,000ha in size, including 6,000ha of saltfields and 160ha of mangroves (DCCEEW 2024). The Leslie (Port Hedland) Saltfields System provides habitat for at least 50 species of waterbird including 33 species listed under international conservation agreements.

BirdLife International has also classified the Port Hedland Saltworks as an Important Bird Area (IBA) (BirdLife International 2024), however the footprint of the IBA is smaller than the Important Wetland area and the Survey Area is not within this boundary, however, it is directly adjacent to it.

The study area supports 0.38 ha of mangrove habitat and 0.11 ha of Intertidal Zone habitat which can provide foraging habitat for the migratory shorebirds listed in Appendix 3. In the context of the broader area (Leslie (Port Hedland) Saltfields System and Port Hedland IBA), this represents a very small percentage of these habitats within the area identified as an important wetland (0.2% of the Mangroves and 0.002% of the Intertidal Zone).

Due to the small footprint of the habitats, the previous disturbance to them and the abundance of more suitable habitat elsewhere, the migratory shorebirds of the area are not considered to be reliant upon the study area or the habitats it supports.

3.2.12 Fauna

A total of four fauna species were opportunistically recorded during the survey, which are summarised in Table 3-7.

Table 3-7: Fauna species recorded within the study area.

Group	Species	Common Name	Observation type
Malacostraca	*Uca flammula*	Flame-backed fiddler crab	Direct
Birds	*Ardea ibis*	Cattle Egret	Direct
	Pandion haliaetus	Osprey	Direct
	Gavicalis virescens	Singing Honeyeater	Direct

No evidence of fauna species of conservation significance was recorded during the field survey.

The desktop study, utilising previous survey results and various database searches identified 43 conservation significant fauna species that may occur within the vicinity of the study area. The likelihood of their occurrence is presented in Appendix 3. The initial likelihood of occurrence rating was based on pre-field information, using nearby records, species distributions and potential of suitable habitat (Appendix 2).

The revised likelihood rating was conducted post field work and included a review of the habitats recorded in the study area and their suitability. The analysis following the field survey concluded that 40 species identified in the desktop assessment as having the potential to occur, were considered likely to occur.

This result is expected given that the study area lies within the Leslie (Port Hedland) Saltfields System and is known to provide habitat for at least 50 species of waterbird (DCCEEW 2024), all species considered likely to occur are waterbirds.

As part of the management of the Important Wetland, Rio Tinto with BirdLife Australia undertake an annual bird census of the IBA to give an indication of the species diversity and abundance of the birds, particularly those considered Migratory under the EPBC Act. One of the 30 monitoring locations is associated with the maintenance infrastructure at the Transfer Pump Station (BirdLife Australia 2023), which is within the study area. As such, a total of 40 Migratory shorebirds have been recorded at the study area or considered likely to occur. It should be noted that this number is associated with individuals observed from the location (flying over, foraging/roosting in the broader area) rather than

just occurring in the habitats of the study area because the focus of observation is on the intertidal shoreline habitat within the salt ponds.

As such, it is unlikely that the Proposal will impact the conservation status of these species at either a local or bioregional scale.

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Figure 3-5 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 intakes 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), (g), (i) and (j) are not at variance; and
- Principles (f) and (h) are 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)n 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 AmmTil 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.

Although mangroves are considered significant under Guideline 2 of the *EPA Advice: Protection of Tropical Arid Zone Mangroves Along the Pilbara Coastline* (EPA, 2001), the purpose of the guidelines are to inform impact assessment of significant development proposals, not minor impacts of operational projects such as this one. However, the performance objectives of this guidance have been considered.

The clearing associated with this application was minimised to 0.38 ha by good engineering design. The 0.38 ha are representative of regenerated mangroves, previously cleared during construction activities prior to the enactment of the EP Act. The area is previously disturbed and minor in extent, particularly in the context of the vast representation of mangroves directly adjacent to this proposal. The clearing associated with this proposal is not considered to negatively impact the adjacent undisturbed mangrove communities.

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 22 taxa from 21 genera representing 11 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 (Rio Tinto, 2024a, 2024b).

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 systematically searched for Priority flora. A follow up targeted survey in April 2024 returned no records of *Atriplex eremitis* (P1) within the study area. *Atriplex eremitis* is associated with disturbance and it is likely that the works associated with this proposal may create additional habitat for this species to occur within.

Two broad fauna habitat types were recorded within the study area: 'Magroves; and 'Intertidal Zone'. 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.

The survey area is a very small portion of the Leslie (Port Hedland) Saltfields System (code: WA068) which is considered an Important Wetland in Australia by the Department of Climate Change, Energy, Environment and Water (DCCEEW 2024).

The Leslie (Port Hedland) Saltfields System comprises a large saltfield (established 1969), fringing coastal flats, and tidal and mudflats between the saltfields and the Indian Ocean and is approximately 13,000 ha in size, including 6,000 ha of saltfields and 160 ha of mangroves (DCCEEW 2024). The Leslie (Port Hedland) Saltfields System provides habitat for at least 50 species of waterbird including 33 species listed under international conservation agreements.

BirdLife International has also classified the Port Hedland Saltworks as an Important Bird Area (IBA) (BirdLife International 2024), however the footprint of the IBA is smaller than the Important Wetland area and the Survey Area is not within this boundary, however, it is directly adjacent to it.

As part of the management of the Important Wetland, Rio Tinto in concert with BirdLife Australia undertake annual bird census of the IBA to give an indication of the species diversity and abundance of the birds, particularly those considered Migratory under the EPBC Act. One of the 30 monitoring locations is associated with the maintenance infrastructure at the Transfer Pump Station (BirdLife Australia 2023), which is within the study area. As such, a total of 40 Migratory shorebirds have been recorded at the study area or considered likely to occur. It should be noted that this number is associated with individuals observed from the location (flying over, foraging/roosting in the broader area) rather than just occurring in the habitats of the study area because the focus of observation is on the intertidal shoreline habitat within the salt ponds.

Thirty one percent of the study area is completely disturbed and the remainder of the vegetation within the study area consists of mangroves and is representative of regenerated mangroves that were previously cleared during construction. The proposed clearing of 0.38 ha of regenerated mangroves out of the current extent of 160 ha of mangroves within the Leslie (Port Hedland) Saltfields System represents a vanishingly small 0.2% of the mangroves. Due to the small footprint of the habitats proposed to be disturbed, the previous disturbance to them and the abundance of more suitable habitat elsewhere, the migratory shorebirds of the area are not considered to be reliant upon the Survey Area or the habitats it supports.

As part of the Environmental Protection Authorities (EPA 1991) conditions for the saltfields development "*The Environmental Protection Authority recommends that the proponent be required to*

construct and manage the facility such that there would be no secondary impacts off the actual site, including no indirect loss of or detriment to mangroves or algal mats off-site, to the satisfaction of the Environmental Protection Authority".

As the clearing activities associated with this proposal are for the maintenance of the infrastructure that manages and supports the salt concentrator ponds operations, the proponent is required to undertake maintenance clearing tasks. The act of clearing the mangroves will assist the proponent in maintaining the habitat within the concentrator pond system which provides foraging habitat for the migratory birds. The importance of these salt concentrator ponds is recognised in the listing of the saltfield as an ecologically significant wetland.

It is considered unlikely the Proposal will negatively impact on the conservation status of any conservation significant species, at 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. One Threatened flora species was identified by the database searches as occurring within 100 km of the study area. *Quoya zonalis* is recorded over 99km to the south-west of the Proposal. The preferred habitat of the species is Rocky steep hill slopes near cliffs, ironstone, granite and conglomerate. The preferred habitat for *Quoya zonalis* was not present within the study area, the study area was searched for all priority species and it is unlikely that it was overlooked.

One Priority one flora 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* 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)(Cranfield, 2008). 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.

One individual of *Atriplex eremitis* falls within the direct impact footprint for the proposed works on the intakes. There are currently 59 individuals of *Atriplex eremitis* within the Rio Tinto database that are not proposed to be impacted through this or any other application currently under assessment. 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 one of Beard's mapping units – Abydos Plain 127.

It has been estimated that over 90% of the pre-European extent of the Beard (1975) mapping unit Abydos Plain 127 remains. 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.

The study area is located on coastal mudflats dissected by tidal creeks that are regularly inundated. The study area is also located within the Leslie (Port Hedland) Saltfields System, listed within A Directory of Nationally Important Wetlands in Australia.l

The tidal 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 water flow. The clearing associated with the maintenance works is over areas that have historically been cleared for installation of the salt fields. The clearing is minor in order to undertake the maintenance on the intakes for the salt ponds and is not expected to negatively impact the condition of the Leslie (Port Hedland) Saltfields System.

Based on specialist assessment, the proposal may be 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. This land system is generally not prone to degradation and is 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 areas around the intake infrastructure. However, due to the small proposed additional clearing within this study area, the likelihood of exacerbating erosion to 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 is also located within the Leslie (Port Hedland) Saltfields System, listed within A Directory of Nationally Important Wetlands in Australia.

The clearing associated with the maintenance works is over areas that has historically been cleared for installation of the salt fields. The clearing is minor in order to undertake the maintenance on the intakes for the salt ponds and is not expected to negatively impact the condition of the Leslie (Port Hedland) Saltfields System.

Based on specialist assessment, the proposal may be 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 fresh 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 clearing associated with the maintenance works is over an area that has historically been cleared for installation of the salt fields. The small scale of clearing 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 (the **Proponent**), is proposing to undertake maintenance works of the intakes 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 0.71 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, Environmental Factor Guideline – Flora and Vegetation* and *Environmental Factor Guideline- Benthic Communities and Habitats* (EPA, 2016a, 2016b, 2016d). Fauna habitats were confirmed with reference to *Technical Guidance – Terrestrial vertebrate fauna surveys for environmental impact assessment* and *Environmental Factor Guideline – Terrestrial Fauna* (EPA, 2016c, 2020).

One vegetation type was identified across one major landform, embankments, within the study area. The vegetation unit was described as *Avicennia marina* subsp*. marina* open to closed forest over *Tecticornia indica* subsp*. leiostachya* sparse samphire shrubs. 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 22 taxa from 21 genera representing 11 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 identified in the desktop assessment as likely to occur and 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: ‘Mangroves; and ‘Intertidal Zone’. 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 60 significant fauna species identified during the desktop study, none are considered to have potential to occur based on the habitat quality present within the study area.

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 it is considered that the study area provides limited fauna habitat quality and does not support the typical faunal assemblage or niches expected from these habitat types for 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), (g), (i) and (j) are not at variance;
- Principles (f) and (h) may 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: DCCEEW, Department of Climate Change, Energy, the Environment and Water (2024) Protected Matters Search Tool.

F: (Biota, 2006a) Port Hedland Solar Saltfield Expansion Botanical Survey

G: (Rio Tinto 2024a)

H: (Rio Tinto 2024b)

Table 2: Fauna Species

A: ALA (2024) Occurrence Search.

B: DBCA (2024a) Dandjoo Biodiversity Platform.

C: DBCA (2024d) Threatened and Priority Fauna Database.

D: (DCCEEW, Department of Climate Change, Energy, the Environment and Water 2024b) Protected Matters Search Tool.

E: (Biota, 2006b) Port Hedland Solar Saltfield Expansion Fauna Survey

F: (Rio Tinto 2024a)

G: (Rio Tinto 2024b)

Flora database search results

Family	Species	Status	Introduced	ALA	Danjoo	Biota 2006a	Rio Tinto 2024a	Rio Tinto 2024b
Acanthaceae	*Avicennia marina*			X	X			
	Rostellularia adscendens var. *clementii*			X	X			
Aizoaceae	*Trianthema cusackianum*				X			
	Trianthema oxycalyptrum var. *oxycalyptrum*			X				
	Trianthema pilosum			X	X			
	Trianthema portulacastrum		*	X	X			
	Trianthema triquetrum			X	X			
	Trianthema turgidifolium			X	X	X	X	X
	Zaleya galericulata			X	X			
Amaranthaceae	*Achyranthes aspera*			X	X			
	Aerva javanica		*	X	X	X		X
	Alternanthera angustifolia			X	X			
	Alternanthera denticulata var. *denticulata*			X	X			
	Alternanthera nana			X	X			
	Alternanthera pungens		*	X				
	Amaranthus clementii			X	X			
	Amaranthus mitchellii			X	X			
	Amaranthus pallidiflorus				X			
	Amaranthus undulatus			X	X	X		
	Gomphrena affinis subsp. *pilbarensis*			X	X			
	Gomphrena breviflora				X			
	Gomphrena canescens			X	X			
	Gomphrena canescens subsp. *canescens*			X	X			
	Gomphrena celosioides		*	X	X			
	Gomphrena cucullata	P3			X			
	Gomphrena cunninghamii			X	X			
	Gomphrena leptoclada			X	X			
	Gomphrena leptoclada subsp. *leptoclada*			X	X			
	Gomphrena leptophylla	P3			X			
	Gomphrena pusilla	P2			X			
	Gomphrena sordida				X	X		X
	Gomphrena tenella			X	X			
	Ptilotus appendiculatus			X	X			
	Ptilotus arthrolasius			X	X			
	Ptilotus astrolasius			X	X			
	Ptilotus auriculifolius			X	X			
	Ptilotus axillaris			X	X	X		
	Ptilotus calostachyus			X	X	X		
	Ptilotus divaricatus				X			
	Ptilotus exaltatus			X	X	X		
	Ptilotus fusiformis			X	X	X		
	Ptilotus fusiformis				X			
	Ptilotus gomphrenoides			X	X			
	Ptilotus incanus			X	X			
	Ptilotus mollis	P4						
	Ptilotus murrayi			X	X			
	Ptilotus nobilis			X				
	Ptilotus obovatus			X	X			
	Ptilotus polystachyus			X	X			
	Ptilotus villosiflorus			X	X			
	Ptilotus xerophilus			X	X			
	Pupalia lappacea		*	X	X			
	Surreya diandra			X	X			
Anacardiaceae	*Mangifera indica*				X	X		
Apocynaceae	*Calotropis procera*		*	X	X		X	X
	Carissa lanceolata			X	X			
	Cynanchum floribundum			X	X	X		
	Cynanchum viminale subsp. *australe*			X	X			
	Gymnanthera cunninghamii	P3			X			
Araliaceae	*Trachymene oleracea*			X	X			
	Trachymene oleracea			X	X			

Family	Species	Status	Introduced	ALA	Danjoo	Biota 2006a	Rio Tinto 2024a	Rio Tinto 2024b
Arecaceae	*Washingtonia filifera*		*	X				
Asparagaceae	*Yucca aloifolia*		*	X				
Asphodelaceae	*Aloe vera*		*	X				
	Aloe vera var. *officinalis*		*	X				
Asteraceae	*Apowollastonia hamersleyensis*			X				
	Blumea tenella			X	X			
	Calocephalus knappii			X	X			
	Calotis hispidula				X			
	Calotis plumulifera			X	X			
	Centipeda minima subsp. *macrocephala*			X	X			
	Chrysocephalum apiculatum subsp. *pilbarense*			X	X			
	Cyanthillium cinereum		*	X	X			
	Erigeron bonariensis		*	X	X			
	Flaveria trinervia		*	X	X			
	Lactuca serriola		*	X	X			
	Pluchea dentex			X				
	Pluchea ferdinandi-muelleri			X	X			
	Pluchea rubelliflora			X	X	X		
	Pluchea tetranthera			X	X	X	X	
	Pseudognaphalium luteoalbum		*	X	X			
	Pterocaulon intermedium			X	X			
	Pterocaulon serrulatum var. *velutinum*			X	X		X	
	Pterocaulon sphacelatum			X	X	X		
	Pterocaulon sphaeranthoides			X	X			
	Sonchus hydrophilus			X	X			
	Sonchus oleraceus			X	X			
	Streptoglossa bubakii			X	X	X		X
	Streptoglossa cylindriceps				X			
	Streptoglossa decurrens			X	X			
	Streptoglossa odora			X	X			
	Streptoglossa tenuiflora			X				
	Syagrus romanzoffiana			X	X			
	Symphyotrichum squamatum		*	X	X			
	Tridax procumbens		*	X	X			
	Xanthium occidentale		*	X	X			
Bignoniaceae	*Dolichandrone occidentalis*			X	X			
Boraginaceae	*Ehretia saligna*			X				
	Ehretia saligna var. *saligna*			X	X			
	Euploca chrysocarpa				X			
	Euploca conocarpa			X	X	X		
	Euploca cunninghamii				X	X		
	Euploca diversifolia			X	X			
	Euploca foliata			X	X			
	Euploca inexplicita				X			
	Euploca mutica	P3			X	X		
	Euploca ovalifolia			X	X			
	Euploca pachyphylla			X	X	X		
	Euploca parviantrum	P1			X			
	Euploca vestita			X				
	Halgania solanacea var. *solanacea*				X			
	Heliotropium ammophilum			X	X			
	Heliotropium crispatum			X	X	X		
	Heliotropium europaeum		*	X	X			
	Heliotropium murinum	P3			X			
	Trichodesma zeylanicum				X			
Brassicaceae	*Lepidium muelleri-ferdinandi*				X			
	Lepidium platypetalum			X	X			
Byblidaceae	*Byblis filifolia*			X	X			
	Byblis pilbarana			X	X			
Cactaceae	*Cylindropuntia fulgida*				X			
	Opuntia stricta		*	X	X			
Campanulaceae	*Wahlenbergia queenslandica*			X	X			
	Wahlenbergia tumidifructa			X	X	X		

Family	Species	Status	Introduced	ALA	Danjoo	Biota 2006a	Rio Tinto 2024a	Rio Tinto 2024b
Cannabaceae	*Celtis strychnoides*			X	X			
Capparaceae	*Capparis spinosa* subsp. *nummularia*				X			
	Capparis umbonata			X	X			
Caryophyllaceae	*Gypsophila vaccaria*		*	X	X			
	Polycarpaea corymbosa			X	X	X		
	Polycarpaea holtzei			X				
	Polycarpaea involucrata				X			
	Polycarpaea longiflora				X			
Casuarinaceae	*Allocasuarina distyla*				X			
	Allocasuarina thuyoides				X			
	Allocasuarina torulosa				X			
Caulerpaceae	*Caulerpa brachypus*			X	X			
	Caulerpa cactoides				X			
	Caulerpa chemnitzia			X	X			
	Caulerpa cupressoides var. *elegans*				X			
	Caulerpa cylindracea			X	X			
	Caulerpa lamourouxii			X	X			
	Caulerpa lentillifera			X	X			
	Caulerpa racemosa			X	X			
	Caulerpa racemosa var. *laetevirens*				X			
	Caulerpa sertularioides			X	X			
	Caulerpa vesiculifera				X			
	Caulerpa taxifolia			X	X			
Celastraceae	*Stackhousia intermedia*			X	X			
Centrolepidaceae	*Centrolepis banksii*			X	X			
Chenopodiaceae	*Atriplex bunburyana*			X	X			
	Atriplex codonocarpa			X	X	X		
	Atriplex eremitis	P1			X			X
	Atriplex semilunaris			X	X			
	Chenopodium auricomum			X	X			
	Dissocarpus paradoxus				X			
	Dysphania kalpari			X	X			
	Dysphania plantaginella			X	X	X		
	Dysphania rhadinostachya			X	X			
	Dysphania rhadinostachya subsp. *rhadinostachya*			X	X	X		
	Enchylaena tomentosa			X	X			
	Enchylaena tomentosa var. *tomentosa*					X		
	Neobassia astrocarpa			X	X	X	X	X
	Rhagodia eremaea			X	X	X		
	Salicornia quinqueflora				X			
	Salsola australis			X	X		X	X
	Sclerolaena bicornis var. *bicornis*			X	X			
	Sclerolaena costata			X	X			
	Sclerolaena densiflora			X				
	Sclerolaena glabra			X	X			
	Sclerolaena hostilis			X	X			
	Suaeda arbusculoides			X	X			
	Tecticornia auriculata			X	X			
	Tecticornia halocnemoides			X	X			
	Tecticornia halocnemoides subsp. *longispicata*			X	X			
	Tecticornia halocnemoides subsp. *tenuis*			X	X	X		X
	Tecticornia indica			X				
	Tecticornia indica subsp. *bidens*			X	X			
	Tecticornia indica subsp. *leiostachya*			X	X	X		X
	Tecticornia pruinosa			X	X			
	Tecticornia pterygosperma subsp. *denticulata*			X	X			
	Threlkeldia diffusa			X	X			
Cleomaceae	*Areocleome oxalidea*				X			
	Arivela uncifera			X	X			
	Arivela viscosa			X	X	X	X	X
Combretaceae	*Terminalia supranitifolia*	P3			X			
Commelinaceae	*Commelina ensifolia*			X		X	X	
	Murdannia graminea			X	X			

Family	Species	Status	Introduced	ALA	Danjoo	Biota 2006a	Rio Tinto 2024a	Rio Tinto 2024b
Convolvulaceae	*Bonamia* aff. *oblongifolia*				X			
	Bonamia alatisemina			X	X			
	Bonamia erecta			X	X			
	Bonamia linearis			X	X	X		
	Bonamia media			X	X			
	Bonamia pilbarensis			X				
	Bonamia rosea			X	X	X		
	Distimake davenportii			X	X			
	Distimake dissectus		*	X	X			
	Distimake dissectus var. *dissectus*		*	X	X			
	Evolvulus alsinoides			X				
	Evolvulus alsinoides var. *decumbens*			X	X			
	Evolvulus alsinoides var. *decumbens / alsinoides* var. *villosicalyx*				X			
	Evolvulus alsinoides var. *villosicalyx*			X	X	X		
	Ipomoea coptica			X	X			
	Ipomoea muelleri			X	X	X		X
	Ipomoea pes-caprae			X	X			
	Ipomoea pes-caprae subsp. *brasiliensis*			X	X			
	Ipomoea polymorpha			X	X	X		
	Operculina aequisepala			X	X			X
	Polymeria ambigua			X	X			
	Polymeria calycina			X	X	X		
Cucurbitaceae	*Citrullus amarus*		*	X	X			
	Citrullus colocynthis		*	X	X			
	Coccinia grandis		*	X	X			
	Cucumis ? argenteus				X			
	Cucumis melo			X	X			
	Cucumis variabilis			X	X			
	Cucurbita pepo		*	X	X			
	Trichosanthes cucumerina var. *cucumerina*			X	X			
Cyperaceae	*Abildgaardia oxystachya*			X	X	X		
	Bulbostylis barbata			X	X	X		
	Cyperus bifax			X	X			
	Cyperus blakeanus			X	X			
	Cyperus bulbosus				X			
	Cyperus castaneus			X	X			
	Cyperus conicus			X	X			
	Cyperus difformis				X			
	Cyperus gymnocaulos / vaginatus				X			
	Cyperus hesperius			X	X			
	Cyperus iria			X	X			
	Cyperus ixiocarpus			X	X			
	Cyperus latzii				X			
	Cyperus leptocarpus			X	X			
	Cyperus macrostachyos			X	X			
	Cyperus polystachyos			X	X			
	Cyperus pulchellus			X	X			
	Cyperus pygmaeus			X	X			
	Cyperus squarrosus			X	X	X		
	Cyperus stoloniferus				X			
	Cyperus vaginatus			X	X	X		
	Fimbristylis aff. *neilsonii*				X			
	Fimbristylis caespitosa			X	X			
	Fimbristylis dichotoma			X	X	X		
	Fimbristylis elegans			X	X			
	Fimbristylis littoralis			X	X			
	Fimbristylis neilsonii			X	X			
	Fimbristylis rara			X	X			
	Fuirena ciliaris			X	X			
	Schoenoplectiella dissachantha			X	X			
	Schoenoplectiella laevis			X	X			
	Schoenoplectiella lateriflora			X	X			
Droseraceae	*Drosera burmanni*			X	X			

Family	Species	Status	Introduced	ALA	Danjoo	Biota 2006a	Rio Tinto 2024a	Rio Tinto 2024b
	Drosera finlaysoniana			X	X			
Elatinaceae	*Bergia ammannioides*			X				
	Bergia henshallii			X	X			
	Bergia pedicellaris			X	X			
	Bergia perennis			X				
	Bergia perennis subsp. *perennis*			X	X			
	Bergia trimera			X	X			
Euphorbiaceae	*Adriana tomentosa*			X	X			
	Adriana tomentosa var. *tomentosa*			X	X			
	Euphorbia australis			X		X		
	Euphorbia australis var. *australis*			X	X			
	Euphorbia australis var. *subtomentosa*			X	X			
	Euphorbia biconvexa			X	X			
	Euphorbia clementii	P3			X			
	Euphorbia coghlanii			X	X			
	Euphorbia fitzroyensis			X	X			
	Euphorbia hirta		*	X	X			
	Euphorbia hyssopifolia				X			
	Euphorbia inappendiculata var. *inappendiculata*	P3						
	Euphorbia maculata				X			
	Euphorbia myrtoides			X	X			
	Euphorbia psilosperma			X	X			
	Euphorbia tannensis subsp. *eremophila*			X	X	X		
	Euphorbia tirucalli		*	X	X			
	Euphorbia trigonosperma			X	X			
	Euphorbia vaccaria var. *vaccaria*			X	X			
	Jatropha gossypifolia		*	X	X			
	Mallotus nesophilus				X			
	Ricinus communis		*	X	X			
Fabaceae	*Acacia acradenia*				X			
	Acacia adoxa var. *adoxa*			X	X			
	Acacia adoxa var. *subglabra*			X	X			
	Acacia ampliceps			X	X	X		X
	Acacia ampliceps x sclerosperma subsp. *sclerosperma*			X	X			
	Acacia ancistrocarpa			X	X			
	Acacia bivenosa			X	X	X		X
	Acacia browniana var. *endlicheri*			X	X			
	Acacia chartacea				X			
	Acacia colei			X	X			
	Acacia colei var. *colei*			X	X	X	X	
	Acacia coriacea subsp. *coriacea*			X				
	Acacia coriacea subsp. *pendens*			X				
	Acacia cowleana				X			
	Acacia cyperophylla var. *omearana*	P1						
	Acacia dictyophleba			X	X			
	Acacia glaucocaesia			X				
	Acacia hilliana			X	X			
	Acacia hilliana x A. stellaticeps				X			
	Acacia holosericea				X			
	Acacia inaequilatera			X	X	X		
	Acacia ligulata				X			
	Acacia maitlandii			X	X			
	Acacia monticola			X	X			
	Acacia orthocarpa			X	X	X		
	Acacia ptychophylla			X	X			
	Acacia pyrifolia			X	X			
	Acacia pyrifolia var. *pyrifolia*			X	X			
	Acacia sabulosa			X	X			
	Acacia salicina			X	X			
	Acacia sclerosperma subsp. *sclerosperma*			X	X			
	Acacia sericophylla			X				
	Acacia sphaerostachya			X	X			
	Acacia stellaticeps			X	X	X	X	X

Family	Species	Status	Introduced	ALA	Danjoo	Biota 2006a	Rio Tinto 2024a	Rio Tinto 2024b
	Acacia synchronicia				X			
	Acacia trachycarpa			X	X	X	X	
	Acacia trachycarpa x tumida var. *pilbarensis*			X	X			
	Acacia translucens			X	X			
	Acacia tumida			X	X			
	Acacia tumida var. *pilbarensis*			X	X			
	Acacia tumida var. *tumida*			X	X			
	Albizia lebbeck				X			
	Alysicarpus muelleri			X	X			
	Cajanus cinereus			X	X			
	Cajanus marmoratus			X	X			
	Cajanus pubescens			X	X			
	Cajanus reticulatus var. *grandifolius*			X	X			
	Canavalia rosea			X	X			
	Clitoria ternatea		*	X	X			
	Crotalaria cunninghamii			X	X	X		
	Crotalaria cunninghamii subsp. *cunninghamii*			X				
	Crotalaria cunninghamii subsp. *sturtii*			X	X			
	Crotalaria dissitiflora				X			
	Crotalaria dissitiflora subsp. *benthamiana*				X			
	Crotalaria medicaginea			X	X			
	Crotalaria ramosissima			X	X	X		
	Crotalaria spectabilis subsp. *spectabilis*				X			
	Cullen cinereum			X	X			
	Cullen lachnostachys				X			
	Cullen leucanthum			X	X	X		
	Cullen martinii			X	X			
	Cullen stipulaceum			X	X			
	Desmodium filiforme				X			
	Desmodium scorpiurus				X			
	Erythrina vespertilio				X			
	Glycine tomentella			X	X			
	Grona filiformis			X	X	X		
	Indigofera boviperda			X	X			
	Indigofera boviperda subsp. *boviperda*			X	X			
	Indigofera chamaeclada subsp. *pubens*				X			
	Indigofera colutea			X	X	X		
	Indigofera hirsuta			X	X	X		
	Indigofera hochstetteri		*	X	X			
	Indigofera linifolia			X	X			
	Indigofera linnaei			X	X			
	Indigofera monophylla			X	X	X		
	Indigofera oblongifolia		*	X	X	X	X	X
	Indigofera rugosa			X	X			
	Indigofera sessiliflora		*	X	X	X		
	Indigofera trita			X	X	X		X
	Kennedia stirlingii			X	X			
	Leptosema anomalum			X	X			
	Leucaena leucocephala		*	X	X			
	Lotus cruentus			X	X			
	Lysiphyllum cunninghamii			X	X			
	Macroptilium atropurpureum				X			
	Neltuma pallida			X	X			
	Neptunia dimorphantha			X	X	X		
	Neptunia scutata			X	X			
	Parkinsonia aculeata		*	X	X			
	Petalostylis cassioides			X	X			
	Petalostylis labicheoides			X	X			
	Rhynchosia minima			X	X	X	X	
	Rothia indica subsp. *australis*	P3			X			
	Senna artemisioides subsp. *oligophylla*			X	X			
	Senna bicapsularis				X			
	Senna costata				X			

Family	Species	Status	Introduced	ALA	Danjoo	Biota 2006a	Rio Tinto 2024a	Rio Tinto 2024b
	Senna curvistyla			X	X			
	Senna glutinosa			X	X	X		
	Senna glutinosa subsp. *glutinosa*			X	X			
	Senna glutinosa subsp. *pruinosa*				X			
	Senna notabilis			X	X	X		X
	Senna occidentalis		*	X	X			
	Senna stricta				X			
	Senna symonii			X				
	Senna venusta			X	X	X		
	Sesbania cannabina			X	X	X		X
	Sesbania formosa			X	X			
	Stylosanthes guianensis		*		X			
	Stylosanthes hamata		*	X	X			
	Swainsona decurrens				X			
	Swainsona formosa			X	X			
	Swainsona pterostylis			X	X			X
	Tephrosia ? sp. D Kimberley Flora				X			
	Tephrosia brachyodon var. *longifolia*			X	X			
	Tephrosia clementii			X	X			
	Tephrosia coriacea				X			
	Tephrosia densa			X				
	Tephrosia forrestiana			X	X			
	Tephrosia leptoclada			X	X	X		
	Tephrosia longifolia				X			
	Tephrosia purpurea				X			
	Tephrosia rosea				X			X
	Tephrosia rosea var. *Fortescue creeks*				X			
	Tephrosia rosea var. *Port Headland (A.S.George 1114)*				X			
	Tephrosia rosea var. *Port Hedland*	P1			X			
	Tephrosia rosea var. *rosea*			X	X			
	Tephrosia simplicifolia			X	X			
	Tephrosia sp. B Kimberley Flora (C.A. Gardner 7300)			X	X	X		
	Tephrosia sp. Bungaroo Creek (M.E. Trudgen 11601)			X	X			
	Tephrosia sp. clay soils (S. van Leeuwen et al. PBS 0273)				X			
	Tephrosia sp. Katherine (H.S.McKee 8509)				X			
	Tephrosia sp. NW Eremaean (S. van Leeuwen et al. PBS 0356)			X	X			
	Tephrosia supina			X	X			
	Tephrosia uniovulata			X	X			
	Tephrosia virens			X	X			
	Trigonella suavissima			X	X			
	Vachellia farnesiana		*	X			X	
	Vigna lanceolata			X	X			
	Vigna lanceolata var. *lanceolata*			X	X			
	Vigna triodiophila	P3						
	Zornia albiflora			X	X			
	Zornia chaetophora			X	X			
	Zornia muelleriana			X	X			
	Zornia muelleriana subsp. *congesta*			X	X			
	Isotropis atropurpurea			X	X			
Frankeniaceae	*Frankenia ambita*			X	X	X		X
Gentianaceae	*Schenkia clementii*			X	X			
Goodeniaceae	*Dampiera candicans*			X	X			
	Goodenia armitiana			X	X			
	Goodenia fasciculata				X			
	Goodenia forrestii			X	X	X		
	Goodenia lamprosperma			X	X			
	Goodenia microptera			X	X	X		
	Goodenia muelleriana			X	X			
	Goodenia nuda			X	X			
	Goodenia scaevolina			X	X			
	Goodenia stobbsiana			X	X			
	Goodenia triodiophila			X	X	X		
	Lechenaultia subcymosa			X				

Family	Species	Status	Introduced	ALA	Danjoo	Biota 2006a	Rio Tinto 2024a	Rio Tinto 2024b
	Scaevola amblyanthera			X	X			
	Scaevola amblyanthera var. *centralis*			X	X	X		
	Scaevola browniana			X				
	Scaevola browniana subsp. *browniana*			X	X			
	Scaevola decipiens				X			
Gyrostemonaceae	*Codonocarpus cotinifolius*			X		X		
	Gyrostemon tepperi				X			
Haloragaceae	*Gonocarpus ephemerus*			X	X			
	Haloragis gossei			X	X	X		
Hemerocallidaceae	*Corynotheca micrantha*			X				
	Corynotheca pungens			X	X			
	Tricoryne corynothecoides			X		X		
Lamiaceae	*Basilicum polystachyon*			X	X			
	Clerodendrum tomentosum var. *lanceolatum*			X	X			
	Quoya zonalis	T & EN						
Lauraceae	*Cassytha capillaris*			X	X	X	X	
	Cassytha filiformis			X	X	X		
Loganiaceae	*Mitrasacme connata*			X	X			
	Mitrasacme exserta			X	X			
Loranthaceae	*Amyema preissii*			X	X			
Lythraceae	*Ammannia muelleri*			X	X			
	Ammannia multiflora			X				
	Rotala diandra			X	X			
Malvaceae	*Abutilon australiense*			X	X			
	Abutilon hannii				X			
	Abutilon indicum var. *australiense*				X			
	Abutilon lepidum			X	X	X		
	Abutilon otocarpum			X	X	X		
	Abutilon oxycarpum subsp. *Prostrate*			X	X			
	Abutilon sp. Dioicum (A.A. Mitchell PRP 1618)			X	X			
	Abutilon sp. Pilbara (W.R. Barker 2025)			X	X	X		
	Abutilon sp. Pritzelianum (S. van Leeuwen 5095)	3			X			
	Corchorus carnarvonensis				X			
	Corchorus elachocarpus			X	X			
	Corchorus incanus			X	X			
	Corchorus incanus subsp. *incanus*			X	X	X		X
	Corchorus laniflorus			X	X			
	Corchorus parviflorus			X	X			
	Corchorus sidoides			X	X			
	Corchorus sidoides subsp. *vermicularis*			X	X			
	Corchorus sp. Yarrie (J. Bull & D. Roberts CAL 01.05)	P1						
	Corchorus tectus			X	X			
	Corchorus tridens			X	X			
	Corchorus walcottii			X	X			
	Gossypium australe			X	X			
	Gossypium hirsutum		*	X	X			
	Gossypium robinsonii			X	X			
	Hibiscus apodus			X	X			
	Hibiscus austrinus var. *austrinus*			X	X			
	Hibiscus austrinus var. *austrinus*				X			
	Hibiscus brachychlaenus			X	X			
	Hibiscus cf. *leptocladus*			X	X			
	Hibiscus goldsworthii			X	X			
	Hibiscus leptocladus			X	X	X		
	Hibiscus sturtii			X	X			
	Hibiscus sturtii var. *campylochlamys*			X				
	Hibiscus sturtii var. *platychlamys*			X				
	Lawrencia viridigrisea			X	X			
	Melhania oblongifolia			X	X	X		
	Melochia pyramidata		*	X	X			
	Seringia exastia			X	X			
	Seringia nephrosperma			X	X			
	Sida aff. *fibulifera*				X	X		

Family	Species	Status	Introduced	ALA	Danjoo	Biota 2006a	Rio Tinto 2024a	Rio Tinto 2024b
	Sida aff.*cardiophylla*				X			
	Sida arsiniata			X	X			
	Sida cardiophylla			X	X			
	Sida clementii			X	X	X		
	Sida echinocarpa			X	X			
	Sida fibulifera			X	X			
	Sida rohlenae				X			
	Sida rohlenae subsp. *rohlenae*			X	X			X
	Sida sp. Articulation below (A.A. Mitchell PRP 1605)			X	X			
	Sida sp. Barlee Range (S. van Leeuwen 1642)				X			
	Sida sp. Pilbara (A.A. Mitchell PRP 1543)			X	X		X	
	Sida sp. Pindan (B.G. Thomson 3398)			X	X			
	Sida sp. Rabbit Flat (B.J. Carter 626)			X	X			
	Sida tescorum				X			
	Triumfetta clementii			X	X			
	Triumfetta maconochieana			X	X			
	Triumfetta micracantha			X	X			
	Triumfetta ramosa			X	X	X		
	Waltheria indica			X	X	X		
	Waltheria virgata			X				
	Abutilon amplum			X	X			
Marsileaceae	*Marsilea drummondii*			X	X			
	Marsilea exarata			X	X			
	Marsilea hirsuta			X	X			
Meliaceae	*Owenia reticulata*			X	X			
Menispermaceae	*Tinospora smilacina*			X	X	X		
Molluginaceae	*Glinus lotoides*			X	X			
	Glinus oppositifolius var. *keenanii*			X	X			
	Hypertelis cerviana			X	X			
	Trigastrotheca molluginea			X	X	X		
Moraceae	*Ficus aculeata* var. *indecora*				X			
	Ficus brachypoda			X	X			
	Ficus opposita var. *indecora*				X			
Myrtaceae	*Corymbia* aff. *aspera*				X			
	Corymbia aspera			X				
	Corymbia candida			X				
	Corymbia candida subsp. *candida*			X	X			
	Corymbia candida subsp. *dipsodes*				X			
	Corymbia candida subsp. *lautifolia*			X	X			
	Corymbia candida subsp. *x lautifolia*			X	X			
	Corymbia deserticola			X	X			
	Corymbia flavescens			X	X			
	Corymbia hamersleyana			X	X	X		
	Corymbia opaca			X	X			
	Corymbia semiclara				X			
	Corymbia terminalis			X	X			
	Corymbia zygophylla			X	X			
	Eucalyptus camaldulensis subsp. *obtusa*			X	X			
	Eucalyptus camaldulensis subsp. *refulgens*			X	X			
	Eucalyptus obtusa				X			
	Eucalyptus victrix			X	X	X		
	Melaleuca argentea			X	X	X		
	Melaleuca cajuputi				X			
	Melaleuca concreta				X			
	Melaleuca lasiandra			X	X			
	Melaleuca linophylla				X			
	Osbornia octodonta			X	X			
Nyctaginaceae	*Boerhavia coccinea*			X	X	X		
	Boerhavia paludosa				X			
	Boerhavia repleta							X
Orobanchaceae	*Buchnera linearis*			X	X			
	Striga squamigera			X	X			
Papaveraceae	*Argemone ochroleuca*		*		X			

Family	Species	Status	Introduced	ALA	Danjoo	Biota 2006a	Rio Tinto 2024a	Rio Tinto 2024b
	Argemone ochroleuca subsp. *ochroleuca*		*	X	X			
Passifloraceae	*Passiflora foetida* var. *hispida*		*	X	X			
Pedaliaceae	*Josephinia* sp.			X	X			
Phrymaceae	*Mimulus gracilis*			X	X			
	Peplidium muelleri			X	X			
	Uvedalia linearis			X				
	Uvedalia linearis var. *linearis*			X	X			
Phyllanthaceae	*Cathetus* aff. *virgatus*				X			
	Flueggea virosa subsp. *melanthesoides*			X	X			
	Lysiandra arida			X	X			
	Nellica maderaspatensis			X	X	X		
	Notoleptopus decaisnei			X	X			
	Synostemon rhytidospermus			X	X			
	Dendrophyllanthus erwinii			X	X			
Pittosporaceae	*Pittosporum angustifolium*				X			
Plantaginaceae	*Stemodia grossa*			X	X	X		
	Stemodia kingii			X	X			
	Stemodia lathraia			X	X			
	Stemodia viscosa			X	X			
Plumbaginaceae	*Muellerolimon salicorniaceum*			X	X			
Poaceae	*Alloteropsis semialata*			X				
	Andropogon gayanus				X			
	Aristida contorta			X	X			
	Aristida holathera			X	X			
	Aristida holathera var. *holathera*			X	X	X		
	Aristida hygrometrica			X	X			
	Aristida inaequiglumis			X	X			
	Aristida latifolia			X	X			X
	Bothriochloa ewartiana				X			
	Cenchrus ciliaris		*	X	X	X		X
	Cenchrus echinatus		*	X	X			
	Cenchrus setaceus		*		X			
	Cenchrus setiger		*	X	X	X		
	Chloris barbata		*	X	X	X		
	Chloris pectinata			X	X			
	Chloris pumilio				X			
	Chloris virgata		*	X	X			
	Chrysopogon fallax			X	X	X	X	
	Cymbopogon ambiguus			X	X			
	Cymbopogon bombycinus				X			
	Cymbopogon obtectus			X	X			
	Cynodon dactylon		*	X	X			
	Dactyloctenium aegyptium		*	X	X			
	Dactyloctenium radulans			X	X	X		
	Dichanthium fecundum			X	X			
	Digitaria ammophila			X				
	Digitaria brownii			X	X			
	Digitaria ciliaris		*	X	X			
	Diplachne fusca			X	X			
	Diplachne fusca subsp. *fusca*			X	X			
	Echinochloa colona		*	X	X			
	Elytrophorus spicatus			X	X			
	Enneapogon caerulescens			X	X	X		
	Enneapogon caerulescens var. *caerulescens*				X			
	Enneapogon lindleyanus			X	X			
	Enneapogon oblongus				X			
	Enneapogon polyphyllus			X	X			
	Enneapogon purpurascens			X	X	X		
	Enneapogon robustissimus				X			
	Enteropogon ramosus			X	X			
	Eragrostis cilianensis		*	X				
	Eragrostis crateriformis				X			
	Eragrostis cumingii			X	X	X		

Family	Species	Status	Introduced	ALA	Danjoo	Biota 2006a	Rio Tinto 2024a	Rio Tinto 2024b
	Eragrostis curvula		*	X				
	Eragrostis dielsii			X	X	X		
	Eragrostis elongata			X	X			
	Eragrostis eriopoda			X	X	X		
	Eragrostis falcata			X	X	X	X	
	Eragrostis nightingaleae			X				
	Eragrostis pilosa		*	X	X			
	Eragrostis speciosa			X	X			
	Eragrostis tenellula			X	X			
	Eragrostis xerophila			X	X			
	Eriachne aristidea			X	X	X		
	Eriachne benthamii			X				
	Eriachne ciliata			X	X			
	Eriachne filiformis				X			
	Eriachne flaccida			X	X			
	Eriachne gardneri				X			
	Eriachne glauca			X	X			
	Eriachne glauca var. *glauca*			X	X			
	Eriachne helmsii			X	X	X		
	Eriachne lanata			X	X			
	Eriachne melicacea			X	X			
	Eriachne mucronata			X	X			
	Eriachne obtusa			X	X	X		
	Eriachne pulchella			X	X			
	Eriachne pulchella subsp. *dominii*			X	X			
	Eriachne sulcata			X	X			
	Eriochloa procera			X	X			
	Eriochloa pseudoacrotricha			X	X			
	Eulalia aurea			X	X	X		
	Iseilema membranaceum			X	X			
	Leptochloa digitata			X	X			
	Melinis repens		*	X	X			
	Panicum australiense			X	X	X		
	Panicum australiense var. *australiense*			X	X			
	Panicum decompositum			X	X	X	X	X
	Panicum majusculum			X	X			
	Paraneurachne muelleri			X	X	X		
	Paspalidium clementii			X	X			
	Paspalidium rarum			X	X	X		
	Paspalidium tabulatum			X	X			
	Paspalum fasciculatum				X			
	Perotis rara			X	X	X		
	Pseudochaetochloa australiensis			X	X			
	Schizachyrium fragile			X	X	X		
	Setaria dielsii				X			
	Setaria italica		*		X			
	Setaria sphacelata		*		X			
	Setaria surgens				X			
	Setaria verticillata		*	X	X			
	Sorghum plumosum			X	X			
	Sorghum stipoideum			X	X			
	Spinifex longifolius			X	X			
	Sporobolus actinocladus			X	X			
	Sporobolus australasicus			X	X			
	Sporobolus mitchellii			X	X			
	Sporobolus virginicus			X	X	X		
	Themeda avenacea				X			
	Themeda triandra			X	X			
	Triodia aff. *epactia*				X			
	Triodia angusta			X	X			
	Triodia basedowii			X				
	Triodia basitricha	P3						
	Triodia chichesterensis	P3			X			

Family	Species	Status	Introduced	ALA	Danjoo	Biota 2006a	Rio Tinto 2024a	Rio Tinto 2024b
	Triodia degreyensis	P1			X			
	Triodia epactia			X	X		X	X
	Triodia lanigera			X	X			
	Triodia longiceps			X	X			
	Triodia scariosa				X			
	Triodia schinzii			X	X	X		
	Triodia secunda			X	X	X	X	
	Triraphis mollis			X	X			
	Urochloa distachyos			X	X			
	Urochloa holosericea subsp. *velutina*			X	X			
	Urochloa occidentalis			X	X			
	Urochloa piligera			X	X			
	Urochloa pubigera			X				
	Whiteochloa airoides			X	X			
	Whiteochloa cymbiformis			X	X	X		
	Xerochloa barbata			X	X			
	Yakirra australiensis				X			
Polygalaceae	*Polygala* aff. *saccopetala*				X			
	Polygala galeocephala			X	X			
	Polygala isingii			X	X			
Polygonaceae	*Rumex vesicarius*		*	X				
Portulacaceae	*Calandrinia pentavalvis*			X	X			
	Calandrinia polyandra					X		
	Calandrinia ptychosperma			X		X		
	Calandrinia pumila			X	X			
	Calandrinia quadrivalvis				X			
	Calandrinia stagnensis			X	X	X		
	Calandrinia strophiolata			X				
	Calandrinia tepperiana			X	X			
	Portulaca australis				X			
	Portulaca decipiens			X	X			
	Portulaca filifolia			X	X			
	Portulaca oleracea			X	X	X		
	Portulaca pilosa		*	X		X		
Potamogetonaceae	*Stuckenia pectinata*			X	X			
Primulaceae	*Aegiceras corniculatum*				X			
Proteaceae	*Conospermum glumaceum*				X			
	Grevillea pyramidalis			X	X			
	Grevillea pyramidalis subsp. *leucadendron*			X	X	X		
	Grevillea refracta subsp. *refracta*			X	X			
	Grevillea wickhamii subsp. *aprica*				X			
	Grevillea wickhamii subsp. *hispidula*			X	X			
	Grevillea wickhamii subsp. *macrodonta*				X			
	Hakea lorea			X	X	X	X	
	Hakea lorea subsp. *lorea*			X	X			
	Hakea macrocarpa			X				
Rhizophoraceae	*Bruguiera exaristata*			X	X			
	Ceriops australis			X	X			
	Ceriops tagal			X	X			
	Rhizophora stylosa			X	X			
Rubiaceae	*Dentella asperata*			X	X			
	Dentella minutissima			X	X			
	Dolichocarpa sp. Hamersley Station (A.A. Mitchell PRP 1479)	P3						
	Spermacoce hillii			X	X			
	Synaptantha tillaeacea				X			
Santalaceae	*Santalum lanceolatum*			X	X	X		
	Diplopeltis eriocarpa			X	X			
	Dodonaea coriacea			X	X	X		
	Atalaya hemiglauca			X	X			
Scrophulariaceae	*Myoporum montanum*			X	X	X	X	X
Solanaceae	*Datura leichhardtii*		*	X	X			
	Nicotiana bilybara			X	X			
	Nicotiana obliqua			X	X			

Family	Species	Status	Introduced	ALA	Danjoo	Biota 2006a	Rio Tinto 2024a	Rio Tinto 2024b
	Nicotiana occidentalis			X	X			
	Nicotiana umbratica	P3						
	Physalis angulata			X	X			
	Solanum aff.*phlomoides*				X			
	Solanum cleistogamum			X	X		X	X
	Solanum cunninghamii			X	X			
	Solanum dioicum			X	X			
	Solanum diversiflorum			X	X	X		X
	Solanum horridum			X	X			
	Solanum lasiophyllum			X	X			
	Solanum nigrum		*	X	X			
	Solanum phlomoides			X	X	X		
Stylidiaceae	*Stylidium desertorum*			X	X			
	Stylidium weeliwolli	P3			X			
Surianaceae	*Stylobasium spathulatum*			X	X			
Tamaricaceae	*Tamarix aphylla*		*	X	X			
Thymelaeaceae	*Pimelea ammocharis*			X	X			
Typhaceae	*Typha domingensis*			X	X			
Verbenaceae	*Phyla nodiflora*		*	X	X			
Violaceae	*Afrohybanthus aurantiacus*			X	X			
	Afrohybanthus enneaspermus x Hybanthus aurantiacus				X			
	Afrohybanthus enneaspermus			X	X			
Zygophyllaceae	*Tribulopis angustifolia*			X	X	X		
Zygophyllaceae	*Tribulus cistoides*			X	X			
	Tribulus hirsutus			X	X	X		
	Tribulus macrocarpus			X	X			
	Tribulus occidentalis			X	X			
	Tribulus sp. long-styled eichlerianus (A.S. George 10666)			X	X			
	Tribulus terrestris				X			

Fauna database search results

Family	Scientific Name	Common Name	WA	EPBC	A	B	C	D	E	F	G
Acanthizidae	*Gerygone fusca*	Western Gerygone			X						
	Gerygone magnirostris	Large-billed Gerygone			X						
	Gerygone magnirostris magnirostris	Top End Large-billed Gerygone			X						
	Gerygone tenebrosa				X	X					
	Gerygone tenebrosa christophori	Southern Dusky Gerygone			X						
	Smicrornis brevirostris	Weebill			X	X					
Accipitridae	*Accipiter cirrocephalus*	Collared Sparrowhawk			X						
	Accipiter fasciatus				X	X					
	Accipiter fasciatus fasciatus					X					
	Aquila audax	Wedge-tailed Eagle			X	X					
	Circus approximans	Swamp Harrier			X	X					
	Circus assimilis	Spotted Harrier			X	X					
	Elanus caeruleus	Black-shouldered Kite			X	X					
	Elanus scriptus	Letter-winged Kite			X						
	Erythrotriorchis radiatus	Red Goshawk		EN				X			
	Haliaeetus leucogaster	White-bellied Sea-Eagle			X	X					
	Haliastur indus	Brahminy Kite			X	X			X	X	
	Haliastur indus girrenera	Torresian Brahminy Kite			X						
	Haliastur sphenurus	Whistling Kite			X	X				X	
	Hamirostra melanosternon	Black-breasted Buzzard			X						
	Hieraaetus morphnoides	Little Eagle			X	X					
	Lophoictinia isura	Square-tailed Kite			X						
	Milvus migrans	Black Kite			X	X					
	Milvus migrans affinis					X					
	Pandion haliaetus	osprey	MI	MI	X		X		X		
	Pandion haliaetus cristatus	Eastern Osprey			X						
Acrocephalidae	*Acrocephalus australis*	Australian Reed Warbler			X						
Aegothelidae	*Aegotheles cristatus*				X	X					
Agamidae	*Amphibolurus longirostris*	Long-nosed Dragon				X					
	Ctenophorus caudicinctus	Western Ring-tailed Dragon			X	X					
	Ctenophorus isolepis isolepis	Central Military Dragon; Crested Dragon			X	X			X	X	
	Ctenophorus nuchalis	Central Netted Dragon			X	X			X	X	
	Ctenophorus scutulatus	Lozenge-marked Dragon			X	X					
	Ctenophorus caudicinctus caudicinctus					X					
	Ctenophorus isolepis	Crested Dragon			X	X					
	Ctenophorus isolepis gularis				X						
	Ctenophorus reticulatus				X	X					
	Diporiphora paraconvergens	Grey-striped Western Desert Dragon			X	X					
	Diporiphora vescus	Northern Pilbara Tree Dragon				X					
	Diporiphora pindan				X	X					
	Diporiphora vescus	Northern Pilbara Tree Dragon			X						
	Diporiphora winneckei					X					
	Gowidon longirostris	Long-nosed Dragon			X	X			X		
	Lophognathus gilberti	Ta-ta				X					
	Lophognathus horneri	Horner's Dragon			X						
	Pogona minor mitchelli	Dwarf Bearded Dragon			X	X					
	Pogona minor	Dwarf Bearded Dragon				X					
	Pogona minor minor	Western Bearded Dragon				X					
Alaudidae	*Mirafra javanica*	Horsfield's Bushlark			X	X			X		
Alcedinidae	*Dacelo leachii*	Blue-winged Kookaburra			X	X					
	Dacelo leachii occidentalis	Pilbara Blue-winged Kookaburra			X						
	Todiramphus chloris	Collared Kingfisher			X	X					
	Todiramphus chloris pilbara					X					
	Todiramphus pyrrhopygius	Red-backed Kingfisher			X	X					
	Todiramphus sanctus	Sacred Kingfisher			X	X					
Anatidae	*Anas castanea*	Chestnut Teal			X						
	Anas gracilis				X	X					
	Anas superciliosa	Pacific Black Duck			X	X					
	Aythya australis	Hardhead			X	X					
	Chenonetta jubata	Australian Wood Duck			X						
	Cygnus atratus	Black Swan			X	X					
	Dendrocygna arcuata	Wandering Whistling-duck			X						

Family	Scientific Name	Common Name	WA	EPBC	A	B	C	D	E	F	G
	Dendrocygna eytoni	Plumed Whistling Duck			X	X					
	Malacorhynchus membranaceus	Pink-eared Duck			X	X					
	Spatula querquedula	Garganey			X						
	Spatula rhynchotis	Australasian Shoveler			X						
	Tadorna tadornoides	Australian Shelduck			X						
	Anhinga novaehollandiae novaehollandiae					X					
Anhingidae	*Anhinga melanogaster*	Darter				X					
	Anhinga novaehollandiae	Australasian Darter			X	X					
Apodidae	*Apus pacificus*	fork-tailed swift	MI	MI	X		X		X		
	Ardea alba	Great Egret			X						
	Ardea garzetta	Little Egret				X					
	Ardea ibis	Cattle Egret				X					
	Ardea novaehollandiae	White-faced Heron				X					
	Ardea pacifica	White-necked Heron			X	X					
	Bubulcus ibis	Cattle Egret			X						
	Bubulcus ibis coromandus	Eastern Cattle Egret			X						
Ardeidae	*Butorides striatus*				X	X					
	Egretta garzetta	Little Egret			X						
	Egretta novaehollandiae	White-faced Heron			X						
	Egretta sacra	Eastern Reef Egret			X	X					
	Egretta sacra sacra	Common Eastern Reef Egret			X						
	Ixobrychus flavicollis	Black Bittern			X						
	Nycticorax caledonicus				X	X					
	Nycticorax caledonicus australasiae	Rufous Night Heron			X	X					
	Artamus cinereus	Black-faced Woodswallow			X	X			X		
	Artamus cinereus melanops	Inland Black-faced Woodswallow			X						
	Artamus leucorynchus				X	X			X		X
	Artamus minor	Little Woodswallow			X	X					
Artamidae	*Artamus personatus*				X	X					
	Artamus superciliosus	White-browed Woodswallow			X	X					
	Cracticus nigrogularis	Pied Butcherbird			X	X					
	Cracticus torquatus	Grey Butcherbird			X						
	Gymnorhina tibicen	Australian Magpie			X						
Bovidae	*Bos taurus*	European Cattle			X					X	
	Capra hircus	Goat			X						
Bufonidae	*Platyplectrum spenceri*	Centralian Burrowing Frog			X	X					
Burhinidae	*Burhinus grallarius*	Bush Stone-curlew			X	X					
	Esacus magnirostris	Beach Stone-curlew			X	X					
	Cacatua roseicapilla	Galah				X					
Cacatuidae	*Cacatua sanguinea*	Little Corella			X	X					
	Cacatua sanguinea westralensis					X					
	Eolophus roseicapilla	Galah			X						
Campephagidae	*Coracina novaehollandiae*	Black-faced Cuckoo-shrike			X	X			X		
	Lalage tricolor	White-winged Triller			X	X					
Canidae	*Canis lupus*					X			X	X	X
	Vulpes vulpes	Red Fox			X	X			X		
Caprimulgidae	*Eurostopodus argus*				X	X					
Carphodactylidae	*Nephrurus levis pilbarensis*	Common Knob-tailed Gecko			X	X					
	Nephrurus levis				X	X					
Casuariidae	*Dromaius novaehollandiae*				X	X			X		
Centropodidae	*Centropus phasianinus*	Pheasant Coucal			X	X					
	Charadrius ruficapillus					X					
	Charadrius leschenaultii	greater sand plover, large sand plover	VU	VU & MI	X		X	X			
	Charadrius leschenaultii leschenaultii	Eastern Greater Sand Plover			X						
	Charadrius melanops	Black-fronted Dotterel				X					
	Charadrius mongolus	lesser sand plover	EN	EN & MI	X		X	X			
Charadriidae	*Charadrius mongolus mongolus*	Mongolian Lesser Sand Plover			X						
	Charadrius ruficapillus	Red-capped Plover			X						
	Charadrius veredus	oriental plover	MI	MI			X		X		
	Elseyornis melanops	Black-fronted Dotterel			X	X					
	Erythrogonys cinctus	Red-kneed Dotterel			X	X					
	Pluvialis fulva	Pacific golden plover	MI	MI	X		X				
	Pluvialis squatarola	grey plover	MI	MI	X		X	X			

Family	Scientific Name	Common Name	WA	EPBC	A	B	C	D	E	F	G
	Vanellus miles	Masked Lapwing			X						
	Vanellus tricolor	Banded Lapwing			X	X					
Chelidae	*Chelodina steindachneri*	Steindachner's Turtle			X						
Cheloniidae	*Chelonia mydas*	Green Turtle			X						
	Chelonia sp.					X					
	Eretmochelys imbricata	Hawksbill Turtle			X						
Ciconiidae	*Ephippiorhynchus asiaticus*				X	X					
Climacteridae	*Climacteris melanura*	Black-tailed Treecreeper			X	X					
	Climacteris melanurus melanurus	Northern Black-tailed Treecreeper			X						
Columbidae	*Columba livia*	Domestic Pigeon			X	X					
	Geopelia striata placida					X					
	Geopelia cuneata	Diamond Dove			X	X			X		
	Geopelia humeralis				X	X					
	Geopelia humeralis headlandi	Pilbara Bar-shouldered Dove			X						
	Geopelia placida	Peaceful Dove			X				X		
	Geopelia striata	Zebra Dove				X					
	Geophaps plumifera	Spinifex Pigeon			X	X					
	Ocyphaps lophotes	Crested Pigeon			X	X			X		
	Phaps chalcoptera	Common Bronzewing			X	X					
	Phaps histrionica	Flock Bronzewing			X						
Corvidae	*Corvus orru cecilae*				X	X					
	Corvus bennetti	Little Crow			X	X					
	Corvus coronoides	Australian Raven			X						
	Corvus orru	Torresian Crow			X	X					
	Corvus orru cecilae	Australian Torresian Crow			X						
Cuculidae	*Chalcites basalis*	Horsfield's Bronze-cuckoo			X						
	Chrysococcyx osculans	Black-eared Cuckoo							X		
	Cuculus pallidus	Pallid Cuckoo				X					
	Heteroscenes pallidus	Pallid Cuckoo			X						
Dasyuridae	*Antechinomys laniger*				X	X					
	Dasycercus blythi	brush-tailed mulgara	P4		X		X				
	Dasycercus sp.				X	X					
	Dasykaluta rosamondae	Little Red Kaluta			X	X			X		
	Dasyurus hallucatus	northern quoll	EN	EN	X		X	X	X		
	Ningaui timealeyi					X					
	Planigale				X	X					
	Planigale ingrami					X					
	Planigale sp.1	Orange-headed Pilbara Planigale				X					
	Pseudantechinus woolleyae	Woolley's Pseudantechinus			X	X					
	Sminthopsis hirtipes	Hairy-footed Dunnart				X					
	Sminthopsis youngsoni	Lesser Hairy-footed Dunnart			X	X			X		
	Sminthopsis macroura	Stripe-faced Dunnart			X	X					
Dicaeidae	*Dicaeum hirundinaceum*	Mistletoebird			X						
Diplodactylidae	*Diplodactylus laevis*	Desert Fat-tailed Gecko			X	X					
	Diplodactylus conspicillatus	Variable Fat-tailed Gecko				X					
	Lucasium woodwardi	Pilbara Ground Gecko			X	X					
	Lucasium stenodactylum	Western Sandplain Gecko			X	X					
	Rhynchoedura ornata	Western Beaked Gecko			X	X			X		
	Strophurus ciliaris aberrans	Northern Spiny-tailed Gecko			X	X					
	Strophurus elderi	Jewelled Gecko			X	X					
	Strophurus strophurus	Western Spiny-tailed Gecko			X	X					
	Strophurus wellingtonae	Western Shield spiny-tailed gecko			X	X					
	Strophurus ciliaris	Northern Spiny-tailed Gecko			X						
	Strophurus ciliaris ciliaris					X					
	Strophurus jeanae	Southern phasmid gecko			X	X					
Elapidae	*Acanthophis pyrrhus*	Desert Death Adder			X	X					
	Acanthophis wellsei	Pilbara Death Adder				X					
	Brachyurophis approximans	North-western Shovel-nosed Snake			X	X					
	Demansia psammophis				X	X			X		
	Demansia psammophis cupreiceps	Reticulated Whipsnake				X					
	Demansia reticulata	Yellow-faced Whipsnake			X						
	Demansia rufescens				X	X					
	Demansia torquata					X					

Family	Scientific Name	Common Name	WA	EPBC	A	B	C	D	E	F	G
	Ephalophis greyi	Mangrove Seasnake			X	X					
	Furina ornata	Moon Snake			X	X					
	Hydrelaps darwiniensis	Black-ringed Mangrove Snake			X	X					
	Hydrophis elegans	Elegant Seasnake			X	X					
	Hydrophis stokesii	Stoke's Seasnake			X	X					
	Hydrophis major	Olive-headed Seasnake			X						
	Pseudechis australis	Mulga Snake			X	X			X		
	Pseudonaja mengdeni	Western Brown Snake			X	X					
	Pseudonaja modesta	Ringed Brown Snake			X	X					
	Pseudonaja nuchalis					X					
	Simoselaps anomalus	Desert Banded Snake			X	X			X		
	Suta fasciata	Rosen's Snake			X	X					
	Suta punctata	Spotted Snake			X	X					
Emballonuridae	*Saccolaimus flaviventris*					X					
	Taphozous georgianus				X	X					
Estrildidae	*Emblema pictum*	Painted Finch			X	X					
	Heteromunia pectoralis				X	X					
	Neochmia				X						
	Neochmia ruficauda	Star Finch			X	X					
	Neochmia ruficauda subclarescens	Star Finch			X	X					
	Taeniopygia guttata	Zebra Finch			X	X			X		
	Taeniopygia guttata castanotis	Australian Zebra Finch			X	X					
Falconidae	*Falco berigora*	Brown Falcon			X	X					
	Falco cenchroides	Australian Kestrel			X	X					
	Falco cenchroides cenchroides	Nankeen kestrel			X	X					
	Falco hypoleucos	grey falcon	VU		X		X	X	X		
	Falco longipennis	Australian Hobby			X	X					
	Falco peregrinus	Peregrine Falcon			X						
	Falco subniger	Black Falcon			X						
Felidae	*Felis catus*	Cat			X	X				X	X
Fregatidae	*Fregata ariel*	lesser frigatebird	MI	MI	X		X				
	Fregata ariel ariel	Indo-pacific Lesser Frigatebird			X						
Gekkonidae	*Diplodactylus stenodactylus*								X		
	Gehyra incognita	Northern Pilbara Cryptic Gehyra			X	X					
	Gehyra kimberleyi	Robust Termitaria Gecko			X	X					
	Gehyra macra	Large Pilbara Rock Gehyra			X	X					
	Gehyra media	Medium Pilbara spotted Rock Gehyra			X	X					
	Gehyra micra	Small Pilbara Spotted Rock Gehyra			X	X					
	Gehyra montium	Central Rock Dtella			X	X					
	Gehyra variegata	Variegated Gehyra			X	X					
	Gehyra pilbara				X	X			X		
	Gehyra punctata	Spotted Dtella			X	X					
	Gehyra purpurascens	Purplish Dtella			X				X		
	Gehyra variegata	Tree Dtella							X		
	Hemidactylus frenatus	Asian House Gecko			X	X					
	Heteronotia binoei	Bynoe's Gecko			X	X			X		
	Heteronotia spelea	Desert Cave Gecko; Pilbara Cave Gecko			X	X					
Glareolidae	*Glareola maldivarum*	oriental pratincole	MI	MI	X		X				
	Stiltia isabella	Australian Pratincole			X	X					
Gruidae	*Antigone rubicunda*	Brolga			X						
	Grus rubicunda	Brolga			X						
Haematopodidae	*Haematopus fuliginosus*	Sooty Oystercatcher			X	X					
	Haematopus longirostris	Pied Oystercatcher			X	X					
Hirundinidae	*Cheramoeca leucosternus*	White-backed woodswallow			X	X					
	Hirundo ariel	Fairy Martin			X	X					
	Hirundo neoxena				X	X					
	Hirundo nigricans	Tree Martin			X	X					
	Hirundo rustica	barn swallow	MI	MI			X				
	Petrochelidon ariel	Fairy Martin			X						
	Petrochelidon nigricans	Tree Martin			X						
Homalopsidae	*Fordonia leucobalia*	White-bellied Mangrove Snake			X	X					
Laridae	*Chlidonias hybrida*	Whiskered Tern			X	X					
	Chlidonias leucopterus	white-winged black tern	MI	MI	X		X				

Family	Scientific Name	Common Name	WA	EPBC	A	B	C	D	E	F	G
	Chroicocephalus novaehollandiae	Silver Gull			X	X					
	Gelochelidon macrotarsa				X	X					
	Gelochelidon nilotica	gull-billed tern	MI	MI	X		X				
	Hydroprogne caspia	Caspian tern	MI	MI	X		X				
	Larus pacificus	Pacific Gull			X						
	Onychoprion anaethetus	Bridled Tern			X						
	Sterna bengalensis	Lesser Crested Tern				X					
	Sterna dougallii	Roseate Tern			X						
	Sterna hirundo	common tern	MI	MI	X		X				
	Sterna hybrida	Whiskered Tern				X					
	Sterna nereis	Fairy Tern			X	X					
	Sternula albifrons	little tern	MI	MI	X		X				
	Sternula albifrons sinensis	Indo-pacific Little Tern			X	X					
	Thalasseus bengalensis	Lesser Crested Tern			X						
	Thalasseus bergii	crested tern	MI	MI	X		X				
Leporidae	*Oryctolagus cuniculus*	Rabbit			X	X					
	Neobatrachus aquilonius	Northern Burrowing Frog			X	X					
Limnodynastidae	*Neobatrachus sutor*				X	X					
	Notaden nichollsi	Desert Spadefoot			X	X			X		
Locustellidae	*Poodytes carteri*				X	X					
	Poodytes gramineus	Little Grassbird			X						
Macropodidae	*Lagostrophus fasciatus fasciatus*	banded hare-wallaby, mernine	VU	VU			X				
	Macropus rufus					X					
	Osphranter robustus	Common Wallaroo			X	X				X	
	Osphranter robustus erubescens				X	X					
	Osphranter rufus	Red Kangaroo			X						
Maluridae	*Malurus assimilis assimilis*	Inland Purple-backed Fairy-wren			X	X			X		
	Malurus lamberti	Variegated Fairy-wren			X						
	Malurus lamberti assimilis	Purple-backed Fairywren				X					
	Malurus leucopterus	White-winged Fairy-wren			X	X			X		
Megadermatidae	*Macroderma gigas*	ghost bat	VU	VU			X	X			
	Certhionyx variegatus	Pied Honeyeater			X						
	Epthianura aurifrons	Orange Chat			X						
	Epthianura tricolor	Crimson Chat			X	X					
	Gavicalis virescens	Singing Honeyeater			X	X					
	Lichenostomus keartlandi					X					
	Lichmera indistincta	Brown Honeyeater			X	X					
	Lichmera indistincta indistincta	Western Brown Honeyeater			X						
	Manorina flavigula	Yellow-throated Miner			X	X					
	Melithreptus gularis	Black-chinned Honeyeater			X						
	Ptilotula keartlandi	Grey-headed Honeyeater			X						
	Ptilotula penicillata carteri	Western White-plumed Honeyeater			X						
	Ptilotula penicillatus	White-plumed Honeyeater			X	X					
	Ptilotula plumula	Grey-fronted Honeyeater			X						
	Sugomel niger	Black Honeyeater			X						
Meropidae	*Merops ornatus*	Rainbow Bee-eater			X	X			X	X	X
	Chaerephon jobensis	Northern Mastiff Bat			X	X					
Molossidae	*Ozimops cobourgianus*	northen coastal free-tailed bat	P1				X				
	Tadarida australis					X					
Monarchidae	*Grallina cyanoleuca*	Magpie-lark			X	X			X		
	Anthus novaeseelandiae	Australian Pipit			X	X			X		
Motacillidae	*Motacilla flava simillima*					X					
	Motacilla alba	White Wagtail			X						
	Motacilla tschutschensis	Eastern Yellow Wagtail			X						
	Leggadina lakedownensis	Lakeland Downs Mouse			X						
	Mus musculus	House Mouse			X	X			X		
	Notomys alexis					X			X	X	
	Pseudomys delicatulus	Delicate Mouse			X	X			X		
Muridae	*Pseudomys desertor*	Desert Mouse			X	X			X	X	
	Pseudomys chapmani	western pebble-mound mouse, ngadji	P4				X				
	Pseudomys hermannsburgensis	Sandy Inland Mouse			X	X					
	Pseudomys nanus	Western Chestnut Mouse				X					
	Rattus rattus	Black Rat			X	X					

Family	Scientific Name	Common Name	WA	EPBC	A	B	C	D	E	F	G
	Zyzomys argurus	Common Rock-rat			X	X					
Myobatrachidae	*Limnodynastes spenceri*	Spencer's Burrowing Frog							X		
	Uperoleia glandulosa	Glandular Toadlet			X	X					
	Uperoleia micromeles	Tanami Toadlet			X	X					
	Uperoleia talpa	Ratcheting Toadlet			X	X					
	Uperoleia russelli	Northwest Toadlet			X	X					
	Uperoleia talpa	Mole Toadlet			X						
Numididae	*Numida meleagris*	Helmeted Guineafowl			X						
Oceanitidae	*Fregetta grallaria*	White-bellied Storm-petrel			X						
	Oceanites oceanicus	Wilson's Storm-petrel			X						
Oreoicidae	*Oreoica gutturalis*	Crested Bellbird			X	X					
Otididae	*Ardeotis australis*	Australian Bustard			X	X			X		
Pachycephalidae	*Colluricincla harmonica*				X	X					
	Pachycephala lanioides				X	X					
	Pachycephala lanioides carnarvoni	Pilbara White-breasted Whistler			X						
	Pachycephala melanura	Mangrove Golden Whistler			X	X					
	Pachycephala rufiventris	Rufous Whistler			X	X			X		
Pardalotidae	*Pardalotus punctatus*	Spotted Pardalote				X					
	Pardalotus rubricatus	Red-browed Pardalote			X	X			X		
	Pardalotus striatus	Striated Pardalote			X						
Passeridae	*Passer montanus*				X	X					
Pelecanidae	*Pelecanus conspicillatus*	Australian Pelican			X	X					
Pelodryadidae	*Cyclorana maini*	Sheep Frog			X	X					
	Cyclorana australis				X	X					
	Litoria caerulea				X	X					
	Litoria rothii	Western Laughing Tree Frog				X					
	Litoria rubella				X	X					
Petauridae	*Petaurus breviceps*	Sugar Glider			X						
Petroicidae	*Eopsaltria pulverulenta*					X					
	Melanodryas cucullata	Hooded Robin			X						
	Peneothello pulverulenta	Mangrove Robin			X						
	Petroica goodenovii				X	X					
Phaethontidae	*Phaethon lepturus fulvus*	Christmas Island White-tailed Tropicbird, Golden Bosunbird		EN				X			
Phalacrocoracidae	*Microcarbo melanoleucos*	Little Pied Cormorant			X						
	Phalacrocorax carbo	Great Cormorant			X						
	Phalacrocorax melanoleucos	Little Pied Cormorant				X					
	Phalacrocorax sulcirostris	Little Black Cormorant			X						
	Phalacrocorax varius	Pied Cormorant			X	X					
Phasianidae	*Coturnix pectoralis*				X	X					
	Coturnix ypsilophora				X	X					
	Pavo cristatus	Indian Peafowl			X						
	Synoicus ypsilophorus australis	Brown Quail			X	X					
Podargidae	*Podargus strigoides*				X	X					
Podicipedidae	*Podiceps cristatus*	Great Crested Grebe			X						
	Poliocephalus poliocephalus	Hoary-headed Grebe			X						
	Tachybaptus novaehollandiae	Australasian Grebe			X	X					
Pomatostomidae	*Pomatostomus temporalis*	Grey-crowned Babbler			X	X					
Procellariidae	*Macronectes giganteus*	Southern Giant-Petrel, Southern Giant Petrel		EN				X			
Psittacidae	*Barnardius zonarius*	Australian Ringneck			X						
	Nymphicus hollandicus	Cockatiel			X	X					
	Trichoglossus haematodus	Rainbow Lorikeet			X						
Psittaculidae	*Melopsittacus undulatus*	Budgerigar			X	X					
	Pezoporus occidentalis	Night Parrot		EN				X			
	Platycercus spurius	Red-capped Parrot				X					
	Platycercus zonarius zonarius	Port Lincoln Parrot				X					
Pteropodidae	*Pteropus alecto*	Black Flying-fox			X	X					
Ptilonorhynchidae	*Chlamydera guttata*	Western bowerbird			X	X					
	Ptilonorhynchus maculatus	Spotted Bowerbird				X					
Pygopodidae	*Delma butleri*	Unbanded Delma			X	X				X	
	Delma nasuta	Sharp-snouted Delma			X	X					
	Delma pax	Peace Delma			X	X				X	
	Delma tincta	Excitable Delma			X	X				X	
	Delma borea	Rusty-topped Delma			X						

Family	Scientific Name	Common Name	WA	EPBC	A	B	C	D	E	F	G
	Delma haroldi					X					
	Lialis burtonis	Burton's Snake-lizard			X	X					
	Pygopus nigriceps	Western Hooded Scaly Foot			X	X					
Pythonidae	*Antaresia childreni*	Children's Python			X	X					
	Antaresia perthensis	Pygmy Python			X	X					
	Antaresia stimsoni					X					
	Aspidites melanocephalus				X	X					
	Aspidites ramsayi				X	X					
	Liasis olivaceus barroni	Pilbara olive python	VU	VU			X	X			
Rallidae	*Fulica atra*	Eurasian Coot			X						
	Fulica atra australis	Australian Eurasian Coot			X						
	Hypotaenidia philippensis	Buff-banded Rail			X						
	Hypotaenidia philippensis mellori	Australian Buff-banded Rail			X						
	Porphyrio porphyrio melanotus	Australasian Purple Swamphen			X						
	Porzana fluminea	Australian Spotted Crake			X						
	Tribonyx ventralis	Black-tailed Native-hen			X						
	Zapornia pusilla	Baillon's Crake			X						
Recurvirostridae	*Cladorhynchus leucocephalus*	Banded Stilt			X	X					
	Himantopus himantopus leucocephalus	Pied Stilt			X						
	Recurvirostra novaehollandiae				X	X					
Rhinonycteridae	*Rhinonicteris aurantia (Pilbara form)*	Pilbara leaf-nosed bat	VU	VU			X	X			
Rhipiduridae	*Rhipidura albiscapa*	Grey Fantail			X	X					
	Rhipidura leucophrys	Willie Wagtail			X	X					
	Rhipidura phasiana				X	X					
Rostratulidae	*Rostratula australis*	Australian Painted Snipe		EN				X			
Scincidae	*Carlia triacantha*	Desert Rainbow Skink				X			X		
	Carlia munda	Shaded-litter Rainbow-skink			X	X					
	Cryptoblepharus buchananii	Buchanan's Snake-eyed Skink			X	X					
	Ctenotus duricola	Eastern Pilbara Lined Ctenotus			X	X					
	Ctenotus grandis titan	Giant Desert Ctenotus			X	X					
	Ctenotus hanloni	Nimble Ctenotus			X	X					
	Ctenotus helenae	Dusky Ctenotus			X	X					
	Ctenotus pantherinus	Leopard Ctenotus			X	X			X		
	Ctenotus rufescens	Rufous Finesnout Ctenotus			X	X			X		
	Ctenotus saxatilis	Rock Ctenotus			X	X			X	X	
	Ctenotus serventyi	North-western Sandy-loam Ctenotus			X	X			X		
	Ctenotus angusticeps	Airlie Island ctenotus, northwestern coastal ctenotus	P3		X		X				
	Ctenotus colletti	Buff-tailed Finesnout Ctenotus			X						
	Ctenotus dux					X					
	Ctenotus grandis					X			X		
	Ctenotus inornatus	Brown Ctenotus				X					
	Ctenotus piankai				X	X			X		
	Ctenotus robustus	Robust Ctenotus			X						
	Egernia depressa				X	X					
	Eremiascincus pallidus	Western Narrow-banded Skink				X					
	Eremiascincus richardsonii	Broad-banded Sand Swimmer				X					
	Eremiascincus fasciolatus	Thick-tailed Skink			X				X		
	Eremiascincus isolepis	Northern Bar-lipped Skink			X	X					
	Eremiascincus musivus	Mosaic Desert Skink			X	X					
	Eremiascincus pallidus	Western Narrow-banded Skink			X						
	Eremiascincus richardsonii	Broad-banded Sand-swimmer			X						
	Lerista baynesi	Bayne's slider							X		
	Lerista bipes	Western Two-toed Slider			X	X			X		
	Lerista clara	Sharp-blazed Three-toed Slider			X	X					
	Lerista jacksoni	Jackson's Lerista			X	X					
	Lerista timida	Dwarf Three-toed Slider			X	X					
	Lerista labialis	Southern Sandslider			X						
	Lerista muelleri	Wood Mulch-slider				X			X		
	Menetia greyii	Common Dwarf Skink			X	X			X		
	Morethia ruficauda exquisita	Fire-tailed Skink			X	X					
	Morethia ruficauda					X			X		

Family	Scientific Name	Common Name	WA	EPBC	A	B	C	D	E	F	G
	Morethia ruficauda ruficauda				X						
	Notoscincus ornatus ornatus	Desert Glossy Skink			X	X					
	Notoscincus ornatus				X	X					
	Notoscincus ornatus ornatus				X						
	Proablepharus reginae	Silvereye Skink			X	X					
	Tiliqua multifasciata	Central Blue-tongue Skink			X	X			X		
	Actitis hypoleucos	common sandpiper	MI	MI	X		X				
	Arenaria interpres	ruddy turnstone	MI	MI	X		X	X			
	Arenaria interpres interpres	Palaearctic Ruddy Turnstone			X						
	Calidris falcinellus sibirica	Eastern Siberian Broad-billed Sandpiper				X					
	Calidris acuminata	sharp-tailed sandpiper	MI	MI		X	X	X			
	Calidris alba	sanderling	MI	MI		X	X				
	Calidris canutus	red knot	EN	EN & MI		X	X	X			
	Calidris falcinellus	Broad-billed Sandpiper				X					
	Calidris ferruginea	curlew sandpiper	CR	CR & MI		X	X				
	Calidris melanotos	pectoral sandpiper	MI	MI		X	X				
	Calidris minuta	Little Stint				X					
	Calidris pugnax	ruff	MI	MI		X	X				
	Calidris pugnax	Ruff			X						
	Calidris ruficollis	red-necked stint	MI	MI		X	X				
	Calidris subminuta	long-toed stint	MI	MI		X	X				
	Calidris tenuirostris	great knot	CR	CR & MI		X	X	X			
	Gallinago megala	Swinhoe's Snipe			X						
Scolopacidae	*Gallinago stenura*	Pin-tailed Snipe			X						
	Limicola falcinellus	broad-billed sandpiper	MI	MI			X				
	Limnodromus semipalmatus	Asian dowitcher	MI	MI	X		X	X			
	Limosa lapponica	bar-tailed godwit	MI	MI	X		X				
	Limosa lapponica baueri	Alaskan Bar-tailed Godwit			X						
	Limosa lapponica menzbieri	bar-tailed godwit (northern Siberian)	CR	CR			X	X			
	Limosa limosa	black-tailed godwit	MI	MI	X		X	X			
	Numenius madagascariensis	eastern curlew	CR	CR & MI	X		X				
	Numenius minutus	little curlew	MI	MI	X	X	X				
	Numenius phaeopus	whimbrel	MI	MI	X		X				
	Numenius phaeopus variegatus	Eastern Siberian Whimbrel			X						
	Phalaropus lobatus	red-necked phalarope	MI	MI	X		X				
	Tringa	Green Sandpiper			X						
	Tringa brevipes	grey-tailed tattler	MI & P4	MI	X		X				
	Tringa glareola	wood sandpiper	MI	MI	X		X				
	Tringa nebularia	common greenshank	MI	MI	X		X				
	Tringa stagnatilis	marsh sandpiper	MI	MI	X		X				
	Xenus cinereus	Terek sandpiper	MI	MI	X		X	X			
Strigidae	*Ninox connivens*	Barking Owl			X						
	Ninox novaeseelandiae				X	X					
	Ninox novaeseelandiae boobook	Southern Boobook			X	X					
Sulidae	*Sula dactylatra bedouti*				X						
	Sula leucogaster	Brown Booby			X						
	Sula leucogaster plotus	Indo-pacific Brown Booby			X						
Sylviidae	*Cincloramphus cruralis*				X	X					
	Cincloramphus mathewsi				X	X			X		
Tachyglossidae	*Tachyglossus aculeatus*	Short-beaked Echidna			X	X					
Threskiornithidae	*Platalea flavipes*	Yellow-billed Spoonbill			X						
	Platalea regia	Royal Spoonbill			X						
	Plegadis falcinellus	glossy ibis	MI	MI	X		X				
	Threskiornis molucca	Australian White Ibis			X	X					
	Threskiornis spinicollis	Straw-necked Ibis			X	X					
Thylacomyidae	*Macrotis lagotis*	Bilby			X			X			
Turnicidae	*Turnix velox*	Little Button-quail			X	X			X		
Typhlopidae	*Anilios ammodytes*	Sand-diving Blind Snake			X	X					
	Anilios grypus	Hook-nosed Blind Snake			X	X					
	Anilios pilbarensis	Pilbara Blind Snake			X	X			X		

Family	Scientific Name	Common Name	WA	EPBC	A	B	C	D	E	F	G
	Indotyphlops braminus	Flowerpot Blind Snake			X	X					
Tytonidae	*Tyto*	Barn Owl			X						
	Tyto javanica	Eastern Barn Owl			X						
Varanidae	*Varanus acanthurus*	Spiny-tailed Goanna; Spiny-tailed Monitor			X	X			X		
	Varanus brevicauda	Short-tailed Pygmy Goanna; Short-tailed Pygmy Monitor			X	X			X		
	Varanus bushi	Pilbara Mulga Goanna; Pilbara Mulga Monitor				X					
	Varanus eremius	Pygmy Desert Goanna; Pygmy Desert Monitor			X	X			X		
	Vernaus flavirufus								X		
	Varanus giganteus					X					
	Varanus gouldii	Sand Goanna; Sand Monitor			X	X					
	Varanus panoptes rubidus	Yellow-spotted Monitor			X	X					
	Varanus pilbarensis					X					
	Varanus tristis	Black-headed Monitor			X						
Vespertilionidae	*Chalinolobus gouldii*					X					
	Nyctophilus arnhemensis	Arnhem Land Long-eared Bat			X	X					
	Nyctophilus geoffroyi	Lesser Long-eared Bat			X	X					
	Scotorepens greyii					X					
	Vespadelus finlaysoni	Finlayson's Cave Bat			X	X			X		
Zosteropidae	*Zosterops lateralis*	Silvereye			X						
	Zosterops luteus				X	X					
	Zosterops luteus balstoni	Western Australian Yellow White-eye			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.

Flora Likelihood of Occurrence Table

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
Quoya zonalis	EN	T	99	Rocky steep hill slopes, near cliffs. Ironstone, granite or conglomerate.	May-Sep	**Unlikely** This taxon was recorded greater than 90 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.
Acacia cyperophylla var. *omearana*	P1	X	96	Stony and gritty alluvium. Along drainage lines, seasonal watercourses.	Mar - Apr or Sep - Oct	**Unlikely** This taxon was recorded greater than 90 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.
Atriplex eremitis	P1	X	13	Tussock grassland occurring as a component of a sub-unit of the Anna land system composed of level sand plains and a mosaic of saline plains. Saline plains amongst disturbed soil.	Aug	**Likely** This taxon was recorded less than 15 km from the study area and its preferred habitat may occur within the study area.	**Recorded**
Corchorus sp. Yarrie (J. Bull & D. Roberts CAL 01.05)	P1	X	85	Drainage line in gullies or at the base of mesas. Skeletal brown silty loam soil. Ironstone.	Jun	**Unlikely** This taxon was recorded greater than 80 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.
Euploca parviantrum		X	29	Recorded from hummock grassland with emergent shrub. Hummock grasslands on almost flat calcareous plains with quartz strew over massive granite.		**Unlikely** This taxon was recorded greater than 25 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.
Tephrosia rosea var. Port Hedland (A.S. George 1114)	P1	X	28	Pale red/yellow/brown sand, loam. Sand plains, coastal taxon, along ephemeral sandy rivers.	Jul - Oct	**Potential** This taxon was recorded greater than 25 km from the study area however, 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.

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
Triodia degreyensis	P1	X	27	Steep hill crest or base of gravelly hills. Brown skeletal clay loam over ironstone outcropping.	Feb	**Unlikely** This taxon was recorded greater than 25 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.
Gomphrena pusilla	P2	X	30	Fine beach sand. Behind foredune, littoral or near-littoral species. Limestone.	Mar - Apr or Jun	**Unlikely** This taxon was recorded greater than 25 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.
Abutilon sp. Pritzelianum (S. van Leeuwen 5095)	P3	X	47	Coastal and near coastal sand dunes, margins of estuaries and coastal plains. Red sand or clay. Often in open scrubby vegetation.	Jun - Nov	**Potential** This taxon was recorded greater than 45 km from the study area however, 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.
Dolichocarpa sp. Hamersley Station (A.A. Mitchell PRP 1479)	P3	X	94	Flat crabhole plains, cracking clay, gilgai self-mulching plains, gentle slopes, flow lines, gibber plains. Red-brown cracking clay/loam. Basalt and ironstone rocks and pebbles, pisolitic gravel.	Mar - May or Jul	**Unlikely** This taxon was recorded greater than 90 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.
Euphorbia clementii	P3	X	30	Gravelly hillsides, stony grounds, coastal areas.	Jun	**Unlikely** This taxon was recorded greater than 25 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.
Euphorbia inappendiculata var. *inappendiculata*	P3	X	86	Red, brown clay or loam. Plains.	May, Aug	**Unlikely** This taxon was recorded greater than 85 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.

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
Euploca mutica	P3	X	21	Sandy soils, red sit sand soil. Flats, plains, rocky slopes, low lying floodplain, flat carcareous plains. Quartz and granite.	Aug	**Unlikely** This taxon was recorded greater than 20 km from the study area and its preferred habitat is unlikely 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.
Gomphrena cucullata	P3	X	89	Red sandy loam, clayey sand. Open floodplains, disturbed grasslands.	Feb - Apr	**Unlikely** This taxon was recorded greater than 85 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.
Gomphrena leptophylla	P3	X	42	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 40 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.
Gymnanthera cunninghamii	P3	X	30	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 25 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.
Heliotropium murinum	P3	X	79	Red sand. Plains, sandplains, gibber plains, road verges. Granite.	May - Jun or Sep	**Unlikely** This taxon was recorded greater than 75 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.
Nicotiana umbratica	P3	X	98	Shallow soils. Rocky outcrops, under the shade of large boulders.	Apr or Jun or Sep	**Unlikely** This taxon was recorded greater than 95 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.

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
Rothia indica subsp. *australis*	P3	X	24	Sandy soils. Sandhills and sandy flats.	Apr - Aug	**Potential** This taxon was recorded greater than 20 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.
Stylidium weeliwolli	P3	X	80	Gritty sand soil, sandy clay. Edge of permanent pools or in gorges.	Aug - Sep	**Unlikely** This taxon was recorded greater than 75 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.
Terminalia supranitifolia	P3	X	98	Sand. Among basalt rocks, volcanic rock piles. Hill tops, rocky ridges in low hilly country relatively close to the coast.	Nov - Dec	**Unlikely** This taxon was recorded greater than 95 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.
Triodia basitricha	P3	X	99	Stony ground, gravelly hill, crests, hills, in gorges, nearby slopes of rocky hills.	Feb - Aug	**Unlikely** This taxon was recorded greater than 95 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.
Triodia chichesterensis	P3	X	31	Flat plains, light sandy soil, hill slopes, stony soil.	Feb - Apr or Aug	**Unlikely** This taxon was recorded greater than 30 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.
Vigna triodiophila	P3	X	86	Stony red-brown clay loam. Shallow red-brown clayey sand. Among boulders, steep slopes, rockpiles. Granophyre rocks (subvolcanic rock with quartz and feldspar).	Dec - Jun	**Unlikely** This taxon was recorded greater than 85 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.

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
Bulbostylis burbidgeae	P4	X	35	Granitic soils. Granite outcrops, cliff bases, under rock overhangs, rock crevices, creeklines.	Mar or Jun - Aug	**Unlikely** This taxon was recorded greater than 30 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.
Ptilotus mollis	P4	X	55	Stony hills, screes, steep rocky sites, often in full sun on massive ironstone formations.	May - Sep	**Unlikely** This taxon was recorded greater than 50 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.

Fauna Likelihood of Occurrence Table

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										
Actitis hypoleucos	Common Sandpiper	MI	MI	X		X	Within study area	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).	**Previously Recorded** The study area contains the wetlands and tidal flats that this species forages within. This species was previously recorded in the study area.	**Likely** The species has been recorded in the Study Area previously.
Apus pacificus	fork-tailed swift	MI	MI	X			27.49	The Fork-tailed Swift is almost exclusively aerial, flying from less than 1 m to at least 300 m above ground and probably much higher. In Australia, they mostly occur over a wide range of habitats from inland plains, dry or open habitats, riparian woodland, tea-tree swamps, low scrub, heathland, saltmarsh, over cliffs, beaches, islands and well out to sea, above foothills or in coastal areas. They also occur over settled areas, including towns, urban areas and cities (DCCEEW 2024).	**Unlikely** The aerial nature of this species and the small area of the study area indicate this species is unlikely to occur in the study area	**Unlikely** The aerial nature of this species and the small area of the study area indicate this species is unlikely to occur in the study area
Arenaria interpres	Ruddy turnstone	MI	MI	X		X	Within study area	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).	**Previously Recorded** The study area contains the wetlands and tidal flats that this species forages within. This species was previously recorded in the study area.	**Likely** The species has been recorded in the Study Area previously.
Calidris acuminata	Sharp-tailed Sandpiper	MI	MI	X		X	Within study area	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, sedgelands and other ephemeral wetlands, but leave when they dry (Department of Climate Change, Energy, the Environment and Water, 2023).	**Previously Recorded** The study area contains the wetlands and tidal flats that this species forages within. This species was previously recorded in the study area.	**Likely** The species has been recorded in the Study Area previously.
Calidris alba	Sanderling	MI	MI	X		X	Within study area	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).	**Previously Recorded** The study area contains the wetlands and tidal flats that this species forages within. This species was previously recorded in the study area.	**Likely** The species has been recorded in the Study Area previously.
Calidris canutus	Red Knot	EN	EN & MI	X		X	0.02	The Red Knot inhabits tidal mudflats, sandflats, beaches, saltmarshes, flooded pasture and ploughed land (Pizzey & Knight 2012). It does not breed in Australia.	**Likely** The study area contains the wetlands and tidal flats that this species forages within. This species was previously recorded within 5km of the study area.	**Likely** The species has been recorded in very close proximity to the Study Area previously and suitable habitat exists in the Study Area.
Calidris ferruginea	Curlew Sandpiper	CR	CR & MI	X		X	Within study area	The Curlew Sandpiper prefers habitats such as tidal mudflats, saltmarsh, salt fields, fresh, brackish or saline wetlands and	**Previously Recorded**	**Likely**

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				
								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).	The study area contains the wetlands and tidal flats that this species forages within. This species was previously recorded in the study area.	The species has been recorded in the Study Area previously.
Calidris melanotos	Pectoral Sandpiper	MI	MI	X		X	2.18	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 samphire (Department of Climate Change, Energy, the Environment and Water, 2023).	**Likely** The study area contains the wetlands and tidal flats that this species forages within. This species was previously recorded within 5km of the study area.	**Likely** The species has been recorded in very close proximity to the Study Area previously and suitable habitat exists in the Study Area.
Calidris pugnax	ruff	MI	MI	X			3.97	The Ruff inhabits a variety of open, moist habitats including grasslands, agricultural land and freshwater wetlands (Menkhorst et al., 2017).	**Likely** The study area contains the wetlands and tidal flats that this species forages within. This species was previously recorded within 5km of the study area.	**Likely** The species has been recorded in very close proximity to the Study Area previously and suitable habitat exists in the Study Area.
Calidris ruficollis	Red-necked Stint	MI	MI	X		X	4.04	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).	**Likely** The study area contains the wetlands and tidal flats that this species forages within. This species was previously recorded within 5km of the study area.	**Likely** The species has been recorded in very close proximity to the Study Area previously and suitable habitat exists in the Study Area.
Calidris subminuta	Long-toed Stint	MI	MI	X		X	0.02	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).	**Likely** The study area contains the wetlands and tidal flats that this species forages within. This species was previously recorded within 5km of the study area.	**Likely** The species has been recorded in very close proximity to the Study Area previously and suitable habitat exists in the Study Area.
Calidris tenuirostris	Great Knot	CR	CR & MI	X		X	Within study area	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).	**Previously Recorded** The study area contains the wetlands and tidal flats that this species forages within. This species was previously recorded in the study area.	**Likely** The species has been recorded in the Study Area previously.
Charadrius leschenaultii	Greater Sand Plover, Large Sand Plover	VU	VU & MI	X		X	Within study area	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,	**Previously Recorded** The study area contains the wetlands and tidal flats that this species forages within. This	**Likely** The species has been recorded in the Study Area previously.

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				
								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).	species was previously recorded in the study area.	
Charadrius mongolus	Lesser Sand Plover	EN	EN & MI	X		X	Within study area	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).	**Previously Recorded** The study area contains the wetlands and tidal flats that this species forages within. This species was previously recorded in the study area.	**Likely** The species has been recorded in the Study Area previously.
Charadrius veredus	Oriental Plover	MI	MI	X		X	Within study area	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 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).	**Previously Recorded** The study area contains the wetlands and tidal flats that this species forages within. This species was previously recorded in the study area.	**Likely** The species has been recorded in the Study Area previously.
Chlidonias leucopterus	White-winged Black Tern	MI	MI	X			0.02	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).	**Likely** The study area contains the wetlands and tidal flats that this species forages within. This species was previously recorded within 5km of the study area.	**Likely** The species has been recorded in very close proximity to the Study Area previously and suitable habitat exists in the Study Area.
Erythrotriorchis radiatus	Red Goshawk	VU	VU			X	>30	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 30 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.
Falco hypoleucos	Grey Falcon	VU		X		X	26.49	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 greater than 25 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.
Fregata ariel	Lesser Frigatebird	MI	MI	X		X	4.00	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.	**Likely** The study area contains the wetlands and tidal flats that this species forages within. This species was previously recorded within 5km of the study area.	**Likely** The species has been recorded in very close proximity to the Study Area previously and suitable habitat exists in the Study Area.
Gelochelidon nilotica	Gull-billed Tern	MI	MI	X			2.26	The Gull-billed Tern is strictly coastal, at high tide it often roosts with other terns or shorebirds (Menkhorst et al., 2017).	**Likely** The study area contains the wetlands and tidal flats that this species forages within. This	**Likely**

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				
									species was previously recorded within 5km of the study area.	The species has been recorded in very close proximity to the Study Area previously and suitable habitat exists in the Study Area.
Glareola maldivarum	Oriental Pratincole	MI	MI	X			3.39	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).	**Likely** The study area contains the wetlands and tidal flats that this species forages within. This species was previously recorded within 5km of the study area.	**Likely** The species has been recorded in very close proximity to the Study Area previously and suitable habitat exists in the Study Area.
Hirundo rustica	Barn Swallow	MI	MI	X		X	4.97	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).	**Likely** This species is highly mobile and was previously recorded within 5km of the study area.	**Likely** The species has been recorded in very close proximity to the Study Area..
Hydroprogne caspia	Caspian Tern	MI	MI	X			Within study area	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).	**Previously Recorded** The study area contains the wetlands and tidal flats that this species forages within. This species was previously recorded in the study area.	**Likely** The species has been recorded in the Study Area previously.
Limicola falcinellus	Broad-billed Sandpiper	MI	MI	X		X	Within study area	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).	**Previously Recorded** The study area contains the wetlands and tidal flats that this species forages within. This species was previously recorded in the study area.	**Likely** The species has been recorded in the Study Area previously.
Limnodromus semipalmatus	Asian Dowitcher	MI	MI	X		X	Within study area	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).	**Previously Recorded** The study area contains the wetlands and tidal flats that this species forages within. This species was previously recorded in the study area.	**Likely** The species has been recorded in the Study Area previously.
Limosa lapponica	Bar-tailed Godwit	MI	MI	X		X	Within study area	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	**Previously Recorded** The study area contains the wetlands and tidal flats that this species forages within. This species was previously recorded in the study area.	**Likely** The species has been recorded in the Study Area previously.

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								Australia (Department of Climate Change, Energy, the Environment and Water, 2023).		
Limosa lapponica menzbieri	Bar-tailed Godwit (Northern Siberian)	CR	CR	X		X	23.92	The Northern Siberian Bar-tailed Godwit habitat includes 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 (BirdLife International, 2023).	**Potential** This taxon was recorded more than 5 km from the study area and its preferred habitat may occur within the study area.	**Potential** Although the preferred habitat for this species is present within the study area, the nearest record is approximately 24km away.
Limosa limosa	Black-tailed Godwit	MI	MI	X		X	Within study area	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).	**Previously Recorded** The study area contains the wetlands and tidal flats that this species forages within. This species was previously recorded in the study area.	**Likely** The species has been recorded in the Study Area previously.
Macronectes giganteus	Southern Giant-Petrel, Southern Giant Petrel		EN & MI			X	>30	The Southern Giant Petrel is a seabird found in the southern oceans. Its habitat is primarily marine, over open seas and inshore waters favouring the edges of the continental shelf and pack ice (Morcombe 2021). Routinely ashore to feed and rest (Menkhorst et al., 2017). It has been found to gather at carrion, offal and sewage outlets. Breeding does not occur in Australia.	**Unlikely** This taxon was recorded greater than 30 km of the study area and its preferred habitat is does not occur in the study area.	**Unlikely** No suitable habitat recorded within study area.
Motacilla cinerea	Grey Wagtail	MI	MI			X	>30	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 30 km of the study area and its preferred habitat is does not occur in the study area.	**Unlikely** No suitable habitat recorded within study area.
Motacilla flava	Yellow Wagtail	MI	MI			X	>30	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).	**Unlikely** This taxon was recorded greater than 30 km of the study area and its preferred habitat is does not occur in the study area.	**Unlikely** No suitable habitat recorded within study area.
Numenius madagascariensis	Eastern Curlew	CR	CR & MI	X		X	Within study area	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).	**Previously Recorded** The study area contains the wetlands and tidal flats that this species forages within. This species was previously recorded in the study area.	**Likely** The species has been recorded in the Study Area previously.
Numenius minutus	Little Curlew	MI	MI	X		X	Within study area	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)	**Previously Recorded** The study area contains the wetlands and tidal flats that this species forages within. This species was previously recorded in the study area.	**Likely** The species has been recorded in the Study Area previously.
Numenius phaeopus	Whimbrel	MI	MI	X		X	Within study area	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,	**Previously Recorded**	**Likely**

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								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).	The study area contains the wetlands and tidal flats that this species forages within. This species was previously recorded in the study area.	The species has been recorded in the Study Area previously.
Pandion haliaetus	Osprey	MI	MI	X		X	Within study area	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).	**Previously Recorded** The study area contains the wetlands and tidal flats that this species forages within. This species was previously recorded in the study area.	**Likely** The species has been recorded in the Study Area previously.
Pezoporus occidentalis	Night Parrot	EN	EN			X	>30	The Night Parrot is a highly cryptic bird which was presumed extinct until its rediscovery in 2013. As such, habitat requirements are still being researched. At the time of this report Night Parrots are thought to roost and nest in clumps of dense vegetation, primarily old and large spinifex (Triodia) clumps, but sometimes other vegetation types are used. Little is known about foraging sites, but favoured sites are considered likely to vary across the range of the species. Triodia is also likely to provide a good food resource for night parrots, in times of mass flowering and seeding, but they also rely heavily on a range of other food species. Sclerolaena has been shown to be a source of food and moisture (Department of Biodiversity, Conservation and Attractions, 2017).	**Unlikely** This taxon was recorded greater than 30 km of the study area and its preferred habitat is does not occur in the study area.	**Unlikely** No suitable habitat recorded within study area.
Phaethon lepturus fulvus	Christmas Island White-tailed Tropicbird, Golden Bosunbird		EN			X	>30	The white-tailed tropicbird (Christmas Island) is endemic to Christmas Island, which is its only known breeding location. It is widely distributed across the island (Christmas Island National Park, 2013) and roosts and forages over the Indian Ocean. The birds roost at sea, with only incubating or brooding adults remaining on nests on the island at night.	**Unlikely** This taxon was recorded greater than 30 km of the study area and its preferred habitat is does not occur in the study area.	**Unlikely** No suitable habitat recorded within study area.
Phalaropus lobatus	Red-necked Phalarope	MI	MI	X		X	4.05	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).	**Likely** The study area contains the wetlands and tidal flats that this species forages within. This species was previously recorded within 5km of the study area.	**Likely** The species has been recorded in very close proximity to the Study Area previously and suitable habitat exists in the Study Area.
Plegadis falcinellus	Glossy Ibis	MI	MI	X			2.25	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).	**Likely** The study area contains the wetlands and tidal flats that this species forages within. This species was previously recorded within 5km of the study area.	**Likely** The species has been recorded in very close proximity to the Study Area previously and suitable habitat exists in the Study Area.
Pluvialis fulva	Pacific Golden Plover	MI	MI	X		X	Within study area	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	**Previously Recorded** The study area contains the wetlands and tidal flats that this species forages within. This species was previously recorded in the study area.	**Likely** The species has been recorded in the Study Area previously.

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								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).		
Pluvialis squatarola	Grey Plover	MI	MI	X		X	Within study area	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).	**Previously Recorded** The study area contains the wetlands and tidal flats that this species forages within. This species was previously recorded in the study area.	**Likely** The species has been recorded in the Study Area previously.
Rostratula australis	Australian Painted Snipe	EN	EN			X	>30	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 30 km of the study area and its preferred habitat is does not occur in the study area.	**Unlikely** No suitable habitat recorded within study area.
Sterna hirundo	Common Tern	MI	MI	X			0.02	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).	**Likely** The study area contains the wetlands and tidal flats that this species forages within. This species was previously recorded within 5km of the study area.	**Likely** The species has been recorded in very close proximity to the Study Area previously and suitable habitat exists in the Study Area.
Sternula albifrons	Little Tern	MI	MI	X		X	Within study area	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).	**Previously Recorded** The study area contains the wetlands and tidal flats that this species forages within. This species was previously recorded in the study area.	**Likely** The species has been recorded in the Study Area previously.
Thalasseus bergii	Crested Tern	MI	MI	X			3.40	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).	**Likely** The study area contains the wetlands and tidal flats that this species forages within. This species was previously recorded within 5km of the study area.	**Likely** The species has been recorded in very close proximity to the Study Area previously and suitable habitat exists in the Study Area.
Tringa brevipes	Grey-tailed Tattler	MI & P4	MI	X		X	Within study area	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).	**Previously Recorded** The study area contains the wetlands and tidal flats that this species forages within. This species was previously recorded in the study area.	**Likely** The species has been recorded in the Study Area previously.

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Tringa glareola	Wood Sandpiper	MI	MI	X		X	2.24	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).	**Likely** The study area contains the wetlands and tidal flats that this species forages within. This species was previously recorded within 5km of the study area.	**Likely** The species has been recorded in very close proximity to the Study Area previously and suitable habitat exists in the Study Area.
Tringa nebularia	Common Greenshank	MI	MI	X		X	Within study area	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).	**Previously Recorded** The study area contains the wetlands and tidal flats that this species forages within. This species was previously recorded in the study area.	**Likely** The species has been recorded in the Study Area previously.
Tringa stagnatilis	Marsh Sandpiper	MI	MI	X		X	Within study area	The Marsh Sandpiper lives in permanent or ephemeral wetlands of varying salinity, including swamps, lagoons, billabongs, saltpans, 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).	**Previously Recorded** The study area contains the wetlands and tidal flats that this species forages within. This species was previously recorded in the study area.	**Likely** The species has been recorded in the Study Area previously.
Xenus cinereus	Terek Sandpiper	MI	MI	X		X	Within study area	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 saltpans 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).	**Previously Recorded** The study area contains the wetlands and tidal flats that this species forages within. This species was previously recorded in the study area.	**Likely** The species has been recorded in the Study Area previously.
Mammals										
Dasycercus blythi	Brush-tailed Mulgara	P4		X			26.49	The Brush-tailed Mulgara predominantly occurs in hummock grasslands (*Triodia* spp.) and shrublands on sandy soils (Menkhorst and Knight, 2021).	**Unlikely** This taxon was recorded greater than 25 km of the study area and there is no Sandplain habitat considered suitable habitat for this species.	**Unlikely** No suitable habitat recorded within study area..
Dasyurus hallucatus	Northern Quoll	EN	EN	X		X	19.85	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	**Unlikely** This taxon was recorded greater than 25 km of the study area. The habitats in the study area do not support any rockpiles or large trees that would support den sites for the species.	**Unlikely** No suitable habitat recorded within study area.

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								and coastal fringes including dunes islands and beaches (Biota Environmental Services, 2008).		
Lagostrophus fasciatus fasciatus	Banded Hare Wallaby	VU	VU	X			29.09	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, *Acacia ligulata*, *Acacia coriacea*, *Acacia tetragonophylla*, *Scaevola spinescens* and *Alectryon oleifolius* on the sandplain, and *Diplolaena grandiflora* and western rosewood on the dunes or dune/travertine interface. They are often seen in heath and patches of *Triodia* (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.
Macroderma gigas	Ghost Bat	VU	VU	X		X	22.57	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 20 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.
Macrotis lagotis	Bilby, Dalgyte, Ninu	VU	VU			X	>30	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 30 km of the study area. The habitats in the study area do not support any sandplains that would support den sites for the species.	**Unlikely** No suitable habitat recorded within study area.
Ozimops cobourgianus	North-western Free-tailed Bat	P1		X			20.04	The North-western Free-tailed Bat occupies tree hollows of the mangrove species *Avicennia marina*, but no other types of roost site are known (Menkhorst and Knight, 2021).	**Potential (foraging only)** This taxon was recorded more than 20 km of the study area. However, the mangrove trees are small and suitable roosting habitat does not occur within the study area.	**Unlikely** Although foraging habitat for this species is present within the study area, the condition is of poor quality and the size of the area is very small. Higher quality habitat is widespread in the area. It is unlikely that this species would rely on this small area for survival.
Pseudomys chapmani	Western Pebble-mound Mouse, Ngadji	P4		X			26.04	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** This taxon was recorded greater than 25 km from the study area and its preferred habitat is not present within the study area.	**Unlikely** No suitable habitat recorded within study area.
Rhinonicteris aurantia (Pilbara form)	Pilbara Leaf-nosed Bat	VU	VU	X		X	23.04	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 20 km of the study area. However, suitable roosting habitat (deep caves) does not occur within the study area.	**Unlikely** Although foraging habitat for this species may be present within the study area, the condition is of poor quality and the size of the area is very small. Higher quality habitat is widespread in the area. It is unlikely that this species would rely on this small area for survival.
Reptiles										
Ctenotus angusticeps	Airlie Island Ctenotus, Northwestern Coastal Ctenotus	P3		X			18.24	The Airlie Island Ctenotus is found in coastal mudflats vegetated with samphire (Wilson and Swan, 2017).	**Unlikely** This taxon was recorded greater than 15 km from the study area and its preferred habitat is not present within the study area.	**Unlikely** No suitable habitat recorded within study area.
Liasis olivaceus barroni	Pilbara Olive Python	VU	VU	X		X	23.06	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	**Unlikely** This taxon was recorded greater than 20 km from the study area and its 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				
								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).		

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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 (2016d)

Appendix 5: Field sites within the study area

Site	Type	Easting (mE)	Northing (mN)
DSL_04	Relevé	696463	7760297
DSL_05	Relevé	696361	7760287

Appendix 6: Flora species recorded within the study area

Family	Species	Status
Acanthaceae	*Avicennia marina* subsp*. marina*	
Aizoaceae	*Sesuvium portulacastrum* subsp. *portulacastrum*	
	Trianthema turgidifolium	
Amaranthaceae	*Ptilotus exaltatus*	
	Surreya diandra	
Apocynaceae	*Calotropis procera*	
Bataceae	*Batis argillicola*	
Chenopodiaceae	*Atriplex eremitis*	P1
	Atriplex sp.	
	Enchylaena tomentosa	
	Neobassia astrocarpa	
	Rhagodia eremaea	
	Salsola australis	
	Suaeda arbusculoides	
	Tecticornia indica subsp*. leiostachya*	
Cucurbitaceae	*Cucumis variabilis*	
Fabaceae	*Indigofera trita*	
	Swainsona sp.	
Malvaceae	*Sida fibulifera*	
Plumbaginaceae	*Muellerolimon salicorniaceum*	
Poaceae	*Cenchrus ciliaris*	*
	Eragrostis sp.	

Note: * indicates an introduced species

Appendix 7: Framework for significance ranking of flora and fauna species

1. *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.

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
Atriplex eremitis	P1	696361	7760287	1

Appendix 9: Introduced (weed) species recorded during survey

Species	Easting (mE)	Northing (mN)	Number of Individuals
**Cenchrus ciliaris*	696463	7760297	25
* *Cenchrus ciliaris*	696361	7760287	1