

FerrAus Ltd



**PROPOSED RAIL CORRIDOR (OPTION 2)
BIOLOGICAL ASSESSMENT**

JUNE 2011

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This report was completed for FerrAus Ltd

FER11001 – Rail Corridor

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EXECUTIVE SUMMARY

A Level 1 flora, vegetation and fauna survey was carried out along FerrAus Ltd's Option 2 Rail Corridor, part of a transport system that would link the proposed Davidson Creek and Robertson Range iron ore mines with Port Hedland. A desktop study was complemented by a field survey of a corridor of land 85 km long and 3 km wide. The corridor was surveyed by way of 25 sampling points, and 171 taxa (species, subspecies and varieties) from 31 families and 95 genera were recorded.

No Declared Rare Flora (Threatened or Presumed Extinct) species, pursuant to subsection 2 of section 23F of the *Wildlife Conservation Act (1950)* were located during the survey. No plant taxa pursuant to section 179 of the *Environment Protection Biodiversity Conservation Act 1999* were located in the areas surveyed. Three Priority taxa as defined by the Department of Environment and Conservation (DEC, 2011a) were located during the survey. These were the Priority 3 plant *Vigna* sp. rockpiles (R. Butcher *et al.* RB 1400) and the Priority 4 plants *Eremophila youngii* subsp. *lepidota* and *Goodenia nuda*.

Five vegetation units were observed and described in the course of the survey. None of these resembled any of the Threatened Ecological Communities (TECs) listed under the federal *Environment Protection and Biodiversity Conservation Act 1999*, nor any of the TECs listed by the Department of Environment and Conservation (DEC, 2011b). One vegetation unit corresponded to the Priority 1 Ecological Community "Fortescue Marsh (Marsh Land System)". The Fortescue Marsh is also considered a Nationally Important Wetland, and is listed as an "indicative place" on the Register of National Estate (DSEWPC, 2011c).

Ten species of exotic flora were recorded from the survey, one of which (**Parkinsonia aculata*), is listed as Declared Plant in this region by the Department of Agriculture and Food (DAF, 2011).

There are three reptiles and no amphibians of conservation significance that may occur along the Option 2 route. There are six mammals and 10 birds of conservation significance that may occur on the site. Each species is listed and discussed below.

A more intense field survey would be required to better sample the flora and fauna and properly assess all the conservation issues likely to arise if the Option 2 Rail Corridor is pursued.

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1. INTRODUCTION

1.1 INTRODUCTION AND SCOPE OF WORK

Animal Plant Mineral Pty Ltd (APM) was engaged by FerrAus Ltd (FerrAus) to provide a Level 1 flora and vegetation survey and Level 1 risk-based fauna assessment for a proposed rail corridor option in the east Pilbara region of Western Australia.

This assessment included:

- a desk-top investigation of the proposed rail corridor option, including a review of on-line databases and reports available in the public domain;
- a review of matters of national environmental significance that are protected under the *Environment Protection and Biodiversity Conservation (EPBC) Act 1999* that potentially occur within the vicinity of the corridor area;
- discussion of the likely occurrence of conservation significant species listed under the *Wildlife Conservation Act 1950* in the project area;
- a review of the currently listed Priority Ecological and Threatened Ecological Communities of the Pilbara region to determine if these communities are present in the project area;
- the identification of any environmental issues relating to fauna, flora and vegetation that may require the current proposed rail alignment to be altered; and
- consideration of the potential risks to the fauna and flora associated with clearing of native vegetation.

The proposed rail corridor is one of two potential options that FerrAus is considering for transportation of ore from Davidson Creek and Robertson Range proposed mines. This corridor option runs for approximately 85km (Figure 1) with the southern extent commencing approximately 35km north-east of Newman on the Marble Bar Road (119° 58' 32"E, 23° 01' 50"S). The corridor follows the Marble Bar Road north for approximately 50km to the junction with the Munjina – Roy Hill Road where it diverts off the Marble Bar road and trends north-west for approximately 35km crossing the edge of the Fortescue Marsh and finishing at 119° 51' 55"E, 22° 24' 02"S.

The project area is situated in the Fortescue Plains subregion of the Pilbara bioregion (Thackway and Cresswell, 1995). The study area includes river gum woodlands along the Fortescue River, chenopod shrublands associated with the salt marsh communities of the Fortescue Marsh, mulga-bunch grass and short grass communities on alluvial plains and broad tracts of spinifex plains.



Figure 1: General location map.

1.2 BACKGROUND AND SUPPORTING INFORMATION

In Western Australia, all native fauna species are protected under the *Wildlife Conservation Act 1950-1979*. Fauna species that are considered rare, threatened with extinction or have high conservation value are specially protected by four schedules (Appendix 1) in this Act. In addition, some species of fauna are covered under the 1991 ANZECC convention, while certain birds are listed under the Japan and Australian Migratory Bird Agreement (JAMBA) and the China and Australian Migratory Bird Agreement (CAMBA). In addition to the above classification, the Department of Environment and Conservation (DEC) also classify some other fauna under five different Priority codes (Appendix 1). Species considered to be of national conservation significance are protected under the *EPBC Act 1999*. Under this Act, activities that may have a significant impact on a species of national conservation significance must be referred to the Department of Sustainability, Environment, Water, Population and Communities (SEWPAC) for assessment.

Plants may be afforded Rare or Priority status when they are known only from a small number of populations, and when at least some of those populations are deemed to be under threat. Declared Rare Flora are protected under section 23F of the *Wildlife Conservation Act 1950-1979*, and it is an offence to “take” Rare Flora without ministerial permission. Section 23F defines “to take” as “...to gather, pick, cut, pull up, destroy, dig up, remove or injure the flora or to cause or permit the same to be done by any means.” Plants and ecological communities considered to have national conservation significance may also be listed under the *EPBC Act 1999*, and may not be damaged or destroyed without the permission of the Federal Minister for the Environment. Definitions of conservation codes for flora are provided in Appendix 2.

Several previous biological surveys have been undertaken in the vicinity of the project area and have been reviewed, these include:

- Animal Plant Mineral (2010) Fauna Habitat Survey of the Proposed Pipeline Route from Roy Hill Station to Eaton Bore. Unpublished report for Roy Hill Iron Ore Pty Ltd.
- Phoenix Environmental Services Pty Ltd (2010) Level 2 Vertebrate Fauna Survey. Unpublished report for FerrAus Ltd.
- G & G Environmental Pty Ltd (2010) Flora and Vegetation Survey FerrAus Pilbara Project. Unpublished report for FerrAus Ltd.
- Ecological Environment (2009) Robertson Range Vertebrate Fauna Survey. Unpublished report for FerrAus Ltd.
- Animal Plant Mineral (2009) Southern Rail Corridor: Vegetation and Flora Assessment Survey. Unpublished report for Hancock Prospecting Pty Ltd.

2. METHODS

2.1 CONTRIBUTING AUTHORS

The field flora and vegetation component of this survey and associated reporting was undertaken by Dr Chris Hancock and Ms Corinne Chambers. Plant identifications were carried out by Dr Chris Hancock and Ms Cate Taus.

Notes and photographs from the field survey and a reconnaissance of the full route by helicopter were used as the basis for the desktop fauna assessment report. This component of the report was prepared by APM Principal Biologist Dr Mitch Ladyman.

2.2 DESKTOP METHODOLOGY

2.2.1 FLORA AND VEGETATION SURVEY

This biological assessment survey fulfils the criteria for a Level 1 survey according to EPA Guidance Statement No. 51 on terrestrial flora and vegetation surveys for environmental impact assessment (EPA, 2004a). It includes a 'desktop' review of flora and ecological communities of conservation significance from the study area, and a reconnaissance survey that comprised sampling of flora, vegetation classification and vegetation condition assessment.

The total area of investigation along the 85km rail corridor was approximately 25,500ha; the survey area comprised a corridor 1.5km either side of the centre line. The final impact footprint is proposed to be approximately 100m wide along the length of the corridor totalling an area of 850ha.

Prior to commencing the fieldwork, a number of database searches were undertaken.

A search of the DEC Threatened Species Branch and Western Australian Herbarium databases was completed for the corridor from its northern extent (119° 51' 55"E, 22° 24' 02"S) to its southern extent (119° 58' 32"E, 23° 01' 50"S), plus an additional 50km radial buffer; the search results are included as Appendix 3 of this report. The DEC also provides an online search tool, NatureMap (DEC, 2011d), detailing historical collection records of flora and fauna across Western Australia. The results of an area search for the proposed rail corridor are presented as Appendix 4. The Threatened Species Branch, Western Australian Herbarium and NatureMap searches produced one Declare Rare Flora (DRF) species and 39 Priority Plants. At the Western Australian Herbarium, specimens of these plants were examined, described and photographed. The pictures and descriptions were used to aid recognition in the field.

An online search for matters of national significance and matters protected by the *EPBC Act 1999*, e.g. heritage areas, Register of National Estate, Ramsar and important wetlands was undertaken using the Protected Matters Search Tool (DSEWPC, 2011c).

The linear search covered the proposed corridor area from 119° 51' 55"E, 22° 24' 02"S to 119° 58' 32"E, 23° 01' 50"S, plus an additional 10km buffer; the search results are included as Appendix 5.

The conservation value of an area, and therefore the potential future impacts, can also be assessed in the context of the biogeographical regionalisation of Australia (Thackway and Cresswell, 1995). Bioregions form a basis for setting boundaries of areas that have similar attributes, in terms of flora and fauna and conservation values. The Australian Natural Resources Atlas (Australian Government, 2011) and the Biodiversity Audit of Western Australia (DEC, 2002) detail information about the bioregions; bioregions are large, geographically distinct areas of land with common characteristics such as climate, ecological features and plant and animal communities. Bioregions represent lowest order of resolution between different flora and fauna habitats. There are 85 bioregions and 403 sub-regions in Australia. A synopsis of the relevant Pilbara bioregion was assessed for its consideration to ecosystems, communities and flora of conservation significance.

The study area was also assessed in the context of regional and statewide vegetation and land system mapping programs carried out by Beard (1975) and Van Vreeswyk *et al.* (2004).

2.2.2 FAUNA SURVEY

This biological assessment survey fulfils the criteria for a Level 1 survey (desktop and reconnaissance survey) according to the EPA Guidance Statement No. 56 on terrestrial fauna surveys for environmental impact assessment (EPA, 2004b). It includes a review of all fauna records from the study area and a site visit that comprised a helicopter reconnaissance flight over the proposed rail corridor study area. During the flight video footage of the entire route was recorded for reference.

The fauna habitats are interpreted using land systems, as defined by Van Vreeswyk *et al.* (2004), as a basis for their description; fauna habitat quality is described as per Appendix 6. Figure 2 shows the proposed rail corridor route over the land systems.

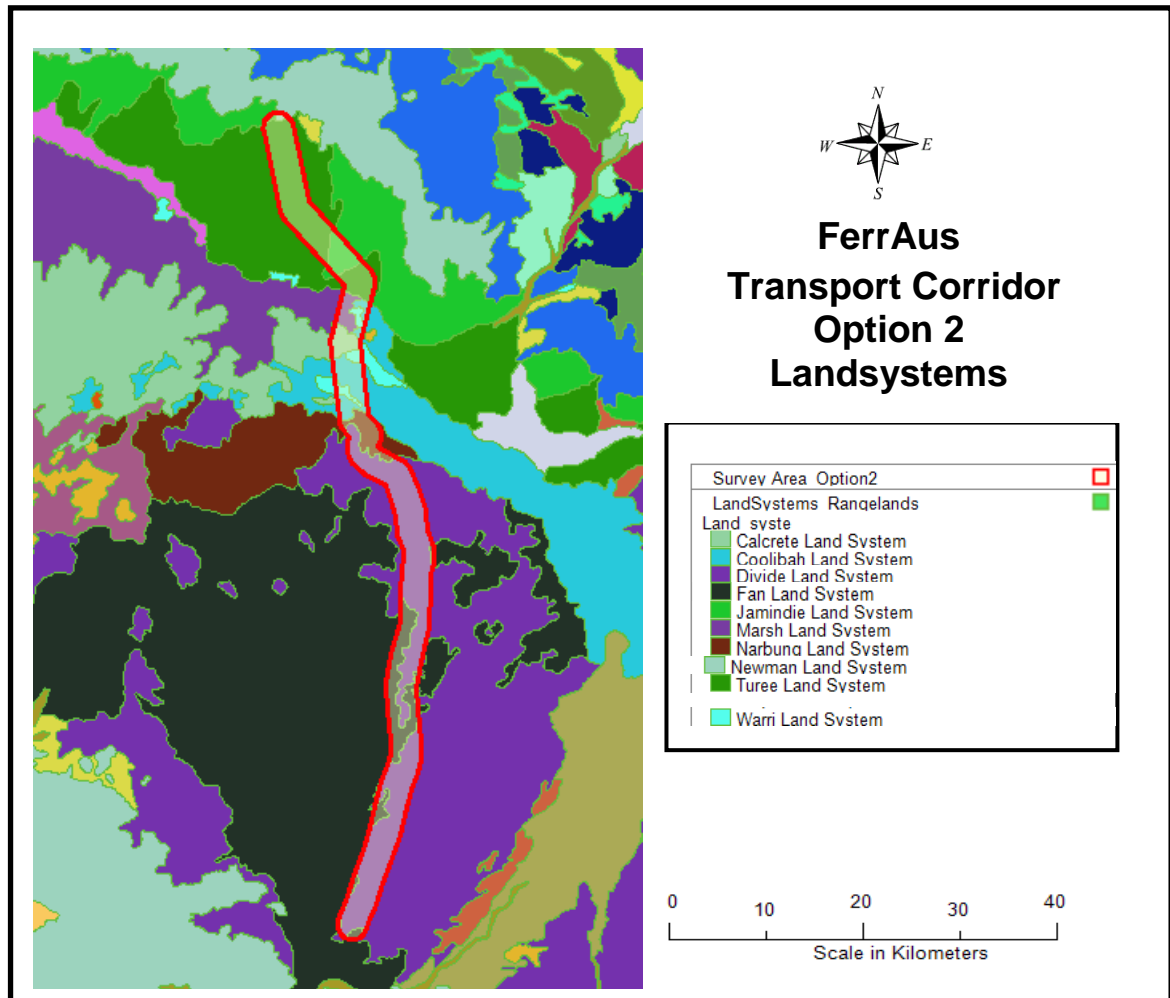


Figure 2: Proposed rail corridor route over land systems.

Lists of fauna expected to occur in the study area were produced using information from a number of sources and are presented in Appendix 7. As far as possible, expected species are those that are likely to utilise the study area, or be affected by changes to the study area. The lists exclude species that have been recorded in the general region as vagrants or for which suitable habitat is absent. The sources of information included publications that provide information on general patterns of distribution of frogs (Tyler and Doughty, 2009), reptiles (Storr *et al.* 1983, 1990, 1999 and 2002), birds (Barrett *et al.* 2003; Johnstone and Storr, 1998; Johnstone and Storr, 2004), and mammals (Menkhorst and Knight, 2001; Van Dyck and Strahan, 2008). In addition, the databases listed below in Table 1 were searched for specimen or observational records.

Table 1: Databases searched to generate the expected species list presented in Appendix 7

Database	Type of records held on database	Area searched
NatureMap (DEC, 20011d)	Records of specimens held in the WA Museum and DEC Fauna Database. Includes historical data.	Search from 119° 51' 55"E, 22° 24' 02"S to 119° 58' 32"E, 23° 01' 50"S, plus an additional 40km buffer
EPBC Protected Matters Search Tool (DSEWPC, 2011c)	Records on matters protected under the EPBC Act, including threatened species.	Linear search from 119° 51' 55"E, 22° 24' 02"S to 119° 58' 32"E, 23° 01' 50"S, plus an additional 10km buffer

The NatureMap search results are presented as Appendix 4 and the EPBC Protected Matters search results as Appendix 5.

In addition, recent fauna reports from the region of interest were also utilised to provide accessory lists for frogs, reptiles, birds and mammals. These reports included the following:

- Bamford Consulting Ecologists (2005). Fauna survey of proposed iron ore mine: Cloudbreak. Unpublished report for Fortescue Metal Group Ltd., Perth.
- Biota Environmental Sciences (2005). Fauna habitats and fauna assemblages of the proposed FMG Stage B Rail Corridor and Mindy Mindy; Christmas Creek; Mt Lewin and Mt Nicholas mines areas. Unpublished report for Fortescue Metal Group Ltd., Perth.
- *ecologia* (2006). Roy Hill Terrestrial Vertebrate Fauna Assessment, *ecologia* Environment, Unpublished Report for Hancock Prospecting Pty Ltd.
- *ecologia* Environment (2008). Roy Hill Iron Ore Project Proposed Infrastructure Supplementary Level 1 Terrestrial Vertebrate Fauna Survey. Unpublished report for Hancock Prospecting Pty Ltd., Perth.
- *ecologia* Environment (2008a). Roy Hill Iron Ore Project Northern and Southern Rail Spurs and Connections Desktop Survey. Unpublished report for Hancock Prospecting Pty Ltd., Perth.
- *Animal Plant Mineral* (2009). Southern Rail Corridor Fauna Survey. Unpublished report for Hancock Prospecting Pty Ltd., Perth.

Taxonomy and nomenclature for fauna species used in this report generally follow the WA Museum list on the NatureMap website (DEC, 2011d) with alternative bird taxonomy from Christidis and Boles (2008) given in parentheses. This is because the WA Museum utilises different bird taxonomy to that which is nationally accepted (Christidis and Boles, 2008).

Three levels of conservation significance are recognised in this report and these are based on how fauna conservation status is determined by the DEC and the SEWPAC (Appendix 1):

Conservation Significance 1:

- Species listed under State or Commonwealth Acts.

Conservation Significance 2:

- Species not listed under State or Commonwealth Acts, but listed in publications on threatened fauna or as Priority species by DEC.

Conservation Significance 3:

- Species not listed under State or Commonwealth Acts or in publications on threatened fauna or as Priority species by DEC, but considered of local significance because of their pattern of distribution or habitat preferences.

At the highest level of conservation significance (Conservation Significance 1) are those species that are protected under State or Commonwealth legislation.

The *EPBC Act 1999* is the Commonwealth Government's primary piece of environmental legislation. Listed under Part 3 of the *EPBC Act 1999* are 'matters of National Environmental Significance' that include threatened species and ecological communities and migratory species, among others. International Union for the Conservation of Nature (IUCN) categories are used to categorise threatened species as 'extinct', 'extinct in the wild', 'critically endangered', 'endangered', 'vulnerable' and 'conservation dependent', with all categories except 'extinct' and 'conservation dependent' listed as matters of National Environmental Significance. A list of migratory species is also maintained, containing mostly bird and marine species. The migratory species listed are those recognised under CAMBA, JAMBA or species listed under the Bonn Convention for which Australia is a range state. Species listed in JAMBA are also protected under Schedule 3 of the *Western Australian Wildlife Conservation Act 1950 (WA Wildlife Conservation Act)*.

The *WA Wildlife Conservation Act* is State legislation for fauna protection administered by the DEC. The *WA Wildlife Conservation Act* lists species under a set of Schedules, where threatened species are listed as Schedule 1. Schedule 1 species are further categorised by DEC into the IUCN categories 'extinct', 'extinct in the wild', 'critically endangered', 'endangered', 'vulnerable' and 'conservation dependent' species (DEC 2010). The schedules and categories are further described in Appendix 1.

The second-highest level of conservation significance (Conservation Significance 2) are species that are listed under publications on threatened species, or are listed as Priority species by DEC.

Reports on the conservation status of most vertebrate fauna species have been produced by SEWPAC in the form of Action Plans. An Action Plan is a review of the conservation status of a taxonomic group against IUCN categories.

Action Plans have been prepared for amphibians (Tyler, 1998), reptiles (Cogger et al. 1993), birds (Garnett and Crowley, 2000), monotremes and marsupials (Maxwell et al. 1996), rodents (Lee, 1995) and bats (Duncan et al. 1999). These publications also use categories similar to those used by the *EPBC Act 1999*. The information presented in some of the earlier Action Plans may be out of date due to changes since publication.

In Western Australia, the DEC has also produced a list of Priority Fauna made up of species that are not considered Threatened under the *WA Wildlife Conservation Act*, but for which the DEC feels there is cause for concern. Levels of Priority are described in Appendix 1.

At the third-highest level of conservation significance (Conservation Significance 3) are species that are not recognised under Commonwealth or State legislation, listed in publications by SEWPAC or listed as Priority species by DEC. These are species considered to be of local significance in the study area because they are at the limit of their distribution in the area, they have a very restricted range or they occur in breeding colonies (e.g. some waterbirds). This level of significance has no legislative or published recognition and is based on interpretation of information on the species patterns of distribution. Recognition of such species is consistent with the aim of preserving regional biodiversity.

2.3 FLORA AND VEGETATION SURVEY FIELDWORK METHODOLOGY

The fieldwork was undertaken from the 3rd to the 6th May 2011, with 25 sampling sites being accessed by foot and 4WD vehicle.

Prior to commencing the fieldwork, most sampling points were selected based on aerial photographs supplied by FerrAus such that the entire study area and all structural vegetation types were covered. Some points were moved during the course of the study and extra sites were added in order to better sample certain vegetation types.

Each sampling site was approximately 50m in diameter, except where plant communities were restricted to smaller areas such as the margins of watercourses. In order to characterize the main vegetation units of the area, the focus at each survey site was on the dominant and sub-dominant species; therefore the flora list generated at each site was not always fully comprehensive. At each sampling location the following details were recorded:

- soil type and colour
- geographic co-ordinates (GDA94, MGA Zones 50K and 51K)
- percent litter cover
- amount and type of any outcropping
- landscape unit
- aspect
- time since fire

- height and percentage cover of each stratum
- height and percentage cover of each vascular plant species
- vegetation condition according to the Keighery scale (Table 2)

Table 2: Vegetation condition rating scale (adapted from Keighery 1994)

Vegetation condition	Description
E - Excellent	Pristine or nearly so, no obvious signs of damage caused by human activities since European settlement.
VG - 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.
G - Good	More obvious signs of damage caused by human activity since European settlement, including some obvious impact on the vegetation structure such as that caused by low levels of grazing or slightly aggressive weeds.
P - Poor	Still retains basic vegetation structure or ability to regenerate to it after very obvious impacts of human activities since European settlement, such as grazing, partial clearing, frequent fires or aggressive weeds.
VP - Very Poor	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.
D - 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.

Plants with unknown or uncertain identities were collected and pressed on site; these plants were compared with confirmed specimens housed at the Western Australian Herbarium to ensure correct identifications.

Sampling point locations are listed in Appendix 8, and shown on Figure 3. The environmental data are summarized in Appendix 9.

Classification of plant communities was carried out on a species by site matrix using the cluster analysis program TWINSpan (Hill, 1979) which is included in the multivariate analysis package PC-ORD (MJM Software Design). Pseudospecies cut levels for the program were set at percentage cover values of 0, 1, 2, 5 and 10.

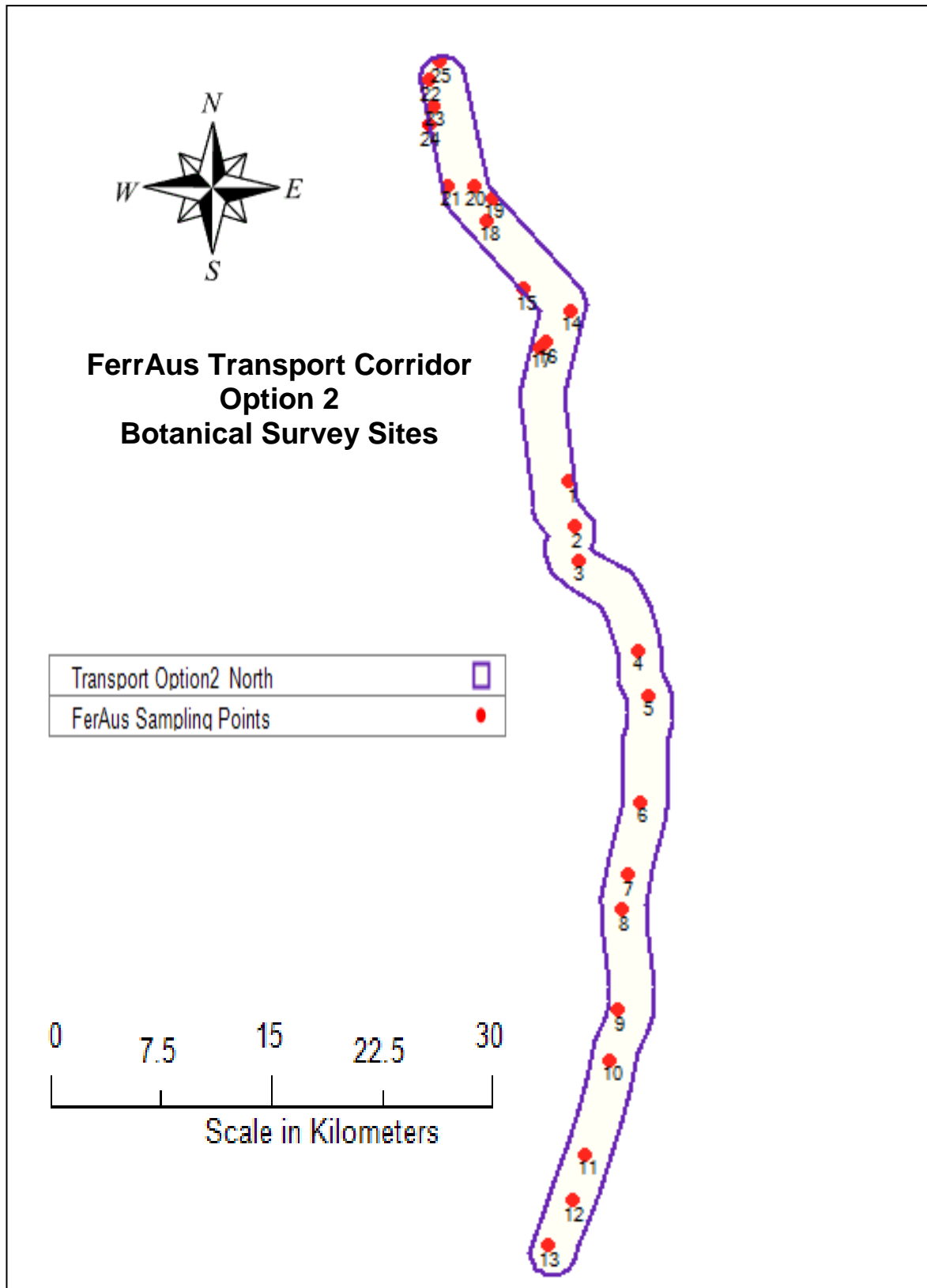


Figure 3: Sampling Point Locations

3. RESULTS

3.1 FLORA AND VEGETATION SURVEY RESULTS

3.1.1 DESKTOP ASSESSMENT

3.1.1.1 REGIONAL REPRESENTATION

Mapping for the Interim Biogeographic Regionalisation for Australia (IBRA version 6.1) programme placed the study area within the Pilbara Bioregion of the Eremaean Botanical Province (DSEWPC, 2011a). Within the Pilbara Bioregion the vegetation of the survey area has been mapped as 'Acacia Forests and Woodlands' and 'Hummock Grasslands'. Acacia Forests and Woodlands covered an estimated 1,993,480ha (11.2%) of the bioregion prior to European settlement. By about 1997 this area was little changed at 1,993,476 ha (11.2%). Hummock Grasslands covered an estimated 13,433,808 (75.2%) of the bioregion prior to European settlement. By about 1997 this area had been slightly reduced to 13,424,080 (75.2%) (Australian Government, 2011).

The proposed rail option is in the Fortescue Plains subregion, described by direct extracts from the Biodiversity Audit of Western Australia (DEC, 2002):

"The Fortescue Plains subregion is alluvial and has river frontages with extensive salt marsh, mulga bunch grass and short grass communities on the alluvial plains in the east. Deeply incised gorge systems in the western (lower) part of the drainage. River gum woodlands fringe the drainage lines. This is the northern limit of Mulga (*Acacia aneura*). An extensive calcrete aquifer (originating within a palaeo drainage valley) feeds numerous permanent springs in the central Fortescue, supporting large permanent wetlands with extensive stands of river gum and cadjeput *Melaleuca* woodlands. Climate conditions are semi-desert tropical with average rainfall of 300 mm, falling mainly in summer cyclonic events (BOM, 2011). Drainage occurs to the north-west. Subregional area is 2,041,914 ha".

Earlier mapping by Beard (1975, 1990) included the survey area in the Fortescue Valley physiographic unit of the Fortescue Botanical District (or Pilbara Region). Within the survey area he recognized four vegetation types:

- 'Acacia aneura Low trees <10m scattered groups, no definite foliage cover Low Woodland of *Acacia aneura* trees in groves or patches'. The occurrence of this vegetation in the Pilbara represents the northern limit of a vegetation type that is very widespread further south across the Gascoyne Botanical District and into the north of the Murchison Botanical District.
- 'Unwooded Succulent Steppe of various halophytes forming an open canopy of 10-30% projective foliage cover'. Beard mapped this vegetation as occurring along the Fortescue River and surrounds where it passes through the proposed rail corridor and onto the flats of the Fortescue Marsh.

The succulent steppe vegetation continues west-nor-west across the marsh for about 105km to the Port Hedland – Newman Railway line. Beard did not map this vegetation type anywhere else outside of the Fortescue Marsh system.

- *Eucalyptus victrix* Medium trees rare but conspicuous Bunch grasses mid-dense 30-70% Tree Savanna of *Eucalyptus victrix*. This vegetation is limited to riverine habitats and Beard also mapped it around the De Grey, Yule and Turner rivers.
- *Eucalyptus gamophylla* Shrubs >1m tall rare but conspicuous (<10%) over *Triodia basedowii* Hummock grasses forming an open canopy of 10-30% projective foliage cover on sandplains'. This vegetation was mapped in several places in the south-east Pilbara as well as the north-east of the Gascoyne Botanical District.

Land system mapping by Van Vreeswyk *et al.* (2004) was consulted to enable a broad assessment of the regional representation of vegetation that occurs in the study area. Land systems are defined as a 'recurring pattern of topography, soils and vegetation'. The study area intersects ten land systems, the geomorphologies described by Van Vreeswyk *et al.* (2004) are:

Jamindie - Depositional surfaces; non-saline plains with hardpan at shallow depth and groved vegetation, stony upper plains and low rises on hardpan or rock, very widely spaced tributary drainage tracts and channels; minor stony gilgai plains, sandy banks and low ridges and hills. Relief up to 30 m. This land system covers 2,074 km² or 1.1% of the Pilbara region, of which 22% is considered in very good condition.

Marsh - Depositional surfaces; lake beds and saline peripheral flood plains forming a termination basin for the upper reaches of the Fortescue River. This land system covers 977 km² or 0.5% of the Pilbara region, of which 43% is considered in very good condition.

Turee - Depositional surfaces, level plains with a mosaic of stony gilgaied and non-gilgaied surfaces, groved hardpan plains and stony saline alluvial plains subject to sheet flow; sparse through drainage tracts with non-tributary and distributary channels. This land system covers 581 km² or 0.3% of the Pilbara region, of which 1% is considered in very good condition.

Coolibah – Depositional surfaces; active flood plains and alluvial plains with shallow, meandering and anastomosing central channels of the Fortescue River. Covers 1,014 km² or 0.6% of the Pilbara region; 9% is considered in very good condition.

Calcrete – Depositional surfaces; valley fill deposits – stony plains as a mosaic of calcrete tables and low rises elevated up to 10 m above the surrounding surfaces of narrow inter-table drainage areas and restricted sandy plains; drainage patterns absent to sparse tributary tracts and occasional through going trunk channels. Occupies 1,444 km² or 0.8% of the Pilbara region; 72% is considered in very good condition.

Narbung – Depositional surfaces; almost level alluvial plains receiving overland sheet flow, minor sand patches and sandy banks; no defined channeled drainage features but internal drainage zones with prominent drainage foci, groves and small claypans. Restricted to a single area 159 km² or 0.1% of the Pilbara region; 24% is considered in very good condition.

Divide – Depositional surfaces; level to gently undulating sandplain with occasional linear dunes and plains with thin sand cover, very little organized drainage but some tracts receiving run-on from adjacent more elevated systems, these tracts mostly unchanneled but locally with sandy channels. A large, unconsolidated land system of 5,293 km² or 2.9% of the Pilbara region; 91% is considered in very good condition.

Fan – Depositional surfaces; level washplains subject to overland sheet flow with numerous drainage foci (groves of dense vegetation) arranged as arcuate bands transverse to the direction of sheetflow, level plains with gilgai microrelief, minor areas of sand sheet and sandy banks; sparse to very rare drainage tracts subject to more concentrated sheet flow and with occasional shallow channels. Relief less than 10 m. Occupies 1,482 km² or 0.8% of the Pilbara region; 4% is considered in very good condition.

Warri – Depositional surfaces; calcrete valley fills; level plains with a mosaic of calcrete tables elevated up to 3 m above surrounding surfaces, narrow inter table areas and drainage floor with channels, minor plains on saline alluvium and hardpan plains subject to sheet flow. Overall relief mostly below 5 m. This small land system occupies 305 km² or 0.2% of the survey area; 7% is considered in very good condition.

Newman – Erosional surfaces; plateau and mountains – extensive high plateau, mountains and strike ridges with vertical escarpments and steep scree slopes and more gently inclined lower slopes; moderately spaced dendritic and rectangular tributary drainage patterns of narrow valleys and gorges with narrow drainage floors and channels. Relief up to 450m. This land system occupies 14,580km² or 8.0% of the survey area; 91% is considered in very good condition.

3.1.1.2 VEGETATION AND FLORA DESKTOP INTERPRETATION

In the Pilbara region there are only two Threatened Ecological Communities (TECs), the *Themeda* grasslands on cracking clay (Hamersley Station, Pilbara) and the Ethel Gorge stygobiont community (DEC, 2011b), neither of these occurs on or near the proposed rail corridor. There are 29 Priority Ecological Communities (PECs) in the Pilbara region, identified by the DEC as at December, 2010 (DEC, 2011c). The proposed rail corridor traverses one of these, the Fortescue Marsh (Marsh Land System) which is listed as a Priority 1 PEC. The TEC and PEC listings are provided in Appendix 10.

The Protected Matters search tool did not return any botanical or geographical ‘matters of national environmental significance’ or ‘other matters protected by the EPBC Act’ within the proposed rail corridor area. The Fortescue Marsh was highlighted in the report however as a Nationally Important Wetland, and it is listed as an “indicative place” on the Register of National Estate (RNE). This means that “Data provided to or obtained by the Heritage Division has been entered into the database. However, a formal nomination (to the National Heritage List) has not been made and the Council has not received the data for assessment.” (DSEWPC, 2011c)

Four invasive plant species were listed as being likely to occur in the vicinity of the study area: **Cenchrus ciliaris*, **Parkinsonia aculeata*, **Prosopis* spp. and **Salvinia molesta*. The entire Protected Matters search tool report itemising these is provided in Appendix 5.

Consultation of the DEC Threatened Species Branch, Western Australian Herbarium and NatureMap records for Declared Rare or Priority Flora identified one DRF species, *Lepidium catapycnon*, and 39 Priority plant taxa within 50km of the study area; these are listed in Table 3.

Table 3: Declared Rare Flora and Priority Plants identified within 50km of the study area.

Priority Code	Species	Habitat	Database		
			Threatened (Declared Rare) Flora	WA Herbarium Specimen	NatureMap
T	<i>Lepidium catapycnon</i>	Skeletal soils. Hillsides	✓	✓	
1	<i>Acacia aphanoclada</i>	Skeletal stony soils. Rocky hills, ridges and rises.	✓	✓	
1	<i>Acacia cyperophylla</i> var. <i>omearana</i>	Stony and gritty alluvium. Along drainage lines.	✓		
1	<i>Acacia</i> sp. Nullagine (B.R. Maslin 4955)	Rocky clay. Low-lying areas between rocky hills.	✓		
1	<i>Aristida jerichoensis</i> var. <i>subspinulifera</i>	Hardpan plains.		✓	
1	<i>Atriplex spinulosa</i>	-	✓		
1	<i>Brachyscome</i> sp. Wanna Munna Flats (S. van Leeuwen 4662)	-	✓	✓	
1	<i>Brunonia</i> sp. Long hairs (D.E. Symon 2440)	Along creek lines.	✓	✓	
1	<i>Eremophila pilosa</i>	-	✓	✓	✓
1	<i>Eremophila spongiocarpa</i>	Weakly saline plain on margins of marsh.	✓	✓	✓
1	<i>Goodenia lyrata</i>	Red sandy loam. Near claypan.	✓		
1	<i>Helichrysum oligochaetum</i>	Red clay. Alluvial plains.	✓	✓	✓
1	<i>Myriocephalus scalpellus</i>	Clay. Depression on floodplain.	✓	✓	
1	<i>Nicotiana heterantha</i>	Black clay. Seasonally wet flats.	✓	✓	✓
1	<i>Peplidium</i> sp. fortescue marsh (S. van Leeuwen 4865)	-	✓	✓	✓
1	<i>Stemodia</i> sp. Battle Hill (A.L. Payne 1006)	Cracking clay. Floodplain.		✓	✓
1	<i>Tecticornia globulifera</i>	-		✓	
1	<i>Tecticornia</i> sp. Christmas Creek (K.A. Shepherd & T. Colmer <i>et al.</i> KS 1063)	-		✓	✓
1	<i>Tribulus minutus</i>	-	✓		
1	<i>Triodia triticoides</i>	Rocky sandstone and limestone hillslopes.	✓		
2	<i>Goodenia hartiana</i>	Sand, sand dune swales, sand hills.	✓		✓
2	<i>Indigofera ixocarpa</i>	Skeletal red soils over massive ironstone.	✓		
2	<i>Isotropis parviflora</i>	Valley slope of ironstone plateau.		✓	

Priority Code	Species	Habitat	Database		
			Threatened (Declared Rare) Flora	WA Herbarium Specimen	NatureMap
3	<i>Acacia fecunda</i>	Quartzite gibbers over grey-red skeletal soil. Along shallow creeks and drainage lines, hills, road verges.	✓		
3	<i>Acacia subtiliformis</i>	Rocky calcrete plateau.	✓	✓	
3	<i>Amaranthus centralis</i>	-	✓	✓	✓
3	<i>Atriplex flabelliformis</i>	Clay loam, loam. Saline flats or marshes.		✓	
3	<i>Crotalaria smithiana</i>	Regeneration site on floodplain.		✓	✓
3	<i>Eremophila magnifica</i> subsp. <i>velutina</i>	Skeletal soils over ironstone. Summits.	✓		
3	<i>Goodenia</i> sp. East Pilbara (A.A. Mitchell PRP 727)	Red-brown clay soil, calcrete pebbles. Low undulating plain, swampy plains.	✓	✓	
3	<i>Gymnanthera cunninghamii</i>	Sandy soils.	✓		✓
3	<i>Iotasperma sessilifolium</i>	Cracking clay, black loam. Edges of waterholes, plains.		✓	✓
3	<i>Nicotiana umbratica</i>	Shallow soils. Rocky outcrops.	✓		
3	<i>Rhagodia</i> sp. Hamersley (M. Trudgen 17794)	-	✓	✓	✓
3	<i>Tecticornia medusa</i>	-		✓	
3	<i>Themeda</i> sp. Hamersley Station (M.E. Trudgen 11431)	Red clay, grass plain.		✓	
4	<i>Eremophila magnifica</i> subsp. <i>magnifica</i>	Skeletal soils over ironstone. Rock screes.		✓	
4	<i>Eremophila youngii</i> subsp. <i>lepidota</i>	Stony red sandy loam. Flats plains, floodplains, sometimes semi-saline, clay flats.		✓	✓
4	<i>Goodenia nuda</i>	-	✓	✓	✓
4	<i>Ptilotus mollis</i>	Stony hills and screes.		✓	✓

3.1.2 FIELD SURVEY

3.1.2.1 FLORA

A total of 171 taxa (species, subspecies and varieties) from 31 families and 95 genera were recorded in the course of the survey. Representation was greatest among the Fabaceae (30 taxa), Poaceae (29 taxa) and Chenopodiaceae (14 taxa) families (see Appendix 11). A summary of vascular plant taxa by site and percentage cover is given in Appendix 12.

No Declared Rare Flora species, pursuant to subsection 2 of section 23F of the *Wildlife Conservation Act (1950)* were located during the survey. No plant taxa pursuant to section 179 of the *EPBC Act 1999* were located in the areas surveyed. Three plants of conservation interest were collected in the course of the survey (locations shown in Figure 4):

1. The Priority 3 herb *Vigna* sp. rockpiles (R. Butcher *et al.* RB 1400) which had previously only been collected from the Karratha area.
2. The Priority 4 shrub *Eremophila youngii* subsp. *lepidota*.
3. The Priority 4 herb *Goodenia nuda*.

Ten species of exotic flora were recorded in the field survey. One of these, *Parkinsonia aculeata*, is listed as a declared plant by the Department of Agriculture and Food (DAF, 2011).

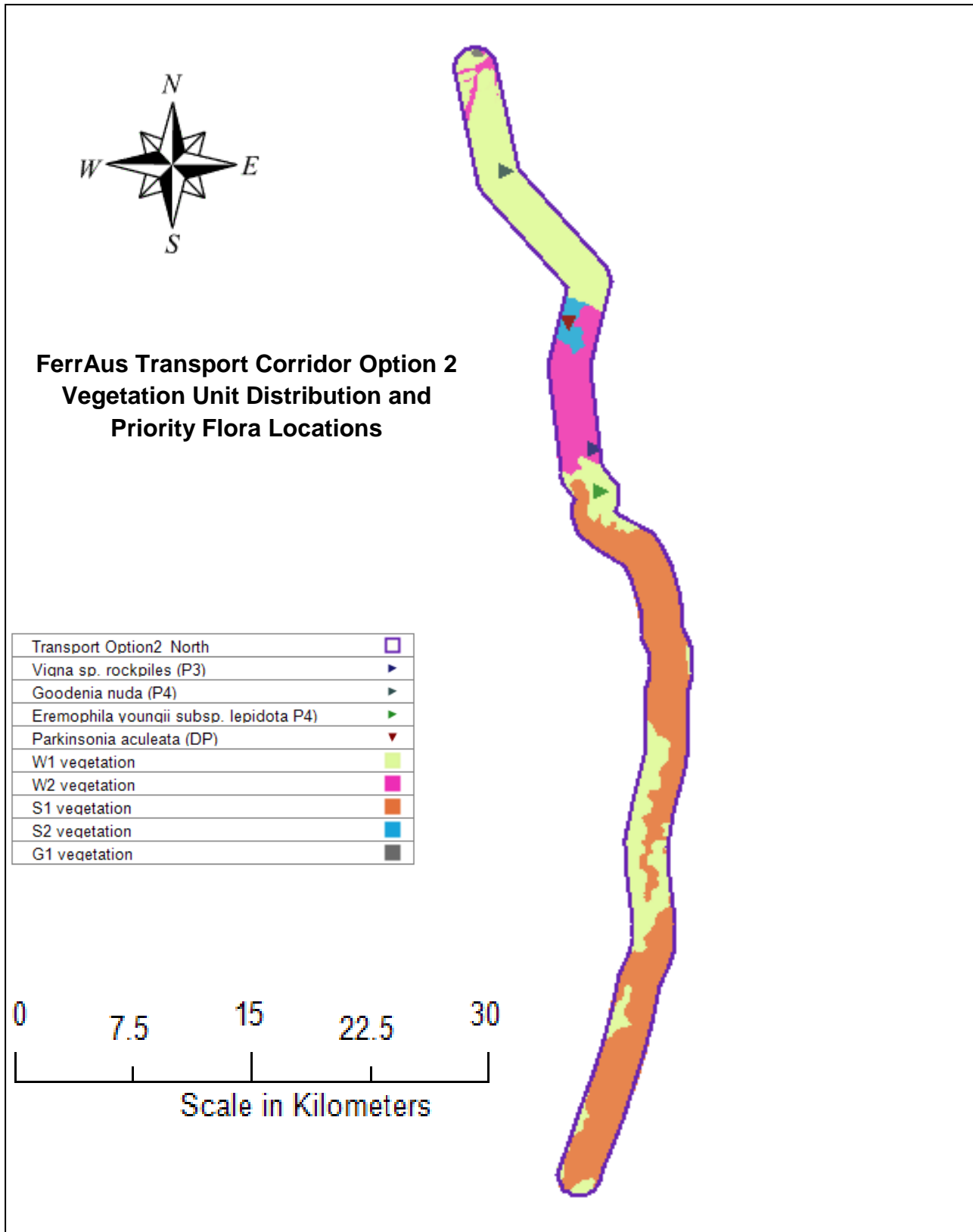


Figure 4: Vegetation Unit Distributions and Rare Flora Locations

3.1.2.2 VEGETATION

The vegetation of the survey area encompassed a range of Woodland, Scrub and Grassland community types. With the aid of the TWINSpan program, five vegetation units were recognised – one Grassland, two Scrub/Shrubland and two Woodland units. They are described below using the National Vegetation Information System (NVIS) structural formation (ESCAVI, 2003). Vegetation Unit distributions are presented in Figure 4.

Unit G1: Open Hummock Grassland and Open Forbland of *Triodia* sp. Shovelanna Hill (S. van Leeuwen 3835) and *Ptilotus calostachyus*. This vegetation was found on a low rocky hill at the northern tip of the survey area.



Plate A: Vegetation Unit G1

Unit S1: Sparse Shrubland of *Acacia ancistrocarpa*, *Acacia pachyacra* and *Eucalyptus gamophylla* over Hummock Grassland of *Triodia basedowii* or *Triodia longiceps*. Vegetation Unit S1 occupied the red sandy loams that made up much of the country along the southern two thirds of the survey area.



Plate B: Vegetation Unit S1

Unit S2: Sparse Shrubland of *Melaleuca glomerata* and *Acacia synchronicia* over Open Chenopod Shrubland of *Atriplex amnicola*, *Tecticornia disarticulate*, *Cullen cinereum* and *Muehlenbeckia florulenta*. This vegetation was restricted to the red clay flats associated with the Fortescue River where it enters the Fortescue Marsh.



Plate C: Vegetation Unit S2

Unit W1: Open Forest, Woodland or Open Woodland of *Acacia aneura* over Shrubland, Open Shrubland or Sparse Shrubland of *Acacia synchronicia* and *Senna* spp. over Bunch Grassland, Open Bunch Grassland and Open Herbland of *Sporobolus australasicus*, *Portulaca oleracea*, *Enneapogon polyphyllus* and *Dysphania rhadinostachya*. Vegetation Unit W1 was found usually on red/brown loams and clay loams that occupied most of the northern quarter of the survey area, with a patchier distribution through the remainder of the corridor.



Plate D: Vegetation Unit W1

Unit W2: Woodland and Open Woodland of *Eucalyptus victrix* over Tussock Grassland or Open Tussock Grassland and Sparse Forbland of **Cenchrus ciliaris*, **Cenchrus setiger* and *Sporobolus australasicus*. This vegetation was recorded on red and brown loams, clays and clay loams south of the Fortescue River and around a watercourse draining the extreme north end of the survey area.



Plate E: Vegetation Unit W2

3.1.2.3 VEGETATION CONDITION

The condition of the vegetation along the proposed rail corridor ranged from ‘excellent’ to ‘poor’. Vegetation damage was mostly due to trampling and grazing by cattle and infestations of exotic grasses, in particular **Cenchrus* spp. The pattern of damage along the proposed rail corridor was mostly related to proximity to long standing or permanent water and the palatability of the understorey. The worst affected areas were in W2 vegetation close to the Fortescue River and along the medium sized creek in the north of the corridor. Areas dominated by *Triodia* rarely showed signs of damage from livestock, and were usually classified as ‘excellent’.

3.2 FAUNA SURVEY RESULTS

3.2.1 FAUNA HABITATS

The study area intersects ten land systems, indicating the diversity of habitats present. Fauna habitats are described below for the five most prominent land systems covering the survey area.

Coolibah – The area traversed by the Option 2 route is highly degraded. It has suffered significant loss of vegetation through over grazing. There are also vehicle tracks, weeds and rubbish within the corridor.

Migratory wetland bird species, such as the Royal Spoonbill, Wandering Whistling Duck, Plumed Whistling Duck and Australian White Ibis would all utilize pools of water forming along the Fortescue River, particularly if these pools remain in the area through which the transport route is proposed to pass. Previous survey work by Animal Plant Mineral (2009) confirms that pools along the Fortescue River, near the crossing of the Marble Bar Road, outlast many of the ephemeral pools that are interspersed along the river in the local area. However, due to the high level of degradation caused by cattle, these areas offer little remaining value to terrestrial fauna such as rodents, dasyurids, skinks, geckos and snakes.

It is possible, however unlikely, that the Northern Quoll may persist in this area. A number of fallen logs, with hollows of suitable size for quolls, were observed within the corridor.

Warri –The Option 2 corridor route passes through a portion of the Warri Land System that is heavily degraded and has very low relief. Therefore it is not expected to support fauna of conservation significance anywhere along this portion of the corridor.

Narbung – The area traversed by the Option 2 route is highly degraded. It has suffered significant loss of vegetation through over grazing. There are many vehicle tracks along the corridor, though there is little evidence of rubbish or other debris.

Migratory wetland bird species such as the Royal Spoonbill, Wandering Whistling Duck, Plumed Whistling Duck and Australian White Ibis would all utilize the pan pools after heavy rains and flooding where the water retracts back. However, there are many larger pools nearby that are not located along the proposed transport corridor.

The claypan habitats do not provide any habitat that conservation significant fauna may depend upon.

Divide – Where the route passed through the Divide Land System there appeared to be very little impact from cattle (though they were present and observed) and there appeared to be few weeds. This area is considered as High quality fauna habitat.

The open scrub of *Acacia synchronicia* and *Acacia sclerosperma* subsp. *sclerosperma* over closed hummock grassland of *Triodia longiceps* and *Triodia pungens* occurring in this land system is ideally suited to species of conservation significance, including the Mulgara, Spectacled Hare-Wallaby and the Bilby.

This community was typically associated with well-drained red sands and loams, occasionally with some light gravel. Its distribution roughly coincided with the Divide Land System as mapped by Vreeswyk *et al.*, (2004).

The dense, well developed and infrequently burnt spinifex clumps are the key fauna resource in this habitat. Mature and well developed spinifex clumps provide a secure refuge and high humidity micro-environment for a high diversity of fauna. Species such as the gecko *Strophurus elderi* and the Military Dragon *Ctenophorus isolepis* specifically occupy these spinifex clumps. This niche micro-environment can also include a range of pygopod lizards (legless lizards), the Desert Death Adder *Acanthophis pyrrhus*, dunnarts, ningauis and numerous rodents. Though they appear simple in structure, the fauna assemblages that are supported within spinifex plains can be rich and diverse. Moreover, spinifex plains are not favoured for grazing by cattle so they tend to remain in good condition where adjacent bunch or tussock grasslands can be heavily degraded. Conservation significant species associated with this habitat include Night Parrots *Pezoporus occidentalis*, Brush-tailed Mulgara *Dasycercus blythi*, Greater Bilbies *Macrotis lagotis* and Woma pythons *Aspidites ramsayi*.

The sandy, clayey substrate is ideal for the construction of complicated burrow systems that both the Mulgara depend upon for refuge and escape from predators. Similarly, Bilby are able to easily dig burrows and forage around the large spinifex clumps.

The hummock grasslands along the proposed transport corridor are sufficiently large to offer refuge to Spectacled Hare-Wallaby. These hare-wallabies spend the daylight hours in spinifex tussocks, sheltered to some degree from the extremes of heat (Bradshaw 2010).

Fan - The fauna habitat in the section of the corridor that traverses the Fan Land System was considered to be good, as per Appendix 6. There are signs of disturbance from grazing, clearing and construction of old station cattle yards, however there is still valuable microhabitat to be exploited by native fauna.

These communities can comprise very dense mulga (*Acacia aneura*) groves. The dense overstorey contributes to a very valuable ground story microhabitat of detritus and litter, over sandy, loamy, and sometimes cracking soils. Dunnarts and planigales thrive in these microhabitats where the detritus stimulates insect activity (prey). The low lying and poorly drained loam and clay soils provide the opportunity to create secure burrows and immediate refuge from predators. Avifauna includes species such as the Grey Honeyeater and Slaty-backed Thornbill which are primarily restricted to these habitats. Other scattered trees include *Corymbia flavescens*, *C. hamersleyana* and *Eucalyptus victrix* which all contribute to the diversity of microhabitats and the accumulation of litter and detritus.

No fauna species of conservation significance are expected to be specifically dependent upon areas of the Fan Land System through which the proposed corridor passes.

3.2.2 POTENTIALLY OCCURRING FAUNA

3.2.2.1 REPTILES AND AMPHIBIANS

There are 8 species of frog and 106 species of reptile listed in Tables 1 and 2, respectively, of Appendix 7 that have the potential to occur on the site. Eighty five species were recorded during previous fauna surveys in the greater region and 42 species of reptile and 3 species of frog have been recorded during the recent adjacent Southern Rail Corridor survey (Animal Plant Mineral, 2009).

During the Southern Rail Corridor survey, the mulga grove communities were shown to be the second most rich and diverse habitats in the local area, with diversity and richness exceeded only by areas of low rocky hills; habitat that does not occur along the proposed transport route.

There are no amphibians of conservation significance expected to occur. However areas close to the Fortescue Marsh are likely to be significant breeding habitats after seasonal rainfall events. Species such as *Pseudophryne douglasi* and *Uporoleia russeli* are restricted to freshwater streams and although widespread are locally restricted to these less well represented habitats.

There are three reptiles of conservation significance that may occur along the proposed rail route.

Conservation Significance 1

- **Woma Python**

Aspidites ramsayi

This python is listed under Schedule 4 (other specially protected fauna) of the WA Wildlife Conservation Act and as Priority 1 by DEC.

- **Pilbara Olive Python**

Morelia olivacea barroni

This python is listed under Schedule 1 (Vulnerable) of the WA Wildlife Conservation Act, and as Vulnerable under the EPBC Act.

The Woma Python has undergone a dramatic decline in the south-west of WA, but the north-west population is more secure. This species has a patchy distribution in the Pilbara and shows a strong habitat preference for sandplain habitats. Consequently, Womas are likely to be found in the low sand dune and sandy plain areas of the Divide Land System. This species is **likely to occur**.

The Pilbara Olive Python was historically thought to be restricted to ranges in the Pilbara and islands in the Dampier Archipelago and was known from relatively few localities. Recent

surveys associated with environment impact assessments have shown this species to be more common than previously thought, and also to occupy a broader range of habitats including riverine areas. It is most often found in close association with waterholes which it uses to hunt. There are several records of this species in the area including from Nullagine and Meenthen Station. This species was also recorded on the EPBC search for the area (Appendix 5) but was not recorded from the DEC Threatened and Priority Fauna search. It **may occur** along the Fortescue River, particularly in areas where calcrete rock ledges protrude through the river bank creating overhangs.

Conservation Significance 2

- **Skink**

Ctenotus uber johnstonei

This skink is rarely recorded and listed as Priority 2 by DEC.

The skink *Ctenotus uber johnstonei* (CS2) has been recorded from the north-west of the study area in the FMG Stage B studies by Biota (2005). This species **may occur** around small outcrops on sandy and stony plains in the study area.

3.2.2.2 MAMMALS

There are 45 species of mammal (including 9 introduced species) that have the potential to occur in the project area with 37 recorded from the nearby region (Table 4, Appendix 7). There are some species, particularly medium-sized mammals that would have occurred in the area in the past, but have become extinct since European settlement.

In the previous Southern Rail Corridor survey (Animal Plant Mineral, 2009) the mulga grove, chenopod shrubland and the low rocky hills habitats only one mammal species was recorded in each habitat. The spinifex plain habitat has recorded four mammal species, including the EPBC listed Mulgara. Eighty percent of the total mammals captured were recorded in the spinifex plain habitat. Therefore it is important to consider this spinifex habitat in the context of not just the rare fauna it supports, such as the Mulgara, but also for the overall diversity and density of the mammal fauna it supports, in particular, critical weight range mammals that are prone to impact.

There are six mammals of conservation significance that may occur on the site. Each species is listed and discussed below.

Conservation Significance 1

- **Northern Quoll** *Dasyurus hallucatus*

This species is listed as Endangered under the EPBC Act.

- **Mulgara** *Dasyercus blythi*

This species is listed under Schedule 1(Vulnerable) of the WA Wildlife Conservation Act and as Vulnerable under the EPBC Act.

- **Greater Bilby** *Macrotis lagotis*

This species is listed under Schedule 1(Vulnerable) of the WA Wildlife Conservation Act and as Vulnerable under the EPBC Act.

- **Northern Marsupial Mole** *Notoryctes caurinus*

This species is listed under Schedule 1(Endangered) of the WA Wildlife Conservation Act and as Endangered under the EPBC Act.

The Northern Quoll *Dasyurus hallucatus* is a medium-sized carnivore that was listed as endangered under the *EPBC Act* in 2005 due to concern about the impact of the Cane Toad (*Bufo marinus*) on the species. Climactic modelling suggests that the Cane Toad is likely to invade the Pilbara region in the next 10 to 20 years. In addition, the Pilbara population of the Northern Quoll has been declining for unknown reasons. The Northern Quoll is associated with rocky areas as well as open forest and woodland. It is only considered likely to occur where there are suitable rocky uplands or large mature eucalypts with fallen hollow logs. This species was listed on the Protected Matters Database by the *EPBC Act* and a number of Northern Quolls have been trapped in fauna surveys in the region and it is consequently considered that this species **could occur** in suitable habitat such as along the Fortescue River.

The Mulgara *Dasyercus blythi* was previously known under the species name of *Dasyercus cristicauda* but now both species are recognized as potentially occurring in the area. As the SEWPAC do not recognise this taxonomic change, *D. blythi* must be considered in the same way as *D. cristicauda*. The Mulgara is generally found in arid sandy regions in the Pilbara, Goldfields and Murchison. It excavates burrows on flats between low sand dunes or on the slopes of high dunes (Van Dyck and Strahan, 2008). This species will also use clayey sand and sandy loam soils with hummock grasses under the influence of drainage systems, such as the habitat in the Divide Land System of the proposed transport corridor. Fauna surveys in the region have recorded Mulgara both to the north and north-west of the study area (Phoenix 2010). The species is **known to occur where suitable habitats exist** and was recently collected less than 30 km to the east during the Southern Rail Corridor survey (Animal Plant Mineral 2009) in habitat mapped as Divide Land System.

The Bilby *Macrotis lagotis* is uncommon throughout its range and has suffered a dramatic range reduction due to the combined impacts of fire, feral predators and competitors, land clearing for agriculture and pastoralism.

Bilbies are generally solitary but males may share burrows with females and their offspring (Van Dyck and Strahan, 2008). Bilbies tend to favour sandy country particularly red earths with *Acacia* shrubland and will tolerate laterite over sands (Van Dyck and Strahan, 2008). Records of the Bilby occur to the immediate north and north-west of the lease area around the Fortescue Marshes (pers. obs.; Biota, 2005). The Bilby **may occur** in the area where suitable habitat exists.

The Northern Marsupial Mole *Notoryctes caurinus* is a little-known species that lives underground in sandy areas, including in sand dunes, and rarely comes to the surface (Maxwell *et al.* 1996). There have been very few recent records of this species, so it difficult to ascertain its status in the area. The sandy dune habitat associated with the Divide Land System is suitable for this species therefore it is **likely to occur** in the area.

Conservation Significance 2

- **Spectacled Hare-Wallaby (mainland form)** *Lagorchestes conspicillatus*

This wallaby is listed as Priority 3 by DEC.

- **Short-tailed Mouse** *Leggadina lakedownensis*

This mouse is listed as Priority 4 by DEC.

The mainland form of the Spectacled Hare-Wallaby *Lagorchestes conspicillatus* is now very rare. Although previously known from various sites around the Pilbara, it appears that this species may have become extinct at many or most of these sites in recent times (P. Kendrick pers. comm.). Scats were collected along the Marble Bar road, 5km south of the Roy Hill Munjina Road junction. These were photographed and sent to Dr Rick How (Senior Curator Vertebrates at the Western Australian Museum) who identified them as those of the Spectacled Hare-Wallaby. Thus there is a **very high likelihood** that this species may occur in areas of tall, un-burnt spinifex. The scats were located adjacent to photo reference point RHIBF011 at 50K 802549E, 7486282S (see Plate F).



Plate F: Possible Spectacled Hare-wallaby scat.

The Lakeland Downs Mouse *Leggadina lakedownensis* appears to be increasing in range in the Pilbara and is **probably present** in the study area particularly on riverine flats with clay-based soils. This has been recorded during previous fauna surveys in the area as well as by the WA Museum (Table 4, Appendix 7).

3.2.2.3 BIRDS

There are 154 species of bird listed in Appendix 7, Table 3 as having the potential to occur on the site with 104 recorded from previous fauna surveys in the region.

Two previous bird surveys have been conducted in the vicinity of the current project area and, due to the mobility of avifauna the results of both of these surveys are relevant to the current proposed project area. During the 2008 survey (ecologia, 2008) 57 bird species were found. A total of 95 bird species were recorded during the 2009 survey (Animal Plant Mineral, 2009).

There have been a number of records made of bird species that might be considered unique for this area. These include:

- Brown Quail – This species is uncommon in Pilbara where it is restricted to dense grass and woodlands bordering swamps. This species was observed near Coondiner Pool which was considered as unusual due to the lack of vegetation and the overall degradation caused by cattle.

It is reasonable to suggest, due to the less degraded condition of the habitat around the pools in the Narbung Land System that this species may occur. It has also been recorded by ecologia at Jimblebar (2008) and at the nearby Cloudbreak Mine by Bamford Consulting Ecologists (2005).

- Ground Cuckoo-Shrike – This was an unusual record of a single individual close to the Roy Hill Mine construction camp. This species is infrequently recorded in the Pilbara. Another record of a lone individual was made in the same place in 2006 by ecologia (2008). It is possible that this species may be sighted again along the transport corridor route, though it is not specifically dependant on this area for survival.
- Bourke's Parrot – During the Southern Rail Corridor survey (Animal Plant Mineral, 2009), 20 individuals came in to water at sunset at Coondiner Pool. This species is uncommon in the Pilbara, but has been recorded at Yandicoogina and Cloudbreak. It was also sighted on the Southern Rail Corridor by ecologia (2008a). Therefore it is reasonable to suggest that there may be a population that utilizes the area periodically and therefore may be disturbed by construction of the transport corridor.
- Royal Spoonbill – During the Southern Rail Corridor survey (Animal Plant Mineral, 2009) a total of seven individuals were observed, over three consecutive censuses along remnant water holes of the Fortescue River. This species is usually not present in the Pilbara and has not been recorded during many other surveys in the area. However, it was also previously recorded by ecologia at Roy Hill in November 2008. Water holes around the Marble Bar Road crossing over the Fortescue River hold water for relatively long periods and therefore spoonbills might be dependent on these pools for feeding as the dry season progresses.
- Australian Shelduck – During the Southern Rail Corridor survey (Animal Plant Mineral, 2009) approximately 35 individuals were recorded amongst a flock of more than 1000 Plumed Whistling Ducks on the Fortescue River. Again this species is far further north than usual. It has previously been recorded at both the FMG rail corridor and Cloudbreak mine site surveys. As for the Royal Spoonbill, this species may remain in the area around the Fortescue River crossing if water persists for longer than the surrounding areas.
- Chestnut Teal - During the Southern Rail Corridor survey (Animal Plant Mineral 2009) one non-breeding male was observed at Coondiner Pool. However, this species is regarded as difficult to identify unless the male is in breeding plumage. However, the observation is quite detailed and is unlikely to be a mis-identification. This species is usually confined to the south west. This recent record highlights the vagrancy of water birds that opportunistically utilize remnant water bodies in the Pilbara. It is unlikely that a vagrant such as this would be disturbed by construction of the transport corridor as the species would not be specifically dependant on the area.

A number of wetland birds have been included in the list of expected species primarily because of the proximity of the proposed transport corridor to the Fortescue Marshes which are listed wetlands of National Significance and the proximity to the Fortescue River and Perkillily Dam. These waterbird species would mostly only be present in the area when large volumes of water are present and may consequently only use the area seasonally.

There are 10 birds of listed conservation significance that may occur on the site. Each species is listed and discussed below.

Conservation Significance 1	
<ul style="list-style-type: none"> Peregrine Falcon <p>This falcon is listed under Schedule 4 (other specially protected fauna) of the <i>WA Wildlife Conservation Act</i>.</p>	<p><i>Falco peregrinus</i></p>
<ul style="list-style-type: none"> Night Parrot <p>This species is listed as Critically Endangered by DEC and under the <i>EPBC Act</i>.</p>	<p><i>Pezoporus occidentalis</i></p>
Migratory Species	
<ul style="list-style-type: none"> Fork-tailed Swift <p>This species is listed as migratory under the <i>EPBC Act</i>.</p>	<p><i>Apus pacificus</i></p>
<ul style="list-style-type: none"> Eastern Great Egret <p>This species is listed as migratory under the <i>EPBC Act</i>.</p>	<p><i>Ardea modesta</i></p>
<ul style="list-style-type: none"> Oriental Plover <p>This species is listed as migratory under the <i>EPBC Act</i>.</p>	<p><i>Charadrius veredus</i></p>
<ul style="list-style-type: none"> Common Sandpiper <p>This species is listed as migratory under the <i>EPBC Act</i>.</p>	<p><i>Actitis hypoleucos</i></p>
<ul style="list-style-type: none"> Rainbow Bee-eater <p>This species is listed as migratory under the <i>EPBC Act</i>.</p>	<p><i>Merops ornatus</i></p>

The Peregrine Falcon is a widespread bird of prey and had been recorded on other fauna surveys in the nearby area. This falcon nests mainly on ledges on cliffs, rocky outcrops and quarries, although it may also use tall trees (Johnstone and Storr, 1998). This species often takes advantage of man-made structures such as abandoned open pits. It is **likely to occur** in the study area mainly due to the foraging opportunities and the nesting opportunities in tall eucalyptus trees along the Fortescue River.

The Night Parrot is a very rare and enigmatic species. The study area is adjacent to the only confirmed recent records of the Night Parrot, recorded at FMG’s Cloudbreak mine (see Davis and Metcalf, 2008). The Night Parrot is very cryptic and the species could be extant in suitable habitat throughout the area. Known habitats of the Night Parrot include spinifex, ranges and breakaways, chenopod shrubland and waterholes. Given the very close proximity to the recent sighting and the juxtaposition of all of the most favoured habitats for the species, it must be considered **likely** that the Night Parrot occurs in the area.

A number of waterbird, shorebird and aerial species are listed as migratory under *the EPBC Act*.

The Fork-tailed Swift is a largely aerial and rare species and is therefore unlikely to be affected by any proposed development. It **has been recorded** from nearby on the Biota Stage B survey (Biota, 2005).

The Rainbow Bee-eater is frequently recorded throughout its range and **has been recorded** previously from the area. It is a common species that migrates southwards in summer to breed. It is possible that this species breeds in sandy areas where the corridor crosses the Divide Land System.

The Eastern Great Egret **has been recorded** around the Fortescue Marshes but is nomadic and migratory and unlikely to be impacted by activities away from the marsh.

The Oriental Plover is listed on the EPBC database search but is considered to be **rare** in the study area.

The Common Sandpiper **was recorded** at nearby Coondiner Pool during the 2009 survey of the Southern Rail Corridor (Animal Plant Mineral, 2009) and so **may occur** in the study area.

Several priority species of bird also occur as follows:

Conservation Significance 2	
<ul style="list-style-type: none"> • Grey Falcon <p>This falcon is listed as Priority 4 by DEC.</p>	<i>Falco hypoleucos</i>
<ul style="list-style-type: none"> • Australian Bustard <p>This species is listed as Priority 4 by DEC</p>	<i>Ardeotis australis</i>
<ul style="list-style-type: none"> • Bush Stone-Curlew <p>This species is listed as Priority 4 by DEC.</p>	<i>Burhinus grallarius</i>

The Grey Falcon is an uncommon bird that inhabits lightly wooded areas in the northern part of Western Australia (Johnstone and Storr, 1998). This species nests in eucalypts along rivers. Grey Falcons **have been recorded** in the region at Cloudbreak mine site and along the northern edge of the marsh (pers. obs.) where they are breeding in tall trees in creeklines.

They are therefore **likely to occur** along the proposed transport corridor route but are unlikely to be impacted unless breeding trees along the Fortescue River are impacted.

Australian Bustards are frequently recorded during surveys in the area and were recorded during the Southern Rail Corridor survey of 2009 (Animal Plant Mineral, 2009). The Australian Bustard inhabits grasslands and savannah grasslands, moving nomadically in response to the presence of food (Johnstone and Storr, 1998). This species is considered highly likely to be seasonally common in the area. The Australian Bustard is threatened by hunting and habitat degradation in the region. The species is also clumsy when taking off and is vulnerable to colliding with vehicles (e.g. such as on haul roads or rail corridors) and overhead powerlines.

The Bush Stone-Curlew inhabits lightly wooded plains, sheltering during the day in thickets of grass or under shrubs (Johnstone and Storr, 1998). This species roosts and nests on the ground and is vulnerable to feral predators such as the fox. The Bush Stone-curlew **has been recorded** from nearby the project area and it may be present where there is woodland or tree cover. The main threatening processes listed by Garnett and Crowley (2000) for this species are loss of habitat and predation by foxes.

3.2.2.4 FERAL FAUNA

Much of the corridor was severely degraded due to overgrazing by cattle at Roy Hill station. There was a noticeable difference in the quality and condition of vegetation on adjacent pastoral leases to the south of Roy Hill station. The worst cattle impact was seen around the Fortescue River and in the section of the Warri Land System to the immediate north of the river crossing.

Wild dogs are expected to be prolific in the area and feral cat has been observed at the Fortescue River crossing (pers. obs.).



4. DISCUSSION AND CONCLUSION

4.1 FIELD SURVEY LIMITATIONS

Most of the corridor was accessible to within a few hundred metres by 4WD, so sampling points were usually located close to roads, tracks and drill lines with only one point requiring a hike of several hundred metres. We were able to visit all vegetation structural types identified from the aerial photographs, and sampling sites were spread along the entire length of the proposed rail corridor.

In keeping with the goals of an initial reconnaissance survey sampling, while wide-ranging, was at a low intensity. The 171 vascular plant taxa recorded would only represent a modest proportion of the total flora for the area. A comparable survey of a 65 km long, 500 m wide corridor in the same area by way of 75 sampling points returned 241 taxa out of an estimated total count of 323 to 362 taxa (Animal Plant Mineral, 2009).

It is unlikely that many plant species were missed due to seasonal factors. The Newman Airport Weather Station recorded 137mm of rain from 11/2/11 to 23/2/11 with follow up rains of 25mm from 1/3/11 to 9/3/11 and 24mm from 30/4/11 to 1/5/11 (BOM, 2011). These rains had produced a flush of growth which was still in evidence when the survey was undertaken in early May, with ephemeral herbs and grasses being recorded at most sites.

All comments relating to fauna are based on an aerial (helicopter) assessment and previous on-ground experience. Extensive field survey work would be required to verify the presence of fauna of conservation significance listed in this report. Nevertheless, this is a well studied area and the final impact corridor is likely to be relatively small and discrete.

4.2 VEGETATION UNITS

Although there were ten Van Vreeswyk *et al.* (2004) land systems in the survey area, only five vegetation units were recorded in the field. While a more intense Level 2 survey would produce more vegetation types through a finer partitioning of vegetation units seen in this study, the aerial photographs and ground observations did not suggest that any new, markedly different plant assemblages would be found.

None of the plant communities seen in this Level 1 survey corresponded to TECs listed by the SEWPAC (DSEWPC, 2011b) or any of the TECs listed by the DEC (DEC, 2011b). Vegetation Unit S2 was found within the boundaries of Priority 1 PEC 'Fortescue Marsh', which corresponds with the Marsh Land System of Van Vreeswyk *et al.* (2004). A Priority One PEC is defined as:

“Poorly known ecological communities. Ecological communities that are known from very few occurrences with a very restricted distribution (generally ≤ 5 occurrences or a total area of ≤ 100 ha).

Occurrences are believed to be under threat either due to limited extent, or being on lands under immediate threat (e.g. within agricultural or pastoral lands, urban areas, active mineral leases) or for which current threats exist. May include communities with occurrences on protected lands. Communities may be included if they are comparatively well-known from one or more localities but do not meet adequacy of survey requirements, and/or are not well defined, and appear to be under immediate threat from known threatening processes across their range”.

Part of the conservation value attributed to the Fortescue Marsh relates to “Specific vegetation types are found on Mulga Downs, only around the marsh” and “Endemic *Eremophila* species and several near endemic and new to science samphires.” (DEC 2011c). Any further survey work would therefore need to search for these vegetation types and plant species where the corridor crosses the saline flats of the Marsh Land System.

Aside from the Fortescue Marsh, the vegetation units of the survey area are not unusual in a regional context, conforming well with widespread vegetation types mapped for the IBRA program (Australian Government, 2011) as well as the vegetation survey of Western Australia (Beard, 1975).

4.3 THREATENED AND PRIORITY FLORA

The desktop study found that 40 Threatened and Priority plant taxa have previously been collected in the vicinity of the survey area. The only Threatened plant species gazetted under Schedule 1 of the *Wildlife Conservation Act (1950)* likely to be in the general area is the perennial herb *Lepidium catapycnon*. This plant has only been recorded from skeletal soils and hillsides however, and since this habitat is restricted to a few hectares at the northern tip of the corridor, it is unlikely that *Lepidium catapycnon* grows in the project area.

Of the 39 Priority plants listed for the area, two were collected in this survey - the Priority 4 plants *Eremophila youngii* subsp. *lepidota* and *Goodenia nuda*. Both plants have both been observed in previous surveys in the area and are not uncommon locally (pers. obs.). While *Goodenia nuda* was always seen under Mulga stands on heavy soils, *Eremophila youngii* subsp. *lepidota* did not have a clear habitat preference, and was found on a variety of soils in both Mulga and Spinifex communities.

The occurrence of the Priority 3 herb *Vigna* sp. rockpiles (R. Butcher *et al.* RB 1400) was a surprise as it was not brought up by the desktop searches and has previously only been collected from rockpiles and colluvial scree country around Karratha. Given the geographical range extension and the fact that it was collected from clay-loam soils rather than rocky country, further specialist taxonomic opinion will be sought to check the plant’s identity.

A more comprehensive survey would be likely to find more populations of *Eremophila youngii* subsp. *lepidota*, *Goodenia nuda* and *Vigna* sp. rockpiles (R. Butcher *et al.* RB 1400) and could also encounter other Priority plant taxa listed for the area.

4.4 WEEDS AND DECLARED PLANTS

Weeds that have the potential to become serious problems are listed as Declared Plants under the *Agriculture and Related Resources Protection Act 1976*. The act stipulates five categories of Declared Plant, depending on the threats posed and management objectives (see Table 4).

Table 4: Declared Plant Categories and Treatment Requirements

Priority	Requirements
P1 Prohibits movement	Prohibits movement of plants or their seeds within the State. This prohibits the movement of contaminated machinery and produce including livestock and fodder.
P2 Aim is to eradicate infestation	Eradicate infestation to destroy and prevent propagation each year until no plants remain. The infested area must be managed in such a way that prevents the spread of seed or plant parts on or in livestock, fodder, grain, vehicles and/or machinery.
P3 Aims to control infestation by reducing area and/or density of infestation	Control infestation in such a way that prevents the spread of seed or plant parts within and from the property on or in livestock, fodder, grain, vehicles and/or machinery. Treat to destroy and prevent seed set all plants.
P4 Aims to prevent infestation spreading beyond existing boundaries of infestation	Prevent the spread of infestation from the property on or in livestock, fodder, grain, vehicles and/or machinery. Treat to destroy and prevent seed set on all plants.
P5	Infestations on public lands must be controlled.

Of the ten weeds recorded in the survey only one, Parkinsonia (**Parkinsonia aculeata*), was listed as a Declared Plant. Parkinsonia is classed as P1 for the entire state and P2 for the Shire of East Pilbara, which includes the survey area. Any development plans for the Option 2 rail corridor would therefore need to include measures to prevent the spread of these weeds beyond the site boundaries, and to also eradicate the population. Methods for managing and eradicating the plants can be found on the Department of Agriculture and Food website:

http://www.agric.wa.gov.au/objtwr/imported_assets/content/pw/weed/decp/parkinsonia.pdf

4.5 FAUNA AND FAUNA HABITATS

The primary impacts from construction of the proposed rail Option 2 will be the clearing of native vegetation and impact to fauna habitat. However, these primary impacts are slight considering how small the disturbance footprint is compared with the vast expanse of landscape the proposed transport route transects.

Although the spinifex plains of the Divide Land System are well represented and the proposed disturbance is not significant, the conservation value of the mammal fauna assemblages that may occur there should be considered as high.

The most significant fauna record in the vicinity for the survey was the collection of scats that are very likely from a Spectacled Hare-Wallaby. These were collected at 50K 802549E, 7486282S.

In addition, the capture of two individual Brush-tailed Mulgara, *Dasycercus blythii* in October 2009, within the Divide Land System and less than 35 km away (Animal Plant Mineral, 2009) is also significant as it is highly likely this species persists in the area. The three individuals of *Dasycercus cristicauda* captured by Phoenix Environmental in 2009 is extremely pertinent.

As the proposed disturbance footprint for the construction of the transport corridor is only 100 m it may be possible to clear the corridor in a staged process over successive days, with raised blade clearing followed by topsoil clearing, followed by clearing for construction. Staged clearing would give any fauna occupying the final alignment time to disperse to adjacent undisturbed habitat.

Alternatively clearing and construction could progress under the guidance of the fauna management plan currently being developed for the Mulgara, Bilby and Northern Marsupial mole as part of the EPBC referral of the FPP.

Commitments to not disturb vegetation utilized by Northern Quoll would benefit several other fauna species of conservation significance, such as the Peregrine and Grey Falcon that may nest in the larger trees, and the Pilbara Olive Python that may refuge in tree hollows.

Other species of conservation significance potentially likely to occur at the site, such as the Australian Bustard, Bush-stone Curlew and the Fork-tailed Swift are far more mobile and very unlikely to be disturbed by the clearing process.

Thus, the proposed development is likely to have minimal impact on the existing fauna provided that FerrAus adheres to commitment to not disturb vegetation with a trunk diameter in excess of 100mm in the river bed or riparian margins, to undertake staged clearing of the corridor over a number of days as outlined above.

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APPENDIX 1 – DEFINITIONS OF CONSERVATION CODES FOR FAUNA



Appendix 1 – EPBC Act and WA Wildlife Conservation Act definitions for Fauna

Schedule 1: Fauna that are rare or likely to become extinct.

Schedule 2: Fauna presumed to be extinct.

Schedule 3: Migratory birds that are listed under JAMBA.

Schedule 4: Other specially protected fauna.

Extinct: Taxa not definitely located in the wild during the past 50 years.

Extinct in the wild: Taxa known to survive only in captivity.

Critically Endangered: Taxa facing an extremely high risk of extinction in the wild in the immediate future.

Endangered: Taxa facing a very high risk of extinction in the wild in the near future.

Vulnerable: Taxa facing a very high risk of extinction in the wild in the medium-term future.

Near Threatened: Taxa that risk becoming Vulnerable in the wild.

Conservation Dependent: Taxa whose survival depends upon ongoing conservation measures. Without these measures, a conservation dependent taxon would be classed as Vulnerable or more severely threatened.

Data Deficient: Taxa suspected of being Rare, Vulnerable or Endangered, but whose true status cannot be determined without more information.

Least Concern: Taxa that are not Threatened.

Priority 1: Taxa with few, poorly known populations on threatened lands.

Taxa which are known from few specimens or sight records from one or a few localities on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, active mineral leases. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.

Priority 2: Taxa with few, poorly known populations on conservation lands.

Taxa which are known from few specimens or sight records from one or a few localities on lands not under immediate threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, vacant Crown land, water reserves, etc. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.

Priority 3: Taxa with several, poorly known populations, some on conservation lands.

Taxa which are known from few specimens or sight records from several localities, some of which are on lands not under immediate threat of habitat destruction or degradation. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.

Priority 4: Taxa in need of monitoring.

Taxa which are considered to have been adequately surveyed, or for which sufficient knowledge is available, and which are considered not currently threatened or in need of special protection, but could be if present circumstances change. These taxa are usually represented on conservation lands.

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Priority 5: Taxa in need of monitoring.

Taxa which are not considered threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.

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APPENDIX 2 – DEFINITIONS OF CONSERVATION CODES FOR FLORA



Appendix 2 – Conservation Codes for Western Australian Flora

Under the Wildlife Conservation Act, the Minister for the Environment may declare species of flora to be protected if they are considered to be in danger of extinction, rare or otherwise in need of special protection. Schedules 1 and 2 deal with those that are threatened and those that are presumed extinct respectively.

T: Threatened Flora (Declared Rare Flora — Extant)

Taxa which have been adequately searched for and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such (Schedule 1 under the Wildlife Conservation Act 1950). Threatened Flora (Schedule 1) are further ranked by the Department according to their level of threat using [IUCN Red List criteria](#):

CR: Critically Endangered – considered to be facing an extremely high risk of extinction in the wild

EN: Endangered – considered to be facing a very high risk of extinction in the wild

VU: Vulnerable – considered to be facing a high risk of extinction in the wild.

X: Presumed Extinct Flora (Declared Rare Flora — Extinct)

Taxa which have been adequately searched for and there is no reasonable doubt that the last individual has died, and have been gazetted as such (Schedule 2 under the Wildlife Conservation Act 1950).

Species that have not yet been adequately surveyed to be listed under Schedule 1 or 2 are added to the Priority Flora List under Priorities 1, 2 or 3. These three categories are ranked in order of priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened flora or fauna. Species that are adequately known, are rare but not threatened, or meet criteria for Near Threatened, or that have been recently removed from the threatened list for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring. Conservation Dependent species are placed in Priority 5.

Priority One: Poorly-known species

Species that are known from one or a few collections or sight records (generally less than five), all on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, Shire, Westrail and Main Roads WA road, gravel and soil reserves, and active mineral leases and under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes.

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Priority Two: Poorly-known species

Species that are known from one or a few collections or sight records, some of which are on lands not under imminent threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, vacant Crown land, water reserves, etc. Species may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes.

Priority Three: Poorly-known species

Species that are known from collections or sight records from several localities not under imminent threat, or from few but widespread localities 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 localities but do not meet adequacy of survey requirements and known threatening processes exist that could affect them.

Priority Four: Rare, Near Threatened and other species in need of monitoring

- *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.
- *Near Threatened*. Species that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable.
- Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

Priority Five: Conservation Dependent species

Species that are not threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.

Department of Environment and Conservation (2011) *Florabase* Department of Environment and Conservation. <http://florabase.dec.wa.gov.au/conservationtaxa> (accessed June 2011).

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**APPENDIX 3 – DEC THREATENED SPECIES BRANCH AND WA
HERBARIUM SEARCH RESULTS**



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Enquiries: Joshua Gilovitz
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Fax: (08) 9334 0278
Email: joshua.gilovitz@dec.wa.gov.au

Animal Plant Mineral
68 Westgrove Drive
Ellenbrook, WA, 6069

Attention: Chris Hancock

Dear Chris Hancock,

REQUEST FOR RARE FLORA INFORMATION

I refer to your request of 02 May 2011 for Threatened Flora information in the Roy Hill area. The search was conducted within the corridor area within the coordinates you submitted plus an additional 50km radial buffer area around it.

A search was undertaken for this area of **(1)** the Department's *Threatened (Declared Rare) Flora* database (for results, *if any*, see "DEFL" – coordinates are GDA94), **(2)** the *Western Australian Herbarium Specimen* database for priority species opportunistically collected in the area of interest (for results, *if any*, see "WAHERB"- coordinates are GDA94 – see condition number 9 in the attached 'Conditions in Respect of Supply' and **(3)**, the Department's *Declared Rare and Priority Flora List* [this list is searched using 'place names'. This list which may also be used as a species target list, contains species that are declared rare (Conservation Code R or X for those presumed to be extinct), poorly known (Conservation Codes 1, 2 or 3), or require monitoring (Conservation Code 4) – for results, *if any*, see "DP List"]. The results are attached electronically to this email.

Attached also are the conditions under which this information has been supplied. Your attention is specifically drawn to the seventh point, which refers to the requirement to undertake field investigations for the accurate determination of rare flora occurrence at a site. *The information supplied should be regarded as an indication only of the rare flora that may be present and may be used as a target list in any surveys undertaken.*

The information provided does not preclude you from obtaining and complying with, where necessary, land clearing approvals from other agencies.

An invoice for \$300 (plus GST) to supply this information will be forwarded.

It would be appreciated if any populations of rare flora you encounter in the area could be reported to this Department to ensure their ongoing management.

If you require any further details, or wish to discuss rare flora management, please contact Dr Ken Atkins, Manager, Species and Communities Branch, on (08) 9334 0455.

Yours faithfully

Joshua Gilovitz

.....
for Keiran McNamara
DIRECTOR GENERAL

4 May 2011

Species and Communities Branch

17 Dick Perry Ave, Technology Park, Kensington
Phone: (08) 9334 0455 Fax: (08) 9334 0278

Locked Bag 104, Bentley Delivery Centre, Bentley, Western Australia 6983

www.dec.wa.gov.au

DEPARTMENT OF ENVIRONMENT AND CONSERVATION

RARE FLORA INFORMATION

CONDITIONS IN RESPECT OF SUPPLY OF INFORMATION

1. All requests for data to be made in writing to the Director General, Department of Environment and Conservation, Attention: Threatened Flora Database Officer, Species and Communities Branch.
2. The data supplied may not be supplied to other organisations, nor be used for any purpose other than for the project for which they have been provided, without the prior written consent of the Director General, Department of Environment and Conservation.
3. Specific locality information for Declared Rare Flora is regarded as confidential, and should be treated as such by receiving organisations. Specific locality information for DRF may not be used in public reports without the written permission of the Director General, Department of Environment and Conservation. Publicly available reports may only show generalised locations or, where necessary, show specific locations without identifying species. The Department is to be contacted for guidance on the presentation of rare flora information.
4. Note that the Department of Environment and Conservation respects the privacy of private landowners who may have rare flora on their property. Rare flora locations identified in the data as being on private property should be treated in confidence, and contact with property owners made through the Department of Environment and Conservation.
5. Receiving organisations should note that while every effort has been made to prevent errors and omissions in the data provided, they may be present. The Department of Environment and Conservation accepts no responsibility for this.
6. Receiving organisations must also recognise that the database is subject to continual updating and amendment, and such considerations should be taken into account by the user.
7. **It should be noted that the supplied data do not necessarily represent a comprehensive listing of the rare flora of the area in question. Its comprehensiveness is dependant on the amount of survey carried out within the specified area. The receiving organisation should employ a botanist, if required, to undertake a survey of the area under consideration.**
8. Acknowledgment of the Department of Environment and Conservation as source of the data is to be made in any published material. The unique reference number that is given upon the request for information should be quoted. Copies of all such publications are to be forwarded to the Department of Environment and Conservation, Attention: The Manager, Species and Communities Branch.
9. The development of the PERTH Herbarium database was not originally intended for electronic mapping (eg. GIS ArcView). The latitude and longitude coordinates for each entry are not verified prior to being databased. It is only in recent times that collections have been submitted to PERTH with GPS recorded in latitude and longitude coordinates. Therefore, be aware when using this data in ArcView that some records may not plot to the locality description given with each collection.

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THE DEPARTMENT OF ENVIRONMENT AND CONSERVATION

DECLARED RARE AND PRIORITY FLORA LIST

for Western Australia

CONSERVATION CODES

R: Declared Rare Flora - Extant Taxa

Taxa which have been adequately searched for and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such.

X: Declared Rare Flora - Presumed Extinct Taxa

Taxa which have not been collected, or otherwise verified, over the past 50 years despite thorough searching, or of which all known wild populations have been destroyed more recently, and have been gazetted as such.

1: Priority One - Poorly known Taxa

Taxa which are known from one or a few (generally <5) populations which are under threat, either due to small population size, or being on lands under immediate threat, e.g. road verges, urban areas, farmland, active mineral leases, etc., or the plants are under threat, e.g. from disease, grazing by feral animals, etc. May include taxa with threatened populations on protected lands. Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.

2: Priority Two - Poorly Known Taxa

Taxa which are known from one or a few (generally <5) populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.

3: Priority Three - Poorly Known Taxa

Taxa which are known from several populations, and the taxa are not believed to be under immediate threat (i.e. not currently endangered), either due to the number of known populations (generally >5), or known populations being large, and either widespread or protected. Such taxa are under consideration for declaration as 'rare flora' but are in need of further survey.

4: Priority Four - Rare Taxa

Taxa which are considered to have been adequately surveyed and which, whilst being rare (in Australia), are not currently threatened by any identifiable factors. These taxa require monitoring every 5-10 years.

Note, the need for further survey of poorly known taxa is prioritised into the three categories depending on the perceived urgency for determining the conservation status of those taxa, as indicated by the apparent degree of threat to the taxa based on the current information.

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ABBREVIATIONS USED IN THREATENED FLORA DATABASE PRINTOUTS

VESTING

AAP Aboriginal Planning Authority
 AGR Chief Executive, Dep. of Agriculture
 ALT Aboriginal Land Trust
 APB Agricultural Protection Board of WA
 BGP Botanical Gardens & Parks Authority
 BSA Boy Scouts Association
 CC Conservation Commission – NPNCA - LFC
 CGT Crown Grant in Trust
 COM Commonwealth of Australia
 CRO Crown Freehold-Govt Ownership
 CRW Crown
 DAG Dep. of Agriculture
 DOW Dep. of Water
 DPI Dep. of Planning & Infrastructure
 EXD Exec Direc CALM
 FES Fire and Emergency Services Aust.
 HOW Dep. of Housing/State Housing Commission
 ILD Industrial Lands Develop. Auth
 LAC LandCorp
 MAG Minister for Agriculture
 MBC Metropolitan Cemeteries Board
 MED Ministry of Education
 MHE Minister for Health
 MIN Minister for Mines
 MPL Ministry for Planning
 MPR Minister for Prisons
 MRD Main Roads WA
 MTR Minister for Transport
 MWA Minister for Water Resources
 MWO Minister for Works
 NAT Natural Trust of Australia WA
 NON Not Vested
 PLB Pastoral Lands Board
 PRI Private/Freehold
 RAI Public Transport Authority
 REL Religious Organisation
 SEC Synergy (ex Western Power)
 SHI Shire
 SPC State Planning Commission
 SWA State of Western Australia
 TEL Telstra
 UNK Unknown
 WAT Water Corporation
 WEL Minister Community Welfare
 WRC Water & Rivers Commission
 XPL Ex-Pastoral Lease

PURPOSES

ABR Aboriginal Reserve
 ACC Access Track
 AER Aerodrome
 AIR Airport
 ARS Agricultural Research Station
 BAP Baptist Union of WA
 CAM Camping
 CAR Caravan park
 CEM Cemetery
 CFA Conservation of Fauna
 CFF Conservation Of Flora & Fauna
 CFL Conservation of Flora
 CHU Church
 CPK Car Park
 CMN Communications
 COM Common

CON Conservation Park
 DEF Defence
 DRA Drain
 EDE Educational Endowment
 EDU Educational purposes UWA
 ENE Enjoyment of Natural Environ.
 EXC Excepted from sale
 EXL Exploration Lease
 EXP Experimental Farm
 FIR Firing Range
 FOR State Forest
 GE General Lease
 GHA Grain Handling
 GOL Golf
 GRA Gravel Pit
 GVT Government Requirements
 HAR Harbour Purposes
 HEP Heritage Purposes
 HER Heritage trail
 HOS Hospital
 KEN Kennels
 LPR Landscape Protection
 MIN Mining lease
 MUN Municipal Purposes
 NPK National Park
 NRE Nature Reserve
 OTH Other
 PAR Parkland (& Recreation)
 PAS Pastoral lease
 PFF Protection of Flora & Fauna
 PFL Protection of Flora
 PIC Picnic ground
 PLA Plantation
 POS Public Open Space
 PRS Prison site
 PUR Purchase Lease
 PUT Public Utility
 QUA Quarry
 RAD Radio Station
 RAC Racecourse
 REC Recreation
 REH Rehabilitation/Re-establish Native Plants
 RRE Railway Reserve
 RUB Rubbish
 SAN Sand
 SCH School-site
 SET Settlers requirements
 SHI Shire Requirements
 SHO Showgrounds
 SNN Sanitary
 SOI Soil Conservation
 STO Stopping place
 TIM Timber
 TOU Tourism
 TOW Town-site
 TRA Training Ground
 TRI Trig station
 UCL Unallocated Crown Land
 UNK Unknown
 VER Road Verge
 VPF Vermin Proof Fence
 WAT Water
 WLS Wildlife Sanctuary
 WOO Firewood

**DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DECLARED RARE AND PRIORITY FLORA LIST
16 September 2010**

SPECIES / TAXON	CONS CODE	DEC REGION	DISTRIBUTION	FLOWER PERIOD
<i>Acacia aphanoclada</i>	1	P	Nullagine	Aug-Sep
<i>Acacia cyperophylla</i> var. <i>omearana</i>	1	P	Nullagine	May
<i>Acacia fecunda</i>	3	P	Nullagine, Skull Springs, Oakover River	Apr, May
<i>Acacia</i> sp. Nullagine (B.R. Maslin 4955)	1	P	Nullagine	
<i>Amaranthus centralis</i>	3	P	Newman	
<i>Aristida jerichoensis</i> var. <i>subspinulifera</i>	1	P,*	East Angelas, Sylvania Stn, Newman, Eastern States	
<i>Atriplex spinulosa</i>	1	P	Nullagine	
<i>Brachyscome</i> sp. Wanna Munna Flats (S. van Leeuwen 4662)	1	P	Tom Price, Newman	July, Sep
<i>Brunonia</i> sp. Long hairs (D.E. Symon 2440)	1	GLD, P	Schwerin Mural Crescent, Newman	Jul
<i>Eremophila magnifica</i> subsp. <i>velutina</i>	3	P	Hamersley Ranges, Newman, Marandoo	Jul-Sep
<i>Goodenia lyrata</i>	1	GLD,P	Laverton, Newman	
<i>Goodenia</i> sp. East Pilbara (AA Mitchell PRP 727)	3	P	Weeli Wolli, Mulga Downs, Nullagine, NW of Newman	Aug, Sep
<i>Indigofera ixocarpa</i>	2	P	Marandoo, Tom Price, Nullagine, Karijini NP	Mar, May
<i>Lepidium catapycnon</i>	T	P	Wittenoom Gorge, Hamersley Range, Weeli Wolli, Newman	Oct-Jan?
<i>Nicotiana umbratica</i>	3	P	Newman, Karijini N.P., Marble Bar, Woodstock, Abydos	Apr, Jun, Sept
<i>Tribulus minutus</i>	1	P	Nullagine	Sep
<i>Triodia triticoides</i>	1	K,P	Ord River, Kununurra, Newman	Apr

DEC Threatened Species Branch List

SHEET	SPNAME	CONSVCODE	POPID1	POPID2	GDA94LAT	GDA94LONG	VESTING	PURPOSE1	PURPOSE2	STATUS	OWNERDATE
	27558 Acacia aphanoclada		1	2	-21.96597	120.10008	NON	UNK			24/10/1988 0:00
	29453 Acacia subtiliformis		3	4	-23.10778	119.58139	NON	UCL			19/11/2006 0:00
	31832 Amaranthus centralis		3	1	-23.09056	120.10306	MIN	STK			17/07/2001 0:00
	29194 Brachyscome sp. Wanna Munna Flats (S. van Leeuwen 4662)		1	2	-23.19756	119.44442	NON	UCL			17/07/2000 0:00
	29201 Brunonia sp. Long hairs (D.E. Symon 2440)		1	2	-23.19478	119.46603	NON	UCL			30/07/2004 0:00
	28531 Eremophila pilosa		1	1	-22.86356	120.00089	PLB	PAS			6/09/1986 0:00
	28533 Eremophila pilosa		1	3	-22.76444	120.07722	PLB	PAS			24/07/1996 0:00
	28534 Eremophila pilosa		1	4	-22.84297	120.00117	PLB	PAS			5/09/2003 0:00
	27923 Eremophila spongiocarpa		1	4	-22.50944	119.78306	PLB	PAS			12/08/2001 0:00
	29473 Eremophila spongiocarpa		1	5	-22.55783	119.75133	PLB	PAS			31/08/2004 0:00
	28874 Goodenia hartiana		2	1	-23.37292	120.15617	NON	UCL	MIN		10/02/2004 0:00
	28875 Goodenia hartiana		2	2	-23.35603	120.16394	NON	UCL	MIN		11/02/2004 0:00
	28876 Goodenia hartiana		2	3	-23.37392	120.16725	NON	UCL	MIN		11/02/2004 0:00
	28877 Goodenia hartiana		2	4	-23.3795	120.16408	NON	UCL	MIN		11/02/2004 0:00
	28878 Goodenia hartiana		2	5	-23.38942	120.15642	NON	UCL	MIN		11/02/2004 0:00
	28879 Goodenia hartiana		2	6	-23.37808	120.15217	NON	UCL	MIN		11/02/2004 0:00
	28880 Goodenia hartiana		2	7	-23.37614	120.10178	NON	UCL	MIN		12/02/2004 0:00
	28881 Goodenia hartiana		2	8	-23.38433	120.08911	NON	UCL	MIN		12/02/2004 0:00
	28882 Goodenia hartiana		2	9	-23.37022	120.07803	NON	UCL	MIN		20/02/2004 0:00
	28883 Goodenia hartiana		2	10	-23.36692	120.08656	NON	UCL	MIN		20/02/2004 0:00
	30458 Goodenia nuda		4	13	-22.43506	119.81539	PLB	PAS	MIN		7/07/2004 0:00
	30459 Goodenia nuda		4	14	-22.53064	119.97136	DPI	STK	EXL		11/07/2004 0:00
	30460 Goodenia nuda		4	15	-22.51789	119.97631	PLB	PAS	EXL		20/02/2005 0:00
	30462 Goodenia nuda		4	17	-22.31694	119.41361	PLB	PAS			3/05/2006 0:00
	30939 Goodenia sp. East Pilbara (A.A. Mitchell PRP 727)		3	3	-23.11664	119.51911	NON	UCL	EXL		19/04/2008 0:00
	30940 Goodenia sp. East Pilbara (A.A. Mitchell PRP 727)		3	4	-23.12406	119.54275	NON	UCL	EXL		22/04/2008 0:00
	30941 Goodenia sp. East Pilbara (A.A. Mitchell PRP 727)		3	5	-23.12853	119.56267	NON	UCL	EXL		22/04/2008 0:00
	30692 Gymnanthera cunninghamii		3	6	-23.30875	119.86197	PLB	PAS	MIN		12/07/2005 0:00
	28630 Helichrysum oligochaetum		1	2	-22.7525	120.14633	PLB	PAS			20/09/2000 0:00
	16042 Lepidium catapycnon	T		4 A	-23.33561	119.65469	NON	UCL			3/05/1999 0:00
	16043 Lepidium catapycnon	T		4 B	-23.33477	119.6508	NON	UCL			15/05/1999 0:00
	16044 Lepidium catapycnon	T		4 C	-23.33755	119.64413	NON	UCL			3/05/1999 0:00
	16045 Lepidium catapycnon	T		4 D	-23.33866	119.62941	NON	UCL			3/05/1999 0:00
	16041 Lepidium catapycnon	T		5 A	-23.35394	119.62969	NON	UCL			3/05/1999 0:00
	16036 Lepidium catapycnon	T		5 B	-23.3545	119.62386	NON	UCL			15/01/1997 0:00
	16038 Lepidium catapycnon	T		7	-22.79644	119.45774	NON	EXL	PAS		3/10/1997 0:00
	22016 Lepidium catapycnon	T		17	-23.11325	119.49156	NON	UCL			14/11/2004 0:00
	28213 Myriocephalus scalpellus		1	1	-22.729	119.65878	PLB	PAS			4/09/1977 0:00
	28239 Nicotiana heterantha		1	4	-22.55139	119.86278	PLB	PAS			27/07/1996 0:00
	29220 Peplidium sp. fortescue marsh (S. van Leeuwen 4865)		1	1	-22.50944	119.78306	PLB	PAS			12/08/2001 0:00
	31165 Rhagodia sp. Hamersley (M. Trudgen 17794)		3	2	-23.13167	119.47931	NON	UCL	EXL		13/02/2006 0:00

WA Herbarium List

SHEET_NO	SPECIES	CONSCOD	LAT	LONG	DATE
PERTH 00991937	Acacia aphanoclada	1	-21.9667	120.1	24 10 1988
PERTH 00991945	Acacia aphanoclada	1	-21.9667	120.1	24 10 1988
PERTH 00167541	Acacia aphanoclada	1	-21.9667	120.1	14 05 1979
PERTH 00379131	Acacia aphanoclada	1	-21.9667	120.1	14 05 1979
PERTH 00991953	Acacia aphanoclada	1	-21.9667	120.1	24 10 1988
PERTH 07620691	Acacia subtiliformis	3	-23.1078	119.5814	19 11 2006
PERTH 08071705	Acacia subtiliformis	3	-23.1285	119.5627	19 04 2008
PERTH 08071284	Acacia subtiliformis	3	-23.1151	119.5203	22 04 2008
PERTH 07879431	Acacia subtiliformis	3	-22.6333	119.4	10 1992
PERTH 07338929	Amaranthus centralis	3	-22.9833	120.1833	17 07 2001
PERTH 04867602	Aristida jerichoensis var. subspinulifera	1	-23.3922	120.0533	21 06 1996
PERTH 07916477	Aristida jerichoensis var. subspinulifera	1	-23.1389	119.4921	09 03 2006
PERTH 01255347	Atriplex flabelliformis	3	-22.62	119.4933	
PERTH 04874218	Atriplex flabelliformis	3	-22.455	119.3831	09 05 1996
PERTH 07859147	Brachyscome sp. Wanna Munna Flats (S. van Leeuwen 4662)	1	-23.1334	119.4787	08 03 2006
PERTH 06422632	Brachyscome sp. Wanna Munna Flats (S. van Leeuwen 4662)	1	-23.1976	119.4444	17 07 2000
PERTH 4211197	Brachyscome sp. Wanna Munna Flats (S. van Leeuwen 4662)	1	-23.3667	120.2	18 09 1991
PERTH 4211170	Brachyscome sp. Wanna Munna Flats (S. van Leeuwen 4662)	1	-23.3667	119.7	31 07 1980
PERTH 4211189	Brachyscome sp. Wanna Munna Flats (S. van Leeuwen 4662)	1	-23.3667	119.7	31 07 1980
PERTH 07325355	Brunonia sp. long hairs (D.E. Symon 2440)	1	-23.1948	119.466	30 07 2004
PERTH 02778378	Crotalaria smithiana	3	-23.1931	119.9533	08 05 1958
PERTH 04646347	Crotalaria smithiana	3	-23.0189	120.1764	26 07 1996
PERTH 07916434	Eremophila magnifica subsp. magnifica	4	-23.2218	119.5291	08 02 2006
PERTH 05120020	Eremophila pilosa	1	-22.7644	120.0772	24 07 1996
PERTH 04057325	Eremophila pilosa	1	-22.8417	120	06 09 1986
PERTH 03974812	Eremophila spongiocarpa	1	-22.4167	119.4139	28 06 1984
PERTH 06538908	Eremophila spongiocarpa	1	-22.5094	119.7831	12 08 2001
PERTH 06538673	Eremophila spongiocarpa	1	-22.5503	119.9383	12 08 2001
PERTH 07291671	Eremophila spongiocarpa	1	-22.5081	119.7841	31 08 2004
PERTH 07291728	Eremophila spongiocarpa	1	-22.5578	119.7514	31 08 2004
PERTH 07144059	Eremophila youngii subsp. lepidota	4	-22.7073	119.7091	01 09 2004
PERTH 01174754	Eremophila youngii subsp. lepidota	4	-22.6867	119.9533	13 10 1975
PERTH 07291736	Eremophila youngii subsp. lepidota	4	-22.5056	119.7919	31 08 2004
PERTH 07291744	Eremophila youngii subsp. lepidota	4	-22.5056	119.7919	31 08 2004
PERTH 1174746	Eremophila youngii subsp. lepidota	4	-22.7111	119.625	30 03 1984
PERTH 04048822	Eremophila youngii subsp. lepidota	4	-22.7111	119.625	30 03 1984
PERTH 1648578	Eremophila youngii subsp. lepidota	4	-22.7111	119.625	30 03 1984
PERTH 07291302	Eremophila youngii subsp. lepidota	4	-22.6589	119.8916	01 09 2004
PERTH 07784511	Eremophila youngii subsp. lepidota	4	-22.4922	119.7753	31 07 2007
PERTH 07825277	Eremophila youngii subsp. lepidota	4	-22.7221	119.6432	04 08 2007
PERTH 07968418	Eremophila youngii subsp. lepidota	4	-22.6	120.0333	01 07 1986
PERTH 08080534	Eremophila youngii subsp. lepidota	4	-22.9256	120.3694	07 05 2006
PERTH 07529120	Goodenia nuda	4	-22.5179	119.9763	20 02 2005
PERTH 02611120	Goodenia nuda	4	-22.6	119.6003	07 08 1970
PERTH 07522908	Goodenia nuda	4	-22.3169	119.4136	03 05 2006
PERTH 07373678	Goodenia sp. East Pilbara (A.A. Mitchell PRP 727)	3	-23.1273	119.5601	21 05 2005
PERTH 08071713	Goodenia sp. East Pilbara (A.A. Mitchell PRP 727)	3	-23.1285	119.5627	20 04 2008
PERTH 08071330	Goodenia sp. East Pilbara (A.A. Mitchell PRP 727)	3	-23.1166	119.5191	22 04 2008
PERTH 08071373	Goodenia sp. East Pilbara (A.A. Mitchell PRP 727)	3	-23.124	119.5428	22 04 2008
PERTH 05726026	Helichrysum oligochaetum	1	-22.7525	120.1463	20 09 2000
PERTH 05470986	Iotasperma sessilifolium	3	-22.8278	120.1667	28 08 1995
PERTH 07859120	Isotropis parviflora	2	-23.1865	119.4709	10 02 2006
PERTH 04623088	Lepidium catapycnon	0	-23.3417	119.6397	01 1997
PERTH 08082499	Lepidium catapycnon	0	-23.3367	119.6572	23 12 2008
PERTH 08228094	Lepidium catapycnon	0	-23.3381	119.6567	09 11 2009
PERTH 05496683	Myriocephalus scalpellus	1	-22.7167	119.65	04 09 1977
PERTH 04924452	Nicotiana heterantha	1	-22.5514	119.8628	27 07 1996
PERTH 07832907	Nicotiana heterantha	1	-22.4124	119.4769	04 09 2006
PERTH 06538916	Peplidium sp. fortescue marsh (S. van Leeuwen 4865)	1	-22.5094	119.7831	12 08 2001
PERTH 07144482	Ptilotus mollis	4	-22.0839	119.8052	30 08 2004
PERTH 08014833	Rhagodia sp. Hamersley (M. Trudgen 17794)	3	-22.4467	119.8978	01 12 2008
PERTH 07859228	Rhagodia sp. Hamersley (M. Trudgen 17794)	3	-23.1317	119.4793	13 02 2006
PERTH 08014841	Rhagodia sp. Hamersley (M. Trudgen 17794)	3	-22.3906	119.8542	14 11 2008
PERTH 04986113	Stemodia sp. Battle Hill (A.L. Payne 1006)	1	-22.7256	120.1117	29 07 1996
PERTH 04454189	Stemodia sp. Battle Hill (A.L. Payne 1006)	1	-22.7158	120.1083	16 04 1996
PERTH 02668459	Tecticornia globulifera	1	-22.4278	119.4167	28 06 1984
PERTH 07484828	Tecticornia globulifera	1	-22.3993	119.4491	16 11 2006
PERTH 04923200	Tecticornia medusa	3	-22.55	119.7978	27 07 1996
PERTH 01230425	Tecticornia medusa	3	-22.6	119.9531	03 11 1990
PERTH 07928904	Tecticornia sp. Christmas Creek (K.A. Shepherd & T. Colmer et al. KS 1063)	1	-22.512	119.7643	16 11 2006
PERTH 07928912	Tecticornia sp. Christmas Creek (K.A. Shepherd & T. Colmer et al. KS 1063)	1	-22.512	119.7643	16 11 2006
PERTH 07784562	Tecticornia sp. Christmas Creek (K.A. Shepherd & T. Colmer et al. KS 1063)	1	-22.5497	119.8631	29 07 2007
PERTH 06538819	Tecticornia sp. Christmas Creek (K.A. Shepherd & T. Colmer et al. KS 1063)	1	-22.5094	119.7831	12 08 2001
PERTH 08015872	Tecticornia sp. Christmas Creek (K.A. Shepherd & T. Colmer et al. KS 1063)	1	-22.5094	119.7831	12 08 2001
PERTH 07896735	Themeda sp. Hamersley Station (M.E. Trudgen 11431)	3	-23.1927	119.4836	08 02 2006

APPENDIX 4 – NATUREMAP SEARCH RESULTS

NatureMap Species Report

Created By Guest user on 02/05/2011

Method 'By Circle'

Centre 119°51' 55" E, 22°24' 02" S

Buffer 40km

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
1.	4901 <i>Abutilon otocarpum</i> (Desert Chinese Lantern)			
2.	4902 <i>Abutilon oxycarpum</i> (Flannel Weed)			
3.	3198 <i>Acacia acradenia</i>			
4.	3205 <i>Acacia adsurgens</i>			
5.	3209 <i>Acacia ampliceps</i>			
6.	3217 <i>Acacia aneura</i> (Mulga)			
7.	37260 <i>Acacia aptaneura</i>			
8.	3224 <i>Acacia arrecta</i>			
9.	14622 <i>Acacia balsamea</i>			
10.	3241 <i>Acacia bivenosa</i>			
11.	23524 <i>Acacia catenulata</i> subsp. <i>occidentalis</i>			
12.	3260 <i>Acacia citrinoviridis</i>			
13.	17013 <i>Acacia colei</i> var. <i>colei</i>			
14.	13502 <i>Acacia coriacea</i> subsp. <i>pendens</i>			
15.	3300 <i>Acacia dictyophleba</i> (Sandhill Wattle)			
16.	3326 <i>Acacia eriopoda</i> (Broome Pindan Wattle)			
17.	3370 <i>Acacia hilliana</i>			
18.	3377 <i>Acacia inaequilatera</i> (Baderi)			
19.	3399 <i>Acacia kempeana</i> (Witchetty Bush)			
20.	3434 <i>Acacia maitlandii</i> (Maitland's Wattle)			
21.	3435 <i>Acacia marramamba</i>			
22.	3447 <i>Acacia monticola</i> (Gawar)			
23.	3500 <i>Acacia pruinocarpa</i> (Gidgee)			
24.	29016 <i>Acacia pyrifolia</i> var. <i>morrisonii</i>			
25.	29015 <i>Acacia pyrifolia</i> var. <i>pyrifolia</i>			
26.	3519 <i>Acacia rhodophloia</i>			
27.	3534 <i>Acacia sclerosperma</i> (Limestone Wattle)			
28.	13078 <i>Acacia sclerosperma</i> subsp. <i>sclerosperma</i>			
29.	3544 <i>Acacia sibilans</i>			
30.	8949 <i>Acacia sibirica</i> (Bastard Mulga)			
31.	19456 <i>Acacia stellaticeps</i>			
32.	13070 <i>Acacia synchronicia</i>			
33.	3573 <i>Acacia tenuissima</i>			
34.	3577 <i>Acacia tetragonophylla</i> (Kurara)			
35.	3579 <i>Acacia trachycarpa</i> (Minni Ritchi)			
36.	20319 <i>Acacia tumida</i> var. <i>pilbarensis</i>			
37.	19641 <i>Acacia tumida</i> var. <i>tumida</i>			
38.	3595 <i>Acacia victoriae</i> (Bramble Wattle)			
39.	3606 <i>Acacia xiphophylla</i>			
40.	24559 <i>Acanthagenys rufogularis</i> (Spiny-cheeked Honeyeater)			
41.	24260 <i>Acanthiza apicalis</i> (Broad-tailed Thornbill (Inland Thornbill))			
42.	24264 <i>Acanthiza robustirostris</i> (Slaty-backed Thornbill)			
43.	24265 <i>Acanthiza uropygialis</i> (Chestnut-rumped Thornbill)			
44.	25332 <i>Acanthophs wellsii</i> (Pilbara Death Adder)			
45.	25535 <i>Accipiter cirrocephalus</i> (Collared Sparrowhawk)			
46.	25536 <i>Accipiter fasciatus</i> (Brown Goshawk)			
47.	25755 <i>Acrocephalus australis</i> (Australian Reed Warbler)			
48.	17422 <i>Adriana tomentosa</i> var. <i>tomentosa</i>			
49.	25544 <i>Aegotheles cristatus</i> (Australian Owlet-nightjar)			
50.	2646 <i>Aerva javanica</i> (Kapok Bush)	Y		
51.	-8281 <i>Amaranthus mitchellii</i> var. <i>cuspidifolius</i>			
52.	30833 <i>Amphibolurus longirostris</i>			
53.	2372 <i>Amyema fitzgeraldii</i> (Pincushion Mistletoe)			
54.	25647 <i>Amytornis striatus</i> (Striated Grasswren)			
55.	24312 <i>Anas gracilis</i> (Grey Teal)			
56.	24316 <i>Anas superciliosa</i> (Pacific Black Duck)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
57.	7828 <i>Angianthus cyathifer</i>			
58.	-1591 <i>Anhinga novaehollandiae</i>			
59.	25318 <i>Antaresia perthensis</i> (Pygmy Python)			
60.	25241 <i>Antaresia stimsoni</i> subsp. <i>stimsoni</i>			
61.	2333 <i>Anthobolus leptomerioides</i>			
62.	25670 <i>Anthus australis</i> (Australian Pipit)			
63.	-1612 <i>Anthus novaeseelandiae</i>			
64.	24285 <i>Aquila audax</i> (Wedge-tailed Eagle)			
65.	25558 <i>Ardea ibis</i> (Cattle Egret)			
66.	-1578 <i>Ardea modesta</i>			
67.	24341 <i>Ardea pacifica</i> (White-necked Heron)			
68.	24610 <i>Ardeotis australis</i> (Australian Bustard)		P4	
69.	207 <i>Aristida contorta</i> (Bunched Kerosene Grass)			
70.	25566 <i>Artamus cinereus</i> (Black-faced Woodswallow)			
71.	24355 <i>Artamus minor</i> (Little Woodswallow)			
72.	24356 <i>Artamus personatus</i> (Masked Woodswallow)			
73.	229 <i>Astrebla pectinata</i> (Barley Mitchell Grass)			
74.	4740 <i>Atalaya hemiglaucula</i> (Whitewood)			
75.	2450 <i>Atriplex amnicola</i> (Swamp Saltbush)			
76.	2451 <i>Atriplex bunburyana</i> (Silver Saltbush)			
77.	2453 <i>Atriplex codonocarpa</i> (Flat-topped Saltbush)			
78.	2476 <i>Atriplex semilunaris</i> (Annual Saltbush)			
79.	-8696 <i>Atriplex</i> sp.			
80.	-1633 <i>Barnardius zonarius</i>			
81.	11726 <i>Bergia perennis</i> subsp. <i>exigua</i>			
82.	11642 <i>Bergia perennis</i> subsp. <i>obtusifolia</i>			
83.	2770 <i>Boerhavia coccinea</i> (Tar Vine)			
84.	6609 <i>Bonamia rosea</i> (Felted Bellflower)			
85.	24251 <i>Bos taurus</i> (European Cattle)	Y		
86.	25331 <i>Brachyurophis approximans</i>			
87.	24359 <i>Burhinus grallarius</i> (Bush Stone-curlew)		P4	
88.	-11099 <i>Byblis</i> sp.			
89.	25715 <i>Cacatua roseicapilla</i> (Galah)			
90.	24725 <i>Cacatua roseicapilla</i> subsp. <i>assimilis</i>			
91.	25716 <i>Cacatua sanguinea</i> (Little Corella)			
92.	-1590 <i>Cacomantis pallidus</i>			
93.	24861 <i>Caimanops amphiboluroides</i>			
94.	2866 <i>Calandrinia quadrivalvis</i>			
95.	20169 <i>Calandrinia</i> sp. Mt Bruce (M.E. Trudgen 1544)			
96.	2870 <i>Calandrinia stagnensis</i>			
97.	14090 <i>Calocephalus beardii</i>			
98.	7893 <i>Calocephalus knappii</i>			
99.	7905 <i>Calotis multicaulis</i> (Many-stemmed Burr-daisy)			
100.	7906 <i>Calotis plumulifera</i>			
101.	7907 <i>Calotis porphyroglossa</i>			
102.	-12966 <i>Calotis</i> sp.			
103.	5446 <i>Calytrix carinata</i>			
104.	24254 <i>Camelus dromedarius</i> (Dromedary, Camel)	Y		
105.	25454 <i>Canis lupus</i>			
106.	24039 <i>Canis lupus</i> subsp. <i>dingo</i> (Dingo)	Y		
107.	2976 <i>Capparis lasiantha</i> (Split Jack)			
108.	11670 <i>Capparis spinosa</i> var. <i>nummularia</i> (Coastal Caper)			
109.	2982 <i>Capparis umbonata</i> (Wild Orange)			
110.	25015 <i>Carlia munda</i>			
111.	25017 <i>Carlia triacantha</i>			
112.	258 <i>Cenchrus ciliaris</i> (Buffel Grass)	Y		
113.	6541 <i>Centaurium spicatum</i> (Spike Centaury)			
114.	24564 <i>Certhionyx variegatus</i> (Pied Honeyeater)			
115.	-1624 <i>Chalcites basalis</i>			
116.	24186 <i>Chalinolobus gouldii</i> (Gould's Wattled Bat)			
117.	24373 <i>Charadrius melanops</i> (Black-fronted Dotterel)			
118.	25339 <i>Chelodina steindachneri</i> (Flat-shelled Turtle)			
119.	12612 <i>Chrysocephalum apiculatum</i>			
120.	24833 <i>Cincloramphus cruralis</i> (Brown Songlark)			
121.	24834 <i>Cincloramphus mathewsi</i> (Rufous Songlark)			
122.	25580 <i>Cinclosoma castaneothorax</i> (Chestnut-breasted Quail-thrush)			
123.	24289 <i>Circus assimilis</i> (Spotted Harrier)			
124.	7369 <i>Citrullus colocynthis</i>	Y		
125.	25582 <i>Climacteris melanura</i> (Black-tailed Treecreeper)			
126.	25675 <i>Colluricincla harmonica</i> (Grey Shrike-thrush)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
127.	24361 <i>Coracina maxima</i> (Ground Cuckoo-shrike)			
128.	25568 <i>Coracina novaehollandiae</i> (Black-faced Cuckoo-shrike)			
129.	13659 <i>Corchorus laniflorus</i>			
130.	24416 <i>Corvus bennetti</i> (Little Crow)			
131.	25593 <i>Corvus orru</i> (Torresian Crow)			
132.	24418 <i>Corvus orru subsp. ceciliae</i> (Western Crow)			
133.	-1666 <i>Corvus sp.</i>			
134.	16783 <i>Corymbia candida</i>			
135.	17093 <i>Corymbia hamersleyana</i>			
136.	24420 <i>Cracticus nigrogularis</i> (Pied Butcherbird)			
137.	25595 <i>Cracticus tibicen</i> (Australian Magpie)			
138.	25596 <i>Cracticus torquatus</i> (Grey Butcherbird)			
139.	19565 <i>Cressa australis</i>			
140.	25020 <i>Cryptoblepharus plagiocephalus</i>			
141.	25458 <i>Ctenophorus caudicinctus</i> (Ring-tailed Dragon)			
142.	24865 <i>Ctenophorus caudicinctus subsp. caudicinctus</i>			
143.	24876 <i>Ctenophorus isolepis subsp. isolepis</i>			
144.	24882 <i>Ctenophorus nuchalis</i> (Central Netted Dragon)			
145.	24886 <i>Ctenophorus reticulatus</i> (Western Netted Dragon)			
146.	25026 <i>Ctenotus atlas</i>			
147.	25036 <i>Ctenotus duricola</i>			
148.	25042 <i>Ctenotus greeri</i>			
149.	25045 <i>Ctenotus helenae</i>			
150.	25463 <i>Ctenotus pantherinus</i> (Leopard Ctenotus)			
151.	25064 <i>Ctenotus pantherinus subsp. ocellifer</i>			
152.	25073 <i>Ctenotus saxatilis</i> (Rock Ctenotus)			
153.	25465 <i>Ctenotus uber</i>			
154.	33031 <i>Cucumis maderaspatanus</i>			
155.	17117 <i>Cullen cinereum</i>			
156.	17118 <i>Cullen leucanthum</i>			
157.	15714 <i>Cullen stipulaceum</i>			
158.	25090 <i>Cyclodomorphus melanops subsp. melanops</i>			
159.	25375 <i>Cyclorana maini</i> (Sheep Frog)			
160.	25376 <i>Cyclorana platycephala</i> (Water-holding Frog)			
161.	818 <i>Cyperus vaginatus</i> (Stiffleaf Sedge)			
162.	25547 <i>Dacelo leachii</i> (Blue-winged Kookaburra)			
163.	25673 <i>Daphoenositta chrysoptera</i> (Varied Sittella)			
164.	30903 <i>Dasyercus blythi</i> (Brush-tailed Mulgara, Ampurta)		P4	
165.	24091 <i>Dasykaluta rosamondae</i> (Little Red Kaluta)			
166.	24093 <i>Dasyurus hallucatus</i> (Northern Quoll)		T	
167.	24998 <i>Delma elegans</i>			
168.	25000 <i>Delma haroldi</i>			
169.	25001 <i>Delma nasuta</i>			
170.	25002 <i>Delma pax</i>			
171.	25004 <i>Delma tincta</i>			
172.	25295 <i>Demansia psammophis subsp. cupreiceps</i>			
173.	24325 <i>Dendrocygna eytoni</i> (Plumed Whistling Duck)			
174.	25607 <i>Dicaeum hirundinaceum</i> (Mistletoebird)			
175.	7164 <i>Dicladanthra forrestii</i>			
176.	6754 <i>Dicrasyllis cordifolia</i>			
177.	24926 <i>Diplodactylus conspicillatus</i> (Fat-tailed Gecko)			
178.	24940 <i>Diplodactylus pulcher</i>			
179.	24944 <i>Diplodactylus savagei</i>			
180.	4759 <i>Dodonaea coriacea</i>			
181.	4773 <i>Dodonaea petiolaris</i>			
182.	24470 <i>Dromaius novaehollandiae</i> (Emu)			
183.	2502 <i>Dysphania kalpari</i> (Rat's Tail)			
184.	2504 <i>Dysphania plantaginella</i>			
185.	2508 <i>Dysphania sphaerosperma</i>			
186.	25094 <i>Egernia formosa</i>			
187.	-1623 <i>Egretta garzetta</i>			
188.	-1577 <i>Egretta novaehollandiae</i>			
189.	-1573 <i>Elsyornis melanops</i>			
190.	24631 <i>Emblema pictum</i> (Painted Finch)			
191.	12064 <i>Enchylaena tomentosa var. tomentosa</i> (Barrier Saltbush)			
192.	357 <i>Enneapogon caeruleus</i> (Limestone Grass)			
193.	-1569 <i>Eolophus roseicapillus</i>			
194.	25578 <i>Ephippiorhynchus asiaticus</i> (Black-necked Stork)			
195.	24568 <i>Epthianura aurifrons</i> (Orange Chat)			
196.	24570 <i>Epthianura tricolor</i> (Crimson Chat)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
197.	24257 <i>Equus asinus</i> (Donkey)	Y		
198.	24258 <i>Equus caballus</i> (Horse)	Y		
199.	377 <i>Eragrostis desertorum</i> (Desert Lovegrass)			
200.	378 <i>Eragrostis dielsii</i> (Mallee Lovegrass)			
201.	380 <i>Eragrostis eriopoda</i> (Woollybutt Grass)			
202.	31541 <i>Eragrostis</i> sp. Erect spikelets (P.K. Latz 2122)			
203.	399 <i>Eragrostis xerophila</i> (Knotty-butt Neverfail)			
204.	25109 <i>Eremiascincus richardsonii</i> (Broad-banded Sand Swimmer)			
205.	24837 <i>Eremiornis carteri</i> (Spinifex-bird)			
206.	2513 <i>Eremophea spinosa</i>			
207.	7190 <i>Eremophila compacta</i>			
208.	7192 <i>Eremophila cuneifolia</i> (Pinyuru)			
209.	17597 <i>Eremophila latrobei</i> subsp. <i>filiformis</i>			
210.	7234 <i>Eremophila longifolia</i> (Berrigan)			
211.	16363 <i>Eremophila maculata</i> subsp. <i>brevifolia</i> (Native Fuchsia)			
212.	17363 <i>Eremophila spongiocarpa</i>		P1	
213.	16040 <i>Eremophila youngii</i> subsp. <i>lepidota</i>		P4	
214.	408 <i>Eriachne flaccida</i> (Claypan Grass)			
215.	413 <i>Eriachne mucronata</i> (Mountain Wanderrie Grass)			
216.	5655 <i>Eucalyptus gamophylla</i> (Twin-leaf Mallee)			
217.	18088 <i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>			
218.	5703 <i>Eucalyptus lucasii</i> (Barlee Box)			
219.	5744 <i>Eucalyptus pilbarensis</i>			
220.	5773 <i>Eucalyptus socialis</i> (Red Mallee)			
221.	19576 <i>Eucalyptus socialis</i> subsp. <i>eucentrica</i>			
222.	29733 <i>Eucalyptus trivalva</i> (Victoria Spring Mallee)			
223.	-5570 <i>Eucalyptus victrix</i> x <i>xerothermica</i>			
224.	15592 <i>Eucalyptus xerothermica</i>			
225.	35307 <i>Euphorbia australis</i> var. <i>australis</i>			
226.	12097 <i>Euphorbia tannensis</i> subsp. <i>eremophila</i> (Desert Spurge)			
227.	24368 <i>Eurostopodus argus</i> (Spotted Nightjar)			
228.	25621 <i>Falco berigora</i> (Brown Falcon)			
229.	25622 <i>Falco cenchroides</i> (Australian Kestrel)			
230.	24473 <i>Falco hypoleucos</i> (Grey Falcon)		P4	
231.	25623 <i>Falco longipennis</i> (Australian Hobby)			
232.	25624 <i>Falco peregrinus</i> (Peregrine Falcon)		S	
233.	24475 <i>Falco peregrinus</i> subsp. <i>macropus</i>		S	
234.	24041 <i>Felis catus</i> (Cat)	Y		
235.	862 <i>Fimbristylis microcarpa</i>			
236.	35558 <i>Flaveria trinervia</i> (Speedy Weed)	Y		
237.	5188 <i>Frankenia ambita</i>			
238.	5212 <i>Frankenia setosa</i> (Bristly Frankenia)			
239.	-10056 <i>Frankenia</i> sp.			
240.	25730 <i>Gallirallus philippensis</i> (Buff-banded Rail)			
241.	24958 <i>Gehyra punctata</i>			
242.	24959 <i>Gehyra variegata</i>			
243.	24401 <i>Geopelia cuneata</i> (Diamond Dove)			
244.	25585 <i>Geopelia striata</i> (Peaceful Dove)			
245.	24403 <i>Geopelia striata</i> subsp. <i>placida</i>			
246.	24404 <i>Geophaps plumifera</i> (Spinifex Pigeon)			
247.	25530 <i>Gerygone fusca</i> (Western Gerygone)			
248.	-4856 <i>Glinus</i> sp.			
249.	3938 <i>Glycine canescens</i> (Silky Glycine)			
250.	7989 <i>Gnephosis brevifolia</i> (Short-leaved Gnephosis)			
251.	10995 <i>Gompholobium polyzygum</i>			
252.	18367 <i>Gomphrena kanisii</i>			
253.	12517 <i>Goodenia cusackiana</i>			
254.	7521 <i>Goodenia lamprosperma</i>			
255.	7526 <i>Goodenia microptera</i>			
256.	12552 <i>Goodenia muelleriana</i>			
257.	7530 <i>Goodenia nuda</i>		P4	
258.	12574 <i>Goodenia prostrata</i>			
259.	7545 <i>Goodenia scaevolina</i> (Ngurubi)			
260.	7560 <i>Goodenia vilmorinae</i>			
261.	4910 <i>Gossypium australe</i> (Native Cotton)			
262.	4918 <i>Gossypium robinsonii</i> (Wild Cotton)			
263.	24443 <i>Grallina cyanoleuca</i> (Magpie-lark)			
264.	15845 <i>Grevillea juncifolia</i> subsp. <i>juncifolia</i>			
265.	19570 <i>Grevillea pyramidalis</i> subsp. <i>leucadendron</i>			
266.	2121 <i>Grevillea wickhamii</i> (Wickham's Grevillea)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
267.	13440 <i>Grevillea wickhamii</i> subsp. <i>aprica</i>			
268.	30258 <i>Halgania solanacea</i> var. <i>Mt Doreen</i> (G.M. Chippendale 4206)			
269.	24295 <i>Haliastur sphenurus</i> (Whistling Kite)			
270.	24297 <i>Hamirostra melanosternon</i> (Black-breasted Buzzard)			
271.	17301 <i>Heliotropium chrysocarpum</i>			
272.	6707 <i>Heliotropium curassavicum</i> (Smooth Heliotrope)			
273.	17305 <i>Heliotropium glanduliferum</i>			
274.	6712 <i>Heliotropium heteranthum</i>			
275.	24961 <i>Heteronotia binoei</i> (Bynoe's Gecko)			
276.	24962 <i>Heteronotia spelea</i> (Desert Cave Gecko)			
277.	-1601 <i>Hieraaetus morphnoides</i>			
278.	5215 <i>Hybanthus aurantiacus</i>			
279.	3982 <i>Indigofera monophylla</i>			
280.	8088 <i>Ixiochlamys cuneifolia</i>			
281.	12059 <i>Jasminum didymum</i> subsp. <i>lineare</i> (Desert Jasmine)			
282.	19636 <i>Keraudrenia velutina</i> subsp. <i>elliptica</i>			
283.	-1641 <i>Lalage sueurii</i>			
284.	24367 <i>Lalage tricolor</i> (White-winged Triller)			
285.	24217 <i>Leggadina lakedownensis</i> (Short-tailed Mouse)		P4	
286.	3025 <i>Lepidium echinatum</i>			
287.	3035 <i>Lepidium pedicellosum</i>			
288.	3037 <i>Lepidium phlebopetalum</i> (Veined Peppercross)			
289.	3038 <i>Lepidium pholidogynum</i>			
290.	3039 <i>Lepidium platypetalum</i> (Slender Peppercross)			
291.	30926 <i>Lerista amicornum</i>			
292.	25135 <i>Lerista flammicauda</i>			
293.	25146 <i>Lerista labialis</i>			
294.	25482 <i>Lerista macropisthopus</i>			
295.	25155 <i>Lerista muelleri</i>			
296.	25005 <i>Lialis burtonis</i>			
297.	24575 <i>Lichenostomus keartlandi</i> (Grey-headed Honeyeater)			
298.	24578 <i>Lichenostomus penicillatus</i> (White-plumed Honeyeater)			
299.	24581 <i>Lichenostomus virescens</i> (Singing Honeyeater)			
300.	25661 <i>Lichmera indistincta</i> (Brown Honeyeater)			
301.	25392 <i>Litoria rubella</i> (Little Red Tree Frog)			
302.	7403 <i>Lobelia heterophylla</i> (Wing-seeded Lobelia)			
303.	24902 <i>Lophognathus longirostris</i>			
304.	4060 <i>Lotus australis</i> (Austral Trefoil)			
305.	30933 <i>Lucasium stenodactylum</i>			
306.	30934 <i>Lucasium wombeyi</i>			
307.	4728 <i>Macgregoria racemigera</i> (Snow Flower)			
308.	24180 <i>Macroderma gigas</i> (Ghost Bat)		P4	
309.	25489 <i>Macropus robustus</i>			
310.	24136 <i>Macropus rufus</i> (Red Kangaroo, Marlu)			
311.	2543 <i>Maireana eriosphaera</i>			
312.	2544 <i>Maireana georgei</i> (Satiny Bluebush)			
313.	2557 <i>Maireana platycarpa</i> (Shy Bluebush)			
314.	2560 <i>Maireana pyramidata</i> (Sago Bush)			
315.	2567 <i>Maireana tomentosa</i> (Felt Bluebush)			
316.	25651 <i>Malurus lamberti</i> (Variegated Fairy-wren)			
317.	25652 <i>Malurus leucopterus</i> (White-winged Fairy-wren)			
318.	4962 <i>Malvastrum americanum</i> (Spiked Malvastrum)	Y		
319.	24583 <i>Manorina flavigula</i> (Yellow-throated Miner)			
320.	12949 <i>Marsdenia australis</i>			
321.	76 <i>Marsilea hirsuta</i> (Nardoo)			
322.	5908 <i>Melaleuca eleuterostachya</i>			
323.	5933 <i>Melaleuca linophylla</i>			
324.	-3184 <i>Melaleuca</i> sp.			
325.	5991 <i>Melaleuca xerophila</i>			
326.	-1570 <i>Melanodryas cucullata</i>			
327.	24736 <i>Melopsittacus undulatus</i> (Budgerigar)			
328.	25184 <i>Menetia greyii</i>			
329.	25491 <i>Menetia surda</i>			
330.	25187 <i>Menetia surda</i> subsp. <i>surda</i>			
331.	24598 <i>Merops omatus</i> (Rainbow Bee-eater)			
332.	-1636 <i>Microcarbo melanoleucos</i>			
333.	25542 <i>Milvus migrans</i> (Black Kite)			
334.	8109 <i>Minuria integerrima</i> (Smooth Minuria)			
335.	25545 <i>Mirafra javanica</i> (Horsfield's Bushlark (Singing Bushlark))			
336.	6519 <i>Mitrasacme connata</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
337.	25495 <i>Morethia ruficauda</i>			
338.	25193 <i>Morethia ruficauda</i> subsp. <i>exquisita</i>			
339.	6490 <i>Muellerolimon salicorniaceum</i>			
340.	24223 <i>Mus musculus</i> (House Mouse)	Y		
341.	17925 <i>Myriocephalus oldfieldii</i>			
342.	25685 <i>Neochima ruficauda</i> (Star Finch)			
343.	24737 <i>Neophema bourkii</i> (Bourke's Parrot)			
344.	24972 <i>Nephrurus wheeleri</i> subsp. <i>cinctus</i>			
345.	6786 <i>Newcastelia cephalantha</i>			
346.	6791 <i>Newcastelia hexarrhena</i> (Lamb's Tails)			
347.	6971 <i>Nicotiana benthamiana</i> (Tjuntiwari)			
348.	14817 <i>Nicotiana heterantha</i>		P1	
349.	11331 <i>Nicotiana occidentalis</i> subsp. <i>obliqua</i>			
350.	24095 <i>Ningau timealeyi</i> (Pilbara Ningau)			
351.	25748 <i>Ninox novaeseelandiae</i> (Boobook Owl)			
352.	25197 <i>Notoscincus ornatus</i> subsp. <i>ornatus</i>			
353.	24742 <i>Nymphicus hollandicus</i> (Cockatiel)			
354.	24407 <i>Ocyphaps lophotes</i> (Crested Pigeon)			
355.	24976 <i>Oedura marmorata</i> (Marbled Velvet Gecko)			
356.	7338 <i>Oldenlandia crouchiana</i>			
357.	24618 <i>Oreoica gutturalis</i> (Crested Bellbird)			
358.	34011 <i>Oreoica gutturalis</i> subsp. <i>gutturalis</i> (Crested Bellbird (southern))		P4	
359.	25680 <i>Pachycephala rufiventris</i> (Rufous Whistler)			
360.	503 <i>Panicum decompositum</i> (Native Millet)			
361.	514 <i>Paractaenum refractum</i>			
362.	24627 <i>Pardalotus rubricatus</i> (Red-browed Pardalote)			
363.	24648 <i>Pelecanus conspicillatus</i> (Australian Pelican)			
364.	12486 <i>Peplidium aithocheilum</i>			
365.	-6617 <i>Peplidium</i> sp.			
366.	20810 <i>Peplidium</i> sp. <i>fortescue</i> marsh (S. van Leeuwen 4865)		P1	Y
367.	3675 <i>Petalostylis labicheoides</i> (Slender Petalostylis)			
368.	-1638 <i>Petrochelidon ariel</i>			
369.	-1640 <i>Petrochelidon nigricans</i>			
370.	24144 <i>Petrogale rothschildi</i> (Rothschild's Rock-wallaby)			
371.	24658 <i>Petroica cucullata</i> (Hooded Robin)			
372.	24659 <i>Petroica goodenovii</i> (Red-capped Robin)			
373.	24667 <i>Phalacrocorax sulcirostris</i> (Little Black Cormorant)			
374.	24409 <i>Phaps chalcoptera</i> (Common Bronzewing)			
375.	24102 <i>Planigale maculata</i> (Common Planigale)			
376.	24842 <i>Platalea regia</i> (Royal Spoonbill)			
377.	25721 <i>Platycercus zonarius</i> (Australian Ringneck (Ring-necked Parrot))			
378.	17817 <i>Pluhea dunlopii</i>			
379.	8168 <i>Pluhea rubelliflora</i>			
380.	6491 <i>Plumbago zeylanica</i> (Native Plumbago)			
381.	25703 <i>Podargus strigoides</i> (Tawny Frogmouth)			
382.	8173 <i>Podolepis capillaris</i> (Wiry Podolepis)			
383.	25510 <i>Pogona minor</i>			
384.	24907 <i>Pogona minor</i> subsp. <i>minor</i>			
385.	24683 <i>Pomatostomus superciliosus</i> (White-browed Babbler)			
386.	25706 <i>Pomatostomus temporalis</i> (Grey-crowned Babbler)			
387.	24684 <i>Pomatostomus temporalis</i> subsp. <i>rubeculus</i>			
388.	2884 <i>Portulaca oleracea</i> (Purslane)	Y		
389.	2886 <i>Portulaca pilosa</i> (Djanggara)			
390.	25199 <i>Proablepharus reginae</i>			
391.	25261 <i>Pseudechis australis</i> (Mulga Snake)			
392.	24233 <i>Pseudomys chapmani</i> (Western Pebble-mound Mouse)		P4	
393.	24235 <i>Pseudomys desertor</i> (Desert Mouse)			
394.	24237 <i>Pseudomys hermannsburgensis</i> (Sandy Inland Mouse)			
395.	25263 <i>Pseudonaja modesta</i> (Ringed Brown Snake)			
396.	25264 <i>Pseudonaja nuchalis</i> (Gwardar)			
397.	24390 <i>Psophodes occidentalis</i> (Western Wedgebill (Chiming Wedgebill))			
398.	18155 <i>Psyrdrax suaveolens</i>			
399.	8191 <i>Pterocaulon serrulatum</i>			
400.	-5660 <i>Pterocaulon</i> sp.			
401.	8192 <i>Pterocaulon sphacelatum</i> (Apple Bush)			
402.	-4606 <i>Pterocaulon sphacelatum</i> / <i>sphaeranthoides</i>			
403.	8193 <i>Pterocaulon sphaeranthoides</i>			
404.	24757 <i>Ptilonorhynchus maculatus</i> subsp. <i>guttatus</i> (Western Bowerbird)			
405.	2690 <i>Ptilotus aervooides</i>			
406.	11996 <i>Ptilotus astrolasius</i> var. <i>astrolasius</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
407.	2704 <i>Ptilotus calostachyus</i> (Weeping Mulla Mulla)			
408.	2706 <i>Ptilotus carinatus</i>			
409.	2721 <i>Ptilotus exaltatus</i> (Tall Mulla Mulla)			
410.	11577 <i>Ptilotus gaudichaudii</i> var. <i>gaudichaudii</i>			
411.	2728 <i>Ptilotus gomphrenoides</i>			
412.	11236 <i>Ptilotus gomphrenoides</i> var. <i>gomphrenoides</i>			
413.	2734 <i>Ptilotus incanus</i>			
414.	2741 <i>Ptilotus macrocephalus</i> (Featherheads)			
415.	2744 <i>Ptilotus mollis</i>		P4	
416.	2747 <i>Ptilotus obovatus</i> (Cotton Bush)			
417.	2751 <i>Ptilotus polystachyus</i> (Prince of Wales Feather)			
418.	2757 <i>Ptilotus schwartzii</i>			
419.	15855 <i>Ptilotus schwartzii</i> var. <i>schwartzii</i>			
420.	25009 <i>Pygopus nigriceps</i>			
421.	24278 <i>Pyrrholaemus brunneus</i> (Redthroat)			
422.	25270 <i>Ramphotyphlops ammodytes</i>			
423.	25276 <i>Ramphotyphlops ganei</i>		P1	
424.	25277 <i>Ramphotyphlops grypus</i>			
425.	25279 <i>Ramphotyphlops hamatus</i>			
426.	25288 <i>Ramphotyphlops waitii</i>			
427.	2582 <i>Rhagodia eremaea</i> (Thorny Saltbush)			
428.	20168 <i>Rhagodia</i> sp. <i>Hammersley</i> (M. Trudgen 17794)		P3	
429.	25614 <i>Rhipidura leucophrys</i> (Willie Wagtail)			
430.	13301 <i>Rhodanthe floribunda</i>			
431.	13310 <i>Rhodanthe margarethae</i>			
432.	13303 <i>Rhodanthe steriliscens</i>			
433.	13254 <i>Rhodanthe stricta</i>			
434.	24982 <i>Rhynchoedura ornata</i> (Beaked Gecko)			
435.	12088 <i>Rostellularia adscendens</i> var. <i>clementii</i>			
436.	5063 <i>Rulingia luteiflora</i> (Yellow-flowered Rulingia)			
437.	6483 <i>Samolus junceus</i>			
438.	14108 <i>Samolus repens</i> var. <i>floribundus</i>			
439.	-6148 <i>Samolus</i> sp.			
440.	12723 <i>Scaevola amblyanthera</i>			
441.	13172 <i>Scaevola parvifolia</i> subsp. <i>pilbarae</i>			
442.	-8719 <i>Scaevola</i> sp.			
443.	11650 <i>Sclerolaena bicornis</i> var. <i>bicornis</i> (Goathead Burr)			
444.	2603 <i>Sclerolaena cornishiana</i> (Cartwheel Burr)			
445.	2606 <i>Sclerolaena cuneata</i> (Yellow Bindii)			
446.	2607 <i>Sclerolaena densiflora</i>			
447.	2611 <i>Sclerolaena eriacantha</i> (Tall Bindii)			
448.	2616 <i>Sclerolaena glabra</i>			
449.	2617 <i>Sclerolaena hostilis</i>			
450.	2619 <i>Sclerolaena lanicuspis</i> (Spinach Burr)			
451.	24200 <i>Scotorepens greyii</i> (Little Broad-nosed Bat)			
452.	8213 <i>Senecio magnificus</i> (Showy Groundsel)			
453.	12279 <i>Senna artemisioides</i> subsp. <i>helmsii</i>			
454.	12305 <i>Senna glutinosa</i> subsp. <i>chatelainiana</i>			
455.	12307 <i>Senna glutinosa</i> subsp. <i>glutinosa</i>			
456.	12309 <i>Senna glutinosa</i> subsp. <i>pruinosa</i>			
457.	12308 <i>Senna glutinosa</i> subsp. <i>x luerssenii</i>			
458.	12312 <i>Senna notabilis</i>			
459.	19347 <i>Senna sericea</i>			
460.	14577 <i>Senna</i> sp. <i>Meekatharra</i> (E. Bailey 1-26)			
461.	-5146 <i>Senna</i> sp. <i>I</i>			Y
462.	18445 <i>Senna stricta</i>			
463.	4966 <i>Sida arenicola</i>			
464.	4976 <i>Sida echinocarpa</i>			
465.	-9417 <i>Sida</i> sp.			
466.	16923 <i>Sida trichopoda</i>			
467.	30948 <i>Smicronis brevirostris</i> (Weebill)			
468.	24116 <i>Sminthopsis macroura</i> (Stripe-faced Dunnart)			
469.	24120 <i>Sminthopsis youngsoni</i> (Lesser Hairy-footed Dunnart)			
470.	7002 <i>Solanum diversiflorum</i>			
471.	7014 <i>Solanum horridum</i>			
472.	7018 <i>Solanum lasiophyllum</i> (Flannel Bush)			
473.	7029 <i>Solanum phlomoides</i>			
474.	7036 <i>Solanum sturtianum</i> (Thargomindah Nightshade)			
475.	-9726 <i>Sporisorium lanigeri</i>			Y
476.	4731 <i>Stackhousia intermedia</i>			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
477.	7098 <i>Stemodia grossa</i> (Marsh Stemodia)			
478.	24482 <i>Stiltia isabella</i> (Australian Pratincole)			
479.	8234 <i>Streptoglossa adscendens</i>			
480.	8235 <i>Streptoglossa bubakii</i>			
481.	8238 <i>Streptoglossa liatroides</i>			
482.	24927 <i>Strophurus elderi</i>			
483.	24949 <i>Strophurus wellingtonae</i>			
484.	3182 <i>Stylobasium spathulatum</i> (Pebble Bush)			
485.	25307 <i>Suta punctata</i> (Spotted Snake)			
486.	4234 <i>Swainsona maccullochiana</i> (Ashburton Pea)			
487.	4244 <i>Swainsona stenodonta</i>			
488.	13587 <i>Swainsona tanamiensis</i>			
489.	13339 <i>Synaptantha tillaeacea</i> var. <i>tillaeacea</i>			
490.	24185 <i>Tadarida australis</i> (White-striped Freetail-bat)			
491.	30870 <i>Taeniopygia guttata</i> (Zebra Finch)			
492.	31616 <i>Tecticornia auriculata</i>			
493.	33319 <i>Tecticornia indica</i> subsp. <i>bidens</i>			
494.	33318 <i>Tecticornia indica</i> subsp. <i>leiostachya</i> (Samphire)			
495.	33297 <i>Tecticornia pergranulata</i> subsp. <i>pergranulata</i> (Blackseed Samphire)			
496.	-7433 <i>Tecticornia</i> sp.			
497.	34177 <i>Tecticornia</i> sp. Christmas Creek (K.A. Shepherd & T. Colmer et al. KS 1063)		P1	
498.	33216 <i>Tecticornia</i> sp. Dennys Crossing (K.A. Shepherd & J. English KS 552)			
499.	31843 <i>Tecticornia</i> sp. Roy Hill (H. Pringle 62)			
500.	17770 <i>Tephrosia densa</i>			
501.	19531 <i>Tephrosia rosea</i> var. <i>clementii</i>			
502.	17789 <i>Tephrosia rosea</i> var. <i>glabrior</i>			
503.	4283 <i>Tephrosia stipuligera</i>			
504.	673 <i>Themeda triandra</i>			
505.	24845 <i>Threskiornis spinicollis</i> (Straw-necked Ibis)			
506.	25202 <i>Tiliqua multifasciata</i> (Central Blue-tongue)			
507.	24308 <i>Todiramphus pyrrhopygia</i> (Red-backed Kingfisher)			
508.	-1613 <i>Todiramphus pyrrhopygius</i>			
509.	25549 <i>Todiramphus sanctus</i> (Sacred Kingfisher)			
510.	6278 <i>Trachymene oleracea</i>			
511.	2825 <i>Trianthema cussackiana</i>			
512.	2826 <i>Trianthema glossostigma</i>			
513.	2832 <i>Trianthema triquetra</i> (Red Spinach)			
514.	4374 <i>Tribulus astrocarpus</i>			
515.	4377 <i>Tribulus hirsutus</i>			
516.	-7030 <i>Tribulus</i> sp.			
517.	18072 <i>Tribulus suberosus</i>			
518.	11750 <i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>			
519.	24157 <i>Trichosurus vulpecula</i> subsp. <i>arnhemensis</i> (Northern Brushtail Possum)			
520.	4316 <i>Trigonella suavissima</i> (Sweet Fenugreek)			
521.	696 <i>Triodia pungens</i> (Soft Spinifex)			
522.	20241 <i>Triodia</i> sp. Shovelanna Hill (S. van Leeuwen 3835)			
523.	704 <i>Triodia wiseana</i> (Limestone Spinifex)			
524.	706 <i>Triraphis mollis</i> (Needle Grass)			
525.	14694 <i>Triumfetta clementii</i>			
526.	24851 <i>Turnix velox</i> (Little Button-quail)			
527.	30814 <i>Tympanocryptis cephalus</i> (Pebble Dragon)			
528.	-1626 <i>Tyto javanica</i>			
529.	25209 <i>Varanus acanthurus</i> (Spiny-tailed Monitor)			
530.	25210 <i>Varanus brevicauda</i> (Short-tailed Pygmy Monitor)			
531.	25211 <i>Varanus caudolineatus</i>			
532.	25218 <i>Varanus gouldii</i> (Bungarra or Sand Monitor)			
533.	25524 <i>Varanus panoptes</i> (Yellow-spotted Monitor)			
534.	25526 <i>Varanus tristis</i> (Racehorse Monitor)			
535.	24205 <i>Vespadelus finlaysoni</i> (Finlayson's Cave Bat)			
536.	24040 <i>Vulpes vulpes</i> (Red Fox)	Y		
537.	7393 <i>Wahlenbergia tumidifruca</i>			
538.	731 <i>Xerochloa laniflora</i> (Rice Grass)			
539.	29095 <i>Zaleya galericulata</i> subsp. <i>galericulata</i>			
540.	18140 <i>Zygophyllum eichleri</i>			
541.	12359 <i>Zygophyllum simile</i>			
542.	-8537 <i>genus</i> sp.			Y

Conservation Codes
T - Rare or likely to become extinct
X - Presumed extinct
IA - Protected under international agreement

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
S	Other specially protected fauna			
1	Priority 1			
2	Priority 2			
3	Priority 3			
4	Priority 4			
5	Priority 5			

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

NatureMap Species Report

Created By Guest user on 02/05/2011

Method 'By Circle'

Centre 119°58' 32" E,23°01' 50" S

Buffer 40km

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
1.	4886 <i>Abutilon amplum</i>			
2.	19589 <i>Abutilon dioicum</i>			
3.	4891 <i>Abutilon fraseri</i> (Lantern Bush)			
4.	4895 <i>Abutilon lepidum</i>			
5.	11215 <i>Acacia adoxa</i> var. <i>adoxo</i>			
6.	3205 <i>Acacia adsurgens</i>			
7.	3214 <i>Acacia ancistrocarpa</i> (Fitzroy Wattle)			
8.	3217 <i>Acacia aneura</i> (Mulga)			
9.	19505 <i>Acacia aneura</i> var. <i>pilbarana</i>			
10.	37260 <i>Acacia aptaneura</i>			
11.	-8962 <i>Acacia ayersiana</i> (hybrid)			
12.	3241 <i>Acacia bivenosa</i>			
13.	-8301 <i>Acacia bivenosa</i> weeping variant			Y
14.	23524 <i>Acacia catenulata</i> subsp. <i>occidentalis</i>			
15.	3260 <i>Acacia citrinoviridis</i>			
16.	13502 <i>Acacia coriacea</i> subsp. <i>pendens</i>			
17.	3300 <i>Acacia dictyophleba</i> (Sandhill Wattle)			
18.	-8703 <i>Acacia dictyophleba</i> / <i>melleodora</i>			
19.	16174 <i>Acacia elachantha</i>			
20.	-8006 <i>Acacia elachantha</i> (Silvery hairy variant)			
21.	3370 <i>Acacia hilliana</i>			
22.	3377 <i>Acacia inaequilatera</i> (Baderi)			
23.	37240 <i>Acacia macraneura</i>			
24.	3434 <i>Acacia maitlandii</i> (Maitland's Wattle)			
25.	19305 <i>Acacia melleodora</i>			
26.	3447 <i>Acacia monticola</i> (Gawar)			
27.	36416 <i>Acacia mulganeura</i>			
28.	3475 <i>Acacia pachyacra</i>			
29.	15724 <i>Acacia paraneura</i>			
30.	3500 <i>Acacia pruinocarpa</i> (Gidgee)			
31.	29016 <i>Acacia pyriformis</i> var. <i>morrisonii</i>			
32.	29015 <i>Acacia pyriformis</i> var. <i>pyriformis</i>			
33.	13078 <i>Acacia sclerosperma</i> subsp. <i>sclerosperma</i>			
34.	-8972 <i>Acacia</i> section <i>Juliflorae</i>			
35.	29135 <i>Acacia sericophylla</i>			
36.	3544 <i>Acacia sibilans</i>			
37.	8949 <i>Acacia sibirica</i> (Bastard Mulga)			
38.	29997 <i>Acacia</i> sp. <i>Jimblebar</i> (S. van Leeuwen 1342)			Y
39.	-7589 <i>Acacia</i> sp. <i>Juliflorae</i> Pilbara Region			
40.	-8412 <i>Acacia</i> sp. <i>Juliflorae</i> - Pilbara			Y
41.	3553 <i>Acacia spondylophylla</i>			
42.	13070 <i>Acacia synchronicia</i>			
43.	3573 <i>Acacia tenuissima</i>			
44.	3577 <i>Acacia tetragonophylla</i> (Kurara)			
45.	3579 <i>Acacia trachycarpa</i> (Minni Ritchi)			
46.	23521 <i>Acacia trudgeniana</i>			
47.	20319 <i>Acacia tumida</i> var. <i>pilbarensis</i>			
48.	3595 <i>Acacia victoriae</i> (Bramble Wattle)			
49.	3598 <i>Acacia wanyu</i>			
50.	3606 <i>Acacia xiphophylla</i>			
51.	24559 <i>Acanthagenys rufogularis</i> (Spiny-cheeked Honeyeater)			
52.	24260 <i>Acanthiza apicalis</i> (Broad-tailed Thornbill (Inland Thornbill))			
53.	24261 <i>Acanthiza chrysorrhoa</i> (Yellow-rumped Thornbill)			
54.	24264 <i>Acanthiza robustirostris</i> (Slaty-backed Thornbill)			
55.	24265 <i>Acanthiza uropygialis</i> (Chestnut-rumped Thornbill)			
56.	25535 <i>Accipiter cirrocephalus</i> (Collared Sparrowhawk)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
57.	25536 <i>Accipiter fasciatus</i> (Brown Goshawk)			
58.	17739 <i>Acetosa vesicaria</i>	Y		
59.	25755 <i>Acrocephalus australis</i> (Australian Reed Warbler)			
60.	24831 <i>Acrocephalus australis</i> subsp. <i>gouldi</i>			
61.	-1576 <i>Actitis hypoleucos</i>			
62.	25544 <i>Aegotheles cristatus</i> (Australian Owllet-nightjar)			
63.	2646 <i>Aerva javanica</i> (Kapok Bush)	Y		
64.	2648 <i>Alternanthera denticulata</i> (Lesser Joyweed)			
65.	34810 <i>Amaranthus centralis</i>		P3	
66.	2660 <i>Amaranthus cuspidifolius</i>			
67.	20018 <i>Amaranthus undulatus</i>			
68.	30833 <i>Amphibolurus longirostris</i>			
69.	196 <i>Amphipogon caricinus</i> (Long Greybeard Grass)			
70.	19835 <i>Amphipogon sericeus</i>			
71.	11614 <i>Amyema gibberula</i> var. <i>gibberula</i>			
72.	2383 <i>Amyema preissii</i> (Wireleaf Mistletoe)			
73.	25647 <i>Amytornis striatus</i> (Striated Grasswren)			
74.	24312 <i>Anas gracilis</i> (Grey Teal)			
75.	24315 <i>Anas rhynchotis</i> (Australasian Shoveler)			
76.	24316 <i>Anas superciliosa</i> (Pacific Black Duck)			
77.	-1591 <i>Anhinga novaehollandiae</i>			
78.	24317 <i>Anseranas semipalmata</i> (Magpie Goose (Pied Goose))			
79.	25318 <i>Antaresia perthensis</i> (Pygmy Python)			
80.	25448 <i>Antaresia stimsoni</i> (Stimson's Python)			
81.	25241 <i>Antaresia stimsoni</i> subsp. <i>stimsoni</i>			
82.	2333 <i>Anthobolus leptomerioides</i>			
83.	25670 <i>Anthus australis</i> (Australian Pipit)			
84.	-1612 <i>Anthus novaeseelandiae</i>			
85.	25528 <i>Aphelocephala leucopsis</i> (Southern Whiteface)			
86.	24268 <i>Aphelocephala nigricincta</i> (Banded Whiteface)			
87.	24285 <i>Aquila audax</i> (Wedge-tailed Eagle)			
88.	25538 <i>Aquila morphnoides</i> (Little Eagle)			
89.	25558 <i>Ardea ibis</i> (Cattle Egret)			
90.	25559 <i>Ardea intermedia</i> (Intermediate Egret)			
91.	-1578 <i>Ardea modesta</i>			
92.	24340 <i>Ardea novaehollandiae</i> (White-faced Heron)			
93.	24341 <i>Ardea pacifica</i> (White-necked Heron)			
94.	24610 <i>Ardeotis australis</i> (Australian Bustard)		P4	
95.	213 <i>Aristida ingrata</i>			
96.	25566 <i>Artamus cinereus</i> (Black-faced Woodswallow)			
97.	24353 <i>Artamus cyanopterus</i> (Dusky Woodswallow)			
98.	24355 <i>Artamus minor</i> (Little Woodswallow)			
99.	24356 <i>Artamus personatus</i> (Masked Woodswallow)			
100.	24357 <i>Artamus superciliosus</i> (White-browed Woodswallow)			
101.	25320 <i>Aspidites melanocephalus</i> (Black-headed Python)			
102.	229 <i>Astrebla pectinata</i> (Barley Mitchell Grass)			
103.	4740 <i>Atalaya hemiglauca</i> (Whitewood)			
104.	2453 <i>Atriplex codonocarpa</i> (Flat-topped Saltbush)			
105.	2476 <i>Atriplex semilunaris</i> (Annual Saltbush)			
106.	24318 <i>Aythya australis</i> (Hardhead)			
107.	-1633 <i>Barnardius zonarius</i>			
108.	2770 <i>Boerhavia coccinea</i> (Tar Vine)			
109.	2774 <i>Boerhavia repleta</i>			
110.	6609 <i>Bonamia rosea</i> (Felted Bellflower)			
111.	24251 <i>Bos taurus</i> (European Cattle)	Y		
112.	242 <i>Brachyachne prostrata</i>			
113.	7872 <i>Brachyscome ciliocarpa</i>			
114.	7878 <i>Brachyscome iberidifolia</i>			
115.	25331 <i>Brachyrophis approximans</i>			
116.	7413 <i>Brunonia australis</i> (Native Cornflower)			
117.	24359 <i>Burhinus grallarius</i> (Bush Stone-curlew)		P4	
118.	25715 <i>Cacatua roseicapilla</i> (Galah)			
119.	24725 <i>Cacatua roseicapilla</i> subsp. <i>assimilis</i>			
120.	25716 <i>Cacatua sanguinea</i> (Little Corella)			
121.	-1590 <i>Cacomantis pallidus</i>			
122.	2866 <i>Calandrinia quadrivalvis</i>			
123.	2870 <i>Calandrinia stagnensis</i>			
124.	24779 <i>Calidris acuminata</i> (Sharp-tailed Sandpiper)			
125.	24784 <i>Calidris ferruginea</i> (Curlew Sandpiper)			
126.	24788 <i>Calidris ruficollis</i> (Red-necked Stint)			

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127.	24789 <i>Calidris subminuta</i> (Long-toed Stint)			
128.	14090 <i>Calocephalus beardii</i>			
129.	7893 <i>Calocephalus knappii</i>			
130.	7905 <i>Calotis multicaulis</i> (Many-stemmed Burr-daisy)			
131.	5446 <i>Calyptrix carinata</i>			
132.	24254 <i>Camelus dromedarius</i> (Dromedary, Camel)	Y		
133.	24039 <i>Canis lupus subsp. dingo</i> (Dingo)	Y		
134.	2976 <i>Capparis lasiantha</i> (Split Jack)			
135.	2982 <i>Capparis umbonata</i> (Wild Orange)			
136.	25015 <i>Carlia munda</i>			
137.	25017 <i>Carlia triacantha</i>			
138.	29721 <i>Cenchrus setiger</i> (Birdwood Grass)	Y		
139.	19762 <i>Centipeda minima subsp. macrocephala</i>			
140.	7921 <i>Centipeda thespidioides</i> (Desert Sneezewood)			
141.	25600 <i>Centropus phasianinus</i> (Pheasant Coucal)			
142.	24563 <i>Certhionyx niger</i> (Black Honeyeater)			
143.	24564 <i>Certhionyx variegatus</i> (Pied Honeyeater)			
144.	-1624 <i>Chalcites basalix</i>			
145.	24186 <i>Chalinolobus gouldii</i> (Gould's Wattled Bat)			
146.	24373 <i>Charadrius melanops</i> (Black-fronted Dotterel)			
147.	24377 <i>Charadrius ruficapillus</i> (Red-capped Plover)			
148.	25339 <i>Chelodina steindachneri</i> (Flat-shelled Turtle)			
149.	24321 <i>Chenonetta jubata</i> (Australian Wood Duck (Wood Duck))			
150.	2485 <i>Chenopodium auricomum</i> (Queensland Bluebush)			
151.	-1602 <i>Cheramoeca leucosterna</i>			
152.	24488 <i>Cheramoeca leucosternus</i> (White-backed Swallow)			
153.	-1579 <i>Chlidonias hybrida</i>			
154.	270 <i>Chloris pumilio</i>			
155.	-1637 <i>Chroicocephalus novaehollandiae</i>			
156.	33516 <i>Chrysocephalum gilesii</i>			
157.	12614 <i>Chrysocephalum pterochaetum</i>			
158.	24431 <i>Chrysococcyx basalis</i> (Horsfield's Bronze Cuckoo)			
159.	24434 <i>Chrysococcyx osculans</i> (Black-eared Cuckoo)			
160.	24833 <i>Cincloramphus cruralis</i> (Brown Songlark)			
161.	24834 <i>Cincloramphus mathewsi</i> (Rufous Songlark)			
162.	24288 <i>Circus approximans</i> (Swamp Harrier)			
163.	24289 <i>Circus assimilis</i> (Spotted Harrier)			
164.	24774 <i>Cladorhynchus leucocephalus</i> (Banded Stilt)			
165.	2988 <i>Cleome viscosa</i> (Tickweed)			
166.	25582 <i>Climacteris melanura</i> (Black-tailed Treecreeper)			
167.	24395 <i>Climacteris melanura subsp. wellsi</i>			
168.	25675 <i>Colluricincla harmonica</i> (Grey Shrike-thrush)			
169.	24613 <i>Colluricincla harmonica subsp. rufiventris</i>			
170.	7939 <i>Conyza bonariensis</i> (Flaxleaf Fleabane)	Y		
171.	24361 <i>Coracina maxima</i> (Ground Cuckoo-shrike)			
172.	25568 <i>Coracina novaehollandiae</i> (Black-faced Cuckoo-shrike)			
173.	24363 <i>Coracina novaehollandiae subsp. subpallida</i>			
174.	13560 <i>Corchorus crozophorifolius</i>			
175.	13659 <i>Corchorus laniflorus</i>			
176.	18415 <i>Corchorus sidoides subsp. sidoides</i>			
177.	20242 <i>Corchorus sp. Hamersley Range hilltops</i> (S. van Leeuwen 3826)			
178.	17661 <i>Corchorus tectus</i>			
179.	24416 <i>Corvus bennetti</i> (Little Crow)			
180.	25593 <i>Corvus orru</i> (Torresian Crow)			
181.	-1666 <i>Corvus sp.</i>			
182.	16783 <i>Corymbia candida</i>			
183.	16780 <i>Corymbia candida subsp. dipsodes</i>			
184.	17083 <i>Corymbia deserticola subsp. deserticola</i>			
185.	17077 <i>Corymbia ferriticola</i>			
186.	17093 <i>Corymbia hamersleyana</i>			
187.	24671 <i>Coturnix pectoralis</i> (Stubble Quail)			
188.	25701 <i>Coturnix ypsilophora</i> (Brown Quail)			
189.	24420 <i>Cracticus nigrogularis</i> (Pied Butcherbird)			
190.	25595 <i>Cracticus tibicen</i> (Australian Magpie)			
191.	25596 <i>Cracticus torquatus</i> (Grey Butcherbird)			
192.	14859 <i>Crotalaria smithiana</i>		P3	
193.	16189 <i>Cryptandra monticola</i>			
194.	30892 <i>Cryptoblepharus ustulatus</i>			
195.	25458 <i>Ctenophorus caudicinctus</i> (Ring-tailed Dragon)			
196.	24865 <i>Ctenophorus caudicinctus subsp. caudicinctus</i>			

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197.	25459 <i>Ctenophorus isolepis</i> (Crested Dragon)			
198.	24875 <i>Ctenophorus isolepis</i> subsp. <i>gularis</i> (Central Military Dragon)			
199.	24876 <i>Ctenophorus isolepis</i> subsp. <i>isolepis</i>			
200.	24882 <i>Ctenophorus nuchalis</i> (Central Netted Dragon)			
201.	24886 <i>Ctenophorus reticulatus</i> (Western Netted Dragon)			
202.	25025 <i>Ctenotus ariadnae</i>			
203.	25036 <i>Ctenotus duricola</i>			
204.	25462 <i>Ctenotus grandis</i>			
205.	25045 <i>Ctenotus helenae</i>			
206.	25052 <i>Ctenotus leonhardii</i>			
207.	25463 <i>Ctenotus pantherinus</i> (Leopard Ctenotus)			
208.	25064 <i>Ctenotus pantherinus</i> subsp. <i>ocellifer</i>			
209.	25072 <i>Ctenotus rubicundus</i>			
210.	25073 <i>Ctenotus saxatilis</i> (Rock Ctenotus)			
211.	25465 <i>Ctenotus uber</i>			
212.	25081 <i>Ctenotus uber</i> subsp. <i>johnstonei</i>		P2	
213.	24435 <i>Cuculus pallidus</i> (Pallid Cuckoo)			
214.	33031 <i>Cucumis maderaspatanus</i>			
215.	12039 <i>Cucumis melo</i> subsp. <i>agrestis</i> (Ulicardo Melon)	Y		
216.	17117 <i>Cullen cinereum</i>			
217.	17118 <i>Cullen leucanthum</i>			
218.	25466 <i>Cyclodomorphus melanops</i> (Slender Blue-tongue)			
219.	25090 <i>Cyclodomorphus melanops</i> subsp. <i>melanops</i>			
220.	25375 <i>Cyclorana maini</i> (Sheep Frog)			
221.	24322 <i>Cygnus atratus</i> (Black Swan)			
222.	279 <i>Cymbopogon ambiguus</i> (Scentgrass)			
223.	786 <i>Cyperus cunninghamii</i>			
224.	818 <i>Cyperus vaginatus</i> (Stiffleaf Sedge)			
225.	25547 <i>Dacelo leachii</i> (Blue-winged Kookaburra)			
226.	7424 <i>Dampiera candidans</i>			
227.	24091 <i>Dasykaluta rosamondae</i> (Little Red Kaluta)			
228.	24997 <i>Delma butleri</i>			
229.	25000 <i>Delma haroldi</i>			
230.	25001 <i>Delma nasuta</i>			
231.	25002 <i>Delma pax</i>			
232.	25468 <i>Demansia psammophis</i> (Yellow-faced Whipsnake)			
233.	24324 <i>Dendrocygna arcuata</i> (Wandering Whistling Duck (Chestnut Whistling Duck))			
234.	24325 <i>Dendrocygna eytoni</i> (Plumed Whistling Duck)			
235.	25607 <i>Dicaeum hirundinaceum</i> (Mistletoebird)			
236.	303 <i>Dichanthium fecundum</i> (Curly Bluegrass)			
237.	7164 <i>Dicladanthera forrestii</i>			
238.	6754 <i>Dicrastylis cordifolia</i>			
239.	310 <i>Digitaria brownii</i> (Cotton Panic Grass)			
240.	24926 <i>Diplodactylus conspicillatus</i> (Fat-tailed Gecko)			
241.	24937 <i>Diplodactylus mitchelli</i>			
242.	24944 <i>Diplodactylus savagei</i>			
243.	12023 <i>Diplopeltis stuartii</i> var. <i>stuartii</i> (Desert Pepperflower)			
244.	7169 <i>Dipteracanthus australasicus</i>			
245.	4759 <i>Dodonaea coriacea</i>			
246.	24470 <i>Dromaius novaehollandiae</i> (Emu)			
247.	3103 <i>Drosera indica</i> (Indian Sundew)			
248.	31274 <i>Duperreya commixta</i>			
249.	2502 <i>Dysphania kalpari</i> (Rat's Tail)			
250.	33478 <i>Dysphania melanocarpa</i>			
251.	11653 <i>Dysphania rhadinostachya</i> subsp. <i>inflata</i>			
252.	32348 <i>Eccremidium arcuatum</i>			
253.	25092 <i>Egernia depressa</i> (Pygmy Spiny-tailed Skink)			
254.	25094 <i>Egernia formosa</i>			
255.	-1623 <i>Egretta garzetta</i>			
256.	-1577 <i>Egretta novaehollandiae</i>			
257.	-1600 <i>Elanus axillaris</i>			
258.	-1573 <i>Euseiornis melanops</i>			
259.	24631 <i>Emblema pictum</i> (Painted Finch)			
260.	360 <i>Enneapogon lindleyanus</i> (Wiry Nineawn)			
261.	-1569 <i>Eolophus roseicapillus</i>			
262.	24570 <i>Epthianura tricolor</i> (Crimson Chat)			
263.	24257 <i>Equus asinus</i> (Donkey)	Y		
264.	378 <i>Eragrostis dielsii</i> (Mallee Lovegrass)			
265.	380 <i>Eragrostis eriopoda</i> (Woollybutt Grass)			
266.	398 <i>Eragrostis tenellula</i> (Delicate Lovegrass)			

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267.	24837 <i>Eremiornis carteri</i> (Spinifex-bird)			
268.	7192 <i>Eremophila cuneifolia</i> (Pinyuru)			
269.	15052 <i>Eremophila forrestii</i> subsp. <i>forrestii</i>			
270.	7228 <i>Eremophila lachnocalyx</i> (Woolly-calyxed Eremophila)			
271.	16940 <i>Eremophila lanceolata</i>			
272.	17597 <i>Eremophila latrobei</i> subsp. <i>filiformis</i>			
273.	17576 <i>Eremophila latrobei</i> subsp. <i>latrobei</i>			
274.	7234 <i>Eremophila longifolia</i> (Berrigan)			
275.	7239 <i>Eremophila margarethae</i> (Sandbank Poverty Bush)			
276.	15028 <i>Eremophila pilosa</i>		P1	
277.	23997 <i>Eremophila tietkensis</i>			
278.	16040 <i>Eremophila youngii</i> subsp. <i>lepidota</i>		P4	
279.	13660 <i>Eriachne lanata</i>			
280.	413 <i>Eriachne mucronata</i> (Mountain Wanderrie Grass)			
281.	421 <i>Eriachne tenuiculmis</i>			
282.	425 <i>Eriochloa procera</i> (Cupgrass)			
283.	24379 <i>Erythronyctes cinctus</i> (Red-kneed Dotterel)			
284.	5655 <i>Eucalyptus gamophylla</i> (Twin-leaf Mallee)			
285.	13528 <i>Eucalyptus kingsmillii</i> subsp. <i>kingsmillii</i>			
286.	5698 <i>Eucalyptus leucophloia</i> (Snappy Gum)			
287.	18088 <i>Eucalyptus leucophloia</i> subsp. <i>leucophloia</i>			
288.	5703 <i>Eucalyptus lucasii</i> (Barlee Box)			
289.	5744 <i>Eucalyptus pilbarensis</i>			
290.	5773 <i>Eucalyptus socialis</i> (Red Mallee)			
291.	29675 <i>Eucalyptus</i> sp. Mt Nameless (D. Nicolle 1191)			
292.	29812 <i>Eucalyptus</i> sp. Rudall River (D. Nicolle & M. French DN 4279)			
293.	29733 <i>Eucalyptus trivalva</i> (Victoria Spring Mallee)			
294.	15592 <i>Eucalyptus xerothermica</i>			
295.	5802 <i>Eucalyptus yilgarnensis</i> (Yorrell)			
296.	11011 <i>Eulalia aurea</i>			
297.	4614 <i>Euphorbia alsiniflora</i> (Namana)			
298.	4620 <i>Euphorbia boophthona</i> (Gascoyne Spurge)			
299.	24368 <i>Eurostopodus argus</i> (Spotted Nightjar)			
300.	11200 <i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>			
301.	25621 <i>Falco berigora</i> (Brown Falcon)			
302.	24471 <i>Falco berigora</i> subsp. <i>berigora</i>			
303.	25622 <i>Falco cenchroides</i> (Australian Kestrel)			
304.	25623 <i>Falco longipennis</i> (Australian Hobby)			
305.	24474 <i>Falco longipennis</i> subsp. <i>longipennis</i>			
306.	25624 <i>Falco peregrinus</i> (Peregrine Falcon)		S	
307.	24041 <i>Felis catus</i> (Cat)	Y		
308.	12159 <i>Fimbristylis simulans</i>			
309.	25727 <i>Fulica atra</i> (Eurasian Coot)			
310.	25301 <i>Furina ornata</i> (Moon Snake)			
311.	25730 <i>Gallirallus philippensis</i> (Buff-banded Rail)			
312.	24956 <i>Gehyra pilbara</i>			
313.	24958 <i>Gehyra punctata</i>			
314.	24959 <i>Gehyra variegata</i>			
315.	-1614 <i>Gelochelidon nilotica</i>			
316.	24401 <i>Geopelia cuneata</i> (Diamond Dove)			
317.	24402 <i>Geopelia humeralis</i> (Bar-shouldered Dove)			
318.	25585 <i>Geopelia striata</i> (Peaceful Dove)			
319.	24404 <i>Geophaps plumifera</i> (Spinifex Pigeon)			
320.	25530 <i>Gerygone fusca</i> (Western Gerygone)			
321.	2835 <i>Glinus lotoides</i> (Hairy Carpet Weed)			
322.	3938 <i>Glycine canescens</i> (Silky Glycine)			
323.	10995 <i>Gompholobium polyzygum</i>			
324.	35336 <i>Gompholobium</i> sp. <i>Pilbara</i> (N.F. Norris 908)			
325.	2676 <i>Gomphrena canescens</i> (Batchelors Buttons)			
326.	18367 <i>Gomphrena kanisii</i>			
327.	11131 <i>Gomphrena sordida</i>			
328.	6151 <i>Gonocarpus ephemerus</i>			
329.	7490 <i>Goodenia armitiana</i>			
330.	20523 <i>Goodenia azurea</i> subsp. <i>hesperia</i>			
331.	18638 <i>Goodenia hartiana</i> (Hart's Goodenia)		P2	
332.	7521 <i>Goodenia lamprosperma</i>			
333.	7526 <i>Goodenia microptera</i>			
334.	12552 <i>Goodenia muelleriana</i>			
335.	12574 <i>Goodenia prostrata</i>			
336.	7544 <i>Goodenia ramelii</i>			

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337.	10982 <i>Goodenia stobbsiana</i>			
338.	7556 <i>Goodenia tenuiloba</i>			
339.	7558 <i>Goodenia triodiophila</i>			
340.	7560 <i>Goodenia vilmorinae</i>			
341.	7564 <i>Goodenia wilunensis</i>			
342.	24443 <i>Grallina cyanoleuca</i> (Magpie-lark)			
343.	15845 <i>Grevillea juncifolia</i> subsp. <i>juncifolia</i>			
344.	12832 <i>Gymnanthera cunninghamii</i>		P3	
345.	19137 <i>Hakea lorea</i> subsp. <i>lorea</i>			
346.	30258 <i>Halgania solanacea</i> var. <i>Mt Doreen</i> (G.M. Chippendale 4206)			
347.	24293 <i>Haliaeetus leucogaster</i> (White-bellied Sea-Eagle)			
348.	24295 <i>Haliastur sphenurus</i> (Whistling Kite)			
349.	24297 <i>Hamirostra melanosternon</i> (Black-breasted Buzzard)			
350.	8030 <i>Helichrysum oligochaetum</i>		P1	
351.	6712 <i>Heliotropium heteranthum</i>			
352.	17307 <i>Heliotropium inexplicitum</i>			
353.	24961 <i>Heteronotia binoei</i> (Bynoe's Gecko)			
354.	24962 <i>Heteronotia spelea</i> (Desert Cave Gecko)			
355.	4931 <i>Hibiscus haynaldii</i>			
356.	-7172 <i>Hibiscus</i> sp.			
357.	11893 <i>Hibiscus sturtii</i> var. <i>truncatus</i>			
358.	-1601 <i>Hieraetis morphnoides</i>			
359.	25734 <i>Himantopus himantopus</i> (Black-winged Stilt)			
360.	24489 <i>Hirundo ariel</i> (Fairy Martin)			
361.	24491 <i>Hirundo neoxena</i> (Welcome Swallow)			
362.	25629 <i>Hirundo nigricans</i> (Tree Martin)			
363.	-1642 <i>Hydroprogne caspia</i>			
364.	3974 <i>Indigofera georgei</i> (Bovine Indigo)			
365.	3982 <i>Indigofera monophylla</i>			
366.	3985 <i>Indigofera rugosa</i>			
367.	19594 <i>Iotasperma sessilifolium</i>		P3	
368.	-12562 <i>Iotasperma</i> sp.			Y
369.	6633 <i>Ipomoea muelleri</i> (Poison Morning Glory)			
370.	3996 <i>Jacksonia aculeata</i>			
371.	4043 <i>Kennedia prorepens</i>			
372.	24572 <i>Lacustroica whitei</i> (Grey Honeyeater)			
373.	-1641 <i>Lalage sueurii</i>			
374.	24367 <i>Lalage tricolor</i> (White-winged Triller)			
375.	5846 <i>Lamarchea sulcata</i>			
376.	3025 <i>Lepidium echinatum</i>			
377.	3032 <i>Lepidium muelleri-ferdinandii</i>			
378.	3033 <i>Lepidium oxytrichum</i>			
379.	3035 <i>Lepidium pedicellosum</i>			
380.	3037 <i>Lepidium phlebopetalum</i> (Veined Peppercross)			
381.	3038 <i>Lepidium pholidogynum</i>			
382.	30926 <i>Lerista amicornum</i>			
383.	25125 <i>Lerista bipes</i>			
384.	25146 <i>Lerista labialis</i>			
385.	25155 <i>Lerista muelleri</i>			
386.	25156 <i>Lerista neander</i>			
387.	25183 <i>Lerista zietzi</i>			
388.	25005 <i>Lialis burtonis</i>			
389.	25238 <i>Liasis olivaceus</i> subsp. <i>barroni</i>		T	
390.	24575 <i>Lichenostomus keartlandi</i> (Grey-headed Honeyeater)			
391.	24578 <i>Lichenostomus penicillatus</i> (White-plumed Honeyeater)			
392.	24579 <i>Lichenostomus plumulus</i> (Grey-fronted Honeyeater)			
393.	24581 <i>Lichenostomus virescens</i> (Singing Honeyeater)			
394.	25661 <i>Lichmera indistincta</i> (Brown Honeyeater)			
395.	25392 <i>Litoria rubella</i> (Little Red Tree Frog)			
396.	7403 <i>Lobelia heterophylla</i> (Wing-seeded Lobelia)			
397.	-1616 <i>Lophoictinia isura</i>			
398.	4061 <i>Lotus cruentus</i> (Redflower Lotus)			
399.	30933 <i>Lucasium stenodactylum</i>			
400.	30934 <i>Lucasium wombeyi</i>			
401.	4728 <i>Macgregoria racemigera</i> (Snow Flower)			
402.	24180 <i>Macroderma gigas</i> (Ghost Bat)		P4	
403.	25489 <i>Macropus robustus</i>			
404.	24136 <i>Macropus rufus</i> (Red Kangaroo, Marlu)			
405.	2544 <i>Maireana georgei</i> (Satiny Bluebush)			
406.	2551 <i>Maireana melanocoma</i> (Pussy Bluebush)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
407.	2556 <i>Maireana planifolia</i> (Low Bluebush)			
408.	2571 <i>Maireana villosa</i>			
409.	24326 <i>Malacorhynchus membranaceus</i> (Pink-eared Duck)			
410.	25651 <i>Malurus lamberti</i> (Variegated Fairy-wren)			
411.	25652 <i>Malurus leucopterus</i> (White-winged Fairy-wren)			
412.	25654 <i>Malurus splendens</i> (Splendid Fairy-wren)			
413.	24553 <i>Malurus splendens</i> subsp. <i>musgravi</i>			Y
414.	24583 <i>Manorina flavigula</i> (Yellow-throated Miner)			
415.	25758 <i>Megalurus gramineus</i> (Little Grassbird)			
416.	5915 <i>Melaleuca glomerata</i>			
417.	-1570 <i>Melanodryas cucullata</i>			
418.	25665 <i>Melithreptus gularis</i> (Black-chinned Honeyeater)			
419.	24736 <i>Melopsittacus undulatus</i> (Budgerigar)			
420.	25184 <i>Menetia greyii</i>			
421.	24598 <i>Merops ornatus</i> (Rainbow Bee-eater)			
422.	-1636 <i>Microcarbo melanoleucos</i>			
423.	25542 <i>Milvus migrans</i> (Black Kite)			
424.	7082 <i>Mimulus gracilis</i>			
425.	25545 <i>Mirafra javanica</i> (Horsfield's Bushlark (Singing Bushlark))			
426.	6519 <i>Mitrasacme connata</i>			
427.	29851 <i>Mollugo molluginea</i>			
428.	25495 <i>Morethia ruficauda</i>			
429.	25193 <i>Morethia ruficauda</i> subsp. <i>exquisita</i>			
430.	24223 <i>Mus musculus</i> (House Mouse)	Y		
431.	17158 <i>Myoporum montanum</i> (Native Myrtle)			
432.	25425 <i>Neobatrachus kunapalari</i> (Kunapalari Frog)			
433.	25685 <i>Neochima ruficauda</i> (Star Finch)			
434.	24639 <i>Neochima ruficauda</i> subsp. <i>clarescens</i>			Y
435.	-1630 <i>Neopsephotus bourkii</i>			
436.	24972 <i>Nephrurus wheeleri</i> subsp. <i>cinctus</i>			
437.	6786 <i>Newcastelia cephalantha</i>			
438.	6791 <i>Newcastelia hexarrhena</i> (Lambs' Tails)			
439.	6971 <i>Nicotiana benthamiana</i> (Tjuntiwari)			
440.	11331 <i>Nicotiana occidentalis</i> subsp. <i>obliqua</i>			
441.	6979 <i>Nicotiana simulans</i>			
442.	24095 <i>Ningaiu timealeyi</i> (Pilbara Ningaiu)			
443.	25747 <i>Ninox connivens</i> (Barking Owl)			
444.	25748 <i>Ninox novaeseelandiae</i> (Boobook Owl)			
445.	24820 <i>Ninox novaeseelandiae</i> subsp. <i>boobook</i>			
446.	24224 <i>Notomys alexis</i> (Spinifex Hopping-mouse)			
447.	25564 <i>Nycticorax caledonicus</i> (Rufous Night Heron)			
448.	24742 <i>Nymphicus hollandicus</i> (Cockatiel)			
449.	24407 <i>Ocyphaps lophotes</i> (Crested Pigeon)			
450.	24976 <i>Oedura marmorata</i> (Marbled Velvet Gecko)			
451.	30943 <i>Opisthodon spenceri</i> (Centralian Burrowing Frog)			
452.	24618 <i>Oreoica gutturalis</i> (Crested Bellbird)			
453.	24085 <i>Oryctolagus cuniculus</i> (Rabbit)	Y		
454.	25680 <i>Pachycephala rufiventris</i> (Rufous Whistler)			
455.	504 <i>Panicum effusum</i> (Hairy Panic Grass)			
456.	505 <i>Panicum laevinode</i>			
457.	514 <i>Paractaenum refractum</i>			
458.	24627 <i>Pardalotus rubricatus</i> (Red-browed Pardalote)			
459.	25682 <i>Pardalotus striatus</i> (Striated Pardalote)			
460.	519 <i>Paspalidium constrictum</i> (Knottybutt Grass)			
461.	24648 <i>Pelecanus conspicillatus</i> (Australian Pelican)			
462.	12486 <i>Peplidium aithocheilum</i>			
463.	35001 <i>Peripleura virgata</i>			
464.	546 <i>Perotis rara</i> (Comet Grass)			
465.	3674 <i>Petalostylis cassioides</i>			
466.	3675 <i>Petalostylis labicheoides</i> (Slender Petalostylis)			
467.	-1638 <i>Petrochelidon ariel</i>			
468.	-1640 <i>Petrochelidon nigricans</i>			
469.	24142 <i>Petrogale lateralis</i> subsp. <i>lateralis</i> (Black-footed Rock-wallaby)		T	
470.	24658 <i>Petroica cucullata</i> (Hooded Robin)			
471.	24659 <i>Petroica goodenovii</i> (Red-capped Robin)			
472.	25697 <i>Phalacrocorax carbo</i> (Great Cormorant)			
473.	24667 <i>Phalacrocorax sulcirostris</i> (Little Black Cormorant)			
474.	25699 <i>Phalacrocorax varius</i> (Pied Cormorant)			
475.	24409 <i>Phaps chalcoptera</i> (Common Bronzewing)			
476.	24593 <i>Phylidonyris albigrons</i> (White-fronted Honeyeater)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
477.	-6831 <i>Phyllachora</i> sp.			
478.	24102 <i>Planigale maculata</i> (Common Planigale)			
479.	24841 <i>Platalea flavipes</i> (Yellow-billed Spoonbill)			
480.	24842 <i>Platalea regia</i> (Royal Spoonbill)			
481.	24748 <i>Platycercus varius</i> (Mulga Parrot)			
482.	25721 <i>Platycercus zonarius</i> (Australian Ringneck (Ring-necked Parrot))			
483.	24751 <i>Platycercus zonarius</i> subsp. <i>zonarius</i>			
484.	24843 <i>Plegadis falcinellus</i> (Glossy Ibis)			
485.	17817 <i>Pluchea dunlopii</i>			
486.	25703 <i>Podargus strigoides</i> (Tawny Frogmouth)			
487.	25704 <i>Podiceps cristatus</i> (Great Crested Grebe)			
488.	18642 <i>Podolepis</i> sp. Great Victoria Desert (A.S. George 8219)			
489.	24907 <i>Pogona minor</i> subsp. <i>minor</i>			
490.	24681 <i>Poliocephalus poliocephalus</i> (Hoary-headed Grebe)			
491.	2903 <i>Polycarpaea longiflora</i>			
492.	6655 <i>Polymeria calycina</i>			
493.	582 <i>Polypogon monspeliensis</i> (Annual Beardgrass)	Y		
494.	24683 <i>Pomatostomus superciliosus</i> (White-browed Babbler)			
495.	25706 <i>Pomatostomus temporalis</i> (Grey-crowned Babbler)			
496.	25731 <i>Porphyrio porphyrio</i> (Purple Swamphen)			
497.	2879 <i>Portulaca cyclophylla</i>			
498.	25732 <i>Porzana pusilla</i> (Baillon's Crake)			
499.	24771 <i>Porzana tabuensis</i> (Spotless Crake)			
500.	-1655 <i>Psephotus varius</i>			
501.	24105 <i>Pseudantechinus roryi</i> (Rory's Pseudantechinus)			
502.	24106 <i>Pseudantechinus woolleyae</i> (Woolley's Pseudantechinus)			
503.	24233 <i>Pseudomys chapmani</i> (Western Pebble-mound Mouse)		P4	
504.	24235 <i>Pseudomys desertor</i> (Desert Mouse)			
505.	24237 <i>Pseudomys hermannsburgensis</i> (Sandy Inland Mouse)			
506.	25264 <i>Pseudonaja nuchalis</i> (Gwardar)			
507.	25432 <i>Pseudophryne douglasi</i> (Gorge Toadlet)			
508.	24390 <i>Psophodes occidentalis</i> (Western Wedgebill (Chiming Wedgebill))			
509.	8192 <i>Pterocaulon sphacelatum</i> (Apple Bush)			
510.	-1594 <i>Ptilonorhynchus guttatus</i>			
511.	24757 <i>Ptilonorhynchus maculatus</i> subsp. <i>guttatus</i> (Western Bowerbird)			
512.	2690 <i>Ptilotus aervoides</i>			
513.	2693 <i>Ptilotus aphyllus</i>			
514.	11996 <i>Ptilotus astrolasius</i> var. <i>astrolasius</i>			
515.	2699 <i>Ptilotus axillaris</i> (Mat Mulla Mulla)			
516.	2704 <i>Ptilotus calostachyus</i> (Weeping Mulla Mulla)			
517.	2706 <i>Ptilotus carinatus</i>			
518.	2721 <i>Ptilotus exaltatus</i> (Tall Mulla Mulla)			
519.	11225 <i>Ptilotus exaltatus</i> var. <i>exaltatus</i> (Tall Mulla Mulla)			
520.	2728 <i>Ptilotus gomphrenoides</i>			
521.	11708 <i>Ptilotus gomphrenoides</i> var. <i>conglomeratus</i>			
522.	11236 <i>Ptilotus gomphrenoides</i> var. <i>gomphrenoides</i>			
523.	11518 <i>Ptilotus gomphrenoides</i> var. <i>roseo-albus</i>			
524.	2731 <i>Ptilotus helipteroides</i> (Hairy Mulla Mulla)			
525.	2747 <i>Ptilotus obovatus</i> (Cotton Bush)			
526.	2755 <i>Ptilotus rotundifolius</i> (Royal Mulla Mulla)			
527.	11219 <i>Ptilotus schwartzii</i> var. <i>georgei</i>			
528.	-1625 <i>Purnella albifrons</i>			
529.	25009 <i>Pygopus nigriceps</i>			
530.	25270 <i>Ramphotyphlops ammodytes</i>			
531.	25276 <i>Ramphotyphlops ganei</i>		P1	
532.	25277 <i>Ramphotyphlops grypus</i>			
533.	25279 <i>Ramphotyphlops hamatus</i>			
534.	24776 <i>Recurvirostra novaehollandiae</i> (Red-necked Avocet)			
535.	2582 <i>Rhagodia eremaea</i> (Thorny Saltbush)			
536.	-1654 <i>Rhipidura albiscapa</i>			
537.	25614 <i>Rhipidura leucophrys</i> (Willie Wagtail)			
538.	13308 <i>Rhodanthe charsleyae</i>			
539.	13301 <i>Rhodanthe floribunda</i>			
540.	13303 <i>Rhodanthe sterilecens</i>			
541.	24982 <i>Rhynchoedura ornata</i> (Beaked Gecko)			
542.	-6153 <i>Riccia crinita</i>			
543.	5285 <i>Rotala diandra</i>			
544.	5063 <i>Rulingia luteiflora</i> (Yellow-flowered Rulingia)			
545.	116 <i>Ruppia polycarpa</i>			
546.	8198 <i>Rutidosia helichrysoides</i> (Grey Wrinklewort)			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
547.	24174 <i>Saccolaimus flaviventris</i> (Yellow-bellied Sheathtail-bat)			
548.	12578 <i>Scaevola acacioides</i>			
549.	12579 <i>Scaevola browniana</i>			
550.	7607 <i>Scaevola cuneiformis</i> (Wedge-leaved Scaevola)			
551.	7633 <i>Scaevola parvifolia</i> (Camel Weed)			
552.	13172 <i>Scaevola parvifolia</i> subsp. <i>pilbarae</i>			
553.	-8719 <i>Scaevola</i> sp.			
554.	7644 <i>Scaevola spinescens</i> (Currant Bush)			
555.	8200 <i>Schoenia cassiniana</i> (Schoenia)			
556.	963 <i>Schoenoplectus laevis</i>			
557.	2602 <i>Sclerolaena convexula</i>			
558.	2603 <i>Sclerolaena cornishiana</i> (Cartwheel Burr)			
559.	2604 <i>Sclerolaena costata</i>			
560.	2607 <i>Sclerolaena densiflora</i>			
561.	2609 <i>Sclerolaena diacantha</i> (Grey Copperburr)			
562.	2611 <i>Sclerolaena eriacantha</i> (Tall Bindii)			
563.	24200 <i>Scotorepens greyii</i> (Little Broad-nosed Bat)			
564.	12279 <i>Senna artemisioides</i> subsp. <i>helmsii</i>			
565.	12280 <i>Senna artemisioides</i> subsp. <i>oligophylla</i>			
566.	17558 <i>Senna artemisioides</i> subsp. <i>x artemisioides</i>			
567.	12307 <i>Senna glutinosa</i> subsp. <i>glutinosa</i>			
568.	12308 <i>Senna glutinosa</i> subsp. <i>x luerssenii</i>			
569.	18451 <i>Senna hamersleyensis</i>			
570.	12312 <i>Senna notabilis</i>			
571.	612 <i>Setaria surgens</i> (Pigeon Grass)			
572.	4976 <i>Sida echinocarpa</i>			
573.	4986 <i>Sida platycalyx</i> (Lifesaver Burr)			
574.	31854 <i>Sida</i> sp. <i>Excedentifolia</i> (J.L. Egan 1925)			
575.	20253 <i>Sida</i> sp. <i>Shovelanna Hill</i> (S. van Leeuwen 3842)			
576.	16948 <i>Sida</i> sp. <i>verrucose glands</i> (F.H. Mollemans 2423)			
577.	30948 <i>Smicronis brevirostris</i> (Weebill)			
578.	24116 <i>Sminthopsis macroura</i> (Stripe-faced Dunnart)			
579.	24120 <i>Sminthopsis youngsoni</i> (Lesser Hairy-footed Dunnart)			
580.	6995 <i>Solanum centrale</i> (Desert Raisin)			
581.	7006 <i>Solanum ellipticum</i> (Potato Bush)			
582.	7007 <i>Solanum esuriale</i> (Quena)			
583.	7018 <i>Solanum lasiophyllum</i> (Flannel Bush)			
584.	7036 <i>Solanum sturtianum</i> (Thargomindah Nightshade)			
585.	619 <i>Sorghum plumosum</i> (Plume Canegrass)			
586.	4734 <i>Stackhousia muricata</i>			
587.	7098 <i>Stemodia grossa</i> (Marsh Stemodia)			
588.	17296 <i>Stemodia</i> sp. <i>Battle Hill</i> (A.L. Payne 1006)		P1	Y
589.	7102 <i>Stemodia viscosa</i> (Pagurda)			
590.	3074 <i>Stenopetalum anfractum</i>			
591.	24329 <i>Stictonetta naevosa</i> (Freckled Duck)			
592.	24482 <i>Stiltia isabella</i> (Australian Pratincole)			
593.	8236 <i>Streptoglossa cylindriceps</i>			
594.	8238 <i>Streptoglossa liatroides</i>			
595.	8239 <i>Streptoglossa macrocephala</i>			
596.	8241 <i>Streptoglossa tenuiflora</i>			
597.	12492 <i>Striga squamigera</i>			
598.	24927 <i>Strophurus elderi</i>			
599.	24949 <i>Strophurus wellingtonae</i>			
600.	7711 <i>Stylidium desertorum</i>			
601.	3182 <i>Stylobasium spathulatum</i> (Pebble Bush)			
602.	-1586 <i>Sugomel niger</i>			
603.	25269 <i>Suta fasciata</i> (Rosen's Snake)			
604.	25307 <i>Suta punctata</i> (Spotted Snake)			
605.	4223 <i>Swainsona decurrens</i>			
606.	4231 <i>Swainsona kingii</i>			
607.	13586 <i>Swainsona paucifoliolata</i>			
608.	25705 <i>Tachybaptus novaehollandiae</i> (Australasian Grebe (Black-throated Grebe))			
609.	24207 <i>Tachyglossus aculeatus</i> (Echidna)			
610.	24331 <i>Tadorna tadornoides</i> (Australian Shelduck (Mountain Duck))			
611.	30870 <i>Taeniopygia guttata</i> (Zebra Finch)			
612.	24175 <i>Taphozous georgianus</i> (Common Sheathtail-bat)			
613.	31492 <i>Tecticornia disarticulata</i>			
614.	17770 <i>Tephrosia densa</i>			
615.	4280 <i>Tephrosia rosea</i> (Flinders River Poison)			
616.	-9168 <i>Tephrosia</i> sp.			

Name ID	Species Name	Naturalised	Conservation Code	¹ Endemic To Query Area
617.	17768 <i>Tephrosia</i> sp. Bungaroo Creek (M.E. Trudgen 11601)			
618.	15444 <i>Tephrosia</i> sp. Cathedral Gorge (F.H. Mollemans 2420)			
619.	4285 <i>Tephrosia supina</i>			
620.	24844 <i>Threskiornis molucca</i> (Australian White Ibis)			
621.	24845 <i>Threskiornis spinicollis</i> (Straw-necked Ibis)			
622.	25202 <i>Tiliqua multifasciata</i> (Central Blue-tongue)			
623.	24308 <i>Todiramphus pyrrhopygia</i> (Red-backed Kingfisher)			
624.	-1613 <i>Todiramphus pyrrhopygius</i>			
625.	25549 <i>Todiramphus sanctus</i> (Sacred Kingfisher)			
626.	6265 <i>Trachymene bialata</i>			
627.	2826 <i>Trianthea glossostigma</i>			
628.	-1617 <i>Tribonyx ventralis</i>			
629.	4377 <i>Tribulus hirsutus</i>			
630.	18072 <i>Tribulus suberosus</i>			
631.	4383 <i>Tribulus terrestris</i> (Caltrop)	Y		
632.	6727 <i>Trichodesma zeylanicum</i> (Camel Bush)			
633.	11750 <i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>			
634.	24806 <i>Tringa glareola</i> (Wood Sandpaper)			
635.	24808 <i>Tringa nebularia</i> (Common Greenshank)			
636.	24809 <i>Tringa stagnatilis</i> (Marsh Sandpiper)			
637.	679 <i>Triodia angusta</i>			
638.	680 <i>Triodia basedowii</i> (Lobed Spinifex)			
639.	690 <i>Triodia longiceps</i> (Giant Grey Spinifex)			
640.	696 <i>Triodia pungens</i> (Soft Spinifex)			
641.	17873 <i>Triodia schinzii</i>			
642.	20241 <i>Triodia</i> sp. Shovelanna Hill (S. van Leeuwen 3835)			
643.	704 <i>Triodia wiseana</i> (Limestone Spinifex)			
644.	706 <i>Triaraphis mollis</i> (Needle Grass)			
645.	4879 <i>Triumfetta leptacantha</i>			
646.	14942 <i>Triumfetta maconochieana</i>			
647.	24851 <i>Turnix velox</i> (Little Button-quail)			
648.	98 <i>Typha domingensis</i> (Bulrush)			
649.	24852 <i>Tyto alba</i> subsp. <i>delicatula</i>			
650.	-1626 <i>Tyto javanica</i>			
651.	25445 <i>Uperoleia russelli</i> (Northwest Toadlet)			
652.	10865 <i>Urochloa subquadriflora</i>			
653.	25209 <i>Varanus acanthurus</i> (Spiny-tailed Monitor)			
654.	25211 <i>Varanus caudolineatus</i>			
655.	25218 <i>Varanus gouldii</i> (Bungarra or Sand Monitor)			
656.	25224 <i>Varanus pilbarensis</i> (Pilbara Rock Monitor)			
657.	25526 <i>Varanus tristis</i> (Racehorse Monitor)			
658.	25227 <i>Varanus tristis</i> subsp. <i>tristis</i> (Racehorse Monitor)			
659.	7654 <i>Velleia connata</i> (Cup Velleia)			
660.	25311 <i>Vermicella snelli</i>			
661.	24205 <i>Vespadelus finlaysoni</i> (Finlayson's Cave Bat)			
662.	5107 <i>Waltheria virgata</i>			
663.	1392 <i>Wurmbea deserticola</i>			
664.	24248 <i>Zyomys argurus</i> (Common Rock-rat)			

Conservation Codes

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

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



APPENDIX 5 – EPBC PROTECTED MATTERS SEARCH REPORT



EPBC Act Protected Matters Report: Coordinates

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

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

Information about the EPBC Act including significance guidelines, forms and application process details can be found at <http://www.environment.gov.au/epbc/assessmentsapprovals/index.html>

Report created: 23/05/11 15:26:31



[Summary](#)

[Details](#)

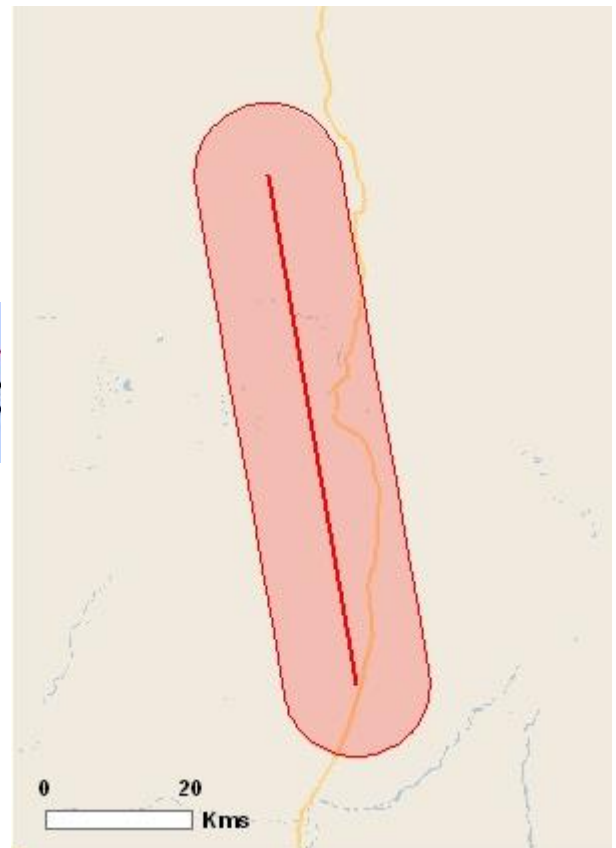
[Matters of NES](#)

[Other matters protected by the EPBC Act](#)

[Extra Information](#)

[Caveat](#)

[Acknowledgements](#)



This map may contain data which are ©Commonwealth of Australia (Geoscience Australia), ©PSMA 2010

[Coordinates](#)

Buffer: 10.0Km

Summary

Matters of National Environmental Significance

This part of the report summarises the matters of national environmental significance that may occur in, or may relate to, the area you nominated. Further information is available in the detail part of the report, which can be accessed by scrolling or following the links below. If you are proposing to undertake an activity that may have a significant impact on one or more matters of national environmental significance then you should consider the Administrative Guidelines on Significance - see <http://www.environment.gov.au/epbc/assessmentsapprovals/guidelines/index.html>.

World Heritage Properties:	None
National Heritage Places:	None
Wetlands of International Significance (Ramsar Wetlands):	None
Great Barrier Reef Marine Park:	None
Commonwealth Marine Areas:	None
Threatened Ecological Communities:	None
Threatened Species:	6
Migratory Species:	8

Other Matters Protected by the EPBC Act

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

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

Please note that the current dataset on Commonwealth land is not complete. Further information on Commonwealth land would need to be obtained from relevant sources including Commonwealth agencies, local agencies, and land tenure maps.

A permit may be required for activities in or on a Commonwealth area that may affect a member of a listed threatened species or ecological community, a member of a listed migratory species, whales and other cetaceans, or a member of a listed marine species. Information on EPBC Act permit requirements and application forms can be found at <http://www.environment.gov.au/epbc/permits/index.html>.

Commonwealth Lands:	None
Commonwealth Heritage Places:	None
Listed Marine Species:	5
Whales and Other Cetaceans:	None

Critical Habitats:	None
Commonwealth Reserves:	None

Report Summary for Extra Information

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

Place on the RNE:	1
State and Territory Reserves:	None
Regional Forest Agreements:	None
Invasive Species:	7
Nationally Important Wetlands:	1

Details

Matters of National Environmental Significance

Threatened Species [[Resource Information](#)]

Name	Status	Type of Presence
------	--------	------------------

BIRDS

[Pezoporus occidentalis](#)

Night Parrot [59350]	Endangered	Species or species habitat likely to occur within area
----------------------	------------	--

[Polytelis alexandrae](#)

Princess Parrot, Alexandra's Parrot [758]	Vulnerable	Species or species habitat may occur within area
---	------------	--

MAMMALS

[Dasycercus cristicauda](#)

Mulgara [328]	Vulnerable	Species or species habitat likely to occur within area
---------------	------------	--

[Dasyurus hallucatus](#)

Northern Quoll [331]	Endangered	Species or species habitat likely to occur within area
----------------------	------------	--

[Macrotis lagotis](#)

Greater Bilby [282]	Vulnerable	Species or species habitat likely to occur within area
---------------------	------------	--

[Rhinonicteris aurantia \(Pilbara form\)](#)

Pilbara Leaf-nosed Bat [82790]	Vulnerable	Species or species habitat likely to occur within area
--------------------------------	------------	--

Migratory Species [[Resource Information](#)]

Name	Status	Type of Presence
------	--------	------------------

Migratory Marine Birds

[Apus pacificus](#)

Fork-tailed Swift [678]		Species or species habitat may occur within area
-------------------------	--	--

[Ardea alba](#)

Great Egret, White Egret [59541]		Species or species habitat may occur within area
----------------------------------	--	--

[Ardea ibis](#)

Cattle Egret [59542]		Species or species habitat may occur within area
----------------------	--	--

Migratory Terrestrial Species

[Merops ornatus](#)

Rainbow Bee-eater [670]

Species or species habitat may occur within area

[Pezoporus occidentalis](#)

Night Parrot [59350]

Endangered

Species or species habitat likely to occur within area

Migratory Wetlands Species

[Ardea alba](#)

Great Egret, White Egret
[59541]

Species or species habitat may occur within area

[Ardea ibis](#)

Cattle Egret [59542]

Species or species habitat may occur within area

[Charadrius veredus](#)

Oriental Plover, Oriental
Dotterel [882]

Species or species habitat may occur within area

Other Matters Protected by the EPBC Act

Listed Marine Species

[\[Resource Information \]](#)

Name

Status

Type of Presence

Birds

[Apus pacificus](#)

Fork-tailed Swift [678]

Species or species habitat may occur within area

[Ardea alba](#)

Great Egret, White Egret
[59541]

Species or species habitat may occur within area

[Ardea ibis](#)

Cattle Egret [59542]

Species or species habitat may occur within area

[Charadrius veredus](#)

Oriental Plover, Oriental
Dotterel [882]

Species or species habitat may occur within area

[Merops ornatus](#)

Rainbow Bee-eater [670]

Species or species habitat may occur within area

Extra Information

Places on the RNE

[\[Resource Information \]](#)

Note that not all Indigenous sites may be listed.

Name

Status

Natural

[Fortescue Marshes WA](#)

Indicative Place

Invasive Species

[\[Resource Information \]](#)

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

Name

Status

Type of Presence

Mammals

[Felis catus](#)

Cat, House Cat, Domestic Cat
[19]

Species or species habitat likely to occur within area

[Oryctolagus cuniculus](#)

Rabbit, European Rabbit [128]

Species or species habitat likely to occur within area

[Vulpes vulpes](#)

Red Fox, Fox [18]

Species or species habitat may occur within area

Plants

[Cenchrus ciliaris](#)

Buffel-grass, Black Buffel-grass [20213]

Species or species habitat likely to occur within area

[Parkinsonia aculeata](#)

Parkinsonia, Jerusalem Thorn, Jelly Bean Tree, Horse Bean [12301]

Species or species habitat may occur within area

[Prosopis spp.](#)

Mesquite, Algaroba [68407]

Species or species habitat may occur within area

[Salvinia molesta](#)

Salvinia, Giant Salvinia, Aquarium Watermoss, Kariba Weed [13665]

Species or species habitat may occur within area

Nationally Important Wetlands

[Resource Information]

[Fortescue Marshes, WA](#)

Caveat

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

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

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

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

For species where the distributions are well known, maps are digitised from sources such as recovery plans and detailed habitat studies. Where appropriate, core breeding, foraging and roosting areas are indicated under 'type of presence'. For species whose distributions are less well known, point locations are collated from government wildlife authorities, museums, and non-government organisations; bioclimatic distribution models are generated and these validated by experts. In some cases, the distribution maps are based solely on expert knowledge.

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

- migratory and
- marine

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

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

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

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

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

Coordinates

-22.40083 119.86528,-23.03056 119.97583

Acknowledgements

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

- [-Department of Environment, Climate Change and Water, New South Wales](#)
- [-Department of Sustainability and Environment, Victoria](#)
- [-Department of Primary Industries, Parks, Water and Environment, Tasmania](#)
- [-Department of Environment and Natural Resources, South Australia](#)
- [-Parks and Wildlife Service NT, NT Dept of Natural Resources, Environment and the Arts](#)
- [-Environmental and Resource Management, Queensland](#)
- [-Department of Environment and Conservation, Western Australia](#)
- [-Department of the Environment, Climate Change, Energy and Water](#)
- [-Birds Australia](#)
- [-Australian Bird and Bat Banding Scheme](#)
- [-Australian National Wildlife Collection](#)
- Natural history museums of Australia
- [-Museum Victoria](#)
- [-Australian Museum](#)
- [-SA Museum](#)
- [-Queensland Museum](#)
- [-Online Zoological Collections of Australian Museums](#)
- [-Queensland Herbarium](#)
- [-National Herbarium of NSW](#)
- [-Royal Botanic Gardens and National Herbarium of Victoria](#)
- [-Tasmanian Herbarium](#)
- [-State Herbarium of South Australia](#)
- [-Northern Territory Herbarium](#)
- [-Western Australian Herbarium](#)
- [-Australian National Herbarium, Atherton and Canberra](#)
- [-University of New England](#)
- [-Ocean Biogeographic Information System](#)
- [-Australian Government, Department of Defence](#)
- [-State Forests of NSW](#)
- Other groups and individuals

The Department is extremely grateful to the many organisations and individuals who provided expert

advice and information on numerous draft distributions.

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APPENDIX 6 – HABITAT QUALITY DESCRIPTORS



Appendix 6: Habitat Condition Descriptors

Fauna habitat condition label	Condition description
High quality fauna habitat:	These areas closely approximate the vegetation mix and quality that would have been in the area prior to any disturbance. The habitat has connectivity with other habitats and is likely to contain the most natural vertebrate fauna assemblage.
Very good fauna habitat:	These areas show minimal signs of disturbance (e.g. grazing, clearing, fragmentation, weeds) and retain almost all of the characteristics of the habitat had it not been disturbed. The habitat has connectivity with other habitats, and fauna assemblages in these areas are likely to be minimally effected by disturbance.
Good fauna habitat:	These areas show signs of disturbance (e.g. grazing, clearing, fragmentation, weeds) but generally retain many of the characteristics of the habitat had it not been disturbed. The habitat has connectivity with other habitats but fauna assemblages in these areas are likely to be affected by disturbance. Fauna assemblages in these areas are likely to be similar to what might be expected in the area.
Disturbed fauna habitat:	These areas show signs of significant disturbance. Many of the trees, shrubs and undergrowth have died or have been cleared. These areas may be in the early succession and regeneration stages. Areas may show signs of significant grazing, contain weeds or have been damaged by vehicles or machinery. Habitats are fragmented or have limited connectivity with other fauna habitats. Fauna assemblages in these areas are likely to differ significantly from what might be expected in the area had the disturbance not occurred.
Highly degraded fauna habitat:	These areas often have a significant loss of vegetation, and / or abundance of weeds, and / or a large number of vehicle tracks or have been completely cleared. There is limited or no fauna habitat connectivity. Fauna assemblages in these areas are likely to differ significantly to what existed prior to the disturbance, and are often depleted compared to what existed prior to the disturbance.

Thompson, G.G. and Thompson, S.A. (2010) Terrestrial Vertebrate Fauna Assessments for Ecological Impact Assessment. Terrestrial Ecosystems.

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APPENDIX 7 – EXPECTED FAUNA SPECIES



Appendix 7: Fauna species potentially occurring along the Proposed Rail Corridor

Table 1. Amphibians that have the potential to occur in the study area.
 FS = species recorded on fauna surveys in the region of the study area (see methods)
 WAM= species recorded in the area by the WA Museum (see Table 1).

Species	Status	Recorded
Hylidae (tree frogs and water-holding frogs)		
Main's Frog <i>Cyclorana maini</i>		FS
Water-holding Frog <i>Cyclorana platycephala</i>		
Desert Tree Frog <i>Litoria rubella</i>		WAM FS
Myobatrachidae (ground frogs)		
Centralian Burrowing Frog <i>Opisthodon spenceri</i>		
Northern Burrowing Frog <i>Neobatrachus aquilonius</i>		
Desert Spadefoot <i>Notaden nicholli</i>		FS
Douglas's Toadlet <i>Pseudophryne douglasi</i>		
Russell's Toadlet <i>Uperoleia russelli</i>		
Number of frogs expected:		8

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Table 2. Reptiles that have the potential to occur in the study area.
 FS = species recorded on fauna surveys in the region of the study area (see methods)
 WAM = species recorded in the area by the WA Museum (see Table 1).

Species	Status	Recorded
Cheluidae (freshwater turtles)		
Steindachner's Turtle <i>Chelodina steindachneri</i>		FS
Agamidae (dragon lizards)		
<i>Caimanops amphiboluroides</i>		WAM FS
Ring-tailed Dragon <i>Ctenophorus caudicinctus</i>		WAM FS
Military Dragon <i>Ctenophorus isolepis</i>		WAM FS
Central Netted Dragon <i>Ctenophorus nuchalis</i>		WAM FS
<i>Ctenophorus reticulatus</i>		WAM FS
<i>Ctenophorus scutulatus</i>		FS
<i>Amphibolurus longirostris</i>		WAM FS
Bearded Dragon <i>Pogona minor</i>		WAM FS
<i>Tympanocryptis cephalus</i>		WAM FS
Thorny Devil <i>Moloch horridus</i>		FS
Diplodactylidae (geckoes)		
Clawless Gecko <i>Crenadactylus ocellatus</i>		
Fat-tailed Gecko <i>Diplodactylus conspicillatus</i>		WAM FS
<i>Diplodactylus pulcher</i>		WAM
<i>Diplodactylus savagei</i>		WAM
<i>Lucasium stenodactylum</i>		WAM FS
<i>Lucasium wombeyi</i>		FS
Beaked Gecko <i>Rhynchoedura ornata</i>		WAM
Jewelled Gecko <i>Strophurus elderi</i>		WAM FS
<i>Strophurus jeanae</i>		
<i>Strophurus wellingtonae</i>		WAM FS
Carphodactylidae (knob-tailed geckoes)		
<i>Nephurus levis</i>		
<i>Nephurus wheeleri</i>		WAM
Gekkonidae (true geckoes)		
Pilbara Dtella <i>Gehyra pilbara</i>		
Spotted Dtella <i>Gehyra punctata</i>		WAM FS
<i>Gehyra purpurascens</i>		WAM
Variegated Dtella <i>Gehyra variegata</i>		WAM FS
Bynoe's Gecko <i>Heteronotia binoei</i>		WAM FS
Pygopodidae (legless lizards)		
<i>Delma butleri</i>		FS
<i>Delma elegans</i>		
<i>Delma haroldi</i>		WAM FS
<i>Delma nasuta</i>		WAM FS

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Table 2 (cont.).

Species	Status	Recorded
<i>Delma pax</i>		WAM FS
<i>Delma tincta</i>		WAM FS
Burton's Legless Lizard <i>Lialis burtonis</i>		WAM FS
Hooded Scaly-foot <i>Pygopus nigriceps</i>		WAM FS
Scincidae (skink lizards)		
<i>Carlia munda</i>		WAM FS
<i>Carlia triacantha</i>		WAM
<i>Cryptoblepharus carnabyi</i>		
<i>Cryptoblepharus plagiocephalus</i>		WAM
<i>Ctenotus ariadne</i>		WAM FS
<i>Ctenotus duricola</i>		WAM FS
<i>Ctenotus grandis</i>		WAM
<i>Ctenotus hanloni</i>		WAM FS
<i>Ctenotus helenae</i>		WAM FS
<i>Ctenotus leonhardii</i>		FS
<i>Ctenotus pantherinus</i>		WAM FS
<i>Ctenotus piankai</i>		FS
<i>Ctenotus quattuordecimlineatus</i>		FS
<i>Ctenotus rubicundus</i>		FS
<i>Ctenotus rutilans</i>		
<i>Ctenotus schomburgkii</i>		
<i>Ctenotus serventyi</i>		WAM FS
<i>Ctenotus uber johnstonei</i>	CS2	FS
Pygmy Spiny-tailed Skink <i>Cyclodomorphus melanops</i>		WAM FS
<i>Egernia depressa</i>		
<i>Egernia formosa</i>		
<i>Egernia pilbarensis</i>		
<i>Egernia striata</i>		
Sand Swimmer <i>Eremiascincus richardsonii</i>		WAM
<i>Glaphyromorphus isolepis</i>		
<i>Lerista amicorum</i>		WAM
<i>Lerista bipes</i>		
<i>Lerista flammicauda</i>		FS
<i>Lerista labialis</i>		WAM
<i>Lerista muelleri</i>		WAM FS
<i>Lerista neander</i>		WAM
<i>Lerista zietzi</i>		WAM
Dwarf Skink <i>Menetia greyii</i>		WAM FS
<i>Menetia surda</i>		WAM FS
<i>Morethia ruficauda</i>		WAM FS
<i>Notoscincus ornatus</i>		WAM
<i>Proablepharus reginae</i>		

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Table 2 (cont.).

Species	Status	Recorded
Central Blue-tongue <i>Tiliqua multifasciata</i>		FS
Varanidae (goanna or monitor lizards)		
Ridge-tailed Monitor <i>Varanus acanthurus</i>		FS
<i>Varanus brevicauda</i>	WAM	FS
<i>Varanus caudolineatus</i>	WAM	FS
<i>Varanus eremius</i>		FS
Perentie <i>Varanus giganteus</i>	WAM	FS
Pygmy Mulga Monitor <i>Varanus gilleni</i>		
Gould's Goanna <i>Varanus gouldii</i>	WAM	
<i>Varanus panoptes</i>		FS
Black-tailed Monitor <i>Varanus tristis</i>		FS
Typhlopidae (blind snakes)		
<i>Ramphotyphlops ammodytes</i>	WAM	FS
<i>Ramphotyphlops grypus</i>	WAM	FS
<i>Ramphotyphlops hamatus</i>	WAM	FS
<i>Ramphotyphlops pilbarensis</i>		
<i>Ramphotyphlops waitii</i>	WAM	
Boidae (pythons)		
Pygmy Python <i>Antaresia perthensis</i>		FS
Stimson's Python <i>Antaresia stimsoni</i>		
Black-headed Python <i>Aspidites melanocephalus</i>		FS
Woma <i>Aspidites ramsayi</i>	CS2	FS
Olive Python (Pilbara) <i>Liasis olivaceus barroni</i>	CS1	
Elapidae (front-fanged snakes)		
Desert Death Adder <i>Acanthophis pyrrhus</i>		FS
Pilbara Death Adder <i>Acanthophis wellsi</i>		
Northwestern Shovel-nosed Snake <i>Brachyuropis approximans</i>		FS
Yellow-faced Whipsnake <i>Demansia psammophis</i>	WAM	FS
Rufous Whipsnake <i>Demansia rufescens</i>		
Moon Snake <i>Furina ornata</i>		
Mulga Snake <i>Pseudechis australis</i>	WAM	FS
Ringed Brown Snake <i>Pseudonaja modesta</i>	WAM	FS
Gwardar <i>Pseudonaja nuchalis</i>	WAM	
Desert Banded Snake <i>Simoselaps anomalus</i>		
Rosen's Snake <i>Suta fasciata</i>		
Spotted Snake <i>Suta punctata</i>	WAM	FS
Pilbara Bandy-bandy <i>Vermicella snelli</i>		
Number of reptile species expected:		106

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Table 3. Birds that have the potential to occur in the study area.

FS = species recorded on fauna surveys in the region of the study area (see methods)

WAM = species recorded in the area by the WA Museum (see Table 1).

Species	Status	Recorded
Dromaiidae (emus)		
Emu <i>Dromaius novaehollandiae</i>		FS
Phasianidae (pheasants and quails)		
Stubble Quail <i>Coturnix pectoralis</i>		FS
Brown Quail <i>Coturnix ypsilophora</i>		FS
Anatidae (ducks and swans)		
Plumed Whistling Duck <i>Dendrocygna eytoni</i>		FS
Black Swan <i>Cygnus atratus</i>		FS
Australian Shelduck <i>Tadorna tadornoides</i>		FS
Australian Wood Duck <i>Chenonetta jubata</i>		
Pink-eared Duck <i>Malacorhynchus membranaceus</i>		FS
Grey Teal <i>Anas gracilis</i>		FS
Pacific Black Duck <i>Anas superciliosa</i>		FS
Hardhead <i>Aythya australis</i>		
Podicipedidae (grebes)		
Australasian Grebe <i>Tachybaptus novaehollandiae</i>		
Hoary-headed Grebe <i>Poliiocephalus poliocephalus</i>		
Columbidae (pigeons and doves)		
Common Bronzewing <i>Phaps chalcoptera</i>		FS
Crested Pigeon <i>Ocyphaps lophotes</i>		FS
Spinifex Pigeon <i>Geophaps plumifera</i>		FS
Diamond Dove <i>Geopelia cuneata</i>		FS
Peaceful Dove <i>Geopelia striata</i>		FS
Podargidae (frogmouths)		
Tawny Frogmouth <i>Podargus strigoides</i>		FS
Eurostopodidae (nightjars)		
Spotted Nightjar <i>Eurostopodus argus</i>		FS
Aegothelidae (owlet-nightjars)		
Australian Owlet-nightjar <i>Aegotheles cristatus</i>		FS
Apodidae (swifts)		
Fork-tailed Swift <i>Apus pacificus</i>	Mig.	FS
Anhingidae (darters)		
Australasian Darter <i>Anhinga novaehollandiae</i>		
Phalacrocoracidae (cormorants)		
Little Pied Cormorant <i>Microcarbo melanoleucos</i>		
Little Black Cormorant <i>Phalacrocorax sulcirostris</i>		
Pied Cormorant <i>Phalacrocorax varius</i>		
Pelecanidae (pelicans)		
Australian Pelican <i>Pelecanus conspicillatus</i>		
Ciconiidae (storks)		
Black-necked Stork <i>Ephippiorhynchus asiaticus</i>		

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Table 3 cont.

Species	Status	Recorded
Ardeidae (herons and egrets)		
White-necked Heron <i>Ardea pacifica</i>	Mig.	FS
Eastern Great Egret <i>Ardea modesta</i>		FS
White-faced Heron <i>Egretta novaehollandiae</i>		FS
Little Egret <i>Egretta garzetta</i>		
Nankeen Night Heron <i>Nycticorax caledonicus</i>		
Threskiornithidae (ibis and spoonbills)		
Glossy Ibis <i>Plegadis falcinellus</i>		
Australian White Ibis <i>Threskiornis molucca</i>		
Straw-necked Ibis <i>Threskiornis spinicollis</i>		FS
Yellow-billed Spoonbill <i>Platalea flavipes</i>		
Accipitridae (kites, hawks and eagles)		
Black-shouldered Kite <i>Elanus axillaris</i>	Mig.	FS
White-bellied Sea Eagle <i>Haliaeetus leucogaster</i>		
Black-breasted Buzzard <i>Hamirostra melanosternon</i>		FS
Whistling Kite <i>Haliastur sphenurus</i>		FS
Black Kite <i>Milvus migrans</i>		FS
Brown Goshawk <i>Accipiter fasciatus</i>		FS
Collared Sparrowhawk <i>Accipiter cirrhocephalus</i>		FS
Spotted Harrier <i>Circus assimilis</i>		FS
Wedge-tailed Eagle <i>Aquila audax</i>		FS
Little Eagle <i>Hieraaetus morphnoides</i>		FS
Falconidae (falcons)		
Nankeen Kestrel <i>Falco cenchroides</i>		FS
Brown Falcon <i>Falco berigora</i>		FS
Australian Hobby <i>Falco longipennis</i>		FS
Grey Falcon <i>Falco hypoleucos</i>	CS2	FS
Black Falcon <i>Falco subniger</i>	CS3	
Peregrine Falcon <i>Falco peregrinus</i>	CS1	FS
Rallidae (rails and crakes)		
Black-tailed Native-hen <i>Tribonyx ventralis</i>		FS
Eurasian Coot <i>Fulica atra</i>		
Otididae (bustards)		
Australian Bustard <i>Ardeotis australis</i>	CS2	WAM FS
Burhinidae (stone-curlews)		
Bush Stone-curlew <i>Burhinus grallarius</i>	CS2	FS
Recurvirostridae (stilts and avocet)		
Black-winged Stilt <i>Himantopus himantopus</i>		
Charadriidae (lapwings and plovers)		
Red-capped Plover <i>Charadrius ruficapillus</i>	Mig. CS3	
Oriental Plover <i>Charadrius veredus</i>		
Inland Dotterel <i>Charadrius australis</i>		FS
Black-fronted Dotterel <i>Euseyonis melanops</i>		FS
Red-kneed Dotterel <i>Erythronyx cinctus</i>		FS
Banded Lapwing <i>Vanellus tricolor</i>		

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Table 3 cont.

Species	Status	Recorded
Rostratulidae (painted snipe) Australian Painted Snipe <i>Rostratula australis</i>	CS1	
Scolopacidae (shorebirds) Common Sandpiper <i>Actitis hypoleucos</i>	Mig.	
Turnicidae (button-quails) Little Button-quail <i>Turnix velox</i>		FS
Glareolidae (pratincoles) Australian Pratincole <i>Stiltia isabella</i>		FS
Laridae (seagulls and terns) Whiskered Tern <i>Chlidonias hybrida</i>		
Cacatuidae (cockatoos) Red-tailed Black-Cockatoo <i>Calyptorhynchus banksii</i> Galah <i>Eolophus roseicapillus</i> Little Corella <i>Cacatua sanguinea</i> Cockatiel <i>Nymphicus hollandicus</i>		WAM FS FS FS
Psittacidae (lorikeets and parrots) Australian Ringneck <i>Barnardius zonarius</i> Mulga Parrot <i>Psephotus varius</i> Budgerigar <i>Melopsittacus undulatus</i> Bourke's Parrot <i>Neopsephotus bourkii</i> Night Parrot <i>Pezoporus occidentalis</i>	CS1	FS FS FS FS
Cuculidae (cuckoos) Pheasant Coucal <i>Centropus phasianinus</i> Horsfield's Bronze-Cuckoo <i>Chalcites basalis</i> Black-eared Cuckoo <i>Chalcites osculans</i> Pallid Cuckoo <i>Cacomantis pallidus</i>		FS FS FS FS
Strigidae (hawk-owls) Barking Owl <i>Ninox connivens</i> Southern Boobook Owl <i>Ninox novaeseelandiae</i>		WAM FS
Tytonidae (barn owls) Eastern Barn Owl <i>Tyto javanica</i>		FS
Halcyonidae (forest kingfishers) Blue-winged Kookaburra <i>Dacelo leachii</i> Red-backed Kingfisher <i>Todiramphus pyrrhopygius</i> Sacred Kingfisher <i>Todiramphus sanctus</i>		FS FS FS
Meropidae (bee-eaters) Rainbow Bee-eater <i>Merops ornatus</i>	Mig.	FS
Climacteridae (treecreepers) Black-tailed Treecreeper <i>Climacteris melanura</i>		
Ptilonorhynchidae (bowerbirds) Western Bowerbird <i>Ptilonorhynchus guttatus</i>		WAM
Maluridae (fairy-wrens) White-winged Fairy-wren <i>Malurus leucopterus</i> Variegated Fairy-wren <i>Malurus lamberti</i> Rufous-crowned Emu-wren <i>Stipiturus ruficeps</i>		FS FS FS

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Table 3 (cont.).

Species	Status	Recorded
Striated Grasswren <i>Amytornis striatus</i>		FS
Acanthizidae (thornbills, scrubwrens and gerygones)		
Redthroat <i>Pyrholaemus brunneus</i>		FS
Weebill <i>Smicronis brevirostris</i>		FS
Western Gerygone <i>Gerygone fusca</i>		FS
Slaty-backed Thornbill <i>Acanthiza robustirostris</i>		FS
Chestnut-rumped Thornbill <i>Acanthiza uropygialis</i>		FS
Inland Thornbill <i>Acanthiza apicalis</i>		FS
Southern Whiteface <i>Aphelocephala leucopsis</i>		FS
Pardalotidae (pardalotes)		
Red-browed Pardalote <i>Pardalotus rubricatus</i>		FS
Striated Pardalote <i>Pardalotus striatus</i>		FS
Meliphagidae (honeyeaters)		
Pied Honeyeater <i>Certhionyx variegatus</i>		FS
Singing Honeyeater <i>Lichenostomus virescens</i>		FS
Grey-headed Honeyeater <i>Lichenostomus keartlandi</i>		FS
White-plumed Honeyeater <i>Lichenostomus penicillatus</i>	WAM	FS
White-fronted Honeyeater <i>Purnella albifrons</i>		FS
Yellow-throated Miner <i>Manorina flavigula</i>		FS
Spiny-cheeked Honeyeater <i>Acanthagenys rufogularis</i>		FS
Grey Honeyeater <i>Conopophila whitei</i>		FS
Crimson Chat <i>Epthianura tricolor</i>	WAM	FS
Orange Chat <i>Epthianura aurifrons</i>		FS
Black Honeyeater <i>Sugomel niger</i>		FS
Brown Honeyeater <i>Lichmera indistincta</i>		FS
Black-chinned Honeyeater <i>Melithreptus gularis</i>		FS
Pomatostomidae (Australian babbblers)		
Grey-crowned Babbler <i>Pomatostomus temporalis</i>	WAM	FS
White-browed Babbler <i>Pomatostomus superciliosus</i>		FS
Cinclosomatidae (quail-thrushes and allies)		
Chestnut-breasted Quail-thrush <i>Cinclosoma castaneothorax</i>		FS
Chiming Wedgebill <i>Psophodes occidentalis</i>		
Neosittidae (sittellas)		
Varied Sittella <i>Daphoenositta chrysoptera</i>		FS
Campephagidae (cuckoo-shrikes)		
Ground Cuckoo-shrike <i>Coracina maxima</i>		FS
Black-faced Cuckoo-shrike <i>Coracina novaehollandiae</i>		FS
White-winged Triller <i>Lalage sueurii</i>		FS
Pachycephalidae (whistlers)		
Rufous Whistler <i>Pachycephala rufiventris</i>		WAM FS
Grey Shrike-thrush <i>Colluricincla harmonica</i>		FS
Crested Bellbird (southern) <i>Oreoica gutturalis</i>	CS2	WAM FS

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Table 3 cont.

Species	Status	Recorded
Artamidae (woodswallows)		
Masked Woodswallow <i>Artamus personatus</i>		WAM FS
Black-faced Woodswallow <i>Artamus cinereus</i>		WAM FS
Little Woodswallow <i>Artamus minor</i>		FS
Grey Butcherbird <i>Cracticus torquatus</i>		FS
Pied Butcherbird <i>Cracticus nigrogularis</i>		FS
Australian Magpie <i>Gymnorhina tibicen</i>		FS
Rhipiduridae (flycatchers)		
Grey Fantail <i>Rhipidura albiscapa</i>		FS
Willie Wagtail <i>Rhipidura leucophrys</i>		FS
Corvidae (ravens and crows)		
Little Crow <i>Corvus bennetti</i>		FS
Torresian Crow <i>Corvus orru</i>		WAM FS
Monarchidae (monarchs and flycatchers)		
Magpie-lark <i>Grallina cyanoleuca</i>		FS
Petroicidae (robins)		
Red-capped Robin <i>Petroica goodenovii</i>		FS
Hooded Robin <i>Melanodryas cucullata</i>		FS
Alaudidae (larks)		
Horsfield's Bushlark <i>Mirafra javanica</i>		WAM FS
Acrocephalidae (reed-warblers)		
Australian Reed-Warbler <i>Acrocephalus australis</i>		
Megaluridae (Old World warblers)		
Rufous Songlark <i>Cincloramphus mathewsi</i>		FS
Brown Songlark <i>Cincloramphus cruralis</i>		FS
Spinifexbird <i>Eremiornis carteri</i>		FS
Hirundinidae (swallows)		
White-backed Swallow <i>Cheramoeca leucosterna</i>		
Welcome Swallow <i>Hirundo neoxena</i>		
Fairy Martin <i>Petrochelidon ariel</i>		FS
Tree Martin <i>Petrochelidon nigricans</i>		FS
Nectariniidae (sunbirds and flower-peckers)		
Mistletoebird <i>Dicaeum hirundinaceum</i>		FS
Estrildidae (finches and allies)		
Zebra Finch <i>Taeniopygia guttata</i>		FS
Star Finch (Western) <i>Neochmia ruficauda</i>	CS2	WAM FS
Painted Finch <i>Emblema pictum</i>		FS
Motacillidae (pipits and true wagtails)		
Australasian Pipit <i>Anthus novaeseelandiae</i>		FS
Number of bird species that may occur:		154

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Table 4. Mammals that have the potential to occur in the study area.
 FS = species recorded on other fauna surveys in the region (see methods)
 WAM = species recorded in the area by the WA Museum (see Table 1).
 Int = introduced species.

Species	Status	Recorded
Tachyglossidae (echidnas)		
Echidna <i>Tachyglossus aculeatus</i>		FS
Dasyuridae (dasyurid marsupials)		
Mulgara <i>Dasyercus blythi</i>	CS2	FS
Little Red Kaluta <i>Dasykaluta rosamondae</i>		FS
Northern Quoll <i>Dasyurus hallucatus</i>	CS1	WAM FS
<i>Ningau timealeyi</i>		FS
Rory's Pseudantechinus <i>Pseudantechinus roryi</i>		
Woolley's Pseudantechinus <i>Pseudantechinus woolleyae</i>		
Planigale <i>Planigale sp.</i>		FS
Long-tailed Dunnart <i>Sminthopsis longicaudata</i>	CS2	FS
Striped-faced Dunnart <i>Sminthopsis macroura</i>		WAM FS
Ooldea Dunnart <i>Sminthopsis ooldea</i>		
Lesser Hairy-footed Dunnart <i>Sminthopsis youngsoni</i>		WAM FS
Thylacomyidae (bilbies)		
Bilby <i>Macrotis lagotis</i>	CS1	FS
Notoryctidae (marsupial moles)		
Northern Marsupial Mole <i>Notoryctes caurinus</i>	CS1	
Macropodidae (kangaroos and wallabies)		
Spectacled Hare-Wallaby <i>Lagorchestes conspicillatus</i>	CS2	
Euro <i>Macropus robustus</i>		FS
Red Kangaroo <i>Macropus rufus</i>		WAM FS
Rothschild's Rock-Wallaby <i>Petrogale rothschildi</i>		WAM FS
Pteropodidae (flying foxes)		
Black Flying-Fox <i>Pteropus alecto</i>		
Little Red Flying-Fox <i>Pteropus scapulatus</i>		
Emballonuridae (sheathtail bats)		
Yellow-bellied Sheathtail Bat <i>Saccolaimus flaviventris</i>		FS
Common Sheathtail Bat <i>Taphozous georgianus</i>		FS
Hill's Sheathtail bat <i>Taphozous hilli</i>		
Vesperilionidae (ordinary bats)		
Gould's Wattled Bat <i>Chalinolobus gouldii</i>		FS
Chocolate Wattled Bat <i>Chalinolobus morio</i>		
Lesser Long-eared Bat <i>Nyctophilus geoffroyi</i>		FS
Little Broad-nosed Bat <i>Scotorepens greyii</i>		FS
Molossidae (freetail bats)		
Northern Freetail Bat <i>Chaerephon jobensis</i>		WAM FS
Beccari's Freetail Bat <i>Mormopterus beccarii</i>		
White-striped Freetail Bat <i>Tadarida australis</i>		FS
Muridae (rats and mice)		

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Short-tailed Mouse	<i>Leggadina lakedownensis</i>	CS2	WAM	FS
House Mouse	<i>Mus musculus</i>	Int.		FS
Spinifex Hopping-Mouse	<i>Notomys alexis</i>		WAM	
Delicate Mouse	<i>Pseudomys delicatulus</i>			
Desert Mouse	<i>Pseudomys desertor</i>		WAM	FS
Sandy Inland Mouse	<i>Pseudomys hermannsburgensis</i>		WAM	FS
Leporidae (rabbits and hares)				
Rabbit	<i>Oryctolagus cuniculus</i>	Int.		FS
Canidae (dogs and foxes)				
Dog	<i>Canis lupus</i>	Int.		FS
Dingo	<i>Canis lupus dingo</i>			FS
Fox	<i>Vulpes vulpes</i>	Int.		
Felidae (cats)				
Feral/House Cat	<i>Felis catus</i>	Int.		FS
Equidae (horses)				
Donkey	<i>Equus asinus</i>	Int.		FS
Horse	<i>Equus caballus</i>	Int.		FS
Camelidae (camels)				
Camel	<i>Camelus dromedarius</i>	Int.		FS
Bovidae (horned ruminants)				
Cow	<i>Bos taurus</i>	Int.		
Number of mammals expected:		45		

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APPENDIX 8 – FLORA AND VEGETATION SURVEY SAMPLING POINT LOCATIONS

APPENDIX 8: COORDINATES OF FERRAUS PROPOSED RAIL CORRIDOR SAMPLING SITES (MGA94, Zones 50K and 51K)

Site	Easting	Northing	Zone
1	803241	7491170	50
2	803606	7488185	50
3	803810	7485909	50
4	807810	7479864	50
5	192464	7476860	51
6	192296	7469681	51
7	807149	7464775	50
8	806815	7462426	50
9	806548	7455690	50
10	805988	7452293	50
11	804297	7446012	50
12	803400	7442914	50
13	801797	7439839	50
14	803310	7502665	50
15	800164	7504135	50
16	801605	7500530	50
17	801228	7500236	50
18	797707	7508755	50
19	798064	7510224	50
20	796802	7511100	50
21	795104	7511075	50
22	793879	7518134	50
23	794061	7516454	50
24	793889	7515136	50
25	794557	7519374	50

APPENDIX 9 – FLORA AND VEGETATION SURVEY ENVIRONMENT DATA

APPENDIX 9: FLORA AND VEGETATION SURVEY ENVIRONMENTAL DATA

Date:	4/5/11	Site:	1	Sampling Unit Type	quadrat
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Location:	Datum	Zone	Easting	Northing
	MGA94	50k	803241	7491170

Soils:	Soil texture	Soil Colour	Outcrop	Soil Comments
	clay/loam	red	-	calcrete rocks

photo:	Topography	Aspect	Slope (o)
771	flat	n/a	0

Litter (%):	Logs	Twigs	Leaves	Bare Ground (%)
		2	3	15

Disturbance:	Years Since Fire	Level of Human Impact	Condition
	6	low	P

Vegetation Structure:	Strata	Upper	Mid	Lower
	Height (m)	8	4	1
	% Cover	10	2	25

Observations	cattle overgrazing
---------------------	--------------------

Field description of vegetation	
--	--

Species	Ht (cm)	% Cover
<i>Corchorus tridens</i>	5	25
<i>Bonamia linearis</i>	5	15
<i>Eucalyptus victrix</i>	900	10
<i>Acacia tetragonophylla</i>	400	2
* <i>Malvastrum americanum</i>	20	2
<i>Dichanthium sericeum</i> subsp. <i>hur</i>	20	1
<i>Sporobolus australasicus</i>	10	1
<i>Sida fibulifera</i>	20	0.5
<i>Convolvulus clementii</i>	5	0.5
<i>Cleome viscosa</i>	20	0.2
* <i>Vachellia farnesiana</i>	100	0.1
<i>Echinochloa colona</i>	20	0.1
<i>Alternanthera nodiflora</i>	15	0.1
<i>Eragrostis falcata</i>	15	0.1
<i>Vigna</i> sp. Rockpiles (R. Butcher e	10	0.1
<i>Euphorbia</i> aff. <i>australis</i>	10	0.1
<i>Dysphania cristata</i>	10	0.1
<i>Rostellularia adscendens</i> var. <i>cler</i>	10	0.1
<i>Boerhavia burbridgeana</i>	5	0.1

APPENDIX 9: FLORA AND VEGETATION SURVEY ENVIRONMENTAL DATA

Date:	4/5/11	Site:	2	Sampling Unit Type	quadrat
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Location:	Datum	Zone	Easting	Northing
	MGA94	50k	803606	7488185

Soils:	Soil texture	Soil Colour	Outcrop	Soil Comments
	sandy loam	red	-	quartz gravel 10pc

photo:	Topography	Aspect	Slope (o)
772	flat	n/a	0

Litter (%):	Logs	Twigs	Leaves	Bare Ground (%)
		2	3	15

Disturbance:	Years Since Fire	Level of Human Impact	Condition
	6	low	E

Vegetation Structure:	Strata	Upper	Mid	Lower
	Height (m)		3	.5
	% Cover		10	10

Observations	
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Field description of vegetation	
--	--

Species	Ht (cm)	% Cover
<i>Aristida contorta</i>	10	25
<i>Acacia synchronicia</i>	300	10
<i>Senna sericea</i>	30	5
<i>Eremophila youngii</i> subsp. <i>lepido</i>	40	1
<i>Eremophila cuneifolia</i>	30	1
* <i>Cenchrus ciliaris</i>	20	1
<i>Sclerolaena eriacantha</i>	20	1
<i>Dactyloctenium radulans</i>	10	1
<i>Brachyachne prostrata</i>	5	0.5
<i>Enteropogon ramosus</i>	30	0.2
<i>Solanum lasiophyllum</i>	20	0.2
<i>Sporobolus australasicus</i>	15	0.2
<i>Salsola australis</i>	20	0.1
<i>Eragrostis eriopoda</i>	15	0.1
<i>Polycarpaea corymbosa</i> var. <i>coryi</i>	10	0.1
<i>Eragrostis dielsii</i>	10	0.1
* <i>Malvastrum americanum</i>	5	0.1
<i>Bulbostylis barbata</i>	5	0.1
* <i>Portulaca oleracea</i>	5	0.1
<i>Boerhavia coccinea</i>	5	0.1

APPENDIX 9: FLORA AND VEGETATION SURVEY ENVIRONMENTAL DATA

Date:	4/5/11	Site:	3	Sampling Unit Type	quadrat
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Location:	Datum	Zone	Easting	Northing
	MGA94	50k	803810	7485909

Soils:	Soil texture	Soil Colour	Outcrop	Soil Comments
	clay loam	red	-	

photo:	Topography	Aspect	Slope (o)
773	flat	n/a	0

Litter (%):	Logs	Twigs	Leaves	Bare Ground (%)
	10	2	3	15

Disturbance:	Years Since Fire	Level of Human Impact	Condition
	6	low	E

Vegetation Structure:	Strata	Upper	Mid	Lower
	Height (m)	8		.3
	% Cover	50		1

Observations	
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Field description of vegetation	dense mulga
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Species	Ht (cm)	% Cover
<i>Acacia aneura</i>	800	50
<i>Acacia tetragonophylla</i>	50	25
<i>Grevillea striata</i>	600	0.5
<i>Acacia sclerosperma</i>	400	0.5
<i>Eucalyptus victrix</i>	800	0.1
* <i>Malvastrum americanum</i>	40	0.1
<i>Triodia longiceps</i>	30	0.1
<i>Psydrax latifolia</i>	30	0.1
<i>Portulaca pilosa</i>	15	0.1

APPENDIX 9: FLORA AND VEGETATION SURVEY ENVIRONMENTAL DATA

Date:	4/5/11	Site:	4	Sampling Unit Type	quadrat
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Location:	Datum	Zone	Easting	Northing
	MGA94	50k	807810	7479864

Soils:	Soil texture	Soil Colour	Outcrop	Soil Comments
	loam	red	-	quartz ironstone grvl 30pc

photo:	Topography	Aspect	Slope (o)
774	flat	n/a	0

Litter (%):	Logs	Twigs	Leaves	Bare Ground (%)
		2	3	15

Disturbance:	Years Since Fire	Level of Human Impact	Condition
	6	low	E

Vegetation Structure:	Strata	Upper	Mid	Lower
	Height (m)		2	1
	% Cover		1	50

Observations	
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Field description of vegetation	
--	--

Species	Ht (cm)	% Cover
<i>Triodia longiceps</i>	50	45
<i>Eremophila cuneifolia</i>	40	25
<i>Ptilotus exaltatus</i>	20	1
<i>Senna notabilis</i>	20	1
<i>Dactyloctenium radulans</i>	15	1
<i>Pterocaulon</i> sp.	15	1
<i>Sporobolus australasicus</i>	10	1
<i>Sarcostemma viminale</i> subsp. <i>au.</i>	120	0.1
* <i>Malvastrum americanum</i>	40	0.1
<i>Eremophila longifolia</i>	40	0.1
<i>Solanum lasiophyllum</i>	30	0.1
<i>Goodenia vilmoriniae</i>	15	0.1
<i>Polycarpaea corymbosa</i> var. <i>coryi</i>	10	0.1
<i>Haloragis gossei</i> var. <i>gossei</i>	10	0.1
<i>Bulbostylis barbata</i>	5	0.1

APPENDIX 9: FLORA AND VEGETATION SURVEY ENVIRONMENTAL DATA

Date:	4/5/11	Site:	5	Sampling Unit Type	quadrat
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Location:	Datum	Zone	Easting	Northing
	MGA94	51k	192464	7476860

Soils:	Soil texture	Soil Colour	Outcrop	Soil Comments
	sandy loam	red	-	

photo:	Topography	Aspect	Slope (o)
775	flat	n/a	0

Litter (%):	Logs	Twigs	Leaves	Bare Ground (%)
		2	3	15

Disturbance:	Years Since Fire	Level of Human Impact	Condition
	6	low	E

Vegetation Structure:	Strata	Upper	Mid	Lower
	Height (m)		2.5	.8
	% Cover		5	45

Observations	
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Field description of vegetation	
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Species	Ht (cm)	% Cover
<i>Triodia basedowii</i>	40	40
<i>Senna artemisioides</i> subsp. <i>oligo</i>	40	25
<i>Acacia pachyacra</i>	250	3
* <i>Malvastrum americanum</i>	130	3
<i>Acacia pruinocarpa</i>	80	1
<i>Acacia synchronicia</i>	40	0.5
<i>Scaevola parvifolia</i>	20	0.5
<i>Ptilotus exaltatus</i>	20	0.5
<i>Sporobolus australasicus</i>	10	0.5
<i>Bulbostylis barbata</i>	5	0.2
<i>Senna glutinosa</i> subsp. <i>x leurrssen</i>	100	0.1
<i>Acacia aneura</i>	70	0.1
<i>Eremophila forrestii</i> subsp. <i>forres</i>	50	0.1
<i>Eremophila cuneifolia</i>	50	0.1
<i>Cleome viscosa</i>	40	0.1
<i>Senna sericea</i>	40	0.1
<i>Solanum sturtianum</i>	40	0.1
<i>Enneapogon polyphyllus</i>	30	0.1
<i>Solanum lasiophyllum</i>	20	0.1
<i>Dysphania cristata</i>	10	0.1
<i>Polycarpaea corymbosa</i> var. <i>cory</i>	10	0.1
<i>Tragus australianus</i>	10	0.1
* <i>Portulaca oleracea</i>	5	0.1

APPENDIX 9: FLORA AND VEGETATION SURVEY ENVIRONMENTAL DATA

Date:	4/5/11	Site:	6	Sampling Unit Type	quadrat
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Location:	Datum	Zone	Easting	Northing
	MGA94	51k	192296	7469681

Soils:	Soil texture	Soil Colour	Outcrop	Soil Comments
	clay loam	red	-	

photo:	Topography	Aspect	Slope (o)
776	flat	n/a	0

Litter (%):	Logs	Twigs	Leaves	Bare Ground (%)
		2	3	15

Disturbance:	Years Since Fire	Level of Human Impact	Condition
	6	low	E

Vegetation Structure:	Strata	Upper	Mid	Lower
	Height (m)		2.5	.7
	% Cover		15	30

Observations	
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Field description of vegetation	
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Species	Ht (cm)	%Cover
<i>Ptilotus obovatus</i>	40	25
<i>Acacia aneura</i>	250	15
<i>Aristida inaequiglumis</i>	50	1
<i>Sporobolus australasicus</i>	10	1
* <i>Portulaca oleracea</i>	5	1
<i>Acacia ancistrocarpa</i>	150	0.5
<i>Psyrax latifolia</i>	100	0.5
* <i>Malvastrum americanum</i>	60	0.5
* <i>Cenchrus ciliaris</i>	40	0.5
<i>Hibiscus burtonii</i>	30	0.2
<i>Cucumis maderaspatanus</i>	c	0.1
<i>Cleome viscosa</i>	30	0.1
<i>Enchylaena tomentosa</i>	25	0.1
<i>Enneapogon polyphyllus</i>	20	0.1
<i>Maireana planifolia</i>	20	0.1
<i>Sida platycalyx</i>	15	0.1

APPENDIX 9: FLORA AND VEGETATION SURVEY ENVIRONMENTAL DATA

Date:	4/5/11	Site:	7	Sampling Unit Type	quadrat
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Location:	Datum	Zone	Easting	Northing
	MGA94	50k	807149	7464775

Soils:	Soil texture	Soil Colour	Outcrop	Soil Comments
	sandy loam	red	-	

photo:	Topography	Aspect	Slope (o)
777	flat	n/a	0

Litter (%):	Logs	Twigs	Leaves	Bare Ground (%)
		2	3	15

Disturbance:	Years Since Fire	Level of Human Impact	Condition
	6	low	E

Vegetation Structure:	Strata	Upper	Mid	Lower
	Height (m)		3.5	.8
	% Cover		10	65

Observations	
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Field description of vegetation	
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Species	Ht (cm)	% Cover
<i>Triodia basedowii</i>	80	60
<i>Acacia ancistrocarpa</i>	200	25
<i>Corymbia deserticola</i>	350	1
* <i>Malvastrum americanum</i>	300	1
<i>Bonamia rosea</i>	20	1
<i>Rulingia luteiflora</i>	20	1
<i>Ptilotus exaltatus</i>	10	1
<i>Senna artemisioides</i> subsp. <i>oligo</i>	40	0.5
<i>Eremophila longifolia</i>	200	0.1
<i>Acacia dictyophleba</i>	100	0.1
<i>Scaevola parvifolia</i>	20	0.1
<i>Senna notabilis</i>	20	0.1
<i>Haloragis gossei</i> var. <i>gossei</i>	10	0.1

APPENDIX 9: FLORA AND VEGETATION SURVEY ENVIRONMENTAL DATA

Date:	4/5/11	Site:	8	Sampling Unit Type	quadrat
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Location:	Datum	Zone	Easting	Northing
	MGA94	50k	806815	7462426

Soils:	Soil texture	Soil Colour	Outcrop	Soil Comments
	loamy sand	red	-	

photo;	Topography	Aspect	Slope (o)
778	flat	n/a	0

Litter (%):	Logs	Twigs	Leaves	Bare Ground (%)
		2	3	15

Disturbance:	Years Since Fire	Level of Human Impact	Condition
	6	low	E

Vegetation Structure:	Strata	Upper	Mid	Lower
	Height (m)		2.5	.5
	% Cover		10	40

Observations	
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Field description of vegetation	
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Species	Ht (cm)	% Cover
<i>Triodia basedowii</i>	60	40
<i>Acacia ancistrocarpa</i>	250	25
* <i>Malvastrum americanum</i>	200	1
<i>Scaevola parvifolia</i>	30	1
<i>Keraudrenia velutina</i> subsp. <i>ellipt</i>	30	1
<i>Bonamia rosea</i>	20	1
<i>Acacia pachyacra</i>	250	0.5
<i>Eucalyptus gamophylla</i>	200	0.5
<i>Acacia pruinocarpa</i>	180	0.1
<i>Ptilotus obovatus</i>	50	0.1
<i>Maireana planifolia</i>	40	0.1
<i>Senna artemisioides</i> subsp. <i>oligo</i>	20	0.1
<i>Senna notabilis</i>	10	0.1
<i>Haloragis gossei</i> var. <i>gossei</i>	10	0.1
* <i>Portulaca oleracea</i>	5	0.1
<i>Eragrostis eriopoda</i>	2	0.1

APPENDIX 9: FLORA AND VEGETATION SURVEY ENVIRONMENTAL DATA

Date:	4/5/11	Site:	9	Sampling Unit Type	quadrat
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Location:	Datum	Zone	Easting	Northing
	MGA94	50k	806548	7455690

Soils:	Soil texture	Soil Colour	Outcrop	Soil Comments
	sandy loam	red	-	

photo;	Topography	Aspect	Slope (o)
779	flat	n/a	0

Litter (%):	Logs	Twigs	Leaves	Bare Ground (%)
	10	2	3	15

Disturbance:	Years Since Fire	Level of Human Impact	Condition
	6	low	VG

Vegetation Structure:	Strata	Upper	Mid	Lower
	Height (m)	7	1.5	.6
	% Cover	60	2	5

Observations	
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Field description of vegetation	regenerating mulga
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Species	Ht (cm)	% Cover
<i>Acacia aneura</i>	700	60
<i>Evolvulus alsinoides</i> var. <i>villosical;</i>	25	25
<i>Solanum lasiophyllum</i>	40	2
<i>Psyrax latifolia</i>	150	1
<i>Hakea lorea</i>	120	1
<i>Senna artemisioides</i> subsp. <i>helm:</i>	50	1
<i>Kennedia prorepens</i>	40	1
<i>Acacia pruinocarpa</i>	100	0.2
* <i>Malvastrum americanum</i>	30	0.2
<i>Duperreya commixta</i>	c	0.1
<i>Aristida inaequiglumis</i>	30	0.1
<i>Eremophila forrestii</i> subsp. <i>forres</i>	30	0.1
<i>Abutilon macrum</i>	30	0.1

APPENDIX 9: FLORA AND VEGETATION SURVEY ENVIRONMENTAL DATA

Date:	4/5/11	Site:	10	Sampling Unit Type	quadrat
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Location:	Datum	Zone	Easting	Northing
	MGA94	50k	805988	7452293

Soils:	Soil texture	Soil Colour	Outcrop	Soil Comments
	loamy sand	red	-	

photo;	Topography	Aspect	Slope (o)
780	flat	n/a	0

Litter (%):	Logs	Twigs	Leaves	Bare Ground (%)
		2	3	15

Disturbance:	Years Since Fire	Level of Human Impact	Condition
	6	low	E

Vegetation Structure:	Strata	Upper	Mid	Lower
	Height (m)		3	1
	% Cover		10	50

Observations	
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Field description of vegetation	
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Species	Ht (cm)	% Cover
<i>Triodia basedowii</i>	40	40
<i>Acacia pachyacra</i>	300	25
<i>Acacia pruinocarpa</i>	250	5
<i>Aristida inaequiglumis</i>	40	2
<i>Solanum sturtianum</i>	40	2
<i>Ptilotus astrolasius</i>	30	2
<i>Ptilotus exaltatus</i>	20	2
* <i>Malvastrum americanum</i>	300	1
<i>Solanum sturtianum</i>	50	1
<i>Senna artemisioides</i> subsp. <i>oligo</i>	50	0.2
<i>Solanum lasiophyllum</i>	30	0.1
<i>Paraneurachne muelleri</i>	30	0.1
<i>Scaevola parvifolia</i>	20	0.1
<i>Ptilotus helipteroides</i>	20	0.1
<i>Aristida contorta</i>	15	0.1
<i>Dysphania kalpari</i>	15	0.1

APPENDIX 9: FLORA AND VEGETATION SURVEY ENVIRONMENTAL DATA

Date:	5/5/11	Site:	11	Sampling Unit Type	quadrat
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Location:	Datum	Zone	Easting	Northing
	MGA94	50k	804297	7446012

Soils:	Soil texture	Soil Colour	Outcrop	Soil Comments
	loamy sand	red	-	

Geomorphology:	Topography	Aspect	Slope (o)
	flat	n/a	0

Litter (%):	Logs	Twigs	Leaves	Bare Ground (%)
		2	3	15

Disturbance:	Years Since Fire	Level of Human Impact	Condition
	6	low	E

Vegetation Structure:	Strata	Upper	Mid	Lower
	Height (m)		2	1
	% Cover		10	50

Observations	
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Field description of vegetation	
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Species	Ht (cm)	% Cover
<i>Triodia basedowii</i>	70	45
<i>Hakea lorea</i>	160	25
<i>Acacia ancistrocarpa</i>	150	6
<i>Triodia schinzii</i>	120	2
<i>Bonamia rosea</i>	30	2
* <i>Malvastrum americanum</i>	180	1
<i>Eucalyptus gamophylla</i>	180	1
<i>Kennedia prorepens</i>	40	1
<i>Rulingia luteiflora</i>	30	1
<i>Scaevola parvifolia</i>	25	1
<i>Acacia dictyophleba</i>	140	0.2
<i>Cymbopogon oblectus</i>	50	0.1
<i>Isotropis atropurpurea</i>	30	0.1
<i>Goodenia ?armitiana</i>	20	0.1
<i>Polygala isingii</i>	10	0.1

APPENDIX 9: FLORA AND VEGETATION SURVEY ENVIRONMENTAL DATA

Date:	5/5/11	Site:	12	Sampling Unit Type	quadrat
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Location:	Datum	Zone	Easting	Northing
	MGA94	50k	803400	7442914

Soils:	Soil texture	Soil Colour	Outcrop	Soil Comments
	sandy loam	red	-	

photo	Topography	Aspect	Slope (o)
782	flat	n/a	0

Litter (%):	Logs	Twigs	Leaves	Bare Ground (%)
		2	3	15

Disturbance:	Years Since Fire	Level of Human Impact	Condition
	6	low	E

Vegetation Structure:	Strata	Upper	Mid	Lower
	Height (m)		3	.8
	% Cover		5	45

Observations	
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Field description of vegetation	
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Species	Ht (cm)	% Cover
<i>Triodia basedowii</i>	60	35
<i>Bonamia rosea</i>	40	25
* <i>Malvastrum americanum</i>	250	3
<i>Newcastelia hexarrhena</i>	35	1
<i>Scaevola parvifolia</i>	30	1
<i>Dicrastylis cordifolia</i>	25	1
<i>Hakea chordophylla</i>	200	0.5
<i>Hakea lorea</i>	150	0.5
<i>Senna artemisioides</i> subsp. <i>oligo</i>	100	0.5
<i>Kennedia prorepens</i>	40	0.5
<i>Paraneurachne muelleri</i>	20	0.5
<i>Eremophila latrobei</i> subsp. <i>filifor</i>	180	0.2
<i>Solanum lasiophyllum</i>	40	0.2
<i>Ptilotus astrolasius</i>	30	0.2
<i>Haloragis gossei</i> var. <i>gossei</i>	10	0.2
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>	120	0.1
<i>Senna notabilis</i>	20	0.1
<i>Goodenia ?armitiana</i>	15	0.1
<i>Fimbristylis dichotoma</i>	15	0.1
<i>Eriachne aristidea</i>	15	0.1
<i>Polygala isingii</i>	10	0.1

APPENDIX 9: FLORA AND VEGETATION SURVEY ENVIRONMENTAL DATA

Date:	5/5/11	Site:	13	Sampling Unit Type	quadrat
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Location:	Datum	Zone	Easting	Northing
	MGA94	50k	801797	7439839

Soils:	Soil texture	Soil Colour	Outcrop	Soil Comments
	loamy sand	red	-	

photo	Topography	Aspect	Slope (o)
781	flat	n/a	0

Litter (%):	Logs	Twigs	Leaves	Bare Ground (%)
		2	3	15

Disturbance:	Years Since Fire	Level of Human Impact	Condition
	6	low	E

Vegetation Structure:	Strata	Upper	Mid	Lower
	Height (m)	3	2	1
	% Cover	5	10	45

Observations	
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Field description of vegetation	
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Species	Ht (cm)	% Cover
<i>Triodia basedowii</i>	80	40
<i>Senna glutinosa</i> subsp. <i>x leuressen</i>	150	25
<i>Eucalyptus gamophylla</i>	300	4
* <i>Malvastrum americanum</i>	200	4
<i>Acacia bivenosa</i>	170	2
<i>Hakea lorea</i>	200	1
<i>Senna artemisioides</i> subsp. <i>oligo</i>	50	1
<i>Ptilotus exaltatus</i>	30	1
<i>Eragrostis eriopoda</i>	30	1
<i>Aristida inaequiglumis</i>	30	1
<i>Kennedia prorepens</i>	30	1
<i>Paraneurachne muelleri</i>	20	1
<i>Scaevola parvifolia</i>	20	1
<i>Acacia dictyophleba</i>	100	0.1
<i>Ptilotus astrolasius</i>	30	0.1
<i>Indigofera monophylla</i>	30	0.1
<i>Bonamia rosea</i>	20	0.1
<i>Hibiscus burtonii</i>	20	0.1
<i>Gomphrena kanisii</i>	20	0.1
<i>Dicrastylis cordifolia</i>	20	0.1
<i>Ptilotus helipteroides</i>	20	0.1
<i>Hibiscus brachychlaenus</i>	20	0.1
<i>Aristida contorta</i>	15	0.1
<i>Fimbristylis dichotoma</i>	15	0.1
* <i>Portulaca oleracea</i>	5	0.1
<i>Haloragis gossei</i> var. <i>gossei</i>	5	0.1

APPENDIX 9: FLORA AND VEGETATION SURVEY ENVIRONMENTAL DATA

Date:	5/5/11	Site:	14	Sampling Unit Type	quadrat
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Location:	Datum	Zone	Easting	Northing
	MGA94		803310	7502665

Soils:	Soil texture	Soil Colour	Outcrop	Soil Comments
	loam	brown	-	90pc bif gravel

photo	Topography	Aspect	Slope (o)
783	flat	n/a	0

Litter (%):	Logs	Twigs	Leaves	Bare Ground (%)
		2	3	15

Disturbance:	Years Since Fire	Level of Human Impact	Condition
	6	low	VG

Vegetation Structure:	Strata	Upper	Mid	Lower
	Height (m)		4	1
	% Cover		3	10

Observations	cattle activity
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Field description of vegetation	
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Species	Ht (cm)	% Cover
<i>Salsola australis</i>	40	25
<i>Acacia synchronicia</i>	350	3
<i>Senna sericea</i>	50	2
* <i>Portulaca oleracea</i>	5	2
<i>Eremophila cuneifolia</i>	50	1
<i>Dysphania rhadinostachya</i> subsp	30	1
<i>Sclerolaena cuneata</i>	20	1
* <i>Malvastrum americanum</i>	15	1
<i>Sporobolus australasicus</i>	15	1
<i>Enneapogon polyphyllus</i>	15	1
<i>Trianthema triquetra</i>	10	1
<i>Polycarpaea corymbosa</i> var. <i>cory.</i>	10	1
<i>Maireana pyramidata</i>	60	0.5
<i>Sclerolaena deserticola</i>	15	0.5
<i>Lepidium phlebopetalum</i>	10	0.1
<i>Polycarpaea holtzei</i>	10	0.1
<i>Brachyachne prostrata</i>	5	0.1
<i>Boerhavia coccinea</i>	5	0.1

APPENDIX 9: FLORA AND VEGETATION SURVEY ENVIRONMENTAL DATA

Date:	5/5/11	Site:	15	Sampling Unit Type	quadrat
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Location:	Datum	Zone	Easting	Northing
	MGA94	50k	800164	7504135

Soils:	Soil texture	Soil Colour	Outcrop	Soil Comments
	clay loam	red	-	bif/chert gravel 80pc

photo	Topography	Aspect	Slope (o)
784	flat	n/a	0

Litter (%):	Logs	Twigs	Leaves	Bare Ground (%)
		2	3	15

Disturbance:	Years Since Fire	Level of Human Impact	Condition
	6	low	G

Vegetation Structure:	Strata	Upper	Mid	Lower
	Height (m)	10	3.5	1
	% Cover	20	5	20

Observations	
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Field description of vegetation	
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Species	Ht (cm)	% Cover
<i>Acacia synchronicia</i>	350	25
<i>Acacia aneura</i>	1000	20
<i>Chrysopogon fallax</i>	40	3
* <i>Cenchrus ciliaris</i>	20	3
<i>Sporobolus australasicus</i>	15	3
<i>Corchorus tridens</i>	10	2
* <i>Portulaca oleracea</i>	5	2
* <i>Malvastrum americanum</i>	250	1
<i>Eremophila cuneifolia</i>	50	1
<i>Sclerolaena cuneata</i>	20	1
<i>Pterocaulon</i> sp.	20	1
<i>Trianthema triquetra</i>	10	1
<i>Dysphania rhadinostachya</i> subsp	20	0.5
<i>Dactyloctenium radulans</i>	15	0.5
<i>Maireana pyramidata</i>	50	0.2
<i>Senna sericea</i>	50	0.2
<i>Enneapogon polyphyllus</i>	15	0.2
<i>Evolvulus alsinoides</i> var. <i>villosical</i>	15	0.2
<i>Goodenia prostrata</i>	5	0.2
* <i>Cucumis melo</i> subsp. <i>agrestis</i>	c	0.1
<i>Ptilotus obovatus</i>	40	0.1
<i>Cleome viscosa</i>	35	0.1
<i>Enteropogon ramosus</i>	30	0.1
<i>Nicotiana occidentalis</i> subsp. <i>obli</i>	30	0.1
<i>Gomphrena affinis</i> subsp. <i>pilbare</i>	20	0.1
<i>Calotis porphyroglossa</i>	15	0.1
<i>Polygala isingii</i>	10	0.1
<i>Polycarpaea corymbosa</i> var. <i>corym</i>	10	0.1
<i>Operculina aequisejala</i>	10	0.1

APPENDIX 9: FLORA AND VEGETATION SURVEY ENVIRONMENTAL DATA

Date:	5/5/11	Site:	16	Sampling Unit Type	quadrat
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Location:	Datum	Zone	Easting	Northing
	MGA94	50k	801605	7500530

Soils:	Soil texture	Soil Colour	Outcrop	Soil Comments
	clay	red	-	

photo	Topography	Aspect	Slope (o)
785	flat	n/a	0

Litter (%):	Logs	Twigs	Leaves	Bare Ground (%)
		2	3	15

Disturbance:	Years Since Fire	Level of Human Impact	Condition
	6	low	VG

Vegetation Structure:	Strata	Upper	Mid	Lower
	Height (m)	9	2.5	1
	% Cover	5	15	60

Observations	low lying poorly drained
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Field description of vegetation	
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Species	Ht (cm)	% Cover
<i>Melaleuca glomerata</i>	200	25
<i>Acacia synchronicia</i>	100	20
<i>Atriplex amnicola</i>	70	20
<i>Eucalyptus victrix</i>	900	5
<i>Tecticornia disarticulata</i>	50	5
* <i>Malvastrum americanum</i>	30	2
<i>Rostellularia adscendens</i> var. <i>clen</i>	30	2
<i>Corchorus tridens</i>	10	2
<i>Muehlenbeckia florulenta</i>	70	1
<i>Cullen cinereum</i>	20	1
<i>Enteropogon ramosus</i>	30	0.5
<i>Dichanthium sericeum</i> subsp. <i>hur</i>	20	0.5
<i>Eragrostis tenellula</i>	15	0.5
<i>Marsilea exarata</i>	10	0.5
<i>Pterocaulon</i> sp.	10	0.2
<i>Lotus cruentus</i>	10	0.2
<i>Ipomoea coptica</i>	c	0.1
<i>Sclerolaena bicornis</i>	30	0.1
<i>Neptunia dimorphantha</i>	15	0.1
<i>Eragrostis falcata</i>	10	0.1
<i>Cressa australis</i>	10	0.1
<i>Basilicum polystachyon</i>	10	0.1
<i>Euphorbia drummondii</i> subsp. <i>dr</i>	5	0.1

APPENDIX 9: FLORA AND VEGETATION SURVEY ENVIRONMENTAL DATA

Date:	5/5/11	Site:	17	Sampling Unit Type	80x15m linear strip along bank
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Location:	Datum	Zone	Easting	Northing
	MGA94	50k	801228	7500236

Soils:	Soil texture	Soil Colour	Outcrop	Soil Comments
	clay	red	-	

photo	Topography	Aspect	Slope (o)
786	flat	n/a	0

Litter (%):	Logs	Twigs	Leaves	Bare Ground (%)
		2	3	15

Disturbance:	Years Since Fire	Level of Human Impact	Condition
	6	low	G

Vegetation Structure:	Strata	Upper	Mid	Lower
	Height (m)		4	1.5
	% Cover		20	60

Observations	trampling from cattle	eucalyptus trees dead
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Field description of vegetation	
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Species	Ht (cm)	% Cover
<i>Tecticornia disarticulata</i>	50	25
<i>Melaleuca glomerata</i>	350	20
<i>Cullen cinereum</i>	20	20
<i>Muellerolimon salicorniaceum</i>	50	15
* <i>Malvastrum americanum</i>	50	10
<i>Atriplex amnicola</i>	60	5
<i>Nicotiana rosulata</i> subsp. <i>rosulata</i>	30	5
<i>Cyperus bifax</i>	20	5
<i>Cressa australis</i>	15	2
<i>Alternanthera nodiflora</i>	20	0.5
<i>Samolus repens</i> var. <i>floribundus</i>	40	0.2
<i>Eragrostis tenellula</i>	15	0.2
* <i>Portulaca oleracea</i>	5	0.2
<i>Boerhavia burbidgeana</i>	5	0.2
* <i>Cucumis melo</i> subsp. <i>agrestis</i>	c	0.1
* <i>Parkinsonia aculeata</i>	180	0.1
<i>Cullen cinereum</i>	20	0.1
<i>Rostellularia adscendens</i> var. <i>clen</i>	15	0.1

APPENDIX 9: FLORA AND VEGETATION SURVEY ENVIRONMENTAL DATA

Date:	5/5/11	Site:	18	Sampling Unit Type	quadrat
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Location:	Datum	Zone	Easting	Northing
	MGA94	50k	797707	7508755

Soils:	Soil texture	Soil Colour	Outcrop	Soil Comments
	clay loam	red	-	bif gravel 70pc

photo	Topography	Aspect	Slope (o)
787	flat	n/a	0

Litter (%):	Logs	Twigs	Leaves	Bare Ground (%)
		2	3	15

Disturbance:	Years Since Fire	Level of Human Impact	Condition
	6	2	low

Vegetation Structure:	Strata	Upper	Mid	Lower
	Height (m)	8	1.5	1
	% Cover	10	5	10

Observations	
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Field description of vegetation	
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Species	Ht (cm)	% Cover
<i>Enneapogon polyphyllus</i>	15	25
<i>Acacia aneura</i>	800	10
<i>Senna artemisioides</i> subsp. <i>oligo</i>	100	2
<i>Salsola australis</i>	30	1
<i>Polycarpaea corymbosa</i> var. <i>cory</i>	15	1
* <i>Portulaca oleracea</i>	5	1
* <i>Cenchrus ciliaris</i>	25	0.5
<i>Dysphania rhadinostachya</i> subsp	20	0.5
<i>Sporobolus australasicus</i>	15	0.5
<i>Dactyloctenium radulans</i>	10	0.5
<i>Chrysopogon fallax</i>	40	0.2
<i>Enteropogon ramosus</i>	30	0.2
<i>Gomphrena kanisii</i>	20	0.2
* <i>Malvastrum americanum</i>	15	0.2
<i>Pterocaulon</i> sp.	15	0.2
<i>Sclerolaena deserticola</i>	15	0.2
<i>Corchorus tridens</i>	5	0.2
<i>Ptilotus auriculifolius</i>	20	0.1
<i>Dysphania kalpari</i>	15	0.1
<i>Ptilotus gomphrenoides</i>	15	0.1
<i>Brachyachne prostrata</i>	10	0.1
<i>Calotis porphyroglossa</i>	10	0.1
<i>Eriachne pulchella</i> subsp. <i>pulchel</i>	10	0.1
<i>Fimbristylis</i> ?sp. K Kimberley Flor	10	0.1
<i>Calotis hispidula</i>	10	0.1
<i>Goodenia prostrata</i>	5	0.1
<i>Polycarpaea holtzei</i>	5	0.1
<i>Ptilotus aervoides</i>	5	0.1
<i>Tribulus astrocarpus</i>	5	0.1
<i>Euphorbia australis</i>	5	0.1

APPENDIX 9: FLORA AND VEGETATION SURVEY ENVIRONMENTAL DATA

Date:	6/5/11	Site:	19	Sampling Unit Type	quadrat
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Location:	Datum	Zone	Easting	Northing
	MGA94	50k	798064	7510224

Soils:	Soil texture	Soil Colour	Outcrop	Soil Comments
	clay	brown/red	-	

photo	Topography	Aspect	Slope (o)
788	flat	n/a	0

Litter (%):	Logs	Twigs	Leaves	Bare Ground (%)
		2	3	15

Disturbance:	Years Since Fire	Level of Human Impact	Condition
	6	low	E

Vegetation Structure:	Strata	Upper	Mid	Lower
	Height (m)	7	2	.5
	% Cover	20	5	5

Observations	
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Field description of vegetation	
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Species	Ht (cm)	% Cover
<i>Acacia tetragonophylla</i>	170	25
<i>Acacia aneura</i>	700	20
<i>Senna sericea</i>	70	1
<i>Cleome viscosa</i>	50	1
<i>Eremophila lanceolata</i>	40	1
* <i>Malvastrum americanum</i>	20	1
<i>Enneapogon polyphyllus</i>	15	1
<i>Acacia synchronicia</i>	130	0.5
<i>Chrysopogon fallax</i>	80	0.5
<i>Ipomoea calobra</i>	10	0.5
<i>Aristida contorta</i>	10	0.5
* <i>Portulaca oleracea</i>	5	0.5
<i>Salsola australis</i>	30	0.2
<i>Enteropogon ramosus</i>	20	0.2
<i>Sporobolus australasicus</i>	15	0.2
<i>Polycarpaea corymbosa</i> var. <i>coryi</i>	15	0.2
<i>Tragus australianus</i>	10	0.2
<i>Goodenia prostrata</i>	5	0.2
<i>Senna artemisioides</i> subsp. <i>helms</i>	120	0.1
<i>Ptilotus auriculifolius</i>	30	0.1
<i>Pterocaulon</i> sp.	20	0.1
<i>Gomphrena affinis</i> subsp. <i>pilbare</i>	20	0.1
<i>Calotis porphyroglossa</i>	10	0.1
<i>Tephrosia clementii</i>	10	0.1
<i>Corchorus tridens</i>	10	0.1
<i>Ptilotus aervoides</i>	5	0.1
<i>Fimbristylis</i> ?sp. K Kimberley Flor	5	0.1
<i>Polycarpaea holtzei</i>	5	0.1
<i>Tribulus astrocarpus</i>	5	0.1
<i>Boerhavia coccinea</i>	5	0.1
<i>Euphorbia australis</i>	5	0.1

APPENDIX 9: FLORA AND VEGETATION SURVEY ENVIRONMENTAL DATA

Date:	6/5/11	Site:	20	Sampling Unit Type	quadrat
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Location:	Datum	Zone	Easting	Northing
	MGA94	50k	796802	7511100

Soils:	Soil texture	Soil Colour	Outcrop	Soil Comments
	clay/loam	red	-	bif gravel 80pc

photo	Topography	Aspect	Slope (o)
789	flat	n/a	0

Litter (%):	Logs	Twigs	Leaves	Bare Ground (%)
		2	3	15

Disturbance:	Years Since Fire	Level of Human Impact	Condition
	6	low	VG

Vegetation Structure:	Strata	Upper	Mid	Lower
	Height (m)	8		.5
	% Cover	60		15

Observations	indistinct braided channels
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Field description of vegetation	
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Species	Ht (cm)	% Cover
<i>Acacia ?macraneura</i> ms	8	25
<i>Acacia rhodophloia</i>	6	20
<i>Enteropogon ramosus</i>	30	1
<i>Dysphania cristata</i>	30	1
<i>Dysphania rhadinostachya</i> subsp	25	1
<i>Enneapogon polyphyllus</i>	20	1
<i>Amaranthus interruptus</i>	20	1
<i>Aristida contorta</i>	16	1
<i>Pterocaulon</i> sp.	10	1
* <i>Portulaca oleracea</i>	5	1
<i>Polycarpaea corymbosa</i> var. <i>coryi</i>	10	0.5
<i>Bulbostylis barbata</i>	10	0.5
* <i>Malvastrum americanum</i>	40	0.2
<i>Eragrostis leptocarpa</i>	40	0.2
<i>Dichanthium sericeum</i> subsp. <i>hur</i>	15	0.2
<i>Boerhavia coccinea</i>	10	0.2
<i>Hibiscus sturtii</i> var. <i>campylochlan</i>	50	0.1
<i>Evolvulus alsinoides</i> var. <i>villosical</i>	20	0.1
<i>Goodenia nuda</i>	15	0.1
<i>Gomphrena affinis</i> subsp. <i>pilbare</i>	15	0.1
<i>Perotis rara</i>	10	0.1
* <i>Cucumis melo</i> subsp. <i>agrestis</i>	10	0.1
<i>Calotis porphyroglossa</i>	10	0.1
<i>Tephrosia clementii</i>	10	0.1
<i>Brachyachne prostrata</i>	5	0.1
<i>Goodenia prostrata</i>	5	0.1
<i>Euphorbia australis</i>	5	0.1
<i>Tribulus astrocarpus</i>	5	0.1
<i>Synaptantha tillaeacea</i> var. <i>tillaei</i>	5	0.1

APPENDIX 9: FLORA AND VEGETATION SURVEY ENVIRONMENTAL DATA

Date:	6/5/11	Site:	21	Sampling Unit Type	quadrat
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Location:	Datum	Zone	Easting	Northing
	MGA94	50k	795104	7511075

Soils:	Soil texture	Soil Colour	Outcrop	Soil Comments
	loam	red	-	bif gravel 30pc

photo	Topography	Aspect	Slope (o)
790	flat	n/a	0

Litter (%):	Logs	Twigs	Leaves	Bare Ground (%)
		2	3	15

Disturbance:	Years Since Fire	Level of Human Impact	Condition
	6	low	VG

Vegetation Structure:	Strata	Upper	Mid	Lower
	Height (m)	4	1.5	.5
	% Cover	5	20	15

Observations	drill pad nearby
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Field description of vegetation	
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Species	Ht (cm)	% Cover
<i>Senna artemisioides</i> subsp. <i>oligo</i>	150	25
<i>Senna sericea</i>	140	10
<i>Acacia synchronicia</i>	350	5
<i>Ptilotus gomphrenoides</i>	10	2
<i>Corchorus tridens</i>	5	2
* <i>Malvastrum americanum</i>	100	1
<i>Cleome viscosa</i>	30	1
<i>Sporobolus australasicus</i>	20	1
<i>Enteropogon ramosus</i>	20	1
<i>Aristida contorta</i>	10	0.5
<i>Solanum lasiophyllum</i>	40	0.2
<i>Salsola australis</i>	30	0.2
<i>Dichanthium sericeum</i> subsp. <i>hur</i>	20	0.2
<i>Tephrosia clementii</i>	10	0.2
<i>Enneapogon polyphyllus</i>	10	0.2
<i>Boerhavia burbidgeana</i>	5	0.2
* <i>Portulaca oleracea</i>	5	0.2
<i>Aristida inaequiglumis</i>	40	0.1
<i>Dysphania rhadinostachya</i> subsp	20	0.1
<i>Goodenia muelleriana</i>	20	0.1
<i>Enneapogon caerulescens</i>	20	0.1
<i>Eremophila lanceolata</i>	20	0.1
<i>Eragrostis setifolia</i>	20	0.1
<i>Cullen cinereum</i>	15	0.1
<i>Ipomoea polymorpha</i>	15	0.1
<i>Neptunia dimorphantha</i>	10	0.1
<i>Trianthema triquetra</i>	5	0.1
<i>Tribulus astrocarpus</i>	5	0.1
<i>Tribulus cistoides</i>	5	0.1
<i>Euphorbia drummondii</i> subsp. <i>Dr</i>	2	0.1

APPENDIX 9: FLORA AND VEGETATION SURVEY ENVIRONMENTAL DATA

Date:	6/5/11	Site:	22	Sampling Unit Type	quadrat
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Location:	Datum	Zone	Easting	Northing
	MGA94	50k	793879	7518134

Soils:	Soil texture	Soil Colour	Outcrop	Soil Comments
	loam	brown/red	-	

photo	Topography	Aspect	Slope (o)
791	flat	n/a	0

Litter (%):	Logs	Twigs	Leaves	Bare Ground (%)
		2	3	15

Disturbance:	Years Since Fire	Level of Human Impact	Condition
	6	low	P

Vegetation Structure:	Strata	Upper	Mid	Lower
	Height (m)	10	3	.8
	% Cover	10	10	60

Observations	
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Field description of vegetation	
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Species	Ht (cm)	% Cover
<i>Acacia coriacea</i> subsp. <i>pendens</i>	1000	25
* <i>Cenchrus ciliaris</i>	40	25
* <i>Cenchrus setiger</i>	40	25
<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>	200	5
<i>Corymbia hamersleyana</i>	1000	4
<i>Acacia tetragonophylla</i>	160	2
<i>Sporobolus australasicus</i>	15	2
<i>Ipomoea muelleri</i>	10	2
* <i>Malvastrum americanum</i>	900	1
* <i>Citrullus colocynthis</i>	15	1
<i>Corchorus tridens</i>	5	1
<i>Acacia synchronicia</i>	350	0.5
<i>Dysphania kalpari</i>	15	0.2
<i>Acacia pruinocarpa</i>	120	0.1
* <i>Aerva javanica</i>	60	0.1
<i>Evolvulus alsinoides</i> var. <i>villosicaly</i>	15	0.1
<i>Streptoglossa odora</i>	10	0.1

APPENDIX 9: FLORA AND VEGETATION SURVEY ENVIRONMENTAL DATA

Date:	6/5/11	Site:	23	Sampling Unit Type	quadrat
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Location:	Datum	Zone	Easting	Northing
	MGA94	50k	794061	7516454

Soils:	Soil texture	Soil Colour	Outcrop	Soil Comments
	clay/loam	red/brown	-	

photo	Topography	Aspect	Slope (o)
792	flat	n/a	0

Litter (%):	Logs	Twigs	Leaves	Bare Ground (%)
		2	3	15

Disturbance:	Years Since Fire	Level of Human Impact	Condition
	6	low	G

Vegetation Structure:	Strata	Upper	Mid	Lower
	Height (m)		4	1
	% Cover		30	45

Observations	
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Field description of vegetation	
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Species	Ht (cm)	% Cover
<i>Acacia synchronicia</i>	400	30
<i>Eucalyptus victrix</i>	900	25
* <i>Malvastrum americanum</i>	30	15
* <i>Cenchrus setiger</i>	30	15
<i>Sporobolus australasicus</i>	20	10
<i>Trianthema triquetra</i>	5	1
<i>Rhagodia eremaea</i>	50	0.1
<i>Dactyloctenium radulans</i>	15	0.1
<i>Brachyachne prostrata</i>	10	0.1
* <i>Portulaca oleracea</i>	5	0.1

APPENDIX 9: FLORA AND VEGETATION SURVEY ENVIRONMENTAL DATA

Date:	6/5/11	Site:	24	Sampling Unit Type	quadrat
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Location:	Datum	Zone	Easting	Northing
	MGA94	50k	793889	7515136

Soils:	Soil texture	Soil Colour	Outcrop	Soil Comments
	clay	brown	-	

photo	Topography	Aspect	Slope (o)
793	flat	n/a	0

Litter (%):	Logs	Twigs	Leaves	Bare Ground (%)
		2	3	15

Disturbance:	Years Since Fire	Level of Human Impact	Condition
	6	low	P

Vegetation Structure:	Strata	Upper	Mid	Lower
	Height (m)	12	2.5	1
	% Cover	10	10	90

Observations	
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Field description of vegetation	
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Species	Ht (cm)	% Cover
* <i>Cenchrus setiger</i>	70	80
<i>Acacia coriacea</i> subsp. <i>pendens</i>	800	25
* <i>Malvastrum americanum</i>	250	10
<i>Eucalyptus victrix</i>	1100	5
* <i>Aerva javanica</i>	60	3
* <i>Cenchrus ciliaris</i>	70	2
<i>Sporobolus australasicus</i>	15	1
<i>Lotus cruentus</i>	10	1
<i>Cucumis maderaspatanus</i>	c	0.2
<i>Dysphania rhadinostachya</i> subsp	40	0.2
<i>Cleome viscosa</i>	70	0.1
<i>Zaleya galericulata</i> subsp. <i>galeric</i>	50	0.1
<i>Enneapogon polyphyllus</i>	20	0.1
<i>Euphorbia australis</i>	15	0.1
* <i>Citrullus colocynthis</i>	10	0.1

APPENDIX 9: FLORA AND VEGETATION SURVEY ENVIRONMENTAL DATA

Date:	6/5/11	Site:	25	Sampling Unit Type	quadrat
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Location:	Datum	Zone	Easting	Northing
	MGA94	50k	794557	7519374

Soils:	Soil texture	Soil Colour	Outcrop	Soil Comments
	sandy loam	red/brown	-	bif gravel 95pc

photo	Topography	Aspect	Slope (o)
794	flat	se	3

Litter (%):	Logs	Twigs	Leaves	Bare Ground (%)
		2	3	15

Disturbance:	Years Since Fire	Level of Human Impact	Condition
	6	low	E

Vegetation Structure:	Strata	Upper	Mid	Lower
	Height (m)			1
	% Cover			45

Observations	gravelly hill
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Field description of vegetation	
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Species	Ht (cm)	% Cover
<i>Triodia</i> sp. Shovelanna Hill (S. Va)	20	25
<i>Ptilotus calostachyus</i>	100	15
* <i>Malvastrum americanum</i>	10	1
<i>Fimbristylis simulans</i>	10	1
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	150	0.5
<i>Ptilotus auriculifolius</i>	50	0.5
<i>Senna glutinosa</i> subsp. <i>x leurssen</i>	150	0.1
<i>Ptilotus exaltatus</i>	30	0.1
<i>Evolvulus alsinoides</i> var. <i>villosical;</i>	10	0.1
* <i>Portulaca oleracea</i>	5	0.1



APPENDIX 10 – THREATENED AND PRIORITY ECOLOGICAL COMMUNITY LISTINGS

List of Threatened Ecological Communities on the Department of Environment and Conservation's Threatened Ecological Community (TEC) Database endorsed by the Minister for the Environment

Species & Communities Branch (Correct to August 2010)

Community identifier	Community name	General Location (IBRA Regions)	Category of Threat and criteria met under WA criteria	Category under Commonwealth <i>Environment Protection and Biodiversity Conservation Act 1999</i>
<u>1. SCP20a</u>	Banksia attenuata woodland over species rich dense shrublands	Swan Coastal Plain	EN B) ii)	EN
<u>2. TOOLIBIN</u>	Perched wetlands of the Wheatbelt region with extensive stands of living Swamp Sheoak (<i>Casuarina obesa</i>) and Paperbark (<i>Melaleuca strobophylla</i>) across the lake floor.	Avon Wheatbelt	CR A) i); CR A) 11); CR C)	EN
<u>3. SCP10b</u>	Shrublands on southern Swan Coastal Plain Ironstones (Busselton area)	Swan Coastal Plain	CR B) ii)	EN
<u>4. SCP19</u>	Sedgeland in Holocene dune swales of the southern Swan Coastal Plain	Swan Coastal Plain	CR B) ii)	EN
<u>5. Clifton-microbialite</u>	Stromatolite like freshwater microbialite community of coastal brackish lakes	Swan Coastal Plain	CR B) i); CR B) ii)	CR
<u>6. Richmond-microbial</u>	Stromatolite like microbialite community of coastal freshwater lakes	Swan Coastal Plain	CR B) i); CR B) ii)	EN
<u>7. Mound Springs SCP</u>	Communities of Tumulus Springs (Organic Mound Springs, Swan Coastal Plain)	Swan Coastal Plain	CR A) i); CR A) ii); CR B) i); CR B) ii)	EN
<u>8. SCP20c</u>	Shrublands and woodlands of the eastern side of the Swan Coastal Plain	Swan Coastal Plain	CR B) ii)	EN
<u>10. NTHIRON</u>	Perth to Gingin Ironstone Association	Swan Coastal Plain	CR A) ii); CR B) i); CR C)	EN
<u>11. MUCHEA LIMESTONE</u>	Shrublands and woodlands on Muchea Limestone	Swan Coastal Plain	EN B) ii)	EN
<u>12. Augusta-microbial</u>	Rimstone Pools and Cave Structures Formed by Microbial Activity on Marine Shorelines	Warren	EN B) ii)	
<u>13. SCP30a</u>	Callitris preissii (or Melaleuca lanceolata) forests and woodlands, Swan Coastal Plain	Swan Coastal Plain	VU B)	
<u>14. SCP18</u>	Shrublands on calcareous silts of the Swan Coastal Plain	Swan Coastal Plain	VU B)	
<u>15. SCP02</u>	Southern wet shrublands, Swan Coastal Plain	Swan Coastal Plain	EN B) ii)	

<u>16. SCP3a</u>	<i>Eucalyptus calophylla</i> - <i>Kingia australis</i> woodlands on heavy soils, Swan Coastal Plain	Swan Coastal Plain	CR B) ii)	EN
<u>17. SCP3c</u>	<i>Eucalyptus calophylla</i> - <i>Xanthorrhoea preissii</i> woodlands and shrublands, Swan Coastal Plain	Swan Coastal Plain	CR B) ii)	EN
<u>18. Thetis-microbialite</u>	Stromatolite community of stratified hypersaline coastal lakes	Geraldton Sandplain	VU B)	
<u>19. SCOTT IRONSTONE</u>	Scott River Ironstone Association	Warren	EN B) i), EN B) ii)	
<u>20. SCP20b</u>	<i>Banksia attenuata</i> and/or <i>Eucalyptus marginata</i> woodlands of the eastern side of the Swan Coastal Plain	Swan Coastal Plain	EN B) i), EN B) ii)	
<u>21. SCP15</u>	Forests and woodlands of deep seasonal wetlands of the Swan Coastal Plain	Swan Coastal Plain	VU C)	
<u>22. SCP1b</u>	<i>Eucalyptus calophylla</i> woodlands on heavy soils of the southern Swan Coastal Plain	Swan Coastal Plain	VU B)	
<u>23. SCP3b</u>	<i>Eucalyptus calophylla</i> - <i>Eucalyptus marginata</i> woodlands on sandy clay soils of the southern Swan Coastal Plain	Swan Coastal Plain	VU B)	
<u>24. CAVES SCP01</u>	Aquatic Root Mat Community Number 1 of Caves of the Swan Coastal Plain	Swan Coastal Plain	CR B) i), CR B) ii)	EN
<u>25. CAVES LEEUWIN01</u>	Aquatic Root Mat Community Number 1 of Caves of the Leeuwin Naturaliste Ridge	Warren	CR B) i), CR B) ii)	EN
<u>26. CAVES LEEUWIN02</u>	Aquatic Root Mat Community Number 2 of Caves of the Leeuwin Naturaliste Ridge	Warren	CR B) i), CR B) ii)	EN
<u>27. CAVES LEEUWIN03</u>	Aquatic Root Mat Community Number 3 of Caves of the Leeuwin Naturaliste Ridge	Warren	CR B) i), CR B) ii)	EN
<u>28. CAVES LEEUWIN04</u>	Aquatic Root Mat Community Number 4 of Caves of the Leeuwin Naturaliste Ridge	Warren	CR B) i), CR B) ii)	EN
<u>29. MONTANE</u>	Montane Thicket of the eastern Stirling Range	Esperance Sandplain	CR B) ii)	EN
<u>30. MEEULUP GRANITES</u>	<i>Calothamnus graniticus</i> heaths on south west coastal granites	Warren/Jairrah Forest	VU B)	
<u>32. SCP07</u>	Herb rich saline shrublands in clay pans	Swan Coastal Plain	VU B)	
<u>33. SCP08</u>	Herb rich shrublands in clay pans	Swan Coastal Plain	VU B)	
<u>34. SCP09</u>	Dense shrublands on clay flats	Swan Coastal Plain	VU B)	
<u>35. SCP10a</u>	Shrublands on dry clay flats	Swan Coastal Plain	EN B) ii)	
<u>38. Morilla swamp</u>	Perched fresh-water wetlands of the northern Wheatbelt dominated by extensive stands of living <i>Eucalyptus camaldulensis</i> (River Red Gum) across the lake floor.	Avon Wheatbelt	PD B)	

<u>39. Camerons</u>	Camerons Cave Troglitic Community	Carnarvon Basin	CR B) i), CR B) ii)
<u>40. Bryde</u>	Unwooded freshwater wetlands of the southern Wheatbelt of Western Australia, dominated by <i>Muehlenbeckia horrida</i> subsp. <i>abdita</i> and <i>Tecticornia verrucosa</i> across the lake floor	Avon Wheatbelt	CR B) i), CR B) ii)
<u>41. Bundera</u>	Cape Range Remipede Community	Carnarvon Basin	CR B) ii)
<u>42. Greenough River Flats</u>	<i>Acacia rostellifera</i> low forest with scattered <i>Eucalyptus camaldulensis</i> on Greenough Alluvial Flats.	Geraldton Sandplain	CR C)
<u>44. Roebuck Bay mudflats</u>	Species-rich faunal community of the intertidal mudflats of Roebuck Bay	Kimberley	VU B)
<u>46. Themeda Grasslands</u>	Themeda grasslands on cracking clays (Hammersley Station, Pilbara). Grassland plains dominated by the perennial Themeda (kangaroo grass) and many annual herbs and grasses.	Pilbara	VU A)
<u>49. Bentonite Lakes</u>	Herbaceous plant assemblages on Bentonite Lakes	Avon Wheatbelt	EN B) iii)
<u>55. Coomberdale chert hills</u>	Heath dominated by one or more of <i>Regelia megacephala</i> , <i>Kunzea praestans</i> and <i>Allocasuarina campestris</i> on ridges and slopes of the chert hills of the Coomberdale floristic region.	Avon Wheatbelt	EN B) ii)
<u>56. Billeranga System</u>	Plant assemblages of the Billeranga System (Beard 1976): <i>Melaleuca filifolia</i> – <i>Allocasuarina campestris</i> thicket on clay sands over laterite on slopes and ridges; open mallee over mixed scrub on yellow sand over gravel on western slopes; <i>Eucalyptus loxophleba</i> woodland over sandy clay loam or rocky clay on lower slopes and creeklines; and mixed scrub or scrub dominated by <i>Dodonaea inaequifolia</i> over red/brown loamy soils on the slopes and ridges	Avon Wheatbelt	VU A), VU B)
<u>59. Koolanooka System</u>	Plant assemblages of the Koolanooka System (Beard 1976): <i>Allocasuarina campestris</i> scrub over red loam on hill slopes; Shrubs and emergent mallees on shallow loam red over massive ironstone on steep rocky slopes; <i>Eucalyptus ebbanoensis</i> subsp. <i>ebbanoensis</i> mallee and <i>Acacia</i> sp. scrub with scattered <i>Allocasuarina huegeliana</i> over red loam and ironstone on the upper slopes and summits; <i>Eucalyptus loxophleba</i> woodland over scrub on the footslopes; and mixed <i>Acacia</i> sp. scrub on granite	Avon Wheatbelt	VU A), VU B)

<u>60. Moonagin System</u>	Plant assemblages of the Moonagin System (Beard 1976): Acacia scrub on red soil on hills; Acacia scrub with scattered <i>Eucalyptus loxophleba</i> and <i>Eucalyptus oleosa</i> on red loam flats on the foothills.	Avon Wheatbelt	VU A), VU B)
<u>62. Limestone ridges (SCP 26a)</u>	<i>Melaleuca huegelii</i> - <i>Melaleuca acerosa</i> shrublands on limestone ridges (Gibson <i>et al.</i> 1994 type 26a)	Swan Coastal Plain	EN B) iii)
<u>63. Irwin River Clay Flats</u>	Clay flats assemblages of the Irwin River: Sedgeland and grasslands with patches of <i>Eucalyptus loxophleba</i> and scattered <i>E. camaldulensis</i> over <i>Acacia acuminata</i> and <i>A. roseo/fera</i> shrubland on brown sand/loam over clay flats of the Irwin River.	Avon Wheatbelt	PD A), PD B)
<u>67. Monsoon thickets</u>	Monsoon (vine) thickets on coastal sand dunes of Dampier Peninsula	West Kimberley, Dampierland Bioregion	VU C)
<u>70. Mt Lindesay</u>	Mt Lindesay – Little Lindesay Vegetation Complex	Frankland District, Warren Region	EN B) ii)
<u>71. Russell Range</u>	Russell Range mixed thicket complexes	South Coast, Esperance Plains Bioregion	VU B), VU C)
<u>72. Ferricrete</u>	Ferricrete floristic community (Rocky Springs type)	Geraldton Sandplain	VU B)
<u>74. Herblands and Bunch Grasslands</u>	Herblands and Bunch Grasslands on gypsum lunette dunes alongside saline playa lakes	Esperance Sandplain	VU B)
<u>75. Inering System</u>	Plant assemblages of the Inering System (Beard 1976)	Avon Wheatbelt	VU A)
<u>76. Lesueur-Coomallo Floristic Community D1</u>	Lesueur-Coomallo Floristic Community D1	Geraldton Sandplain	CR B) i) CR B) ii)
<u>77. Lesueur-Coomallo Floristic Community A1.2</u>	Lesueur-Coomallo Floristic Community A1.2	Geraldton Sandplain	EN B) ii)
<u>78. Ethel Gorge</u>	Ethel Gorge aquifer stygobiont community	Pilbara	EN B) ii)
<u>80. Theda Soak</u>	Assemblages of Theda Soak rainforest swamp	North Kimberley	VU A), VU B)
<u>81. Walcott Inlet</u>	Assemblages of Walcott Inlet rainforest swamps	North Kimberley	VU B)
<u>82. Roe River</u>	Assemblages of Roe River rainforest swamp	North Kimberley	VU B)
<u>84. Dragon Tree Soak</u>	Assemblages of Dragon Tree Soak organic mound spring	Kimberley Region, Great Sandy Desert Bioregion	EN B) i)
<u>85. Bunda Bunda</u>	Assemblages of Bunda Bunda organic mound spring	West Kimberley, Dampierland Bioregion	VU A), VU B)
<u>86. Big Springs</u>	Assemblages of Big Springs organic mound springs	West Kimberley, Dampierland Bioregion	VU A), VU B)
<u>89. North Kimberley mounds</u>	Organic mound spring sedgeland community of the North Kimberley Bioregion	North Kimberley	VU A), VU B)

<u>92. Black Spring</u>	Black Spring organic mound spring community	North Kimberley	EN B) i), EN B) ii)
<u>95. Mandora Mounds</u>	Assemblages of the organic springs and mound springs of the Mandora Marsh area	West Kimberley, Dampierland and Greats Sandy Desert Bioregions	EN B) iii)
<u>96. Broomehill</u>	Plant assemblages of the Broomehill System	Avon Wheatbelt	PD A)
<u>97. Mound Springs (Three Springs area)</u>	Assemblages of the organic mound springs of the Three Springs area	Avon Wheatbelt	EN B) i), EN B) ii)
<u>99. Depot Springs</u>	Depot Springs stygofauna community	Goldfields Region, Murchison Bioregion	VU B)
<u>102. Eucalyptus acies mallee heath</u>	Thumb Peak, Mid mount Barren, Woolburnup Hill (Central Barren Ranges) <i>Eucalyptus acies</i> mallee heath	Esperance Sandplain	VU B)

Total = 69 TECs in Western Australia that are endorsed by the Minister for Environment (17 of these are listed under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999*)

Critically Endangered: 21; Endangered: 17; Vulnerable: 28; Presumed Destroyed: 3

PRIORITY ECOLOGICAL COMMUNITIES FOR WESTERN AUSTRALIA VERSION 15
Species and Communities Branch, Department of Environment and Conservation
6 December 2010

Possible threatened ecological communities that do not meet survey criteria or that are not adequately defined are added to the Priority ecological community list under Priorities 1, 2 and 3. These three categories are ranked in order of priority for survey and/or definition of the community, and evaluation of conservation status, so that consideration can be given to their declaration as threatened ecological communities. Ecological communities that are adequately known, and are rare but not threatened or meet criteria for Near Threatened, or that have been recently removed from the threatened list, are placed in Priority 4. These ecological communities require regular monitoring. Conservation Dependent ecological communities are placed in Priority 5.

In addition, communities that have been proposed as threatened ecological communities by the Threatened Ecological Community Scientific Committee and that have not yet been classified as 'threatened' in Western Australia are listed as Priority 1 ecological communities, as an interim measure.

Note:

- i) Nothing in this table may be construed as a nomination for listing under the Commonwealth *EPBC Act 1999*.
- ii) The inclusion in this table of a community type does not necessarily imply any status as a threatened ecological community.
- iii) Regions eg Pilbara are based on Department of Environment and Conservation regional boundaries.
- iv) For definitions of categories (Priority 1 etc.) refer to document entitled 'Definitions and Categories'.

	Community name	Category
	PILBARA	
1	West Angelas Cracking-Clays Open tussock grasslands of <i>Astrebla pectinata</i> , <i>A. elymoides</i> , <i>Aristida latifolia</i> , in combination with <i>Astrebla squarrosa</i> and low scattered shrubs of <i>Sida fibulifera</i> , on basalt derived cracking-clay loam depressions and flowlines. Threats: Disturbance footprints increasing from mine, future infrastructure development, possible weed invasion and changes in fire regime.	Priority 1
2	Weeli Wolli Spring community Weeli Wolli Spring's riparian woodland and forest associations are unusual as a consequence of the composition of the understorey. The sedge and herbfield communities that fringe many of the pools and associated water bodies along the main channels of Weeli Wolli Creek have not been recorded from any other wetland site in the Pilbara. The spring and creekline are also noted for their relatively high diversity of stygofauna and this is probably attributed to the large-scale calcrete and alluvial aquifer system associated with the creek. The valley of Weeli Wolli Spring also supports a very rich microbat assemblage including a threatened species. Threats: dewatering and re-watering altering patterns of inundation, weed invasion	Priority 1
3	Burrup Peninsula rock pool communities Calcareous tufa deposits. Interesting aquatic snails. Threats: recreational impacts, and potential development; possibly NOX and SOX emissions.	Priority 1
4	Burrup Peninsula rock pile communities Comprise a mixture of Pilbara and Kimberley species, communities are different from those of the Hamersley and Chichester Ranges. Short-range endemic land snails. Threats: industrial development.	Priority 1
5	Roebourne Plains coastal grasslands with gilgai microrelief on deep cracking clays (Roebourne Plains gilgai grasslands) The Roebourne Plains coastal grasslands with gilgai micro-relief occur on deep cracking clays that are self mulching and emerge on depositional surfaces. The Roebourne Plains gilgai grasslands occur on microrelief of deep cracking clays, surrounded by clay plains/flats and sandy coastal and alluvial plains. The gilgai depressions supports ephemeral and perennial tussock grasslands dominated by <i>Sorghum</i> sp. and <i>Eragrostis xerophila</i> (Roebourne Plains grass) along with other native species including <i>Astrebla pectinata</i> (barley mitchell grass), <i>Eriachne benthamii</i> (swamp wanderrie grass), <i>Chrysopogon fallax</i> (golden beard grass) and <i>Panicum decompositum</i> (native millet). Restricted to the Karratha area, this community differs from the surrounding clay flats of the Horseflat land system which are dominated by <i>Eragrostis xerophila</i> and other perennial tussock grass species (<i>Eragrostis</i> mostly). Threats: Grazing, clearing for mining and infrastructure and urban development, weed invasion, basic raw material extraction.	Priority 1
6	Stony Chenopod association of the Roebourne Plains area The association appears to be uncommon. Only one occurrence has been located to date (Roebourne Airport). The community is dominated by <i>Eragrostis xerophila</i> and chenopods growing in saline clay soils with dense surface strew of pebbles and cobbles. This community is likely to be linked with the Cheerawarra land system. Threats: grazing, clearing, and weeds especially buffel grass.	Priority 1
7	Barrow Island subterranean fauna Barrow Island stygofauna and troglifauna. Threats: Mining and industrial development.	Priority 1
8	Subterranean invertebrate communities of mesas in the Robe Valley region A series of isolated mesas occur in the Robe Valley in the state's Pilbara Region. The mesas are remnants of old valley infill deposits of the palaeo Robe River. The troglitic faunal communities occur in an extremely	Priority 1

	specialised habitat and appear to require the particular structure and hydrogeology associated with mesas to provide a suitable humid habitat. Short range endemism is common in the fauna. The habitat is the humidified pisolitic strata. Threats: Mining	
9	Subterranean invertebrate community of pisolitic hills in the Pilbara A series of isolated low undulating hills occur in the state's Pilbara region. The troglofauna are being identified as having very short range distributions. Threats: mining	Priority 1
10	Peedamulla Marsh vegetation complex Peedamulla (Cane River) Swamp Cyperaceae community, near mouth of Cane River. Plants are unusual. Threats: grazing, weed invasion, altered surface hydrologic flows.	Priority 1
11	<i>Triodia angusta</i> dominated creekline vegetation (Barrow Island) General cover of <i>Triodia angusta</i> with shrubs principally <i>Hakea suberea</i> , <i>Petalostylis labicheoides</i> , <i>Acacia bivenosa</i> , and <i>Gossypium robinsonii</i> . Threats: basic raw material extraction for island infrastructure.	Priority 1
12	Brockman Iron cracking clay communities of the Hamersley Range Rare tussock grassland dominated by <i>Astrebla lappacea</i> in the Hamersley Range, on the Newman land system. Tussock grassland on cracking clays- derived in valley floors, depositional floors. This is a rare community and the landform is rare. Known from near West Angeles, Newman, Tom Price and boundary of Hamersley and Brockman Stations. Threats: Heavily grazed, mining and infrastructure developments.	Priority 1
13	Sand Sheet vegetation (Robe Valley) <i>Corymbia zygomphylla</i> scattered low trees over <i>Acacia tumida</i> var. <i>pilbarensis</i> , <i>Grevillea eriostachya</i> high shrubland over <i>Triodia schinzii</i> hummock grassland. Other associated species include <i>Cleome uncifera</i> , <i>Heliotropium transforme</i> , <i>Indigofera boviparda</i> subsp. <i>boviparda</i> , and <i>Ptilotus arthrolasius</i> . Most northern example/expression of vegetation of Carnarvon Basin. Community is poorly represented type in the Pilbara Region, and not represented in the reserve system. Community contains many plant species that are at their northern limits or exist as disjunct populations. Vulnerable to invasion by weeds (particularly buffel grass) Threats: mining, basic raw material extraction, weed invasion	Priority 1
14	Mingah Springs calcrete groundwater assemblage type on Gascoyne palaeodrainage on Mingah Spring Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
15	Coastal dune tussock grassland Tussock grassland of <i>Whiteochloa airoides</i> on hind dunes or remnant dunes with white or pinkish white medium sands with marine fragments. There may be occasional <i>Spinifex longifolius</i> tussock or <i>Triodia epactia</i> hummock grasses. There may be scattered low shrubs of <i>Olearia dampierii</i> subsp. <i>dampierii</i> , <i>Scaevola spinescens</i> , <i>S. cunninghamii</i> , <i>Trianthema turgidifolia</i> and <i>Corchorus</i> species. Occurs on Barrow Island and possibly some unaffected littoral areas in West Pilbara. Threats: weed invasion especially buffel grass and kapok, basic raw material extraction.	Priority 1
16	Freshwater claypans of the Fortescue Valley Freshwater claypans downstream of the Fortescue Marsh - Goodiadarrie Hills on Mulga Downs Station. Important for waterbirds, invertebrates and some poorly collected plants. <i>Eriachne</i> spp., <i>Eragrostis</i> spp. grasslands. Unique community, has few Coolabah. Threats: weed invasion, infrastructure corridors, altered hydrological flows, inappropriate fire regimes.	Priority 1
17	Fortescue Marsh (Marsh Land System) Fortescue Marsh on the Fortescue River, east of Mulga Downs, on Marillana and Roy Hill Stations. Endemic <i>Eremophila</i> species and several near endemic and new to science samphires. Recorded locality for night parrot and bilby. Several restricted aquatic invertebrates. Specific vegetation types are found on Mulga Downs, only around the marsh, and an unusual system occurs downstream. Threats: mining, altered hydrology (watering with fresh water), grazing and weed invasion.	Priority 1
18	Tanpool land system A highly restricted land system that occurs between Pannawonica and Onslow. Consists of stony plains and low ridges of sandstone and other sedimentary rocks supporting hard spinifex grasslands and snakewood shrublands. Threats: grazing	Priority 1
19	Stygofaunal community of the Bungaroo Aquifer A unique assemblage of aquatic subterranean fauna including eels, snails and other stygofauna. Threats: groundwater drawdown, mining.	Priority 1
20	Coolibah-lignum flats: <i>Eucalyptus victrix</i> over <i>Muehlenbeckia</i> community Woodland or forest of <i>Eucalyptus victrix</i> (coolibah) over thicket of <i>Muehlenbeckia florulenta</i> (lignum) on red clays in run-on zones. Associated species include <i>Eriachne benthamii</i> , <i>Themeda triandra</i> , <i>Aristida latifolia</i> , <i>Eulalia aurea</i> and <i>Acacia aneura</i> . A series of sub-types have been identified: <ul style="list-style-type: none"> • Coolibah woodlands over lignum (<i>Muehlenbeckia florulenta</i>) over swamp wandiree (Lake Robinson is the only known occurrence) • Coolibah and mulga (<i>Acacia aneura</i>) woodland over lignum and tussock grasses on clay plains (Coondewanna Flats and Wanna Munna Flats) • Coolibah woodland over lignum and silky browntop (<i>Eulalia aurea</i>) (two occurrences known on Mt Bruce) 	Priority 1 Priority 3(iii) Priority 1

	Flats) Threats: dewatering and grazing, clearing associated with infrastructure corridors.	
21	Four plant assemblages of the Wona Land System (previously 'Cracking clays of the Chichester and Mungaroo Range') A system of basalt upland gilgai plains with tussock grasslands occurs throughout the Chichester Range in the Chichester-Millstream National Park, Mungaroo Range Nature Reserve and on adjacent pastoral leases. There are a series of community types identified within the Wona Land System gilgai plains that are considered susceptible to known threats such as grazing or have constituent rare/restricted species, as follows: <ul style="list-style-type: none"> Cracking clays of the Chichester and Mungaroo Range. This grassless plain of stony gibber community occurs on the tablelands with very little vegetative cover during the dry season, however during the wet a suite of ephemerals/annuals and short-lived perennials emerge, many of which are poorly known and range-end taxa. Annual Sorghum grasslands on self mulching clays. This community appears very rare and restricted to the Pannawonica-Robe valley end of Chichester Range. Mitchell grass plains (<i>Astrebela</i> spp.) on gilgai Mitchell grass and Roebourne Plain grass (<i>Eragrostis xerophila</i>) plain on gilgai (typical type, heavily grazed) 	Priority 1 Priority 1 Priority 3(ii) Priority 3(ii)
22	Triodia sp. Robe River assemblages of mesas of the Pilbara (previously named 'Triodia sp. Robe River assemblages of mesas of the Robe Valley') <i>Triodia</i> sp. Robe River MET 12,369 is apparently geographically restricted to the extreme south western end of the Hamersley Range where it is known from an area extending from the Fortescue River south east to the Beasley River. The majority of occurrences have been recorded from the Robe River valley south to Duck Creek. These occurrences are typically restricted to mesas and cordillo landforms where the plant assemblages are dominated by or contain <i>Triodia</i> sp. Robe River. The community is a mosaic of plant assemblages and is not contained in any reserves. Threats: Mining and associated infrastructure	Priority 3(ii)
23	Stony saline plains of the Mosquito Land System Described as saltbush community of the duplex plains - Mosquito Creek series (Nullagine). Known to contain two endemic Acacias. One occurrence known on stony plains, and one on rocky ground. Threats: preferential grazing, prospecting and mining, increasing erosion	Priority 3(ii)
24	Fortescue Valley Sand Dunes (known previously as 'Sand dune communities of the Fortescue Botanical District') These red linear sand dune communities lie on the Divide Land system at the junction of the Hamersley Range and Fortescue Valley, between Weeli Wollie Creek and the low hills to the west. A small number are vegetated with <i>Acacia dictyophleba</i> scattered tall shrubs over <i>Crotalaria cunninghamii</i> , <i>Trichodesma zeylanicum</i> var. <i>grandiflorum</i> open shrubland. They are regionally rare, small and fragile and highly susceptible to threatening processes. Threats: weed invasion especially buffel grass, and erosion.	Priority 3(ii)
25	Riparian vegetation including phreatophytic species associated with creek lines and watercourses of Rudall River Semi permanent pools along courses of Rudall River. Threats: weed invasion, altered hydrological flows, inappropriate fire regimes.	Priority 3(ii)
26	Horseflat land system of the Roebourne Plains The remainder of the Horseflat land system – not including the Roebourne Plains gilgai grasslands and the Chenopod association of the Roebourne Plains area. Extent- from Cape Preston to Balla Balla (Whim Creek). Threats: grazing, weed invasion.	Priority 3(ii)
27	Invertebrate assemblages (Errawallana Spring type) Coolawanya Station Geologically distinct. Sherlock River system. Permanent spring-fed creek. Has atypical invertebrate community. Threats: grazing.	Priority 4(ii)
28	Invertebrate assemblages (Nyeetberry Pool type) Jimmawurrada Creek. Nyeetberry pool, Robe River. Permanent River Pool in the Pilbara (groundwater fed). Blind isopod collected from this site. Threats: mining and feral animals	Priority 4(ii)
29	Stygofaunal communities of the Western Fortescue Plains freshwater aquifer (Previously named 'Stygofaunal communities of the Millstream freshwater aquifer') A unique assemblage of subterranean invertebrate fauna. Threats: Groundwater drawdown and salinisation.	Priority 4(ii)
	KIMBERLEY	
1	Perched spring-fed peat-based swamps on hillslopes of the Durack Range area Assemblages of spring-fed wetlands on organic substrates perched on sandstone hill-slopes in the Central Kimberley bioregion. Drainage lines are vegetated with a forest of <i>Corymbia ptychocarpa</i> (swamp bloodwood), <i>Grevillea pteridifolia</i> , <i>Melaleuca</i> spp, <i>Pandanus spiralis</i> , and some <i>Livistona</i> spp. over the fern <i>Cyclosorus interruptus</i> and the climbing fern <i>Lygodium microphyllum</i> . Sedges occur in the understorey and clumps of Reed Grass <i>Arundinella nepalensis</i> are dominant in the understorey where the canopy is more open. Also associated with the drainage lines are swamps vegetated by dense sedgelands with grasses and herbs. Threats: Cattle grazing and weeds.	Priority 1
2	Assemblages of Point Spring and Long Swamp rainforest swamps Closed canopy rainforest on freshwater swamps on alluvial floodplain soils in the east Kimberley. Two	Priority 1

	occurrences are known, these are Point Spring and Long Swamp. At Point Spring the canopy is 17m high and the dominant tree species include <i>Canarium australianum</i> , <i>Carallia brachiata</i> , <i>Euodia elleryana</i> , <i>Ficus racemosa</i> , <i>F. virens</i> and <i>Terminalia sericocarpa</i> . The rainforest canopy height at Long Swamp is 30m, and the dominant tree species include <i>Nauclea orientalis</i> , <i>Terminalia sericocarpa</i> and <i>Euodia elleryana</i> . The periphery of the patch is permanently moist and supports a <i>Melaleuca leucadendra</i> forest. Threats: Invasion by feral fish, impacts of stock, climate change and rising sea levels.	
3	Assemblages of the wetlands associated with the organic mound springs on the tidal mudflats of the Victoria-Bonaparte Bioregion East Kimberley (i.e. Brolga Spring, King Gordon Spring, Attack Spring etc on Carlton Hill Station). Large wetlands with <i>Melaleuca</i> forest with small patches of rainforest on central mounds. Rainforest and paperbark forest associated with mound springs and seepage areas of the Victoria Bonaparte coastal lands.	Priority 1
4	Monsoon vine thickets of limestone ranges Ningbing Range, Napier Range, and Jeremiah hills.	Priority 1
5	<i>Oryza australiensis</i> (wild rice) grasslands on alluvial flats of the Ord River West side of Weaber Hills, Weaber Plain, Mantini Flats, Knox Creek.	Priority 1
6	Inland Mangrove (<i>Avicennia marina</i>) community of Salt Creek Anna Plains Station, Mandora.	Priority 1
7	Plant assemblages on vertical sandstone surfaces Eg. Two undescribed spinifex spp. at Bungles and Molly Spring, foxtail spinifex at Cathedral Gorge and Thompsons Spring. Fire sensitive plants, fire regimes a threat.	Priority 1
8	Invertebrate community of Napier Range Cave On Old Napier Downs, Karst No. KNI. Threats: Mine close by and tourist visitation.	Priority 1
9	Invertebrate assemblages of the cliff foot springs around Devonian reef system Black soils. Threats: Springs drying up due to dewatering of karst systems.	Priority 1
10	Dwarf pindan heath community of Broome coast Occurs between the racecourse and Gantheame Point lighthouse. Insufficient survey outside of Broome townsite area to determine full extent.	Priority 1
11	<i>Corymbia paractia</i> dominated community on dunes <i>Corymbia paractia</i> behind dunes, Broome township area, Dampier Peninsula. Transition zone where coastal dunes (with vine thickets) merge with Pindan (desert) vegetation. Also, port north of Broome.	Priority 1
12	Invertebrate community of Tunnel Creek Has unique fauna and has high visitation but not enough data available yet to describe - currently only has one sample site (neighbouring sample areas eg Windjana Gorge have different genera).	Priority 2
13	Camaenid land snails of limestone hills of the Jeremiah and Ningbing Ranges A suite of species of land snail belonging to the family Camaenidae are only recorded from limestone ranges and outcrops of the East Kimberley. They occur in areas of limited Devonian reef with unusual vine thickets with a boab overstorey. All the Camaenid snails are short-range endemics, with known geographic ranges ranging from 0.01 ha to 5.6 km ² . Twenty critically endangered, four endangered and one vulnerable species occur in the Ningbing Ranges and Jeramia Hills north of Kununurra. Threats: frequent fires leading to vegetation changes (loss of vine thickets) and leaf litter and grazing impacts, especially on flat-lying fringing limestone pavement areas.	Priority 3(iii)
14	Assemblages of Disaster Bay organic mound springs Organic mound springs on tidal flat with <i>Melaleuca acacioides</i> , <i>Timonius timon</i> , <i>Pandanus spiralis</i> , <i>Melaleuca viridiflora</i> , <i>Acacia neurocarpa</i> and <i>Lumnitzera racemosa</i> (mangrove) woodland with <i>Typha domingensis</i> and sedges, including <i>Schoenoplectus litoralis</i> .	Priority 3(iii)
15	Assemblages of Lolly Well Springs wetland complex Wetland complex containing numerous low organic mound springs with moats.	Priority 3(ii)
16	Nimalaica clay pan community. Nimalaica claypan is a unique, almost permanent, freshwater lake inland from Willie Creek, Broome Threats: groundwater extraction, causeway construction, feral animals, expansion of township	Priority 4(ii)
	MID-WEST	
1	Mount Gibson Range vegetation complexes (banded ironstone formation) Threats: mining	Priority 1
2	Blue Hills (Mount Karara/Mungada Ridge/Blue Hills) vegetation complexes (banded ironstone formation) Threats: mining	Priority 1
3	Jack Hills vegetation complexes (banded ironstone formation) Threats: mining	Priority 1
4	Mount Gould vegetation complexes (banded ironstone formation) Threats: mining	Priority 1
5	Lake Austin vegetation complexes (banded ironstone formation) Threats: mining	Priority 1
6	New Forest (including Twin Peaks) vegetation complexes (banded ironstone formation) Threats: mining	Priority 1
7	Robinson Range vegetation complexes (banded ironstone formation)	Priority 1

	Threats: mining	
8	Weld Range vegetation complexes (banded ironstone formation) Threats: mining	Priority 1
9	Wolla Wolla (Gullewa) vegetation complexes (banded ironstone formation) Threats: mining	Priority 1
10	Yalgoo vegetation complexes (banded ironstone formation) Threats: mining	Priority 1
11	Plant assemblages of the Moresby Range system Includes the <i>Melaleuca megacephala</i> and <i>Hakea pycnoneura</i> thicket on stony slopes, <i>Verticordia</i> dominated low heath, and <i>Allocasuarina campestris</i> and <i>Melaleuca uncinata</i> thicket on superficial laterite, on Moresby Range. Threats: clearing for infrastructure	Priority 1
12	Mount Dugel/Mount Nairn vegetation complexes (banded ironstone formation) Threats: mining	Priority 1
13	Minjar/Gnows Nest vegetation complexes (banded ironstone formation) Threats: mining	Priority 1
14	Warriedar Hill/Pinyalling vegetation complexes (banded ironstone formation) Threats: mining	Priority 1
15	Mount Magnet vegetation complexes (banded ironstone formation) Threats: mining	Priority 1
16	Tallering Peak vegetation complexes Tallering Peak in the northwest is a massif of banded ironstone and jaspilite, with outcropping masses of rock along the spine. Vegetation is sparse and includes shrubs of only 1.2m of <i>Acacia quadrimarginea</i> , <i>A ?coolgardiensis</i> , <i>Eremophila leucophylla</i> , <i>Thryptomene johnsonii</i> , a smaller <i>Baeckea</i> or <i>Thryptomene</i> sp. and <i>Ptilotus obovatus</i> . Threats: mining	Priority 1
17	Lesueur-Coomallo Floristic Community M2 (<i>Melaleuca preissiana</i> woodland) Woodland dominated by <i>Melaleuca preissiana</i> along sandy drainage lines, with faithful species of <i>Anigozanthus pulcherrimus</i> and constant species of <i>Chamaescilla corymbosa</i> , <i>Petrophile brevifolia</i> and <i>Xanthorrhoea reflexa</i> .	Priority 1
18	Lesueur-Coomallo Floristic Community DFGH Mixed species-rich heath on lateritic gravel with <i>Hakea erinacea</i> , <i>Melaleuca platycalyx</i> and <i>Petrophile seminuda</i> : a fine scale mixture of four floristically-defined communities occurring on lateritic slopes.	Priority 1
19	Kalbarri ironstone community Winter wet, mallee/Melaleuca over herbs. Dense shrubland when burnt. Surrounded by sandplain. Yerina springs and north Eurardy Station. Z-bend loop, Junga Dam. The declared rare flora taxon <i>Eremophila microtheca</i> occurs in community.	Priority 1
20	Shrublands of the Northampton area, dominated by Melaleuca species over exposed Kockatea Shale Heath on breakaways located in Port Gregory, west of Northampton. Community includes priority taxa; <i>Ptilotus chortophyllum</i> (P1), <i>Leucopogon</i> sp. Port Gregory, <i>Ozothamnus</i> sp. Northampton, <i>Gastrolobium propinquum</i> (P1), outlier of <i>Ptilotus helichrysoides</i> . Unusual geology (Kockatea Shale) outcropping at surface.	Priority 1
21	Badja calcrete groundwater assemblage type on Moore palaeodrainage on Badja Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
22	Belele calcrete groundwater assemblage type on Murchison palaeodrainage on Belele Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
23	Black Range South and Windsor groundwater calcrete assemblage type on Raeside and Murchison palaeodrainage on Lake Mason and Windsor Stations Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
24	Bunnawarra calcrete groundwater assemblage type on Moore palaeodrainage on Bunnawarra Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
25	Byro Central and Byro HS calcrete groundwater assemblage types on Murchison palaeodrainage on Byro Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
26	Challa, Challa North and Wondinong calcrete groundwater assemblage type on Murchison palaeodrainage on Challa and Wondinong Stations Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
27	Cogla Downs calcrete groundwater assemblage type on Murchison palaeodrainage on Yarrabubba Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1

28	Dalgety and Landor calcrete groundwater assemblage type on Gascoyne palaeodrainage on Dalgety Downs and Landor Stations Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
29	Doolgunna calcrete groundwater assemblage type on Gascoyne palaeodrainage on Doolgunna Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
30	Gabyon calcrete groundwater assemblage type on Moore palaeodrainage on Gabyon Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
31	Gifford Creek, Mangaroon, Wanna calcrete groundwater assemblage type on Lyons palaeodrainage on Gifford Creek, Lyons and Wanna Stations Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
32	Hillview calcrete groundwater assemblage type on Murchison palaeodrainage on Hillview Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
33	Innouendy calcrete groundwater assemblage type on Murchison palaeodrainage on Innouendy Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
34	Karalundi calcrete groundwater assemblage type on Murchison palaeodrainage on Karalundi Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
35	Killara calcrete groundwater assemblage types on Murchison palaeodrainage on Killara Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
36	Killara North calcrete groundwater assemblage types on Murchison palaeodrainage on Killara Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
37	Lake Austin calcrete groundwater assemblage type on Murchison palaeodrainage on Austin Downs Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
38	Maranalgo west calcrete assemblage type on Moore palaeodrainage on Maranalgo Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
39	Meeberrie calcrete groundwater assemblage type on Murchison palaeodrainage on Meeberrie Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
40	Meka calcrete groundwater assemblage type on Murchison palaeodrainage on Meka Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
41	Milgun central calcrete groundwater assemblage types on Gascoyne palaeodrainage on Milgun Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
42	Milgun south calcrete groundwater assemblage types on Gascoyne palaeodrainage on Milgun Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
43	Mount Augustus calcrete groundwater assemblage type on Lyons palaeodrainage on Mount Augustus Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
44	Mount Narryer calcrete groundwater assemblage type on Murchison palaeodrainage on Mount Narryer Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
45	Mount Padbury calcrete groundwater assemblage type on Murchison palaeodrainage on Mount Padbury Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
46	Muralgarra calcrete groundwater assemblage type on Murchison palaeodrainage on Muralgarra Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
47	Murchison Downs calcrete groundwater assemblage type on Murchison palaeodrainage on Murchison Downs Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1

48	Ninghan calcrete groundwater assemblage type on Moore palaeodrainage on Ninghan Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
49	Nowthanna Hill calcrete groundwater assemblage type on Murchison palaeodrainage on Yarrabubba Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
50	Paroo calcrete groundwater assemblage type on Carey palaeodrainage on Paroo Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
51	Polelle calcrete groundwater assemblage type on Murchison palaeodrainage on Polelle Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
52	Taincrow calcrete groundwater assemblage type on Murchison palaeodrainage on Taincrow Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
53	Three Rivers calcrete groundwater assemblage types on Gascoyne palaeodrainage on Three Rivers Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
54	Three Rivers Plutonic calcrete groundwater assemblage types on Gascoyne palaeodrainage on Three Rivers Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
55	Wagga Wagga and Yalgoo calcrete groundwater assemblage type on Yalgoo and Moore palaeodrainage on Wagga Wagga and Bunnawarra Stations Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
56	Windimurra calcrete groundwater assemblage type on Murchison palaeodrainage on Windimurra Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
57	Yarrabubba east calcrete groundwater assemblage types on Murchison palaeodrainage on Yarrabubba Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining.	Priority 1
58	Yarrabubba west calcrete groundwater assemblage types on Murchison palaeodrainage on Yarrabubba Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining.	Priority 1
59	Yoweragabbie calcrete groundwater assemblage type on Moore palaeodrainage on Yoweragabbie Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
60	*Claypans with mid dense shrublands of <i>Melaleuca lateritia</i> over herbs Claypans (predominantly basins) usually dominated by a shrubland of <i>Melaleuca lateritia</i> occurring both on the coastal plain and the adjacent plateau. These claypans are characterized by aquatic (<i>Hydrocotyle lemnoides</i> – Priority 4) and amphibious taxa (e.g. <i>Glossostigma diandrum</i> , <i>Villarsia capitata</i> and <i>Eleocharis keigheryi</i> - DRF)	Priority 1
61	<i>Petrophile chrysantha</i> low heath on Lesueur dissected uplands (Gp200-170) Low heath dominated by <i>Petrophile chrysantha</i> on Lesueur Dissected Uplands. Associated species include <i>Dryandra armata</i> and <i>Hakea undulata</i> .	Priority 2
62	Coolabah-lignum swamps Widely distributed, would need to clarify composition of herbs and extent of specific plant assemblage. Similar assemblage occurs in the Pilbara.	Priority 3(iii)
63	Fairy Shrimp communities of rock outcrops Invertebrate communities are unusual, some species known from relatively few outcrops but not under imminent threat. Mining could be an issue with regards to dust accumulation as it could affect pool chemistry, and especially with regard to flatter rocks at landscape level.	Priority 3(i)
64	*Granite outcrop pools with endemic aquatic fauna Freshwater pools formed on granite outcrops that may persist for several months and house a variety of aquatic invertebrates, some of which are endemic to south-west WA. Some examples include cladocerans, ostracods, copepods, rotifers, oligochaetes and molluscs.	Priority 3(i)
65	Hypersaline community number 2 (Stromatolites of Hamelin Pool) Hypersaline tidal stromatolite aragonite community formed by trapping and binding by a variety of cyanobacteria and eukaryotes.	Priority 4 (i)
66	Plant assemblages (spinifex dominated) of sand dune mesa topping the Kennedy Range National Park	Priority 4 (i)

67	Invertebrate assemblages of Edithana Pool High quality river pool on the Lyons River. High invertebrate diversity. Threats: cattle and Tilapia	Priority 4 (ii)
68	Springs of the Western Kennedy Ranges Spring in the Kennedy Range. Has rich representative invertebrate community. Threats: feral goats and mining.	Priority 4 (ii)
69	Invertebrate assemblages of Cattle Pool High quality river pool on the Lyons River adjacent to Mt Augustus National Park. High invertebrate diversity. Threats: cattle and Tilapia	Priority 4 (ii)
70	Invertebrate assemblages of Yinnetharra Cattle Pool Permanent freshwater pool on the middle Gascoyne. Threats: cattle	Priority 4 (ii)
71	Invertebrate assemblages of Mibbly pool Large relatively undisturbed freshwater pool on the upper Gascoyne River (therefore unusual). Until recently protected from stock by thick riparian vegetation. A track has been cleared to the pool which has allowed stock access.	Priority 4 (ii)
72	Invertebrate assemblages of Erong Springs High aquatic invertebrate diversity site in the Gascoyne area. Threats: stock and goats.	Priority 4 (ii)
73	Invertebrate assemblages of Callytharra Spring, Wooramel River Permanent Spring on the Wooramel river. High aquatic invertebrate diversity Threats: cattle.	Priority 4 (ii)
74	Lake Macleod invertebrate assemblages Saline aquatic community with strong marine affinities with particularly rich copepod elements - is effectively a well developed, very rich birrida community with strong marine and terrestrial components with especially rich hypactacoid community. Distinctive but lacks threats.	Priority 4 (ii)
	GOLDFIELDS	
1	Koolyanobbing vegetation complexes (banded ironstone formation) Threats: Subject to mining	Priority 1
2	Die Hardy Range/Diemels vegetation complex (banded ironstone formation) Threats: iron ore mining.	Priority 1
3	Mount Jackson Range vegetation complex (banded ironstone formation) Threats: iron ore mining.	Priority 1
4	Mount Dimer vegetation complexes (banded ironstone formation). Threats: mining	Priority 1
5	Windarling Ranges vegetation complex (banded ironstone formation) Threats: mining	Priority 1
6	Booylgoo Range vegetation complexes (banded ironstone formation) Threats: mining	Priority 1
7	Bulga Downs/ Perinvale/Walling/vegetation complexes (banded ironstone formation) Threats: mining	Priority 1
8	Cashmere Downs vegetation complexes (banded ironstone formation) Threats: mining	Priority 1
9	Finnerty Range vegetation complexes (banded ironstone formation) Threats: mining	Priority 1
10	Lake Giles vegetation complexes (banded ironstone formation) Threats: mining	Priority 1
11	Lake Mason vegetation complexes (banded ironstone formation) Threats: mining	Priority 1
12	Montague Range vegetation complexes (banded ironstone formation) Threats: mining	Priority 1
13	Lee Steere Range vegetation complexes (banded ironstone formation) Threats: mining	Priority 1
14	Violet Range vegetation complexes (banded ironstone formation) Threats: mining	Priority 1
15	Wiluna West vegetation complexes (banded ironstone formation) Threats: mining	Priority 1
16	Albion Downs calcrete groundwater assemblage type on Carey palaeodrainage on Albion Downs Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
17	Banjawarn and Melrose (Lake Darlot) calcrete groundwater assemblage type on Carey palaeodrainage on Banjawarn and Melrose Stations Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
18	Barwidgee calcrete groundwater assemblage type on Carey palaeodrainage on Barwidgee Station Unique assemblages of invertebrates have been identified in the groundwater calcretes.	Priority 1

	Threats: mining	
19	Black Range North calcrete groundwater assemblage type on Raeside palaeodrainage on Lake Mason Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
20	Cunyu SBF and Cunyu Sweetwater calcrete groundwater assemblage types on Nabberu palaeodrainage on Cunyu Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
21	Dandaraga calcrete groundwater assemblage type on Raeside palaeodrainage on Dandaraga Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
22	Depot Springs calcrete groundwater assemblage type on Raeside palaeodrainage on Depot Springs Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
23	Glenayle and Carnegie Downs calcrete groundwater assemblage type on Burnside palaeodrainage on Glenayle Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
24	Hinkler Well calcrete groundwater assemblage type on Carey palaeodrainage on Lake Way Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
25	Lake Way South calcrete groundwater assemblage type on Carey palaeodrainage on Lake Way Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
26	Jundee Homestead calcrete groundwater assemblage type on Carnegie palaeodrainage on Jundee Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
27	Jundee South Hill calcrete groundwater assemblage type on Carnegie palaeodrainage on Jundee Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
28	Kaluwiri calcrete groundwater assemblage type on Raeside palaeodrainage on Kaluwiri Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
29	Lake Mason calcrete groundwater assemblage type on Raeside palaeodrainage on Lake Mason Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
30	Lake Miranda east calcrete groundwater assemblage types on Carey palaeodrainage on Yakabindie Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
31	Lake Miranda west calcrete groundwater assemblage types on Carey palaeodrainage on Yakabindie Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
32	Lake Violet south and Lake Violet calcrete groundwater assemblage types on Carey palaeodrainage on Millbillillie Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
33	Laverton Downs calcrete groundwater assemblage type on Carey palaeodrainage on Laverton Downs Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
34	Lorna Glen calcrete groundwater assemblage type on Carnegie palaeodrainage on Lorna Glen Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
35	Melita calcrete groundwater assemblage type on Raeside palaeodrainage on Melita Station (Sons of Gwalia) Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
36	Millbillillie: Bubble calcrete groundwater assemblage type on Carey palaeodrainage on Millbillillie Station Unique assemblages of invertebrates have been identified in the groundwater calcretes.	Priority 1

	Threats: mining	
37	Mount Morgan calcrete groundwater assemblage type on Carey palaeodrainage on Mount Weld Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
38	Nambi calcrete groundwater assemblage type on Carey palaeodrainage on Nambi Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
39	Old Cunya calcrete groundwater assemblage type on Nabberu palaeodrainage on Cunyu Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
40	Perrinvale (Pine Well) calcrete groundwater assemblage type on Raeside palaeodrainage on Perrinvale Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
41	Pinnacles calcrete groundwater assemblage type on Raeside palaeodrainage on Pinnacles Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
42	Sturt Meadows calcrete groundwater assemblage type on Raeside palaeodrainage on Sturt Meadows Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
43	Uramurdah Lake calcrete groundwater assemblage type on Carey palaeodrainage on Millbillillie Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
44	Wiluna BF calcrete groundwater assemblage type on Carey palaeodrainage on Millbillillie Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
45	Windidda calcrete groundwater assemblage type on Carnegie palaeodrainage on Windidda Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
46	Yakabindie calcrete groundwater assemblage type on Carey palaeodrainage on Yakabindie Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
47	Yandal calcrete groundwater assemblage type on Carey palaeodrainage on Yandal Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
48	Yeelirrie calcrete groundwater assemblage type on Carey palaeodrainage on Yeelirrie Stration Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
49	Yuinmery calcrete groundwater assemblage types on Raeside palaeodrainage on Yuinmery Station Unique assemblages of invertebrates have been identified in the groundwater calcretes. Threats: mining	Priority 1
50	Helena and Aurora Range vegetation complexes (banded ironstone formation) Threats: iron ore mining.	Priority 1
51	Mount Manning Range vegetation complex (banded ironstone formation) Threats: iron ore mining.	Priority 1
52	Banded Ironstone Hills with <i>Dryandra arborea</i> On Unallocated Crown Land in excellent condition north-west Menzies area. Threats: mining	Priority 1
53	Yellow sandplain communities of the Great Victoria Desert Very diverse mammalian and reptile fauna, distinctive plant communities. Threats: mining	Priority 3(ii)
54	Yilgarn Hills vegetation complex Threats: mining	Priority 3(iii)
55	Mount Belches <i>Acacia quadrimarginea</i> / <i>Ptilotus obovatus</i> banded ironstone community On Randall Timber Reserve. Threats: Has grazing coexistence with the reserve.	Priority 3(iii)
56	Duladgin Ridge vegetation complex	Priority 3(iii)
57	Mount Jumbo Range vegetation complex Laverton area, northeast goldfields	Priority 3(iii)
58	Mount Linden Range banded ironstone ridge vegetation complex	Priority 3(iii)
SOUTH WEST		
1	<i>Reedia spathacea</i> - <i>Empodisma gracillimum</i> – <i>Sporadanthus rivularis</i> dominated floodplains and paluslopes of the Blackwood Plateau Diverse closed sedges and rushes to 1.5 m in height of <i>Reedia spathacea</i> / <i>Empodisma</i>	Priority 1

	<i>gracillimum/Sporadanthus rivularis</i> with open low shrubs to open scrub of <i>Taxandria linearifolia</i> .	
2	Granite community dominated by the shrubs <i>Calothamnus graniticus</i> subsp. <i>graniticus</i>, <i>Acacia cyclops</i>, <i>A. saligna</i>, <i>Hakea oleifolia</i>, <i>H. prostrata</i> and <i>Jacksonia furcellata</i> (Sugar Loaf Rock) Shrubland (0.5-2 m) growing on shallow soils derived from granite gneiss on the Cowaramup and Gracetown (Willyabrup Exposed Rocky Slopes land unit) soil landscape systems. The dominant species include: <i>Allocasuarina humilis</i> , <i>Acacia cyclops</i> , <i>A. littorea</i> , <i>A. pulchella</i> , <i>A. rostellifera</i> , <i>Calothamnus graniticus</i> , <i>Darwinia citriodora</i> , <i>Corymbia calophylla</i> , <i>Daviesia horrida</i> , <i>D. preissii</i> , <i>Dryandra lindleyana</i> , <i>D. erinacea</i> , <i>Hakea prostrata</i> , <i>H. trifurcata</i> , <i>Spyridium globulosum</i> , <i>Pimelea ferruginea</i> , and <i>Xanthorrhoea preissi</i> .	Priority 1
3	<i>Corymbia calophylla</i>, <i>Melaleuca raphiophylla</i>, <i>Banksia littoralis</i>, <i>Eucalyptus rudis</i>, <i>Agonis flexuosa</i> low open forest with seasonal subsoil moisture of the Dunsborough area <i>Corymbia calophylla</i> , <i>Agonis flexuosa</i> , <i>Banksia littoralis</i> , <i>Melaleuca raphiophylla</i> low open forest over <i>Viminea juncea</i> , <i>Jacksonia furcellata</i> tall open shrubland over <i>Xanthorrhoea preissii</i> , <i>Pericalymma elliptica</i> shrubland over <i>Hibbertia</i> spp, <i>Astroloma pallidum</i> , <i>Leucopogon australia</i> open low heath over <i>Hypolaena pubescens</i> , <i>Mesomelaena tetragona</i> , <i>Lepidosperma</i> spp. dense sedges over <i>Amphipogon</i> and <i>Thysanotus</i> spp. open herbs. The community occurs on sandy loam soils at the southern tip of the Swan Coastal Plain. Threats: urban development, weeds and recreation impacts, fire and changes in hydrology	Priority 1
4	Tall closed sedgeland on shallow soils derived from granite gneiss on the Leeuwin Naturaliste Ridge ('Sedgelands of the Cape Leeuwin Spring') Tall closed sedgeland of <i>Juncus kraussii</i> , <i>Baumea juncea</i> , and <i>Schoenoplectus validus</i> ; tall closed sedgeland of <i>Typha orientalis</i> , over <i>S. validus</i> , <i>Lepidosperma gladiatum</i> and <i>Muehlenbeckia adpressa</i> ; low closed sedgeland of <i>Ficina nodosa</i> and <i>Baumea juncea</i> on shallow soils derived from granite gneiss on the Leeuwin Naturaliste Ridge.	Priority 1
5	<i>Eucalyptus cornuta</i>, <i>Agonis flexuosa</i> and <i>Eucalyptus decipiens</i> forest on deep yellow-brown siliceous sands over limestone ('Busselton Yate community')	Priority 1
6	<i>Eucalyptus rudis</i>, <i>Corymbia calophylla</i>, <i>Agonis flexuosa</i> Closed Low Forest (near Busselton) A low lying Spearwood Dune plant community associated with shallow sandy soils over Tamala limestone that in places is exposed at the surface. The plant community on these soils supports a unique mixture of wetland and upland flora. Typically low forest dominated by <i>Eucalyptus rudis</i> , <i>Eucalyptus calophylla</i> , <i>Agonis flexuosa</i> over a diverse understorey including <i>Hibbertia hypericoides</i> , <i>Logania vaginalis</i> , <i>Conospermum caeruleum</i> , <i>Agrostocrinum hirsutum</i> and <i>Lomandra micrantha</i> . Other associated species include <i>Eucalyptus decipiens</i> , <i>Melaleuca raphiophylla</i> , <i>Banksia littoralis</i> , <i>Hakea varia</i> and the sedge species <i>Baumea juncea</i> and <i>Gahnia trifida</i> .	Priority 1
7	<i>Eucalyptus patens</i>, <i>Corymbia calophylla</i>, <i>Agonis flexuosa</i> Closed Low Forest (near Busselton) <i>Eucalyptus patens</i> on loamy brown sands over limestone. Species present include <i>Eucalyptus patens</i> , <i>Corymbia calophylla</i> and <i>Agonis flexuosa</i> over understorey species including <i>Bossiaea linophylla</i> , <i>Hibbertia hypericoides</i> , <i>Gastrobium praemorsum</i> , <i>Leucopogon propinquus</i> , <i>Phyllanthus calycinus</i> , <i>Lomandra micrantha</i> , <i>Lepidosperma longitudinale</i> , <i>Mesomelaena tetragona</i> , <i>Cyathochaeta avenacea</i> and <i>Tetraria octandra</i> . The community is likely to have similarities to community type 1b 'Southern <i>Corymbia calophylla</i> woodlands on heavy soils'.	Priority 1
8	Central Whicher Scarp Mountain Marri woodland (Whicher Scarp woodlands of grey/white sands community A1) Located on Whicher Scarp mid slopes. The taxa that identify the group include: <i>Ricinocarpus</i> aff. <i>cyanescens</i> , <i>Hibbertia ferruginea</i> , <i>Platysace filiformis</i> , <i>Conospermum capitatum</i> subsp. <i>glabratum</i> , <i>Thysanotus arbuscular</i> , <i>Schoenus brevisetis</i> , <i>Phlebocarya filifolia</i> , <i>Leucopogon glabellus</i> , <i>Pimelea rosea</i> subsp. <i>rosea</i> , <i>Adenanthos obovatus</i> , <i>Stylidium carnosum</i> and <i>Gompholobium capitatum</i> . Note: This community should be cross-referenced with ' <i>Eucalyptus haematoxylon</i> - <i>Eucalyptus marginata</i> woodlands on Whicher foothills ('community type 1a')', see below.	Priority 1
9	West Whicher Scarp <i>Banksia attenuata</i> woodland (Swan Coastal Plain centred woodlands of grey/white sands community B2) This community type occurs in grey sand in the West Whicher Scarp. It is similar to the open <i>Banksia attenuata</i> woodlands with Peppermint (<i>Agonis flexuosa</i>) from the grey sands of the West Whicher Scarp. The type is species poor. Taxa include: <i>Allocasuarina fraseriana</i> , <i>Banksia attenuata</i> , <i>Xylomellum occidentale</i> , <i>Bossiaea praetermissa</i> , <i>Calytrix flavescens</i> , <i>Gompholobium tomentosum</i> , <i>Hibbertia hypericoides</i> , <i>Hovea stricta</i> , <i>Hypocalymma robustum</i> , <i>Kunzea rostrata</i> , <i>Petrophile linearis</i> and a suite of grasses, herbs and sedges.	Priority 1
10	Central Whicher Scarp Jarrah woodland (Whicher Scarp woodlands of coloured sands and laterites community C1) Occurs on coloured sands on moderate to gentle slopes of the Central Whicher Scarp. The community has strong representation of a less common group of southern taxa including: <i>Podocarpus drouyianus</i> , <i>Loxocarya cinerea</i> , <i>Allocasuarina fraseriana</i> , <i>Drosera stolonifera</i> , <i>Amperea ericoides</i> , <i>Thysanotus triandrus</i> , <i>Cyathochaeta equitans</i> , <i>Hibbertia quadricolor</i> , <i>Comesperma calymega</i> , <i>Lepidosperma pubisquamum</i> , <i>Conospermum paniculatum</i> , <i>Acacia preissiana</i> and <i>Hybanthus debissimus</i> . Note: This community should be cross-referenced with ' <i>Eucalyptus haematoxylon</i> - <i>Eucalyptus marginata</i> woodlands on Whicher foothills ('community type 1a')', see below.	Priority 1
11	Whicher Scarp Jarrah woodland of deep coloured sands (Whicher Scarp woodlands of coloured sands and laterites community C2) Community is found scattered through the Central and North Whicher Scarp on midslopes on deep, generally coloured sands rarely associated with laterites. Community has a strongest representation of common sand taxa especially <i>Hypolaena exsulca</i> , <i>Dasyogon bromeliifolius</i> , <i>Stirlingia latifolia</i> , <i>Petrophile linearis</i> ,	Priority 1

	<i>Melaleuca thymoides</i> and <i>Adenanthos meisneri</i> . Note: This community should be cross-referenced with ‘ <i>Eucalyptus haematoxylon</i> - <i>Eucalyptus marginata</i> woodlands on Whicher foothills (‘community type 1a’)', see below.	
12	Dardanup Jarrah and Mountain Marri woodland on laterite (Whicher Scarp woodlands of coloured sands and laterites community C5) Community located on unusual surface of quartzite and laterite in Dardanup forest which is an area where the Whicher Scarp, Blackwood Plateau and Darling Scarp interface. It is notable in the presence of uncommonly encountered laterite taxa including: <i>Lomandra</i> sp. Dardanup, <i>Lomandra spartea</i> , <i>Olx benthamiana</i> , <i>Andersonia heterophylla</i> , <i>Hemigenia incana</i> , <i>Acacia varia</i> var. <i>varia</i> , <i>Daviesia angulata</i> , <i>Pimelea preissii</i> , and also <i>Lomandra brittanii</i> , <i>Xanthorrhoea acanthostachya</i> , <i>Dryandra armata</i> var. <i>armata</i> , <i>Hakea stenocarpa</i> , <i>Stachystemon vermicularis</i> , <i>Lambertia multiflora</i> var. <i>darlingensis</i> , <i>Petrophile striata</i> and <i>Pimelea sulphurea</i> . Note: This community should be cross-referenced with ‘ <i>Eucalyptus haematoxylon</i> - <i>Eucalyptus marginata</i> woodlands on Whicher foothills (‘community type 1a’)', see below.	Priority 1
13	Sabina River Jarrah and Marri woodland (Whicher Scarp community F1) Community in Sabina River alluvial fan where the Sabina River meets the Swan Coastal Plain. It is characterised by a suite of wetland taxa of restricted occurrence in the Whicher Scarp: <i>Mirbelia dilatata</i> , <i>Lomandra pauciflora</i> , <i>Tremandra diffusa</i> , <i>Tremandra stelligera</i> , <i>Trymalium floribundum</i> subsp. <i>trifidum</i> and <i>Clematis aristata</i> var. <i>occidentalis</i> . Other significant taxa in the community are: <i>Hovea elliptica</i> , <i>Leucopogon verticillatus</i> , and <i>Darwinia citriodora</i> .	Priority 1
14	Shrublands of near permanent wetlands in creeklines of the Whicher Scarp (Whicher Scarp community G2) Community is species poor and included the following taxa: <i>Astartea scoparia</i> , <i>Homalospermum firmum</i> , <i>Taxandria fragrans</i> MS, <i>*Anthoxanthum odoratum</i> , <i>Baumea rubingosa</i> , <i>Cyathochaeta teretifolia</i> , <i>Isolepis cernua</i> , <i>Taraxis grossa</i> .	Priority 1
15	Swan Coastal Plain Paluslope Wetlands These wetlands are very wet all year round and are associated with areas of groundwater seepage from the sandy low hills at the base of the Whicher Scarp. At times these wetlands are contiguous with areas of Pinjarra Plain wetlands, and the wetlands of the two landforms merge. Combinations of the following species are typically found in the type: <i>Melaleuca preissiana</i> , <i>Taxandria linearifolia</i> , <i>Taxandria fragrans</i> , <i>Melaleuca incana</i> , and <i>Cyathochaeta teretifolia</i> . Other species include: <i>Eucalyptus patens</i> , <i>Homalospermum firmum</i> , <i>Gahnia decomposita</i> , <i>Callistachys lanceolata</i> , <i>Hakea linearis</i> , <i>Melanostachya ustulata</i> , <i>Evandra aristata</i> , <i>Beaufortia sparsa</i> , <i>Calistemon glaucus</i> and <i>Pultenaea pinifolia</i> .	Priority 1
16	Relictual White Mangrove Community (Leschenault Inlet) May not be considered a separate community type as is possibly a geographic outlier.	Priority 1
17	<i>Melaleuca lanceolata</i> forests, Leeuwin Naturaliste Ridge Low Closed Forest to Closed Forest of <i>Melaleuca lanceolata</i> (“moonah”) occurring near the coastline of the Leeuwin-Naturaliste Ridge adjacent to limestone cliffs and down steeply sloping rock slopes on dark-grey, brown or, less commonly, pale-grey sands, often with outcropping limestone. The Moonah varies from 2 to 15 metres, reflecting depth of soil and wind pruning. Typical understorey shrubs are <i>Tetragonia implexicoma</i> , <i>Rhagodia baccata</i> , <i>Leucopogon propinquus</i> , and <i>Suaeda australis</i> .	Priority 2
18	Blackwood Alluvial Flats Woodlands and shrublands of the alluvial soils of the upper Blackwood River (Condinup and Darkan 5f soil-landscape sub-systems). Vegetation associations identified to date: Wet shrublands on alluvial clay flats, Jarrah-Marri woodlands on alluvial grey-brown loams, Wandoo woodlands on alluvial grey-brown clay-loams (includes vernal pools), Flooded Gum-Wandoo woodland on alluvial grey clays (includes vernal pools), Wandoo woodlands on grey sandy loams	Priority 2
19	Low shrublands on acidic grey-brown sands of the Gracetown soil-landscape system A low shrubland or heath occurring on grey brown sand with a bleached surface derived from granite gneiss near the west coast of the Leeuwin-Naturaliste Ridge. Dominant or characteristic shrub species include; <i>Calothamnus sanguineus</i> , <i>Darwinia citriodora</i> , <i>Hakea prostrata</i> , <i>Hakea trifurcata</i> , <i>Jacksonia horrida</i> , <i>Kunzea ciliata</i> , <i>Pimelea ferruginea</i> , <i>Pimelea rosea</i> , <i>Spyridium globulosum</i> , <i>Verticordia plumosa</i> var. <i>plumosa</i> , <i>Xanthorrhoea brunonis</i> . Common herbs, grasses and sedges include; <i>Asteridea pulverulenta</i> , <i>Austrodanthonia setacea</i> , <i>Austrostipa compressa</i> , <i>Brachyscome iberidifolia</i> , <i>Lepidosperma squamatum</i> , <i>Platysace haplosciadia</i> , <i>Trichocline spatulata</i> and <i>Velleia trinervis</i> .	Priority 2
20	*Southern Swan Coastal Plain <i>Eucalyptus gomphocephala</i> - <i>Agonis flexuosa</i> woodlands (type 25) Woodlands of <i>Eucalyptus gomphocephala</i> - <i>Agonis flexuosa</i> south of Woodman Point. Recorded from the Karrakatta, Cottesloe and Vasse units. Dominants other than tuart were occasionally recorded, including <i>Corymbia calophylla</i> at Paganoni block and <i>Eucalyptus decipiens</i> at Kemerton. Tuart formed the overstorey nearby however.	Priority 3(i)
21	Quindalup <i>Eucalyptus gomphocephala</i> and / or <i>Agonis flexuosa</i> woodlands (‘community type 30b’) This community is dominated by either Tuart or <i>Agonis flexuosa</i> . The presence of <i>Hibbertia cuneiformis</i> , <i>Geranium retrorsum</i> and <i>Dichondra repens</i> differentiate this group from other Quindalup community types. The type is found from the Leschenault Peninsular south to Busselton.	Priority 3(i)
22	<i>Eucalyptus haematoxylon</i> - <i>Eucalyptus marginata</i> woodlands on Whicher foothills (‘community type 1a’) Community occurs along the northern edge of State Forest along the base of the Whicher Range and is composed of <i>Eucalyptus haematoxylon</i> – <i>Corymbia calophylla</i> - <i>Eucalyptus marginata</i> forests and woodlands. Taxa virtually restricted to the type include <i>Acacia varia</i> subsp. <i>varia</i> , <i>Agonis grandiflora</i> and	Priority 3(i)

	<i>Xanthosia pusilla</i> .	
23	*Low lying <i>Banksia attenuata</i> woodlands or shrublands ('community type 21c') This type occurs sporadically between Gingin and Bunbury, and is largely restricted to the Bassendean system. The type tends to occupy lower lying wetter sites and is variously dominated by <i>Melaleuca preissiana</i> , <i>Banksia attenuata</i> , <i>B. menziesii</i> , <i>Regelia ciliata</i> , <i>Eucalyptus marginata</i> or <i>Corymbia calophylla</i> . Structurally, this community type may be either a woodland or occasionally shrubland.	Priority 3(i)
24	Southern <i>Banksia attenuata</i> woodlands ('community type 21b') This community is restricted to sand sheets at the base of the Whicher Scarp, the sand sheets on elevated ridges or the sand plain south of Bunbury. Structurally, this community type is normally <i>Banksia attenuata</i> or <i>Eucalyptus marginata</i> – <i>B. attenuata</i> woodlands. Common taxa include <i>Acacia extensa</i> , <i>Jacksonia</i> sp., Busselton, <i>Laxmannia sessiliflora</i> , <i>Lysinema ciliatum</i> and <i>Johnsonia acaulis</i> .	Priority 3(i)
	SWAN	
1	*Pools of the Avon and Dale Rivers Deep pools and natural braided sections of the fresh to brackish Avon and Dale Rivers.	Priority 1
2	Fairbridge Ironstone community (Cemetery – Fairbridge Farm).	Priority 1
3	Mount Saddleback heath communities	Priority 1
4	<i>Casuarina obesa</i> association Thomas Rd to Serpentine River, Swan Coastal Plain. No detailed information to assess if distinct community.	Priority 1
5	Elongate fluviatile delta system Peel Harvey system, the site appears to contain common vegetation types on an unusual substrate, may not meet the criteria for TECs.	Priority 1
6	*Claypans with mid dense shrublands of <i>Melaleuca lateritia</i> over herbs Claypans (predominantly basins) usually dominated by a shrubland of <i>Melaleuca lateritia</i> occurring both on the coastal plain and the adjacent plateau. These claypans are characterized by aquatic (<i>Hydrocotyle lemnoides</i> – Priority 4) and amphibious taxa (e.g. <i>Glossostigma diandrum</i> , <i>Villarsia capitata</i> and <i>Eleocharis keigheryi</i> - DRF).	Priority 1
7	Hypersaline microbial community 1 Extant coastal hypersaline lakes microbialite community formed by <i>Apanothecae halophitica</i> , <i>Oscillatoria</i> sp./ <i>Spirulina</i> sp., <i>Botryococcus</i> and diatoms (Government House Lake, Rottnest).	Priority 2
8	Wandoo woodland over dense low sedges of <i>Mesomelaena preisii</i> on clay flats Wandoo woodland on clay flats in valleys over dense low sedges of <i>Mesomelaena preisii</i> .	Priority 2
9	<i>Banksia</i> woodland of the Gingin area restricted to soils dominated by yellow to orange sands Species-rich <i>Banksia</i> woodlands on deep yellow-red sands that appear restricted to the western Dandaragan Plateau. The vegetation is described as scattered <i>Eucalyptus todtiana</i> and <i>Eucalyptus calophylla</i> over <i>Banksia menziesii</i> and <i>Banksia attenuata</i> low open woodland over <i>Jacksonia sternbergiana</i> and <i>Adenanthos cygnorum</i> high open shrubland over <i>Allocasuarina humilis</i> and <i>Chamelaucium lullfitzii</i> (DRF) open shrubland over <i>Eremaea pauciflora</i> and <i>Astroloma xerophyllum</i> low shrubland over <i>Mesomelaena pseudostygia</i> open sedgeland.	Priority 2
10	Living microbial mats in hypersaline ponds Extant hypersaline pond stromatolitic 'Conophyton' like un lithified communities formed with little sediment incorporation by (?) <i>Phormidium hypersalinum</i> (Pamelup Pond, Lake Preston, Yalgorup).	Priority 2
11	Wooded wetlands that support colonial waterbird nesting areas Chandala, Booragoon Lake, unnamed wetland near Pinjarra, McCarleys Swamp. This type differs from the listed 'Perched wetlands of the Wheatbelt region with extensive stands of <i>Casuarina obesa</i> and <i>Melaleuca strobophylla</i> ' ('Toolibin-type' wetlands) in that the Wheatbelt type is <i>Casuarina</i> , rather than <i>Melaleuca</i> dominated. Also, Toolobin Lake type is now brackish-saline (formerly fresh-brackish), whereas this type are currently fresh-brackish.	Priority 2
12	Litter Dependent Invertebrate Community of the northern Jarrah Forest Chandler Block, Northern Jarrah Forest, insufficient evidence that this is a discrete community type.	Priority 2
13	<i>Banksia ilicifolia</i> woodlands, southern Swan Coastal Plain ('community type 22') Low lying sites generally consisting of <i>Banksia ilicifolia</i> – <i>B. attenuata</i> woodlands, but <i>Melaleuca preissiana</i> woodlands and scrubs are also recorded. Occurs on Bassendean and Spearwood systems in the central Swan Coastal Plain north of Rockingham. Typically has very open understorey, and sites are likely to be seasonally waterlogged.	Priority 2
14	Coastal shrublands on shallow sands, southern Swan Coastal Plain ('community type 29a') Mostly heaths on shallow sands over limestone close to the coast. No single dominant but important species include <i>Spyridium globulosum</i> , <i>Rhagodia baccata</i> , and <i>Olearia axillaris</i> .	Priority 3(ii)
15	Granite communities of the northern Jarrah Forest Jarrahdale area - Monadnocks, Blue Rock; insufficient information to distinguish discrete community type/s.	Priority 3(i)
16	Swan Coastal Plain <i>Banksia attenuata</i> - <i>Banksia menziesii</i> woodlands ('community type 23b') These woodlands occur in the Bassendean system, from Melaleuca Park to Gingin. Occurs in reasonably extensive <i>Banksia</i> woodlands north of Perth.	Priority 3(i)
17	*Southern Swan Coastal Plain <i>Eucalyptus gomphocephala</i> - <i>Agonis flexuosa</i> woodlands (type 25) Woodlands of <i>Eucalyptus gomphocephala</i> - <i>Agonis flexuosa</i> south of Woodman Point. Recorded from the Karrakatta, Cottesloe and Vasse units. Dominants other than tuart were occasionally recorded, including <i>Corymbia calophylla</i> at Paganoni block and <i>Eucalyptus decipiens</i> at Kemerton. Tuart formed the overstorey nearby however.	Priority 3(i)

18	*Low lying <i>Banksia attenuata</i> woodlands or shrublands ('community type 21c') This type occurs sporadically between Gingin and Bunbury, and is largely restricted to the Bassendean system. The type tends to occupy lower lying wetter sites and is variously dominated by <i>Melaleuca preissiana</i> , <i>Banksia attenuata</i> , <i>B. menziesii</i> , <i>Regelia ciliata</i> , <i>Eucalyptus marginata</i> or <i>Corymbia calophylla</i> . Structurally, this community type may be either a woodland or occasionally shrubland.	Priority 3(i)
19	Northern Spearwood shrublands and woodlands ('community type 24') Heaths with scattered <i>Eucalyptus gomphocephala</i> occurring on deeper soils north from Woodman Point. Most sites occur on the Cottesloe unit of the Spearwood system. The heathlands in this group typically include <i>Dryandra sessilis</i> , <i>Calothamnus quadrifidus</i> , and <i>Schoenus grandiflorus</i> .	Priority 3(i)
20	Acacia shrublands on taller dunes, southern Swan Coastal Plain ('community type 29b') Community is dominated by Acacia shrublands or mixed heaths on the larger dunes. This community stretches from Seabird to south of Mandurah. No consistent dominant but species such as <i>Acacia rostellifera</i> , <i>Acacia lasiocarpa</i> , and <i>Melaleuca acerosa</i> were important.	Priority 3(i)
21	Central Northern Darling Scarp Granite Shrubland Community Shrublands and heath on deeper loams and red earths on fragmented granite/quartzite. Heath species typically consist of the taller shrubs <i>Xanthorrhoea acanthostachya</i> and <i>Allocasuarina humilis</i> over smaller proteaceous and myrtaceous shrubs, namely <i>Melaleuca</i> aff. <i>scabra</i> , <i>Baeckea camphorosmae</i> and to a lesser extent, the proteaceous shrubs <i>Dryandra armata</i> , <i>Hakea incrassata</i> and <i>Hakea undulata</i> . Located in central region of the Northern Darling Scarp near Perth.	Priority 4 (i)
	WARREN	
1	<i>Reedia spathacea</i> - <i>Empodisma gracillimum</i> - <i>Schoenus multiglumis</i> dominated peat paluslopes and sandy mud floodplains of the Warren Biogeographical Region Sedges/ rushes to about 1.5m in height of <i>Reedia spathacea</i> / <i>Empodisma gracillimum</i> / <i>Schoenus multiglumis</i> with <i>Homalospermum firmum</i> low open shrubs to scrub.	Priority 1
2	Relictual peat community Lake Surprise.	Priority 1
3	Southwest Coastal Grassland Southwest coastal grassland dominated by <i>Austrostipa flavescens</i> , <i>Poa porphyroclados</i> and <i>Desmocladius flexuosus</i> .	Priority 1
4	Dense heath B of <i>Spyridium glosulosum</i>, <i>Banksia occidentalis</i>, <i>Olearia axillaris</i>, <i>Melaleuca pauciflora</i>, <i>Pericalymma spongiocaula</i> and <i>Jacksonia horrida</i> with tall open sedges of <i>Ficinia nodosa</i> Typical species may include <i>Anarthria prolifera</i> , <i>Ficinia nodosa</i> , <i>Baumea juncea</i> , <i>Hibbertia stellaris</i> , <i>Patersonia occidentalis</i> , <i>Cassytha racemosa</i> , <i>Melaleuca pauciflora</i> , <i>Melaleuca</i> sp., <i>Pericalymma spongiocaula</i> , <i>Banksia occidentalis</i> , <i>Hakea varia</i> , <i>Spyridium globulosum</i> , <i>Dodonaea ceratocarpa</i> . Found at Black point, D'Entrecasteaux National Park Threats: Uncontrolled vehicle access, trampling, grazing, altered hydrology, <i>Phytophthora</i> and acid sulphate soils.	Priority 1
5	Low forest B of <i>Melaleuca cuticularis</i> with <i>Banksia occidentalis</i> Typical species include <i>Melaleuca cuticularis</i> , <i>Banksia occidentalis</i> , <i>Acacia saligna</i> , <i>Rhadinotamnus anceps</i> , <i>Cassytha racemosa</i> , <i>Spyridium globulosum</i> , <i>Olearia axillaris</i> , <i>Olx phyllanthii</i> , <i>Agonis flexuosa</i> , <i>Xanthorrhoea preissii</i> , <i>Muehlenbeckia adpressa</i> . Found at Black point, D'Entrecasteaux National Park Threats: Uncontrolled vehicle access, trampling, grazing, altered hydrology, <i>Phytophthora</i> and acid sulphate soils.	Priority 1
6	Sphagnum communities of the Tingle Forest Only 3 known occurrences - Walpole area.	Priority 2
7	Basalt association of the Warren Region Black Point - near Augusta. Dwarf Scrub D <i>Leucophyta brownii</i> , <i>Sarcocornia quinquefolia</i> and <i>Olearia axillaris</i> with Open Low Sedges of <i>Juncus pauciflorus</i> and Herbs of <i>Sarcocornia quinquefolia</i> , <i>Isolepis</i> sp., <i>Samolus repens</i> and Very Open Low Grass of <i>Sporobolus virginicus</i> . Bunbury Basalt outcrops, flats over Bunbury Basalt with reddish brown sandy clay loam basaltic soils and basaltic saprolite outcrops with light yellowish brown clays. Threats: Uncontrolled vehicle access, trampling, grazing, altered hydrology, <i>Phytophthora</i> and acid sulphate soils.	Priority 2
8	Saprolite association of the Warren Region Walpole Inlet. 'Palusmont wetland communities'.	Priority 2
9	Flat wetlands Rocky Gully to Denmark Threats: dieback and fire.	Priority 2
10	Southern Granite community (Muirillup Rock, Northcliffe) Subset of wheatbelt granites; insufficient information to distinguish discrete community type/s.	Priority 2
11	Aquatic invertebrate communities of peat swamps	Priority 2
12	Epiphytic Cryptogams of the karri forest Cryptogams associated with <i>Trymalium floribundum</i> and <i>Chorilaena quercifolia</i> in the karri forests of south-west WA. Comprises liverworts, mosses and lichens found on the bark of mature (plants greater than 15 years old and prior to senescence at about age 50) <i>Trymalium floribundum</i> and <i>Chorilaena quercifolia</i> in the karri forest of south-west Western Australia.	Priority 3 (iii)
	WHEATBELT	
1	Highclere Hills (Mayfield) vegetation complex (banded ironstone formation) Threats: iron ore mining.	Priority 1

2	Red Morrel Woodland of the Wheatbelt Tall open woodlands of <i>Eucalyptus longicornis</i> (red morrell) found in the Wheatbelt on lateritic, ironstone or granitic soil types. Sometimes found with <i>Eucalyptus salmonophloia</i> (Salmon Gum), or <i>E. loxophleba</i> (York Gum) woodlands and has very little understorey. It is also found directly above lake systems in the central and eastern Wheatbelt. The landscape unit in which it is found is valley floors, usually adjacent to saline areas.	Priority 1
3	* Pools of the Avon and Dale Rivers Deep pools and natural braided sections of the fresh to brackish Avon and Dale Rivers.	Priority 1
4	Canegrass perched clay wetlands of the wheatbelt dominated by <i>Eragrostis australasica</i> and <i>Melaleuca strobophylla</i> across the lake floor	Priority 1
5	Mottlecah dominated heathland on deep white sands Wheatbelt Mottlecah (<i>Eucalyptus macrocarpa</i> subsp. <i>macrocarpa</i>) dominated heathland on deep white sands. <i>Eucalyptus macrocarpa</i> over proteaceous sandplain community.	Priority 1
6	Natural organic saline seeps of the Avon Botanical District The known occurrence of this community is characterised by vegetation in a series of bands from the upland to the saline seep. 1) Dunes and sandplain, 2) Saline seep and 3) Adjacent flats and flow lines.	Priority 1
7	Dense Melaleuca thickets with emergent mallee <i>Eucalyptus erythronema</i> var. <i>marginata</i> and <i>Eucalyptus transcontinentalis</i> of the Wheatbelt Region	Priority 1
8	Tamma-Dryandra-Eremaea shrubland Tamma-Dryandra-Eremaea shrubland on cream sands of the Ulva Landform Unit. <i>Acacia lasiocalyx</i> and <i>Allocasuarina campestris</i> over <i>Eremaea pauciflora</i> , <i>Dryandra armata</i> , <i>Hakea aculeata</i> and <i>Dryandra erythrocephala</i> open heath over <i>Neurachne alopecuroidea</i> very open grassland over cream sands of the Ulva Landform Unit.	Priority 1
9	<i>Banksia prionotes</i> and <i>Xylomelum angustifolium</i> low woodlands on transported yellow sand <i>Banksia prionotes</i> and <i>Xylomelum angustifolium</i> Low Woodlands on large yellow sands dunes (formed from sheets of transported sand in the valleys) on the Ulva Landform Unit. The community has a species rich understorey of <i>Grevillea eriostachya</i> , <i>Melaleuca leptospermoides</i> , <i>Verticordia roei</i> , <i>Calytrix leschenaultii</i> , <i>Dampiera</i> spp., <i>Baeckea preissiana</i> and <i>Borya constricta</i> .	Priority 1
10	Salt Flats Plant Assemblages of the Mortlock River (East Branch) The habitat comprises braided channels (up to 2 km wide), flats, wash-lines and sandy rises (up to 2m high) stretching 39 km along the Mortlock River (East) from Meckering eastwards to 8 km west of Tammin. A mosaic of plant communities assorted by elevation occurs on the river flats. The area represents the most extensive braided saline drainage line in this part of the SW agricultural zone. The plant community comprises mixed shrubs (<i>Scholtzia capitata</i> , <i>Melaleuca</i> aff. <i>uncinata</i>) over species rich herbs on sandy rises, with <i>Melaleuca thyoidea</i> on margins, dwarf scrub and species rich herbs on washlines and saline wetlands.	Priority 1
11	Brown mallet <i>Eucalyptus astringens</i> communities in the western Wheatbelt on alluvial flats (previously 'Beaufort River Flats') Near York and on the Arthur River on grey clays the understorey is dominated by <i>Melaleuca viminea</i> over sedges (<i>Gahnia trifida</i>) and bunch grasses. At Kojunup and near Tambellup on brown clays sparse shrubs and succulent shrubs (<i>Disphyma crassifolium</i>) dominate the understorey.	Priority 1
12	Yate (<i>Eucalyptus occidentalis</i>) dominated alluvial claypans of the Jingalup Soil System	Priority 2
13	Gypsum Dunes (Lake Chinocup) <i>Eucalyptus</i> aff. <i>incrassata</i> mallee over low scrub on gypsum dunes.	Priority 2
14	Wheatbelt <i>Allocasuarina huegeliana</i> over <i>Pteridium esculentum</i> fernland community Tall emergent <i>Eucalyptus salmonophloia</i> over <i>Allocasuarina huegeliana</i> tall closed forest over <i>Acacia acuminata</i> mid-high isolated trees over <i>Alyxia buxifolia</i> tall sparse shrubland over <i>Pteridium esculentum</i> very tall closed fernland over various sparse forbland. Occurs in a drainage line near the base of a granite inselberg.	Priority 2
15	*Claypans with mid dense shrublands of <i>Melaleuca lateritia</i> over herbs Claypans (predominantly basins) usually dominated by a shrubland of <i>Melaleuca lateritia</i> occurring both on the coastal plain and the adjacent plateau. These claypans are characterized by aquatic (<i>Hydrocotyle lemnoidea</i> – Priority 4) and amphibious taxa (e.g. <i>Glossostigma diandrum</i> , <i>Villarsia capitata</i> and <i>Eleocharis keigheryi</i> - DRF).	Priority 2
16	<i>Allocasuarina huegeliana</i> and <i>Lepidosperma tuberculatum</i> growing on the south-western side of granite outcrops adjacent to laterite on the eastern slopes of the Darling Scarp	Priority 2
17	Ironcap Hills vegetation complexes (Mt Holland, Middle, North and South Ironcap Hills, Digger Rock and Hatter Hill) Threats: mining	Priority 3(iii)
18	Parker Range vegetation complexes <i>Hakea pendula</i> Tall Shrubland is of particular significance. <i>Eucalyptus sheathiana</i> with <i>E. transcontinentalis</i> and/or <i>E. eremophila</i> woodland on sandy soils at the base of ridges and low rises; <i>E. longicornis</i> with <i>E. corrugata</i> and <i>E. salubris</i> or <i>E. myriadena</i> woodland on broad flats; <i>E. salmonophloia</i> and <i>E. salubris</i> woodland on broad flats; <i>Allocasuarina acutivalvis</i> and <i>A. corniculata</i> on deeper sandy soils of lateritic ridges; <i>E. capillosa</i> subsp. <i>polyclada</i> and/or <i>E. loxophleba</i> over <i>Hakea pendens</i> thicket on skeletal soils on ridges (laterites, breakaways and massive gossanous caps); and <i>Callitris glaucophylla</i> low open woodland on massive greenstone ridges. Threats: exploration and mining	Priority 3(iii)
19	*Granite outcrop pools with endemic aquatic fauna Freshwater pools formed on granite outcrops that may persist for several months and house a variety of	Priority 3(i)

	aquatic invertebrates, some of which are endemic to south-west WA. Some examples include cladocerans, ostracods, copepods, rotifers, oligochaetes and molluscs.	
20	Plant assemblages of the Wongan Hills System Mallee over <i>Petrophile shuttleworthiana/Allocasuarina campestris</i> thicket on shallow gravely soils over ironstone on summit and slopes; Shrub mallee on slopes of lateritic hills; Mallee over <i>Allocasuarina campestris</i> thicket on the slopes of the laterite plateaus; Mallee over <i>Melaleuca</i> thicket on red brown loam over gravel on slopes below the plateau; Mallee over <i>Melaleuca coronicarpa</i> heath on shallow red soil on scarp slopes; <i>A. campestris/Calothamnus asper</i> thicket over red-brown clay/ironstone/greenstone on scree slopes; and in lower areas: <i>Eucalyptus longicornis/ E. salubris</i> woodland, <i>E. salmonophloia</i> and <i>E. loxophleba</i> woodlands; <i>Acacia acuminata</i> low forest; <i>E. ebbanoensis</i> mallee over scrub; and open mallee of <i>E. drummondii</i> .	Priority 4(i)
	SOUTH COAST	
1	Species rich shrublands and thickets with scattered eucalypt emergents on yellow sandy loam <i>Eucalyptus flocktoniae</i> (syn. <i>E. urna</i>) low woodland.	Priority 1
2	Stromatolite-like microbialite community of a Coastal Hypersaline Lake (Pink Lake) Microbial, invertebrate and plant assemblages of natural saline seeps. Well-laminated stromatolites consisting of alternations of egg-shell-like layers of inorganic aragonite precipitate and calcified microbial layers dominated by coccoid cyanobacteria and photosynthetic bacteria. These structures probably record seasonal alternations of the growth of a benthic microbial community and aragonite precipitation.	Priority 1
3	Ridge Road Quartzite community Open Jarrah forest and woodland developed on young exposed quartzite with an understorey dominated by <i>Taxandria parviceps</i> on the western interface of the Yilgarn craton and the Albany-Frazer orogen.	Priority 1
4	Bremer Range vegetation complexes Mt Day, Round Top Hill, Honman Ridge. <i>Eucalyptus rhomboidea</i> ms and <i>E. eremophila</i> woodland on the side slopes of low ridges; <i>E. flocktoniae</i> woodland (with <i>E. salubris</i> , <i>E. salmonophloia</i> , <i>E. dundasii</i> and <i>E. tenuis</i>) on broad flat ridges and side slopes; <i>E. flocktoniae</i> and/or <i>E. longicornis</i> woodland on saline soils on ridges and flats adjacent to large salt lake systems; <i>E. longicornis</i> and/or <i>E. salmonophloia</i> or, <i>E. georgei</i> subsp <i>georgei</i> or, <i>E. dundasii</i> woodland, on low areas; <i>E. livida</i> woodland on lateritic tops or <i>Allocasuarina</i> thickets on greenstone ridges of lateritic breakaways; <i>Acacia duriuscula</i> , <i>Allocasuarina globosa</i> , <i>E. georgei</i> subsp. <i>georgei</i> and <i>E. oleosa</i> thickets on greenstone ridges with skeletal soils. Proposed Nature Reserve. Threats: exploration and mining	Priority 1
5	Fraser Range vegetation complex Plant assemblages of the Fraser Range Vegetation Complex: <i>Allocasuarina huegeliana</i> and <i>Pittosporum phylliraeoides</i> open woodland over <i>Beyeria lechenaultia</i> and <i>Dodonaea microzyga</i> Scrub and <i>Aristida contorta</i> bunch grasses (granite complex), on the slopes and summits of hills; <i>Acacia acuminata</i> Tall Shrubland dominated by <i>Melaleuca uncinata</i> and <i>Triodia scariosa</i> on uplands with shallow loamy sands; <i>Eucalyptus</i> aff. <i>uncinata</i> (KRN 7854) over <i>Senna artemisioides</i> subsp. <i>helmsii</i> , <i>Cryptandra miliaris</i> , <i>Dodonaea boroniifolia</i> , <i>D. stenozyga</i> and <i>Triodia scariosa</i> (<i>Eucalyptus effusa</i> Mallee) on colluvial flats with loamy clay sands, and; <i>E. oleosa</i> , <i>E. transcontinentalis</i> , <i>E. flocktoniae</i> Woodland on flats.	Priority 1
6	Plant assemblages of the Southern Hills Vegetation Complex Complex of woodland (<i>E. oleosa</i> , <i>E. transcontinentalis</i> , <i>E. flocktoniae</i>) on flats with open stony ridges carrying mainly mallee and spinifex (<i>Eucalyptus effusa</i> Mallee: <i>Eucalyptus</i> aff. <i>uncinata</i> (KRN 7854) over <i>Cassia helmsii</i> , <i>Cryptandra miliaris</i> , <i>Dodonaea boroniifolia</i> , <i>D. stenozyga</i> and <i>Triodia scariosa</i>). Includes patches of grassland, wattle thicket and mallee.	Priority 1

7	Green Range granite hill heath and woodland community Heath and woodland dominated by <i>Acacia heteroclita</i> , <i>Anthocercis viscosa</i> , <i>Thryptomene saxicola</i> , <i>Darwinia citriodora</i> , <i>Prostanthera verticillata</i> , <i>Platysace compressa</i> , <i>Gastrolobium bilobum</i> , <i>Hakea oleifolia</i> , <i>Leucopogon verticillaris</i> , <i>Agonis flexuosa</i> , <i>Eucalyptus cornuta</i> , and <i>Acacia drummondii</i> ssp. <i>elegans</i> on red clay-loam over granite.	Priority 1
8	Wet ironstone heath community (Albany District) The habitat for the community is winter-wet ironstone in valley floors. The heath community is dominated by <i>Kunzea recurva</i> , <i>K. preissiana</i> , <i>K. micrantha</i> , <i>Hakea lasiocarpa</i> , <i>H. tuberculata</i> , <i>H. oldfieldii</i> , <i>H. cucullata</i> , <i>H. sulcata</i> , <i>Petrophile squamata</i> , <i>Dryandra tenuifolia</i> ssp. <i>tenuifolia</i> , <i>Adenanthos apiculatus</i> , <i>Melaleuca suberosa</i> , <i>M. violacea</i> , <i>Gastrolobium spinosum</i> . North Porongurup.	Priority 1
9	Porongurup Range Karri Forest Occurs on granite, red clay-loam on the mid-upper slopes of the Porongurup Range. Dominants include <i>Eucalyptus diversicolor</i> , <i>Corymbia calophylla</i> , <i>Trymalium floribundum</i> , <i>Hydrocotyle ?hirta</i> , <i>Tetrarrhena laevis</i> , <i>Clematis pubescens</i> , <i>Lepidosperma effusum</i> and <i>Pteridium esculentum</i> . Other associated species include; <i>Apium prostratum</i> subsp. <i>phillipii</i> (DRF), <i>Ranunculus colonorum</i> , <i>Adiantum aethiopicum</i> , <i>Asplenium flabellifolium</i> , <i>A. aethiopicum</i> (P4), <i>Veronica plebeia</i> , <i>Poa porphyroclados</i> and <i>Oxalis corniculata</i> .	Priority 1
10	Cheyne's 1 Tree Mallee <i>Eucalyptus acies</i> , <i>E. lehmanii</i> , <i>E. goniantha</i> Tree Mallee Tall Open Shrubland and Open Sedgeland on loam on steep slopes of spongelite breakaway. Common shrub species include <i>Gastrolobium bilobum</i> , <i>Rhadinotamnus rudis</i> , <i>Melaleuca blaerifolia</i> , <i>Hakea elliptica</i> , <i>Spyridium majoranifolium</i> and <i>Agonis theiformis</i> . Common sedges include <i>Desmocladus flexuosus</i> and <i>Tetraria capillaris</i> . Priority taxa other than <i>E. acies</i> (P4) and <i>E. goniantha</i> (P4) include <i>Dryandra serra</i> (P4, at the eastern limit of its range) and <i>Calothamnus robustus</i> (P3).	Priority 1
11	Cheyne's 2 Open Tree Mallee <i>Eucalyptus acies</i> (P4), <i>E. doratoxylon</i> Tree Mallee over Mixed Tall Open Shrubland, Open Shrubland and Open Sedgeland on loam on gentle to moderate slopes and crests of spongelite outcropping. Common tall shrub species include <i>Allocasuarina trichodon</i> , <i>Hakea cucullata</i> and <i>H. lasiantha</i> ; however the tall shrub stratum may be absent. Common shrubs include <i>Calothamnus robustus</i> (P3), <i>Beaufortia empetrifolia</i> , <i>Dryandra mucronulata</i> , <i>Melaleuca striata</i> and <i>Taxandria spatulata</i> . Common sedges include <i>Mesomelaena stygia</i> , <i>M. tetragona</i> , <i>Cyathochaeta avenacea</i> , <i>Anarthria scabra</i> and <i>Chordifex leucoblepharus</i> .	Priority 1
12	Heath on Komatiite at Bandalup Hill Dense heath on alkaline red clay over komatiite (ultra-mafic rock) and associated carbonates. Note: very open tree mallee over heath B in Hale Bopp occurrence. Dominant species: <i>Beyeria</i> sp. Bandalup, <i>Acacia ophiolithica</i> , <i>Hakea verrucosa</i> , <i>Grevillea fastigiata</i> , <i>Melaleuca</i> sp. Gorse, <i>Allocasuarina</i> sp. Bandalup, <i>Verticordia oxylepis</i> , <i>Grevillea oligantha</i> , <i>Hybanthus floribundus</i> , <i>Pomaderris brevifolia</i> ssp. <i>brevifolia</i> , <i>Pultenaea wudjariensis</i> , <i>Melaleuca pomphostoma</i> , <i>Nematolepis phebaloides</i> , <i>Philothea gardneri</i> Bandalup form, <i>Gyrostemon</i> sp. Ravensthorpe, <i>Calothamnus quadrifidus</i> , <i>Calytrix tetragona</i> , <i>Halganina anagalloides</i> , <i>Coleanthera myrtoides</i> . <i>Beyeria</i> sp., <i>Pultenaea wudjariensis</i> , <i>Grevillea fastigiata</i> and <i>Gyrostemon</i> sp. Ravensthorpe are narrow range endemics.	Priority 1
13	Melaleuca sp. Kundip Heath Very open mallee over <i>Melaleuca</i> sp. Kundip (Collection number GF Craig 6020) dense heath. Open mallee over dense shrub heath (1.0-1.5) dominated by <i>Melaleuca</i> sp. Kundip on pale grey loamy sand with quartz rubble, occupies hill slopes. Associated species include <i>Melaleuca</i> sp. Kundip (GF Craig 6020) (P1) (dominant), <i>M. haplantha</i> , <i>M. stramentosa</i> (P1), <i>M. rigidifolia</i> , <i>M. bracteosa</i> , <i>Melaleuca</i> sp. Gorse, <i>Pultenaea</i> sp. Kundip (GF Craig 6008) (P1), <i>Eucalyptus cernua</i> , <i>E. phaenophylla</i> , <i>E. pileata</i> , <i>Dodonaea trifida</i> (P3), <i>Acacia durabilis</i> (P3), <i>Leucopogon infuscatus</i> and <i>Hibbertia psilocarpa</i> ms. On its eastern boundary, the community abuts <i>Eucalyptus astringens</i> open low woodland and in this area there is an intergrade community.	Priority 1
14	Montane mallee of the Stirling Ranges Thicket, mallee-thicket and heath community on mid to upper slopes of Stirling Range mountains and hills east of Red Gum Pass.	Priority 1
15	Coyanarup Wetland Suite Microscale paluslopes associated with seepage and creeks in the area between Coyanarup Peak and Bluff Knoll in the Stirling Ranges.	Priority 1
16	<i>Eucalyptus purpurata</i> woodlands (Bandalup Hill) <i>Eucalyptus purpurata</i> woodlands on magnesite soils of the ridge-tops and upper slopes of Bandalup Hill	Priority 1
17	<i>Banksia coccinea</i> Shrubland/<i>Eucalyptus staeri</i>/Sheoak Open Woodland ('Community type 14a') Found on deep white/light grey sand on the lower slopes and valleys, usually occurring just upslope of seasonally wet drainage lines. The community is floristically very diverse and structurally quite variable. Typically <i>Allocasuarina fraseriana</i> , <i>Eucalyptus staeri</i> , <i>Banksia attenuata</i> and <i>Banksia ilicifolia</i> are present as emergents or as low open woodland above a <i>Banksia coccinea</i> tall open scrub, mixed open/closed heath, mixed low open heath, mixed sedgeland and open herbland. <i>Jacksonia spinosa</i> often forms a distinct stratum above the heathland, dominant heath species are <i>Melaleuca thymoides</i> , <i>Adenanthos cuneatus</i> , <i>Leucopogon rubricaulis</i> , <i>Phyllota barbata</i> , <i>Hypocalymma strictum</i> and <i>Leucopogon glabellus</i> . Common sedges and herbs include <i>Anarthria scabra</i> , <i>Lyginia barbata</i> , <i>Schoenus caespititius</i> , <i>Anarthria prolifera</i> , <i>Anarthria gracilis</i> and <i>Cyathochaeta equitans</i> . The community is highly susceptible to <i>Phytophthora</i> dieback with infestations resulting in greatly reduced floristic and structural diversity. Appears to be restricted to the Albany region.	Priority 1

18	<i>Banksia laevigata</i> – <i>Banksia lemniiana</i> proteaceous thicket This community occurs on laterised ridges and breakaways. Associated species generally include <i>Eucalyptus pleurocarpa</i> , <i>Adenanthos oreophilus</i> , <i>Leptospermum maxwellii</i> , <i>Beaufortia orbifolia</i> , <i>Taxandria spathulata</i> and <i>Stylidium albomontis</i> .	Priority 1
19	<i>Eucalyptus megacornuta</i> mallet woodland Associated species include the shrubs <i>Hovea acanthoclada</i> , <i>Lasiopetalum compactum</i> , <i>Melaleuca thapsina</i> . This community typically grows on rock piles and breakaways of laterised banded ironstone and pyrite formations. A vegetation study noted that <i>E. megacornuta</i> is almost confined to the Ravensthorpe Range and was considered rare (less than 1,000 plants known in conservation reserves, or few populations).	Priority 1
20	Microbial mantles of Nullarbor caves (especially Weebubbie Cave) Significant microbial communities in underwater sections of caves. Threats: uncontrolled access	Priority 1
21	Mosaic of Albany Blackbutt (<i>Eucalyptus staeri</i>) mallee-heath found on lateritic ridges and Chittick (<i>Lambertia inermis</i> subsp. <i>inermis</i>) scrub-heath on seasonally-waterlogged laterite Regionally very restricted and very poorly reserved. Threats: dieback	Priority 1
22	<i>Banksia littoralis</i> woodland / <i>Melaleuca incana</i> Shrubland (South Coast Region) Threats: fragmentation, dieback disease, hydrological change, too frequent fire, weed invasion	Priority 1
23	<i>Banksia occidentalis</i>/<i>Kunzea clavata</i> Shrubland (South Coast Region) Threats: dieback disease, too frequent fire, weed invasion	Priority 1
24	<i>Astartea scoparia</i> Swamp Thicket (South Coast Region) Threats: fragmentation, too frequent fire, hydrological change, weed invasion, dieback disease	Priority 1
25	Coastal <i>Melaleuca incana</i> / <i>Taxandria juniperina</i> Shrubland/ Closed Forest (South Coast Region) Threats: fragmentation, too frequent fire, hydrological change, weed invasion, dieback disease	Priority 1
26	Tallerack (<i>Eucalyptus pleurocarpa</i>) mallee-heath on seasonally inundated soils May have been common prior to clearing for agriculture, and the remaining occurrences of this vegetation are of high conservation significance.	Priority 2
27	Subterranean faunal ecosystems of Nullarbor caves (known from Nurina Cave, Olwolgin Cave, Burnabbie Cave, N327, N1327) The caves contain communities of invertebrates, other fauna and sensitive habitats including tree roots. Caves included in this community contain at least four troglobitic taxa. Threats: uncontrolled access	Priority 3(i)
28	Swamp Yate (<i>Eucalyptus occidentalis</i>) woodlands in seasonally inundated clay basins (South Coast) Yate woodlands with intact understorey and fringing vegetation are poorly conserved in the region.	Priority 3(iii)
29	Scrub heath on deep sand with <i>Banksia</i> and <i>Lambertia</i>, and <i>Banksia</i> scrub heath on Esperance Sandplain The scrub heath forms part of Beard's Esperance System and comprises two very closely related vegetation units (bSZc & blSZc) on sand of varying depths overlying clay: Scrub heath dominated by <i>Banksia speciosa</i> and <i>Lambertia inermis</i> and other proteaceous species such as <i>B. media</i> and <i>Hakea</i> spp. (with occasional <i>Nuytsia floribunda</i> and mallee species) over herbs on deep sand (to 1m) over clay over ironstone. The scrub heath may share a number of species in common with the Mallee heath vegetation unit (e26SZc) of the Esperance System: <i>Eucalyptus tetragona</i> and <i>E. decipiens</i> with occasional <i>E. incrassata</i> , <i>E. redunca</i> over <i>Lambertia inermis</i> and <i>Hakea</i> spp. on lateritic soil over ironstone.	Priority 3(iii)
30	*Granite outcrop pools with endemic aquatic fauna Freshwater pools formed on granite outcrops that may persist for several months and house a variety of aquatic invertebrates, some of which are endemic to south-west WA. Some examples include cladocerans, ostracods, copepods, rotifers, oligochaetes and molluscs.	Priority 3(i)
31	Woodline Hills vegetation complexes (<i>Baeckea recurva</i> shrubland) Ridge communities unique but unless a mine is proposed are currently not threatened.	Priority 4(i)
32	Stirling Range Upland Yate community Low woodland of <i>Eucalyptus cornuta</i> over a sparse shrub layer of <i>Gastrolobium velutinum</i> , <i>Chamelaucium pauciflorum</i> and <i>Thomasia foliosa</i> over open herbs of <i>Tetrarrhena laevis</i> , <i>Poa porphyroclados</i> , <i>Billardiera heterophylla</i> , <i>Clematis pubescens</i> , <i>Senecio</i> sp., <i>Hydrocotyle hirta</i> , <i>Cheilanthes austrotenuifolia</i> and <i>Asplenium flabellifolium</i> .	Priority 4(ii)

*Community type occurs in more than one region

Total 284 (community types and sub-types)

APPENDIX 11 – SUMMARY OF VASCULAR PLANT TAXA BY FAMILY

APPENDIX 11: SUMMARY OF VASCULAR PLANT TAXA BY FAMILY

Family	Taxon
Acanthaceae	<i>Rostellularia adscendens</i> var. <i>clementii</i>
Aizoaceae	<i>Trianthema triquetra</i> <i>Zaleya galericulata</i> subsp. <i>galericulata</i>
Amaranthaceae	* <i>Aerva javanica</i> <i>Alternanthera nodiflora</i> <i>Amaranthus interruptus</i> <i>Gomphrena affinis</i> subsp. <i>pilbarensis</i> <i>Gomphrena kanisii</i> <i>Ptilotus aervoides</i> <i>Ptilotus astrolasius</i> <i>Ptilotus auriculifolius</i> <i>Ptilotus calostachyus</i> <i>Ptilotus exaltatus</i> <i>Ptilotus gomphrenoides</i> <i>Ptilotus helipteroides</i> <i>Ptilotus obovatus</i>
Apocynaceae	<i>Sarcostemma viminale</i> subsp. <i>australe</i>
Asteraceae	<i>Calotis hispidula</i> <i>Calotis porphyroglossa</i> <i>Pterocaulon</i> sp. <i>Streptoglossa odora</i>
Brassicaceae	<i>Lepidium phlebopetalum</i>
Caryophyllaceae	<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i> <i>Polycarpaea holtzei</i>
Chenopodiaceae	<i>Atriplex amnicola</i> <i>Dysphania cristata</i> <i>Dysphania kalpari</i> <i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i> <i>Enchylaena tomentosa</i> <i>Maireana planifolia</i> <i>Maireana pyramidata</i> <i>Rhagodia eremaea</i> <i>Salsola australis</i> <i>Sclerolaena bicornis</i> <i>Sclerolaena cuneata</i> <i>Sclerolaena deserticola</i> <i>Sclerolaena eriacantha</i> <i>Tecticornia disarticulata</i>
Cleomaceae	<i>Cleome viscosa</i>
Convolvulaceae	<i>Bonamia linearis</i> <i>Bonamia rosea</i> <i>Convolvulus clementii</i> <i>Cressa australis</i> <i>Duperreya commixta</i> <i>Evolvulus alsinoides</i> var. <i>villosicalyx</i> <i>Ipomoea calobra</i> <i>Ipomoea optica</i> <i>Ipomoea muelleri</i> <i>Ipomoea polymorpha</i> <i>Operculina aequisejala</i>

APPENDIX 11: SUMMARY OF VASCULAR PLANT TAXA BY FAMILY

Family	Taxon
Cucurbitaceae	* <i>Citrullus colocynthis</i> <i>Cucumis maderaspatanus</i> * <i>Cucumis melo</i> subsp. <i>agrestis</i>
Cyperaceae	<i>Bulbostylis barbata</i> <i>Cyperus bifax</i> <i>Fimbristylis dichotoma</i> <i>Fimbristylis simulans</i> <i>Fimbristylis</i> ?sp. K Kimberley Flora (E. Langfield 40)
Euphorbiaceae	<i>Euphorbia</i> aff. <i>australis</i> <i>Euphorbia australis</i> <i>Euphorbia drummondii</i> subsp. <i>drummondii</i>
Fabaceae	<i>Acacia</i> ? <i>macraneura</i> ms <i>Acacia ancistrocarpa</i> <i>Acacia aneura</i> <i>Acacia bivenosa</i> <i>Acacia coriacea</i> subsp. <i>pendens</i> <i>Acacia dictyophleba</i> <i>Acacia pachyacra</i> <i>Acacia pruinocarpa</i> <i>Acacia pyrifolia</i> var. <i>pyrifolia</i> <i>Acacia rhodophloia</i> <i>Acacia sclerosperma</i> <i>Acacia synchronicia</i> <i>Acacia tetragonophylla</i> <i>Cullen cinereum</i> <i>Indigofera monophylla</i> <i>Isotropis atropurpurea</i> <i>Kennedia prorepens</i> <i>Lotus cruentus</i> <i>Neptunia dimorphantha</i> * <i>Parkinsonia aculeata</i> (DP) <i>Senna artemisioides</i> subsp. <i>helmsii</i> <i>Senna artemisioides</i> subsp. <i>oligophylla</i> <i>Senna glutinosa</i> subsp. <i>glutinosa</i> <i>Senna glutinosa</i> subsp. <i>pruinosa</i> <i>Senna glutinosa</i> subsp. <i>x leurssenii</i> <i>Senna notabilis</i> <i>Senna sericea</i> <i>Tephrosia clementii</i> * <i>Vachellia farnesiana</i> <i>Vigna</i> sp. rockpiles (R. Butcher et al. RB 1400)(P3)
Goodeniaceae	<i>Goodenia</i> ? <i>armitiana</i> <i>Goodenia muelleriana</i> <i>Goodenia nuda</i> (P4) <i>Goodenia prostrata</i> <i>Goodenia vilmoriniae</i> <i>Scaevola parvifolia</i>
Haloragaceae	<i>Haloragis gossei</i> var. <i>gossei</i>

APPENDIX 11: SUMMARY OF VASCULAR PLANT TAXA BY FAMILY

Family	Taxon
Lamiaceae	<i>Basilicum polystachyon</i> <i>Dicrastylis cordifolia</i> <i>Newcastelia hexarrhena</i>
Malvaceae	<i>Abutilon macrum</i> <i>Corchorus tridens</i> <i>Hibiscus brachychlaenus</i> <i>Hibiscus burtonii</i> <i>Hibiscus sturtii</i> var. <i>campylochlamys</i> <i>Keraudrenia velutina</i> subsp. <i>elliptica</i> * <i>Malvastrum americanum</i> <i>Rulingia luteiflora</i> <i>Sida fibulifera</i> <i>Sida platycalyx</i>
Marsileaceae	<i>Marsilea exarata</i>
Myrtaceae	<i>Corymbia deserticola</i> <i>Corymbia hamersleyana</i> <i>Eucalyptus gamophylla</i> <i>Eucalyptus victrix</i> <i>Melaleuca glomerata</i>
Nyctaginaceae	<i>Boerhavia burbridgeana</i> <i>Boerhavia coccinea</i>
Plumbaginaceae	<i>Muellerolimon salicorniaceum</i>
Poaceae	<i>Aristida contorta</i> <i>Aristida inaequiglumis</i> <i>Brachyachne prostrata</i> * <i>Cenchrus ciliaris</i> * <i>Cenchrus setiger</i> <i>Chrysopogon fallax</i> <i>Cymbopogon obtectus</i> <i>Dactyloctenium radulans</i> <i>Dichanthium sericeum</i> subsp. <i>humilius</i> * <i>Echinochloa colona</i> <i>Enneapogon caeruleascens</i> <i>Enneapogon polyphyllus</i> <i>Enteropogon ramosus</i> <i>Eragrostis dielsii</i> <i>Eragrostis eriopoda</i> <i>Eragrostis falcata</i> <i>Eragrostis leptocarpa</i> <i>Eragrostis setifolia</i> <i>Eragrostis tenellula</i> <i>Eriachne aristidea</i> <i>Eriachne pulchella</i> subsp. <i>pulchella</i> <i>Paraneurachne muelleri</i> <i>Perotis rara</i> <i>Sporobolus australasicus</i> <i>Tragus australianus</i> <i>Triodia basedowii</i> <i>Triodia longiceps</i> <i>Triodia schinzii</i> <i>Triodia</i> sp. Shovelanna Hill (S. van Leeuwen 3835)
Polygalaceae	<i>Polygala isingii</i> <i>Muehlenbeckia florulenta</i>
Portulacaceae	* <i>Portulaca oleracea</i> <i>Portulaca pilosa</i>

APPENDIX 11: SUMMARY OF VASCULAR PLANT TAXA BY FAMILY

Family	Taxon
Primulaceae	<i>Samolus repens</i> var. <i>floribundus</i>
Proteaceae	<i>Grevillea striata</i> <i>Hakea chordophylla</i> <i>Hakea lorea</i>
Rubiaceae	<i>Psydrax latifolia</i> <i>Synaptantha tillaeacea</i> var. <i>tillaeacea</i>
Scrophulariaceae	<i>Eremophila cuneifolia</i> <i>Eremophila forrestii</i> subsp. <i>forrestii</i> <i>Eremophila lanceolata</i> <i>Eremophila latrobei</i> subsp. <i>filiformis</i> <i>Eremophila longifolia</i> <i>Eremophila youngii</i> subsp. <i>lepidota</i> (P4)
Solanaceae	<i>Nicotiana occidentalis</i> subsp. <i>obliqua</i> <i>Nicotiana rosulata</i> subsp. <i>rosulata</i> <i>Solanum lasiophyllum</i> <i>Solanum sturtianum</i>
Zygophyllaceae	<i>Tribulus astrocarpus</i> <i>Tribulus cistoides</i>

* denotes introduced (weed) species



**APPENDIX 12 – SUMMARY OF VASCULAR PLANT TAXA BY
COMMUNITY, SITE AND PERCENT COVER**

APPENDIX 13: SUMMARY OF VASCULAR PLANT TAXA BY COMMUNITY, SITE AND PERCENT COVER

* denotes introduced (weed) species; + indicates a cover value of <1%.

Vegetation Unit Site Number	G1	S1								S2		W1								W2					
	25	4	12	13	7	8	11	5	10	16	17	6	9	3	20	14	15	18	19	2	21	23	22	1	24
<i>Acacia ancistrocarpa</i>				4	7	8	6	3	1			+													
<i>Acacia aneura</i>									+			15	60	50		20	10	20							
<i>Acacia bivenosa</i>				2																					
<i>Acacia coriacea</i> subsp. <i>pendens</i>																						4		5	
<i>Acacia dictyophleba</i>				+	+	1	+																		
<i>Acacia ?macraneura</i> ms														60											
<i>Abutilon macrum</i>												+													
<i>Acacia pachyacra</i>			3			+	1	3	4																
<i>Acacia pruinocarpa</i>						+		1	5			+											+		
<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>																							5		
<i>Acacia rhodophloia</i>														20											
<i>Acacia sclerosperma</i>														+											
<i>Acacia synchronicia</i>									+	20					3	4		+	10	5	30	+			
<i>Acacia tetragonophylla</i>														+		1		+				2			
* <i>Aerva javanica</i>																						+		3	
<i>Alternanthera nodiflora</i>											+														+
<i>Amaranthus interruptus</i>														1											
<i>Aristida contorta</i>				+					+					1			+	+	+	+					
<i>Aristida inaequiglumis</i>				1								1	+												
<i>Atriplex amnicola</i>										20	5														
<i>Basilicum polystachyon</i>										+															
<i>Boerhavia burbridgeana</i>											+														+
<i>Boerhavia coccinea</i>															+	+			+	+					
<i>Bonamia linearis</i>																									15
<i>Bonamia rosea</i>			1	+	1	1	2																		
<i>Brachyachne prostrata</i>														+	+		+		+			+			
<i>Bulbostylis barbata</i>		+							+					+						+					
<i>Calotis hispidula</i>																		+							
<i>Calotis porphyroglossa</i>															+		+	+							
* <i>Cenchrus ciliaris</i>												+					3	+		1	15	25		2	
* <i>Cenchrus setiger</i>																					15	25		80	
<i>Chrysopogon fallax</i>														+	+	3	+	+							
* <i>Citrullus colocynthis</i>																									
<i>Cleome viscosa</i>									+			+						1		1			1	+	+
<i>Convolvulus clementii</i>																									+
<i>Corchorus tridens</i>										2						2	+	+		2		1	5		
<i>Corymbia deserticola</i>						1																			
<i>Corymbia hamersleyana</i>																							4		
<i>Cressa australis</i>										+	2														
<i>Cucumis maderaspatanus</i>												+													+
* <i>Cucumis melo</i> subsp. <i>agrestis</i>											+						+								
<i>Cullen cinereum</i>										1	20														
<i>Cymbopogon oblectus</i>								+																	
<i>Cyperus bifax</i>											5														
<i>Dactyloctenium radulans</i>		1													1	+	+		1		+				
<i>Dichanthium sericeum</i> subsp. <i>humilius</i>										+					+						+			1	
<i>Dicrastylis cordifolia</i>			1	+																					
<i>Duperreya commixta</i>													+												
<i>Dysphania cristata</i>									+						1										+
<i>Dysphania kalpari</i>										+								+							+
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>															1	1	+	+	1		+				+
* <i>Echinochloa colona</i>																									+
<i>Enchylaena tomentosa</i>												+													
<i>Enneapogon caeruleus</i>																									+
<i>Enneapogon polyphyllus</i>									+			+		1	1	+	+	1		+					+
<i>Enteropogon ramosus</i>										+				1		+	+	+	+	1					
<i>Eragrostis dielsii</i>																									
<i>Eragrostis eriopoda</i>					1		+																		
<i>Eragrostis falcata</i>										+															+
<i>Eragrostis leptocarpa</i>															+										
<i>Eragrostis setifolia</i>																									+
<i>Eragrostis tenellula</i>										+	+														
<i>Eremophila cuneifolia</i>									+						1	1				1					
<i>Eremophila forrestii</i> subsp. <i>forrestii</i>									+				+												
<i>Eremophila lanceolata</i>																			1		+				
<i>Eremophila latrobei</i> subsp. <i>filiformis</i>				+																					
<i>Eremophila longifolia</i>		+			+																				
<i>Eremophila youngii</i> subsp. <i>lepidota</i> (P4)																									1
<i>Eriachne aristidea</i>				+																					
<i>Eriachne pulchella</i> subsp. <i>pulchella</i>																			+						
<i>Eucalyptus gamophylla</i>				4	1	+	1																		
<i>Eucalyptus victrix</i>										5				+								1	1	10	5
<i>Euphorbia</i> aff. <i>australis</i>																									+
<i>Euphorbia australis</i>																		+	+						
<i>Euphorbia drummondii</i> subsp. <i>drummondii</i>										+															
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>		+											+		+		+							+	
<i>Fimbristylis dichotoma</i>				+	+																				
<i>Fimbristylis simulans</i>		1																							
<i>Fimbristylis ?</i> sp. K Kimberley Flora (E. Langfield 40)																				+	+				
<i>Gomphrena affinis</i> subsp. <i>pilbarensis</i>																			+	+	+				
<i>Gomphrena kanisii</i>						+																			
<i>Goodenia ?armitiana</i>				+				+																	
<i>Goodenia muelleriana</i>																									+
<i>Goodenia nuda</i> (P4)															+										
<i>Goodenia prostrata</i>															+		+	+	+						
<i>Goodenia vilmoriniae</i>												+													
<i>Grevillea striata</i>														+											

APPENDIX 13: SUMMARY OF VASCULAR PLANT TAXA BY COMMUNITY, SITE AND PERCENT COVER

Vegetation Unit Site Number	G1	S1								S2		W1								W2						
	25	4	12	13	7	8	11	5	10	16	17	6	9	3	20	14	15	18	19	2	21	23	22	1	24	
<i>Hakea chordophylla</i>			+																							
<i>Hakea lorea</i>			+	1				2				1														
<i>Haloragis gossei</i> var. <i>gossei</i>		+	+	+	+	+																				
<i>Hibiscus brachychlaenus</i>				+																						
<i>Hibiscus burtonii</i>				+								+														
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>														+												
<i>Indigofera monophylla</i>				+																						
<i>Ipomoea calobra</i>																			+							
<i>Ipomoea coptica</i>											+															
<i>Ipomoea muelleri</i>																										2
<i>Ipomoea polymorpha</i>																						+				
<i>Isotropis atropurpurea</i>								+																		
<i>Kennedia prorepens</i>			+	1				1				1														
<i>Keraudrenia velutina</i> subsp. <i>elliptica</i>								+																		
<i>Lepidium phlebopetalum</i>																+										
<i>Lotus cruentus</i>											+															1
<i>Maireana planifolia</i>		+						+				+														
<i>Maireana pyramidata</i>																+	+									
* <i>Malvastrum americanum</i>											2															2
<i>Marsilea exarata</i>											+															
<i>Melaleuca glomerata</i>											15	20														
<i>Muehlenbeckia florulenta</i>											1	10														
<i>Muellerolimon salicorniaceum</i>												15														
<i>Neptunia dimorphantha</i>											+												+			
<i>Newcastelia hexarrhena</i>				1																						
<i>Nicotiana occidentalis</i> subsp. <i>obliqua</i>																		+								
<i>Nicotiana rosulata</i> subsp. <i>rosulata</i>												5														
<i>Operculina aequisepala</i>																		+								
<i>Paraneurachne muelleri</i>			+	1					+				+													
* <i>Parkinsonia aculeata</i> (DP)											+															
<i>Perotis rara</i>																	+									
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>		+							+							+	1	+	1	+	+					
<i>Polycarpaea holtzei</i>	1																+		+	+						
<i>Polygala isingii</i>			+					+										+								
* <i>Portulaca oleracea</i>	+			+			+	+		+		1			1	2	2	1	+	+	+				1	
<i>Portulaca pilosa</i>																										
<i>Psydrax latifolia</i>																										
<i>Pterocaulon</i> sp.		+									+															
<i>Ptilotus aervoides</i>																										
<i>Ptilotus astrolasius</i>			+	+					2																	
<i>Ptilotus auriculifolius</i>		+																								
<i>Ptilotus calostachyus</i>	15																									
<i>Ptilotus exaltatus</i>	+	+		1	1			+	2																	
<i>Ptilotus gomphrenoides</i>																			+							2
<i>Ptilotus helipteroides</i>						+			+																	
<i>Ptilotus obovatus</i>								+				20						+								
<i>Rhagodia eremaea</i>																										+
<i>Rostellularia adscendens</i> var. <i>clementii</i>										2	+															+
<i>Rulingia luteiflora</i>						1		1																		
<i>Salsola australis</i>																		+		1	+	+	+			
<i>Samolus repens</i> var. <i>floribundus</i>											+															
<i>Sarcostemma viminale</i> subsp. <i>australe</i>		+																								
<i>Scaevola parvifolia</i>			1	1	+	1	1	+	+																	
<i>Sclerolaena bicornis</i>											+															
<i>Sclerolaena cuneata</i>																1	1									
<i>Sclerolaena deserticola</i>																+		+								
<i>Sclerolaena eriacantha</i>																										+
<i>Senna artemisioides</i> subsp. <i>helmsii</i>																										
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>			+	1	+	+		+	+																	1
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	+																		2							2
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>			+																							
<i>Senna glutinosa</i> subsp. <i>x leurossenii</i>	+			1					+																	
<i>Senna notabilis</i>		+	+		+	+																				
<i>Senna sericea</i>									+								2	+		1	5	10				
<i>Sida fibulifera</i>																										+
<i>Sida platycalyx</i>												+														
<i>Solanum lasiophyllum</i>		+	+					+	2			+	2								+	+				
<i>Solanum sturtianum</i>								+	1																	
<i>Sporobolus australasicus</i>		1							+			1			1	3	+	+	+	+	1	10	2	1	1	
<i>Streptoglossa odora</i>																										+
<i>Synaptantha tillaeacea</i> var. <i>tillaeacea</i>																										
<i>Tecticornia disarticulata</i>										5	10															
<i>Tephrosia clementii</i>																										+
<i>Tragus australianus</i>									+																	+
<i>Trianthema triquetra</i>																1	1				+	+			1	
<i>Tribulus astrocarpus</i>																+		+	+		+					+
<i>Tribulus cistoides</i>																										+
<i>Triodia basedowii</i>			35	40	60	40	45	40	40																	
<i>Triodia longiceps</i>		45											+													
<i>Triodia schinzii</i>								2																		
<i>Triodia</i> sp. Shovelanna Hill (S. van Leeuwen 3835)	25																									
* <i>Vachellia farnesiana</i>																										+
<i>Vigna</i> sp. rockpiles (R. Butcher et al. RB 1400) (P3)																										+
<i>Zaleya galericulata</i> subsp. <i>galericulata</i>																										+