



PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT



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Prepared for

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PERMITS

This flora survey was undertaken under the following licences issued by the Department of Environment and Conservation:

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STATEMENT OF LIMITATIONS

Scope of Services

This environmental site assessment report ('the report') has been prepared in accordance with the scope of services set out in the contract, or as otherwise agreed, between the Client and ENV.Australia Pty Ltd (ENV) ('scope of services'). In some circumstances the scope of services may have been limited by factors such as time, budget, access and/or site disturbance constraints.

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The scope of services did not include any assessment of the title to or ownership of the properties, buildings and structures referred to in the report, nor the application or interpretation of laws in the jurisdiction in which those properties, buildings and structures are located.

EXECUTIVE SUMMARY

ENV.Australia Pty Ltd was commissioned by BHP Billiton Iron Ore, in February 2011, to undertake a Level Two Regional Flora and Vegetation Assessment of the Port Hedland area, located adjacent and surrounding the town of Port Hedland in the coastal Pilbara region in Western Australia. The study area is 808.7km² in size.

The purpose of the assessment was to provide a background to the regional flora and vegetation of the Port Hedland area. The assessment included a review of previous surveys conducted in the area and additional field survey work to provide any supplementary information required. The field survey was undertaken over two field trips from the 30th of April to the 6th of May, 2011 and from the 20th of June to the 1st of July, 2011.

No species listed under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth), or gazetted as Declared Rare Flora under the *Wildlife Conservation Act 1950* (WA) were recorded. No Declared Rare Flora would be expected to occur due to the absence of suitable habitat in the study area.

Four Priority Flora were recorded during the current survey: *Abutilon pritzelianum* MS (Priority 1), *Heliotropium muticum* (Priority 1), *Tephrosia rosea* var. *venulosa* MS (Priority 1) and *Gomphrena pusilla* (Priority 2). A total 12 Priority Flora have been recorded in the study area from the current and previous surveys.

A total of 338 taxa were recorded from 55 families and 152 genera during the current survey. The combined species inventory from the current survey and the previous surveys recorded 577 taxa from 67 families and 198 genera.

Twelve introduced species were recorded in the study area during the current survey. None of these species are listed as Weeds on National Significance by the Australian Government. None of these species are listed as Declared Plants under the *Agriculture and Related Resources Protection Act 1976* (WA). A total of 28 introduced flora have been recorded in the study area from the current and previous surveys.

Forty vegetation associations were mapped in the study area. None of the vegetation types are listed as a Threatened Ecological Community under the *Environment Protection and Biodiversity Conservation Act 1999*, as an Environmentally Sensitive Area under the *Environmental Protection Act 1986* or as a Priority Ecological Community by the Department of Environment and Conservation.

1 INTRODUCTION

1.1 THE PROJECT

1.1.1 Objectives

ENV.Australia Pty Ltd (ENV) was commissioned by BHP Billiton Iron Ore (BHPBIO), in February 2011, to undertake a Level Two Flora and Vegetation assessment of the Port Hedland area (the study area). The purpose of the assessment was to provide a regional perspective of the flora and vegetation of the Port Hedland area. BHPBIO currently operates a number of iron ore mines in the Pilbara with ore transported by rail to Port Hedland for export. Therefore, a large amount of rail and port infrastructure is situated in the Port Hedland region.

The objectives of the flora assessment were to:

- undertake a comprehensive database and literature review for the study area;
- conduct a targeted survey for conservation significant flora and vegetation;
- document, describe and map the occurrence of conservation significant flora species;
- document, describe and map the occurrence of introduced flora species;
- document, describe and map the vegetation associations present;
- describe the conservation significance of these vegetation associations; and
- assess and map vegetation condition.

1.1.2 Location

The study area is 808.74 square kilometres (km²) [80,874 hectares (ha)] in size and is located in the Port Hedland district, in the Pilbara region of Western Australia (Figure 1).

1.2 ENVIRONMENTAL ATTRIBUTES

1.2.1 Climate

The study area is located in the coastal Pilbara region of Western Australia. The Pilbara has an arid-tropical climate with two distinct seasons, a hot summer from October to April and a mild winter from May to September. In summer, maximum daytime temperatures average 36.8°C, whilst in winter, minimum night time temperatures

average 12.3°C (Bureau of Meteorology (BoM) 2011; Figure 2). Rainfall in the Pilbara is often sporadic, and throughout the year (in summer and winter).

The nearest accessible long-term climate data is available from the BoM Port Hedland Airport weather station located in the study area.

The Port Hedland area has an average annual rainfall of 313.6 mm (1942-2011) (BoM 2011) with the majority of rainfall occurring during the summer months (Figure 2). Summer rainfall is typically associated with tropical storms in the north, or tropical cyclones that cross the coast and move inland. Winter rainfall is commonly the result of cold fronts moving north-easterly across the State.

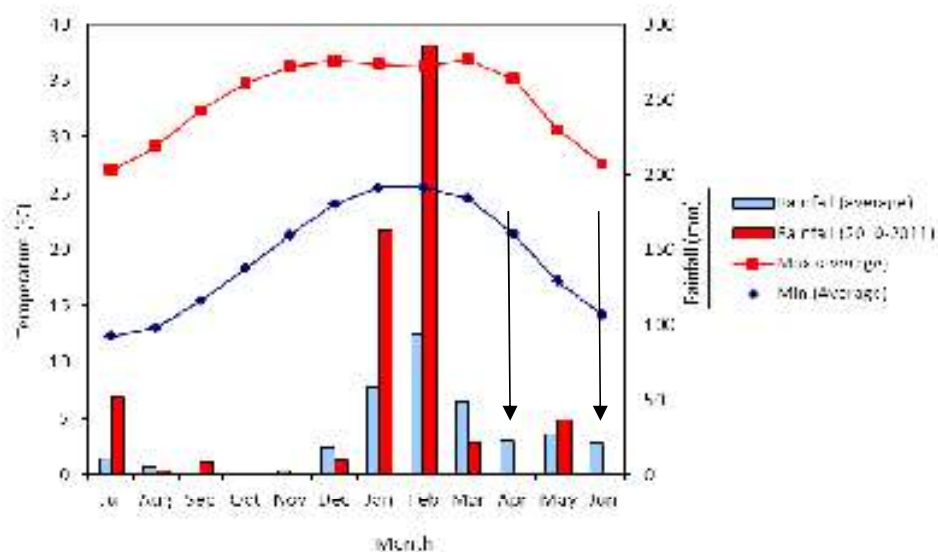


Figure 2: Average long-term (1942 -2011) and actual Monthly Rainfall (July 2010 – June 2011) and average Maximum and Minimum Temperatures at Port Hedland Airport (BoM 2011). Arrows indicate survey times.

1.2.2 Interim Biogeographic Regionalisation for Australia

The Interim Biogeographic Regionalisation for Australia (IBRA) divides Australia into 85 bioregions based on major biological and geographical/geological attributes (Thackway and Cresswell 1995). These bioregions are subdivided into 403 subregions, as part of a refinement of the IBRA framework (Department of Sustainability, Environment, Water, Population and Communities [DSEWPoC] 2011a).

The northern section of the study area is located in the Roebourne subregion (PIL4) (574.92 km²), while the southern section is located in the Chichester subregion (PIL1) (140.53 km²) of the Pilbara bioregion (Thackway and Cresswell 1995).

The Roebourne subregion is characterised by coastal and sub-coastal alluvial and older colluvial plains with a grass savannah of mixed bunch and hummock grasses, and dwarf

shrub steppe of *Acacia stellaticeps* or *A. pyrifolia* and *A. inaequilatera* (Kendrick and Stanley 2001). This subregion covers more than 70% of the study area.

The Chichester subregion is characterised by Archaean granite and basalt plains with a shrub steppe of *Acacia inaequilatera* over *Triodia wiseana* hummock grassland and *Eucalyptus leucophloia* tree steppe on the ranges (Kendrick and McKenzie 2001). This subregion occurs in the south-eastern portion comprising 17% of the study area. The remaining 13% of the study area is not classified as it is largely ocean.

1.2.3 Land Systems

Land system mapping is based on regional patterns in topography, soils and vegetation. The land system mapping classifies the Pilbara region into 102 land systems (van Vreeswyk *et al.* 2004). The study area comprises six land systems (Table 1).

The majority of the study area is dominated by the Uaroo Land system, which occupies more than 60% of the central part of the study area. The Littoral Land System occurs along the coastal region in the north and the Macroy Land System occurs only in the south eastern corner of the study area. Areas of River Land System occur along the western and eastern boundaries of the study area, with small occurrences of the Mallina and Yamerina Land Systems along the western boundary.

Table 1: Land Systems of the Study Area

Land System	Description	Area of Land System in Pilbara Bioregion		Area of Land System in the Study area		
		Area (km ²)	% of Pilbara Region	Area (km ²)	% of Study area	% of total in Pilbara Bioregion
Littoral	Bare coastal mudflats with mangroves on seaward fringes, samphire flats, sandy islands, coastal dunes and beaches.	1,577	0.9%	127.4	15.75%	8.1%
Macroy	Stony plains and occasional tor fields based on granite supporting hard and soft spinifex grasslands.	13,095	7.2%	37.8	4.67%	0.008%
Mallina	Sandy surfaced alluvial plains supporting soft spinifex (and occasional hard spinifex) grasslands.	2,557	1.4%	11.2	1.38%	0.44%
River	Active flood plains and major rivers supporting grassy eucalypt woodlands, tussock grasslands and soft spinifex grasslands.	4,088	2.3%	32.2	3.98%	0.79%
Uaroo	Broad sandy plains supporting shrubby hard and soft spinifex grasslands.	7,681	4.2%	495.4	61.26%	6.45%
Yamerina	Flood plains and deltaic deposits supporting tussock grasslands, grassy woodlands and minor halophytic low shrublands.	1,207	0.7%	8.9	1.1%	0.74%
Other	River Bed Land Unit and Marine Environment	N/A	N/A	95.8	11.86%	N/A

1.2.4 Geology

Eight geological units occur in the study area (Table 2), based on mapping at a scale of 1:250,000 by the Geological Survey of Western Australia (1990).

Table 2: Geological Units of the Study Area

Unit	Description	Area (km ²)
ACDcsw	CONSTANTINE SANDSTONE, subunit: Wacke; locally subarkosic; fine- to coarse-grained; well-developed graded units; minor pebble beds and shale; turbiditic; metamorphosed	12.1
AgPMA	Granitic rock, unassigned, interpreted from aeromagnetic data	48.9
APIxmbmutS	Interleaved amphibolite and talc-tremolite-serpentine-chlorite schist	19.1
ACDms	MALLINA FORMATION: interbedded shale, siltstone, sandstone, and medium- to fine-grained wacke; metamorphosed	27.1
AmyyPWP	Mylonitic granitoid, felsic and mafic volcanic, ultramafic, and sedimentary rocks	8.9
APIxbs	Pilbara Supergroup, unassigned: mafic and ultramafic volcanic rocks; minor chert; metamorphosed	236.7
AgPI	PIPPINGARRA GRANITIC COMPLEX: undivided granitoid rocks; metamorphosed	332.4
AgmPMA	Unassigned monzogranite, interpreted from aeromagnetic data; metamorphosed	20.9
Other	Unassigned geological areas	102.6

1.2.5 Soils

The following five soil groups (Tille 2006) occur in the study area:

Tidal soils (104): Intertidal soils are inundated regularly, while supratidal soils are inundated infrequently. Soils are deep (>100 cm) sandy clay loams or silty light to medium clays overlying silty medium clays.

Calcareous deep Sands (442): This soil group comprises of deep white, grey and brown calcareous sands of the coastal margins of the survey area. The sands tend to be white to light grey on the beach and foredune zones, trending to yellowish brown to strong brown away from the beaches.

Red deep sandy duplex soils(405): These soils have medium (10-30 cm) topsoils of loamy sands to sandy loams overlying medium to thick (30-60 cm) subsoils of clay loams or light to medium clay. These soils are mostly deep (>100 cm).

Red/brown non-

cracking clays(622): Shallow (<50 cm) red/brown non-cracking clays have thin clay loam or light clay topsoils overlying subsoils of light clay or are uniformly clay throughout.

Red deep sands

(445): The majority of the deep red sands occur on sandplains, sand sheets and sand banks. These soils are deep and have thin to medium (10-30 cm) topsoil textures of loamy sand overlying thick (>60 cm) subsoils of clayey sand or sandy loam.

1.2.6 Vegetation Mapping

Vegetation mapping of the Pilbara region was completed on a broad scale (1:1,000,000) by Beard (1975). The study area is situated in the Roebourne plains which forms a part of the Fortescue Botanical District in the Eremaean Botanical Province of Western Australia (Beard 1975). Beard (1975) mapped seven broad vegetation units in the study area (Table 3).

Shepherd *et al.* (2001) re-assessed the mapping of Beard (1975), and updated vegetation boundaries to account for clearing in the intensive land use zone, and divided some larger vegetation units into smaller units. Vegetation types 43, 93, 117, 127, 589, 619 and 647 described by Shepherd *et al.* (2001) correspond with that of Beard (1975) as shown in Table 3.

Seven broad vegetation types characterise the study area. Vegetation type 647, dominates the north and west, accounting for about 37% of the study area. Other dominant broad vegetation types include 589 and 93, which chiefly occur in the central and south eastern parts, and account for approximately 22% and 15% of the study area respectively.

Table 3: Broad Vegetation Mapping of the Study Area

Broad Vegetation Type			
Vegetation Description	Beard / Shepherd Unit Code	Area (km ²) of study area	% of study area
Hummock grasslands, dwarf-shrub steppe; <i>Acacia translucens</i> over soft spinifex	a18Zr t1Hi / 647	300.54	37.16%
Hummock grasslands, shrub steppe; kanji over soft spinifex	a2Sr t1Hi / 93	118.96	14.71%

Broad Vegetation Type		Area (km ²) of study area	% of study area
Vegetation Description	Beard / Shepherd Unit Code		
Hummock grasslands, grass steppe; soft spinifex	t1Hi / 117	13.61	1.68%
Bare areas; mudflats	Mud / 127	75.77	9.37%
Low forest; mangroves (Kimberley) or thicket; mangroves (Pilbara)	Mangrove / 43	34.3	4.24%
Mosaic: Short bunch grassland - savannah / grass plain (Pilbara) / Hummock grasslands, grass steppe; soft spinifex	xGc/t1Hi / 589	177.48	21.95%
Medium woodland; river gum (<i>Eucalyptus camaldulensis</i>)	e18Mi / 619	2.82	0.35%
Areas not mapped by Beard (1975)	-	85.26	10.54%

1.3 PREVIOUS BIOLOGICAL STUDIES

The flora and fauna of the Pilbara has been recorded at a broad scale by Burbidge (1959) and Beard (1975). More recently, the Department of Agriculture (van Vreeswyk *et al.* 2004) compiled an inventory and condition survey of the Pilbara which provides inventory of flora and a description of land resources in terms of land systems. Data from the Pilbara Region Biological Survey 2002-2009 by the DEC are currently being analysed; however, vegetation and flora data have not yet been published. The DEC survey will provide a regional context that is necessary to assess the likely impact of future development proposals. It is anticipated that the survey will provide information on patterns in the distribution of flora and fauna to help the community make decisions about conservation requirements and the sustainable use of natural resources.

Surveys of the flora and vegetation (excluding mangroves) of the Port Hedland area have been conducted by a number of consultancies including ENV, Biota Environmental

Sciences (Biota), Dr. Kelly Shepherd (Department of Environment and Conservation), Woodman Environmental Consulting and Maia Environmental Consultancy.

2 METHODS

2.1 BACKGROUND TO THE PROTECTION OF FLORA AND VEGETATION

Flora and vegetation are protected formally and informally by various legislative and non-legislative measures, which are as follows:

Legislative Protection

- *Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act)*;
- *Wildlife Conservation Act 1950 (WC Act)*; and
- *Environmental Protection Act 1986 (EP Act)*.

Non-Legislative Protection

- Western Australian DEC Priority lists for flora and vegetation; and
- Recognition of locally significant populations by the DEC.

A short description of each is given below. Other definitions, including species conservation categories for flora, are provided in Appendix A. Conservation categories for ecological communities are provided in Appendix B.

EPBC Act

The *EPBC Act* aims to protect matters of national environmental significance. Under the *EPBC Act*, the Commonwealth Department of Sustainability, Environment, Water, Populations and Communities (DSEWPaC) lists threatened species and communities in categories determined by criteria set out in the Act (www.environment.gov.au/epbc/index.html) (Appendix A and Appendix B).

Projects likely to cause impacts on matters of national environmental significance should be referred to DSEWPaC for assessment under the *EPBC Act*.

WC Act

The Western Australian DEC lists flora under the provisions of the *WC Act* as protected according to their need for protection (Appendix A)

Flora is given Declared Rare status when populations are geographically restricted or are threatened by local processes. In addition, under the *WC Act*, by Notice in the Western Australian Government Gazette of 9 October 1987, all native flora (spermatophytes, pteridophytes, bryophytes and thallophytes) is protected throughout the State.

EP Act

Declared Rare Flora (DRF) and Threatened Ecological Communities (TECs) are given special consideration in environmental impact assessments, and have special status as Environmentally Sensitive Areas (ESAs) under the *EP Act* and the *Environmental Protection (Clearing of Native Vegetation) Regulations 2004*.

Agriculture and Related Resources Protection (ARRP) Act

Plants may be ‘Declared’ by the Agriculture Protection Board under the *ARRP Act 1976 (WA)*. Declared Plants are gazetted under five categories (P1-P5), which define the action required. Details of the definitions of these categories are provided in Appendix C. A declaration may apply to the whole State, to districts, individual properties or even to single paddocks. If a plant is ‘Declared’, landholders are obliged to control that plant on their properties (Department of Agriculture and Food Western Australia [DAFWA] 2011).

The Environmental Weed Strategy for Western Australia (Department of Conservation and Land Management [CALM] 1999) contains criteria for the assessment and ranking of weeds in terms of their environmental impact on biodiversity (Appendix C). The Strategy defines environmental weeds as ‘plants that establish themselves in natural ecosystems and proceed to modify natural processes, usually adversely, resulting in the decline of the communities they invade.’

The Australian Government along with the State and Territory governments has endorsed 20 species as Weeds of National Significance (WONS). Four major criteria were used in determining WONS:

- the invasiveness of a weed species;
- a weed's impacts;
- the potential for spread of a weed; and
- socio-economic and environmental values.

Each WONS has a national strategy and a national coordinator, responsible for implementing the strategy. WONS are regarded as the worst weeds in Australia because of their invasiveness, potential for spread, and economic and environmental impacts (Commonwealth of Australia 2011).

DEC Priority Lists

The DEC lists ‘Priority’ flora that have not been assigned statutory protection under the *WC Act*, but which are under consideration for declaration as DRF.

Flora assessed as Priority 1-3 (Appendix A) are considered to be in urgent need of further survey. Priority 4 flora requires monitoring every 5-10 years and Priority 5 flora is subject to a specific conservation program (Appendix A for definitions).

Although DEC Priority species have no formal legal protection, they are under consideration as 'Rare' flora under the *WC Act*.

In addition, the DEC maintains a list of Priority Ecological Communities (PECs) which identifies those communities that need further investigation before possible nomination for TEC status.

Once listed, a community is a PEC, and when endorsed by the Western Australian Minister of Environment becomes a TEC, and protected as an Environmentally Sensitive Areas (ESA) under *Environmental Protection (Clearing of Native Vegetation) Regulations 2004* (Appendix B for definitions).

Informal Recognition of Flora

Certain populations or communities of flora may be of local significance or interest because of their patterns of distribution and abundance. For example, flora may be locally significant because they are range extensions to the previously known distribution, or are newly discovered taxa (and have the potential to be of more than local significance). In addition, many species are in decline as a result of threatening processes (primarily land clearing), and relict populations of such species assume local importance for the DEC. It is not uncommon for the DEC to make comment on these species of interest.

2.2 LITERATURE REVIEW

2.2.1 Literature Review

The following 21 reports were reviewed and synthesised as part of the literature review:

- *Port Hedland Solar Saltfield Biological Expansion Botanical Survey* (Biota 2006);
- *A Flora and Fauna Assessment of RGP5 Spoil Areas A and H, Port Hedland Harbour* (Biota 2008a);
- *A Biodiversity Assessment of the Utah Point Berth Development Port Hedland*. (Biota 2008b);
- *Port Hedland Nelson Point Dredging Approvals - Flora and Vegetation Assessment of an area Located in DMMA A* (ENV 2008a);
- *Outer Harbour Development Flora and Vegetation Assessment* (ENV 2009a);
- *Port Hedland Nelson Point Dredging Approvals Flora and Vegetation Assessment of DMMA H* (ENV 2009b);

- *Goldsworthy Rail Duplication Flora and Vegetation Assessment* (ENV 2009c);
- *Port Hedland Nelson Point Dredging Approvals Targeted Species Assessment of DMMA H* (ENV 2009d);
- *Port Hedland Area Targeted Flora Survey* (ENV 2009e);
- *Boodarie Depot Flora and Vegetation Assessment* (ENV 2009f);
- *Port Hedland Transmission Lines Flora & Fauna Assessment* (ENV 2009g);
- *Targeted survey of Tecticornia (Chenopodiaceae) in the Nelson Point to Bing Siding Rail Duplication Study area, Port Hedland* (Shepherd 2009);
- *Wallwork Road Bridge Flora and Vegetation Assessment* (ENV 2010a);
- *Goldsworthy Rail Development Supplemental Flora and Vegetation Assessment* (ENV 2010b);
- *Finucane Island to Wedgefield Flora and Vegetation Assessment* (ENV 2010c);
- *Great Northern Highway Road Bridge Flora and Vegetation Assessment* (ENV 2010d);
- *Tug Harbour (Wedgefield) Flora and Vegetation Survey and Fauna Assessment* (ENV 2010e);
- *Hunt Point Beach Flora, Vegetation and Fauna Assessment* (ENV 2010f);
- *Level One Flora and Vegetation Assessment of Mooka Siding* (Maia 2010);
- *Targeted Regional Tephrosia rosea var. venulosa Survey* (ENV 2011); and
- *North West Iron Ore Alliance Port Project Flora, Vegetation and Mangal Studies* (Woodman 2011).

Seven reports have previously been compiled based on results drawn from the above surveys. The results included in these reports are presented in this literature review as they are incorporated in the above cited original reports. These reports include:

- *A Flora and Fauna Assessment of RGP5 DMMA A, Port Hedland Harbour* (Biota 2008c);
- *Port Hedland Nelson Point Dredging Approvals Flora and Fauna Review of DMMA H* (Biota 2009);
- *Project Quantum Flora and Vegetation Assessment* (ENV 2008b);
- *Finucane Island Causeway Flora and Vegetation Assessment* (ENV 2009h);
- *Finucane Island Rail Project* (ENV 2009i);
- *Boodarie Drive Intersection Vegetation Clearing Permit* (ENV 2010g); and
- *Native Vegetation Clearing Permit Number 3463/1 Amendment - Flora, Vegetation and Fauna Summary Letter* (ENV 2010h).

An additional three reports were reviewed, of these, the significant results were extracted from Hope Downs (2002) and Biota (2004) and are included in the results

presented from the previous surveys. This includes records of Priority and introduced flora located in the study area. The complete species lists recorded during these surveys have not been assimilated into the species list compiled from the 21 previous surveys as these surveys were for rail corridors and much of the area surveyed was not in the vicinity of the study area. Results from Mattiske (1994) have not been included in the analysis conducted due to the age of the survey.

- *Hedland HBI Project – Boodarie Site – Flora, Vegetation and Vertebrate Fauna Survey (Mattiske Consulting 1994);*
- *Hope Downs Iron Ore Project Rail and Port Public Environmental Review (Hope Downs Management Services Pty Ltd 2002);* and
- *Vegetation and Flora Survey of the Proposed FMG Stage A Rail Corridor (Biota 2004).*

Species recorded from all surveys were compiled into a list of all species recorded in the study area. This list was checked for currency of names and erroneous records were removed.

2.2.2 Database Searches

Database searches were also conducted as part of the literature review. This involved a search of the following sources:

- DEC combined biological database *NatureMap* (DEC 2011b);
- DEC databases, including Threatened Flora Database (DEFL), the Western Australian Herbarium database (WAHerb) and the DEC Priority Flora List were interrogated for Priority and DRF for the area of interest (DEC 2011c);
- DEC Threatened and Priority Ecological Communities (TECs and PECs) database for the coordinates presented above (DEC 2011d); and
- DSEWPaC Protected Matters SearchTool (DSEWPaC 2011b), also known as an EPBC search.

A request for a database search was submitted to the DEC [centred at 20° 26' 51.43 ''S and 118° 36' 24.46'' E, with 50 km radius] to ascertain the presence of Declared Rare or Priority species and Threatened or Priority Ecological Communities previously recorded in the study and surrounding areas. In addition, a literature review was conducted, together with a review of records of flora for the study area. These sources were used to compile a list of expected Declared Rare or Priority species, and TECs and PECs that may occur on the landforms in the study area.

2.3 SURVEY METHODS

The survey was carried out to be consistent with EPA requirements for environmental surveying and reporting for flora and vegetation in Western Australia, as set out in the following documents:

- *Environmental Protection of Native Vegetation in Western Australia: Clearing of Native Vegetation with Particular Reference to Agricultural Areas. Position Statement No. 2* (EPA 2000);
- *Terrestrial Biological Surveys as an Element of Biodiversity Protection. Position Statement No. 3* (EPA 2002); and
- *EPA Guidance for the Assessment of Environmental Factors: Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia No. 51* (EPA 2004).

The flora survey was also completed to meet the requirements of the BHPBIO Guidance for Vegetation and Flora Surveys in the Pilbara Region (BHPBIO 2010).

2.3.1 Field Survey

The survey was undertaken over two field trips from the 30th of April to the 6th of May, 2011 and from the 20th of June to the 1st of July, 2011. A total of 70 person days were invested in the survey of the 808.7 km² study area.

The survey recorded flora of conservation significance, introduced flora, flora richness, vegetation composition and structure and assessed vegetation condition using quadrat data, targeted searches and traverses of the study area. Field staff collected flora information using 50 x 50 m vegetation survey plots, as per BHPBIO Guidance document (BHPBIO 2010), relevés and opportunistic collections. For areas in which a 50 x 50 m quadrat was not possible (i.e. in areas of linear vegetation/vegetation/habitats), suitable quadrat dimensions were used, whilst maintaining the same total search area. The location of quadrats was chosen to be representative of the vegetation of the study area. The locations of the previously surveyed quadrats were assessed prior to the current survey and new quadrat locations were selected in different areas than the previous surveys to achieve high density sampling of all habitats and land forms present in the study area. Quadrat locations are illustrated in Figure 3.

The first field survey comprised targeted searches for Priority Flora. Known habitats and locations of previously recorded Priority Flora were targeted and traversed. The second field survey comprised surveys of the vegetation types with quadrats and relevés sampled in all vegetation types. A total of 158 quadrats and three relevés were established in the study area.

Data was recorded using standardised field sheets designed in accordance with BHPBIO Guidance (BHPBIO 2010). The information recorded at each quadrat included landscape

features, soils and rock type, fire age, bare ground and disturbance levels and vegetation condition (the Condition Scale (Keighery 1994 as summarised in Government of Western Australia 2000) is presented in Appendix D). Each species of plant at each quadrat was recorded, including information on height and percentage cover. Opportunistic collections focused mainly on the location of new flora taxa not recorded in the quadrats, introduced species, and in particular, Priority Flora, and flora not well known or not currently described.

For the three months preceding the surveys, Port Hedland received 307.6 mm of rainfall (February - April 2011), compared with the long-term average of 167 mm for the same period (BoM 2011). This was due to a number of cyclones impacting upon the north-west coast during the 2010-2011 cyclone season. Rainfall for the 12 months prior to the surveys (June 2010 – May 2011) was 579.8 mm compared with 309.8 mm for the long-term average for the same period (1942-2011). Overall, rainfall was 87% above the long term average (Figure 2).

2.3.2 Taxonomic Identification

At least one specimen of each taxon was collected for all surveys as per the BHPBIO Guidance (2010). In addition, where field identification of taxa was not possible, specimens were collected systematically for later identification by taxonomists utilising the resources of the Western Australian Herbarium (WAH), through comparison with the reference collection and use of identification keys.

The species list for the study area was checked against FloraBase (WAH 2011) to determine whether any of the species are listed as DRF, Priority Flora or introduced species. Declared Rare and Priority Flora were also checked against the *EPBC Act* listing of threatened species to determine whether any are federally listed. Introduced species were checked against the Environmental Weed Strategy for Western Australia (CALM 1999), to determine the criteria and ranking in terms of their environmental impact, and the *ARRP Act* to determine whether any are listed as Declared Plants.

In addition, all specimens collected during the 2011 surveys that were difficult to identify, range extensions or Priority Flora were validated by the BHPBIO sponsored taxonomist at the WAH, as per BHPBIO Guidance (BHPBIO 2010). Chain of Custody forms indicating the specimens validated by the BHPBIO sponsored taxonomist are presented in Appendix E. Rare Flora Report Forms were completed for Priority and DRF recorded in the study area. These forms were forwarded to the DEC and are presented in Appendix E. Range extensions and Priority Flora were lodged at the Western Australian Herbarium. Results from the surveys will be lodged with the DEC as per licence conditions.

2.3.3 Vegetation Association Definition and Mapping

Vegetation associations were described based on their structure and species composition, as defined by quadrat data and field observations. Quadrat and relevé

vegetation descriptions, as well as aerial photo patterns, were used to delineate vegetation. Vegetation associations were named in alignment with the vegetation mapping of the Outer Harbour Development Area (ENV 2009a) which is situated in the current study area (Specht (1970) with modification by Aplin (1979) and Trudgen (2002) as cited in BHPBIO 2010). The vegetation mapping of the Outer Harbour Development Area was expanded from the current survey to cover the entire study area.

Field mapping was carried out using GPS (Magellan and Garmin) and GIS (OziExplorer and ArcGIS 9.3.1) hardware and software. The boundaries of the vegetation associations were drawn over high resolution aerial photographs with the aid of GPS coordinates taken throughout the field survey. The vegetation associations were digitised and produced as manipulable electronic mapping data using Microstation V7.0. ESRI shapefiles were created with ARCGIS 9.3.1.

Once the vegetation associations were determined, they were checked against the listing of Federal and State TECs and State PECs. The vegetation associations were also checked against regional databases, such as Beard (1975), Shepherd *et al.* (2001) and Comprehensive Adequate and Representative (CAR) Reserve Analysis (DAFWA 2007), to determine their regional representation.

2.3.4 Vegetation Condition

The condition of the vegetation was assessed according to the Bush Forever vegetation condition scale (Keighery 1994 as summarised in Government of Western Australia 2000); Appendix D). Vegetation condition was recorded during field traverses of the study area and at all quadrat sites.

3 RESULTS AND DISCUSSION

3.1 LITERATURE REVIEW

A literature review was completed to provide a regional overview for the study area. A summary of the results are provided below.

3.1.1 Literature Review

The review compiles the results and findings of over 21 flora and vegetation reports produced for the Port Hedland area mainly in the last five years which involved field surveys of the Port Hedland area. Difficulties existed in the compilation and comparison of results produced from different reports as differences in survey timing, extent, methodologies and the size and location of each study area will influence the results of each survey. A summary of the surveys reviewed is presented in Table 4.

A total of 465 taxa were recorded from the combined results of the previous surveys conducted in the Port Hedland area. No Threatened species pursuant to the *EPBC Act* have been recorded and no plant taxa gazetted as Declared Rare pursuant to the *WC Act* have been recorded by previous surveys.

A total of 10 current Priority Flora have been previously recorded from the Port Hedland area: *Abutilon pritzelianum* (Priority 1), *Heliotropium muticum* (Priority 1), *Tephrosia rosea* var. *venulosa* (Priority 1), *Gomphrena pusilla* (Priority 2), *Eragrostis crateriformis* (Priority 3), *Gomphrena leptophylla* (Priority 3), *Gymnanthera cunninghamii* (Priority 3), *Pterocaulon* sp. A Kimberley Flora (B.J. Carter 599) (Priority 3), *Bulbostylis burbidgeae* (Priority 4) and *Goodenia nuda* (Priority 4).

Three changes in the conservation status of taxa recorded from the previous surveys have occurred in the time since the original surveys: *Abutilon trudgenii* (Priority 3 changed to no conservation status), *Pterocaulon* sp. A Kimberley Flora (B.J. Carter 599) (Priority 2 reduced to Priority 3) and *Goodenia nuda* (Priority 3 reduced to Priority 4). No additional Priority species from the study area have been recognised during this time.

A total of 21 introduced flora have been previously recorded from the combined surveys. Two of these 21 species are listed as Declared Plants under the *ARRP Act*: **Opuntia stricta* and **Tamarix aphylla*. **Opuntia stricta* is listed as a P1 and a P2 Declared Plant for the Port Hedland area and **Tamarix aphylla* is listed as a P1 Declared Plant for the whole of the state (DAFWA 2011). In accordance with the *ARRP Act*, it is prohibited for P1 Declared Plants to be introduced into an area, or moved in an area. P2 Declared Plants are required to be eradicated from the area (DAFWA 2011).

**Opuntia stricta* (Prickly pear) was recorded along with **Yucca aloifolia* and **Aloe vera* from one location in sandplain habitat on Finucane Island and are likely to have been planted as they are commonly occurring garden species (ENV 2010f). **Tamarix aphylla*

has been recorded from one location in a drainage trench approximately 1 km east of the Port Hedland airport (ENV 2009c).

Five broad vegetation types were frequently occurring in the Port Hedland area and variations of each of these vegetation types were recorded in a number of the previous surveys. These vegetation types are:

- Hummock grassland of *Triodia secunda*;
- Low Open Shrubland of *Tecticornia* spp. on saline flats;
- Low Shrubland of *Acacia stellaticeps* with mixed *Triodia secunda* / *Triodia schinzii* / *Triodia epactia* Open Hummock Grassland;
- High Closed Shrubland of *Avicennia marina* and *Rhizophora stylosa* (Mangroves); and
- Mixed Tussock grassland of *Eragrostis* spp., **Cenchrus ciliaris*, *Aristida* spp. and *Paraneurachne* spp.

The vegetation condition of the Port Hedland area ranged from Completely Degraded to Excellent. The majority of the disturbance recorded in previous surveys was associated with clearing for infrastructure, tracks, roads and rail lines. The townsites of Port Hedland and South Hedland and the port represent significantly disturbed areas.

One vegetation type is of conservation significance: the mangroves. Three additional vegetation types were considered to be of conservation interest, samphire shrublands (Biota 2008a), grasslands dominated by *Triodia secunda* (Biota 2008a) and vegetation in association with Granite Domes and Torrs (Maia 2010).

The majority of the vegetation occurring in the Port Hedland area is well represented regionally. Beard (1975) recognised seven broad vegetation types that correlate with vegetation types described in the previous surveys.

Table 4: Summary of Main Findings from Previous Surveys of the Port Hedland Area

Project	Survey time	Additional data derived from previous surveys	Season	Methodology	Survey area (ha)	Number of Quadrats	Number of Relevés	Number of Taxa Recorded	Conservation Significant Flora	Flora of Interest	Introduced Flora
A Flora and Fauna Assessment of RGP5 Spoil Areas A and H, Port Hedland Harbour (Biota 2008a)	February 2008	-	Poor	Single Season Level 1	583.1	-	-	63	N/A		* <i>Aerva javanica</i> , * <i>Cenchrus ciliaris</i> , * <i>Cynodon dactylon</i> , * <i>Stylosanthes hamata</i> , * <i>Washingtonia filifera</i> , * <i>Chloris virgata</i> , * <i>Merremia dissecta</i> , * <i>Cenchrus setiger</i> , * <i>Portulaca oleracea</i>
A Biodiversity Assessment of the Utah Point Berth Development Port Hedland (Biota 2008b)	April 2007	-	Very Good	Single Season Level 1	-	-	-	108	<i>Bulbostylis burbridgeae</i> (Priority 4)	<i>Glycine tomentella</i>	* <i>Cenchrus ciliaris</i> , * <i>Cenchrus setiger</i> , * <i>Aerva javanica</i> , * <i>Stylosanthes hamata</i> , * <i>Chloris virgata</i> , * <i>Flaveria trinervia</i>
Port Hedland Nelson Point DMMA A Area Flora and Vegetation Assessment (ENV 2008a)	October 2008	-	Poor	Single Season Level 1	3	1	-	29	<i>Tephrosia rosea</i> var. <i>venulosa</i> (Priority 1).	-	* <i>Cenchrus ciliaris</i> and * <i>Chloris virgata</i>
Outer Harbour Development Flora and Vegetation Assessment (ENV 2009a)	October 2007 and May 2008	-	Very Good	Two Season Level 2	20,303	126 quadrats surveyed in 2007 and 2008; 96 quadrats surveyed in 2008	-	387	<i>Heliotropium muticum</i> (Priority 1), <i>Tephrosia rosea</i> var. <i>venulosa</i> (Priority 1), <i>Gymnanthera cunninghamii</i> (Priority 3), <i>Pterocaulon</i> sp. A Kimberley Flora (B.J. Carter 599) (Priority 3) and <i>Goodenia nuda</i> (Priority 4).	<i>Eriachne sulcata</i>	* <i>Aerva javanica</i> , * <i>Cenchrus ciliaris</i> , * <i>Chloris virgata</i> , * <i>Citrullus colocynthis</i> , * <i>Cucumis melo</i> subsp. <i>agrestis</i> , * <i>Digitaria ciliaris</i> , * <i>Merremia dissecta</i> , * <i>Setaria verticillata</i> , * <i>Stylosanthes hamata</i> and * <i>Portulaca oleracea</i> .
Port Hedland Nelson Point DMMA H Area Flora and Vegetation Assessment (ENV 2009b)	October 2008	-	Poor	Single Season Level 2	176	6	3	50	<i>Tephrosia rosea</i> var. <i>venulosa</i> (Priority 1).		* <i>Cenchrus ciliaris</i> and * <i>Aerva javanica</i>
Goldsworthy Rail Duplication Flora and Vegetation Assessment (ENV 2009c)	October 2008	-	Poor	Single Season Level 1	-	37	5	140	<i>Tephrosia rosea</i> var. <i>venulosa</i> (Priority 1)		* <i>Tamarix aphylla</i> , * <i>Aerva javanica</i> , * <i>Cenchrus ciliaris</i> , * <i>Stylosanthes hamata</i> , * <i>Chloris virgata</i> , * <i>Citrullus colocynthis</i> , * <i>Portulaca oleracea</i>
Port Hedland Nelson Point Dredging Approvals Targeted Species Assessment of DMMA H (ENV 2009d)	March 2009	-	Very Good	Targeted Flora Survey	266	-	-	2	<i>Tephrosia rosea</i> var. <i>venulosa</i> (Priority 1) and <i>Pterocaulon</i> sp. A Kimberley Flora (B.J. Carter 599) (Priority 3).		N/A
Port Hedland Area Targeted Flora Survey (ENV 2009e)	March 2009	ENV 2009d; ENV 2009e; ENV 2009g	Very Good	Targeted Flora Survey	2214	-	-	4	<i>Heliotropium muticum</i> (Priority 1), <i>Tephrosia rosea</i> var. <i>venulosa</i> (Priority 1), <i>Pterocaulon</i> sp. A Kimberley Flora (B.J. Carter 599) (Priority 3) and <i>Goodenia nuda</i> (Priority 3).		N/A
Boodarie Depot Flora and Vegetation Assessment (ENV 2009f)	June 2009	ENV 2009d	Good	Single Season Level 1	14	-	-	-			

Project	Survey time	Additional data derived from previous surveys	Season	Methodology	Survey area (ha)	Number of Quadrats	Number of Relevés	Number of Taxa Recorded	Conservation Significant Flora	Flora of Interest	Introduced Flora
Port Hedland Transmission Lines Flora & Fauna Assessment (ENV 2009g)	July 2009	-	Good	Single Season Level 1	4.63	-	-	93	<i>Abutilon pritzelianum</i> (Priority 1)		* <i>Aerva javanica</i> , * <i>Cenchrus ciliaris</i> , * <i>Stylosanthes hamata</i> , * <i>Citrullus colocynthis</i>
Targeted survey of Tecticornia (Chenopodiaceae) in the Nelson Point to Bing Siding Rail Duplication Project Area, Port Hedland (Shepherd 2009)	December 2009	-	Very Poor	Targeted Flora Survey		-	-	-			
Wallwork Road Bridge Flora and Vegetation Assessment (ENV 2010a)	January 2010	-	Very Poor	Single Season Level 1	38.3	7	1	56	N/A		* <i>Aerva javanica</i> , * <i>Cenchrus ciliaris</i>
Goldsworthy Rail Development Supplemental Flora and Vegetation Assessment (ENV 2010b)	January 2010	-	Very Poor	Single Season Level 1	117.8	11	6	83	<i>Pterocaulon</i> sp. A Kimberley Flora (B.J. Carter 599) (Priority 3)	<i>Tephrosia rosea</i> var. <i>rosea/venulosa</i> <i>Tephrosia rosea</i> var. <i>off. rosea</i>	* <i>Aerva javanica</i> , * <i>Cenchrus ciliaris</i> , * <i>Citrullus colocynthis</i>
Finucane Island to Wedgefield Flora and Vegetation Assessment (ENV 2010c)	March 2010	ENV 2011; ENV 2009e; ENV 2009d; ENV 2009f	Poor	Single Season Level 1	156	5	9	69	<i>Tephrosia rosea</i> var. <i>venulosa</i> (Priority 1)		* <i>Aerva javanica</i> , * <i>Cenchrus ciliaris</i> , * <i>Chloris virgata</i> , * <i>Stylosanthes hamata</i> , * <i>Vitex trifolia</i> var. <i>subtriseata</i>
Great Northern Highway Road Bridge Flora and Vegetation Assessment (ENV 2010d)	March 2010	ENV 2010b; ENV 2010c; ENV 2011; ENV 2009f	Poor	Single Season Level 1	161.2	8	2	53	<i>Tephrosia rosea</i> var. <i>venulosa</i> (Priority 1)		* <i>Cenchrus ciliaris</i> , * <i>Stylosanthes hamata</i> , * <i>Vitex trifolia</i> var. <i>subtriseata</i>
Tug Harbour (Wedgefield) Flora and Vegetation Survey and Fauna Assessment (ENV 2010e)	August 2010	-	Poor	Single Season Level 1	85	6	2	51	<i>Tephrosia rosea</i> var. <i>venulosa</i> (Priority 1)		* <i>Cenchrus ciliaris</i> , * <i>Aerva javanica</i> , * <i>Portulaca oleracea</i>
Hunt Point Beach Flora, Vegetation and Fauna Assessment (ENV 2010f)	August 2010	-	Poor	Single Season Level 1	67	2	3	37	<i>Tephrosia rosea</i> var. <i>venulosa</i> (Priority 1)		* <i>Cenchrus ciliaris</i> , * <i>Aerva javanica</i> , * <i>Chloris barbata</i> , * <i>Yucca aloifolia</i> , * <i>Indigofera sessiliflora</i> , * <i>Opuntia stricta</i> , * <i>Aloe vera</i> , * <i>Portulaca oleracea</i>
Level One Flora and Vegetation Assessment of Mooka Siding (Maia 2010)	August 2010	-	Poor	Single Season Level 1	1677	22	-	170	<i>Heliotropium muticum</i> (Priority 1)		* <i>Aerva javanica</i> , * <i>Cenchrus ciliaris</i> , * <i>Cenchrus setiger</i> , * <i>Malvastrum americanum</i> , * <i>Echinochloa colona</i> , * <i>Stylosanthes hamata</i> , * <i>Citrullus colocynthis</i> , * <i>Portulaca oleracea</i>
Targeted Regional <i>Tephrosia rosea</i> var. <i>venulosa</i> Survey (ENV 2011)	January to February 2010	-	Very Poor	Targeted Flora Survey		-	-	-	<i>Tephrosia rosea</i> var. <i>venulosa</i> (Priority 1)		N/A
North West Iron Ore Alliance Port Project Flora, Vegetation and Mangal Studies (Woodman 2011)	July to August 2010 and April 2011	-	Very Good	Two Season Level 2		12 quadrats surveyed in 2010; 14 quadrats surveyed in 2011	3	193	<i>Eragrostis crateriformis</i> (Priority 3), <i>Gomphrena leptophylla</i> (Priority 3), <i>Gomphrena pusilla</i> (Priority 2), <i>Goodenia nuda</i> (Priority 4), <i>Gymnanthera cunninghamii</i> (Priority 3), <i>Tephrosia rosea</i> var. <i>venulosa</i> (Priority 1)	<i>Murdannia graminea</i>	* <i>Aerva javanica</i> , * <i>Cenchrus ciliaris</i>

Project	Survey time	Additional data derived from previous surveys	Season	Methodology	Survey area (ha)	Number of Quadrats	Number of Relevés	Number of Taxa Recorded	Conservation Significant Flora	Flora of Interest	Introduced Flora
Vegetation and Flora Survey of the Proposed Fortescue Metals Group Stage A Rail Corridor (Biota 2004)	March – April 2004	(Hope Downs Management Services 2002)	Very Good	Single Season Level 2	-	97 quadrats	-	762	Unable to extract species recorded in study area	Unable to extract species recorded in study area	Unable to extract species recorded in study area
Hope Downs Iron Ore Project Public Environmental Review (Hope Downs Management Services 2002)	February 2001	-	Very Good	Single Season Level 2	-	286 quadrats	-	763	Unable to extract species recorded in study area	Unable to extract species recorded in study area	Unable to extract species recorded in study area

3.2 LIMITATIONS AND VARIABLES INFLUENCING THE 2011 SURVEY

There are always variables associated with individual surveys and it is often difficult to predict the extent to which they influence survey outcomes. There were no major limitations to the survey with the survey conducted in a good season, after high rainfall by experienced staff. Some small areas of the study area were inaccessible and were unable to be surveyed. Table 5 outlines some of the limitations identified during this survey.

Table 5: Limitations and Variables Associated with the Current Flora and Vegetation Survey

Variable	Impact on Survey Outcomes
Access	Most areas of the survey area were accessible and adequately surveyed. Small areas in the south of the study area were inaccessible and these areas were not surveyed.
Experience	The scientists who conducted these surveys were practitioners suitably qualified in their respective fields. <ul style="list-style-type: none"> • Co-ordinating Botanist: Emma Carroll (Senior Botanist) • Field Staff: Kellie McMaster (Senior Botanist), Bridget Watkins (Botanist), Hayden Ajduk (Botanist), Lucy Dadour (Botanist) and Catherine Webb (Botanist). • Taxonomy: Peter Jobson (Taxonomist) • Data Analysis, Interpretation and Reporting: Emma Carroll and Bridget Watkins
Timing, weather, season.	The rainfall for the six months preceding the survey was above average with 507.8 mm recorded (January to June 2011) compared to the long term average of 274.7 mm for the same period (BoM 2011). Many perennial and annual species were present during the survey and conditions were considered optimal.
Scope: Life forms	As the survey was undertaken after periods of above average summer rainfall, most perennial species exhibited identifiable features (<i>i.e.</i> flowers, fruits and vegetative material). Many perennial and annual species were present during the survey.
Sources of information	At the bioregion level, the coastal Pilbara has been well studied in recent years. Numerous flora surveys have been undertaken in the area as part of environmental impact assessment processes. Those most relevant to the current study are listed in Section 2.2.1. The vegetation mapping was produced to be consistent with that produced for the Outer Harbour Development Area which is situated in the current study area (ENV 2009a).

Variable	Impact on Survey Outcomes
Completeness	<p>During the current survey a total of 338 taxa were recorded, with an average richness of 28 taxa per quadrat, which is considered high compared with similar surveys conducted in the vicinity. Other surveys have recorded an average richness of between 17.9 taxa per quadrat (ENV 2010a) and 21.8 taxa per quadrat (ENV 2009a).</p> <p>The combined species inventory from the previous 20 surveys and the current survey indicated 577 taxa had been recorded from 67 families and 198 genera.</p>

3.3 DATABASE REVIEW

3.3.1 Potentially Occurring Flora of Conservation Significance

In the Pilbara bioregion, two taxa, *Lepidium catapycnon* (Hamersley Lepidium) and *Thryptomene wittweri* (Mountain Thryptomene) are listed as Threatened under the *EPBC Act* and as DRF under the *WC Act*. Neither of these two species is expected to occur in the study area, due to the absence of suitable habitat. The desktop assessment (DEC database searches and previous surveys) identified records for 20 Priority Flora in 50 km of the study area. The likelihood of these 20 taxa occurring in the survey area is assessed in Table 6.

One taxon is 'Likely' to occur, six taxa are 'Possible' to occur, four are 'Unlikely' to occur. Twelve taxa have been previously recorded in the study area.

Table 6: The Likelihood of Priority Flora Occurring in the Study Area Based on Previous Surveys and DEC Database searches

Priority Taxon	Status	Annual or Perennial	Habitat Preference (WAH 2011)	Suitable Habitat Present	Number of Records ^[1]	Closest Record ^[2]	Source	Likelihood in the survey area ^[3]
<i>Abutilon pritzelianum</i>	P1	Perennial	Red sand dunes	Yes	17	In study area	DEC Database Search	Recorded (ENV 2009g)
<i>Acacia glaucocaesia</i>	P3	Perennial	Red loam, sandy loam and clay on floodplains	Yes	30	34.5 km	DEC Database Search	Possible
<i>Acacia levata</i>	P3	Perennial	Sand or sandy loam over granite on hillslopes	Yes	15	116 km	DEC Database Search	Unlikely
<i>Acacia</i> sp. Marble Bar (J.G. & M.H. Simmons 3499)	P1	Perennial	Information unavailable	Unknown	1	157 km	DEC Database Search	Unlikely
<i>Atriplex eremitis</i>	P1	Perennial	Semi saline plain in saline patch	Yes	1	41 km	DEC Database Search	Possible
<i>Bulbostylis burbridgeae</i>	P4	Annual	Granitic soils, granite outcrops, cliff bases	Yes	9	In study area	Previous survey	Recorded (Biota 2008b)
<i>Eragrostis crateriformis</i>	P3	Annual	Clayey loam, creek banks, depressions	Yes	8	54 km	Previous survey	Recorded (Woodman 2011)
<i>Euphorbia clementii</i>	P2	Perennial	Gravelly hillsides and stony grounds	Yes	5	50 km	DEC Database Search	Possible
<i>Gomphrena cucullata</i>	P2	Perennial	Red sandy loam, clayey sand on open floodplains	Yes	5	61 km	DEC Database Search	Possible

Priority Taxon	Status	Annual or Perennial	Habitat Preference (WAH 2011)	Suitable Habitat Present	Number of Records ^[1]	Closest Record ^[2]	Source	Likelihood in the survey area ^[3]
<i>Gomphrena leptophylla</i>	P3	Perennial	Sand, sandy to clayey loam, granite, quartzite on open flats, sandy creek beds, edges salt pans & marshes and stony hillsides	Yes	5	113 km	DEC Database Search	Recorded (Woodman 2011)
<i>Gomphrena pusilla</i>	P2	Perennial	Fine beach sand behind foredunes, on limestone	Yes	5	In study area	DEC Database Search	Recorded (Woodman 2011)
<i>Goodenia nuda</i>	P4	Perennial	Loamy plain, floodplain, drainage line, hill side, hill crest	Yes	21	In study area	DEC Database Search	Recorded (ENV 2009a, 2009e and Woodman 2011)
<i>Gymnanthera cunninghamii</i>	P3	Perennial	Sandy soils	Yes	14	In study area	DEC Database Search	Recorded (ENV 2009a and Woodman 2011)
<i>Heliotropium muticum</i>	P1	Perennial	Loam, sandy loam on plains and floodplains	Yes	7	In study area	DEC Database Search	Recorded (ENV 2009a, 2009e and Maia 2010)
<i>Nicotiana umbratica</i>	P3	Annual / Perennial	Shallow soils and rocky outcrops	Yes	10	92 km	DEC Database Search	Unlikely
<i>Phyllanthus aridus</i>	P3	Perennial	Sandstone, gravel and red sand	Yes	3	In study area	Previous survey	Recorded (Hope Downs 2002)

Priority Taxon	Status	Annual or Perennial	Habitat Preference (WAH 2011)	Suitable Habitat Present	Number of Records ^[1]	Closest Record ^[2]	Source	Likelihood in the survey area ^[3]
<i>Pityrodia</i> sp. Marble Bar (G. Woodman & D. Coultas GWDC Opp 4)	P1	Perennial	Skeletal soils over massive ironstone	No	2	104 km	DEC Database Search	Unlikely
<i>Polymeria distigma</i>	P3	Perennial	Sandy soils	Yes	14	4.1 km	DEC Database Search	Likely
<i>Pterocaulon</i> sp. A Kimberley Flora (B.J. Carter 599)	P3	Perennial	Sand on coastal areas, saline sandy flats and pindan sandplains	Yes	14	In study area	DEC Database Search	Recorded (ENV 2009a, 2009d and 2010b)
<i>Ptilotus appendiculatus</i> var. <i>minor</i>	P1	Perennial	Information unavailable	yes	1	In study area	DEC Database Search	Recorded (DEC database search)
<i>Tephrosia rosea</i> var. <i>venulosa</i>	P1	Perennial	Red sand near creeks	Yes	16	In study area	DEC Database Search	Recorded (ENV 2008a, 2009a, 2009b, 2009d, 2009e, 2009f, 2010b, 2010c, 2010d, 2010e, 2010f and 2011)

1 Number of records from the Western Australian Herbarium (WAH 2011)

2 Closest records from DEC flora database search results (DEC 2011c)

3 Likely – suitable habitat, close (<10 km) records and/or field survey completed in sub-optimal season, suggest species is likely to occur;
Possible – suitable habitat, records (<50 km) and/or field survey completed in sub-optimal season, suggests species possibly occurs; and
Unlikely – lack of suitable habitat, no records (<50 km) and/or field survey completed in optimal season, suggest species is unlikely to occur.

3.3.2 Potentially Occurring Ecological Communities of Conservation Significance

Two Threatened Ecological Communities (TECs) listed under *EPBC Act* or as endorsed by the Western Australian Minister for the Environment, occur in the Pilbara region. These are:

- *Themeda* Grasslands on Cracking Clays; the closest occurrence is >50 km to the south west of the survey area; and
- Ethel Gorge aquifer stygobiont community; approximately 370 km to the south-southeast of the survey area.

Neither of the TECs occurs in the vicinity of the study area, and no analogues are expected to occur due to the absence of extensive clay plains typical of the *Themeda* grasslands and calcrete geology for the stygobionts.

Twenty-nine (29) Priority Ecological Communities (PECs) are listed by the DEC for the Pilbara bioregion. None of these PECs occur in or adjacent to the study area. The nearest PEC, Horseflat Landsystem of the Roebourne Plains, is located approximately 100 km to the west of the study area.

3.4 FLORA

3.4.1 Flora of the Current Survey

Seasonal conditions for recording perennial, annual and other short-lived flora in May and June 2011 were near optimal, compensating for the poor conditions in 2010 and moderate conditions during other previous surveys. These conditions have resulted in a comprehensive vascular flora list.

During the current survey a total of 338 taxa were recorded from 58 families and 152 genera. The most commonly occurring families were Fabaceae (71 taxa), Poaceae (51 taxa), Malvaceae (29 taxa), Amaranthaceae (18 taxa) and Cyperaceae (15 taxa). A total of 22 families were represented by only one taxon. The most commonly occurring genera were *Acacia* (20 taxa), *Tephrosia* (12 taxa) and *Ptilotus*, *Senna* and *Sida* (9 taxa each). A total of 92 genera were represented by only one taxon.

Species richness for quadrats ranged from one to 49 taxa per quadrat, and averaged 28 taxa (standard deviation ± 11.08). The most taxa-rich quadrats were associated with drainage lines and sand plains while the quadrats with low taxa richness were associated with the coastal vegetation and mangroves.

The most commonly occurring taxa were *Bulbostylis barbata* (123 records), *Triodia epactia* (117 records), *Acacia stellaticeps* (111 records), *Yakirra australiensis* var.

australiensis (107 records) and *Aristida holathera* var. *holathera* (98 records). A total of 65 taxa were represented by only one occurrence.

Quadrat data from the current survey, including photographs, is presented in Appendix F; the species by site matrix is presented in Appendix G. The flora inventory comprising taxa from the all surveys is presented in Appendix H.

3.4.2 Flora of the Previous Surveys

A total of 465 taxa were recorded from the combined results of the 21 previous surveys conducted in the Port Hedland area (Appendix H: Biota 2008a; Biota 2008c; ENV 2008a; ENV 2009a; ENV 2009b; ENV 2009c; ENV 2009d; ENV 2009e; ENV 2009f; ENV 2009g; ENV 2010a; ENV 2010b; ENV 2010c; ENV 2010d; ENV 2010e; ENV 2010f; ENV 2011; Maia 2010; Shepherd 2009; and Woodman 2011). These 465 taxa were recorded from 64 families and 182 taxa. The most commonly occurring families recorded were Fabaceae (89 taxa), Poaceae (71 taxa) and Malvaceae (34 taxa). The most commonly occurring genera recorded were *Acacia* (25 taxa), *Tephrosia* (13 taxa), *Ptilotus* and *Cyperus* (12 taxa each).

**Cenchrus ciliaris* was the most commonly occurring taxon, with records from 16 of the 20 surveys. 163 of the 465 taxa (35% of the species inventory) were recorded from only one survey.

3.4.3 Flora of the Combined Survey Dataset

The combined species inventory from the previous 21 surveys and the current survey indicated 577 taxa had been recorded from 67 families and 198 genera. The most commonly occurring families from the combined dataset were Fabaceae (112 taxa), Poaceae (90 taxa) and Malvaceae (44 taxa). A total of 24 families were represented by only one taxon. The most commonly occurring genera from the combined dataset were *Acacia* (28 taxa), *Tephrosia* (16 taxa), *Cyperus* and *Ptilotus* (15 taxa), and *Eragrostis* (13 taxa). A total of 100 genera were represented by only one taxon. The combined species inventory, and the survey from which each species was recorded, is presented in Appendix H.

A total of 76 of the 338 taxa (22% of the species inventory) recorded during the current survey had not been recorded during the 21 previous surveys of the Port Hedland area. The 76 new taxa included seven genera and one family that had not been previously recorded in the study area. The high number of new species is likely to be due to the increased survey area which covers more landform types and the good seasonal conditions. A total of 240 taxa were recorded previously which were not recorded in the current survey. This difference in number is likely due to differences in season and taxonomic identifications by various authors

The species list compiled from the current and previous surveys conducted in the Port Hedland area was compared to a species list compiled for the same area from a search

of the NatureMap database (DEC 2011a). A total of 394 taxa were returned for the area in the database search (DEC 2011a). The results of this search are provided in Appendix I. It should be noted that differences exist between results presented by Florabase (WAH 2011) and NatureMap (DEC 2011a) as they are compiled from different sources. Locations presented for each species on Florabase are compiled from specimens vouchered at the WAH. Therefore, if specimens have not been vouchered from an area, a point will not exist at that locality.

3.4.4 Conservation Significant Flora Recorded in the Study Area

No Threatened species pursuant to the *EPBC Act* or taxa gazetted as DRF pursuant to the *WC Act* were recorded in the study area during the current survey or previous surveys.

Four Priority Flora were recorded during the current survey: *Abutilon pritzelianum* MS (Priority 1), *Heliotropium muticum* (Priority 1), *Tephrosia rosea* var. *venulosa* MS (Priority 1) and *Gomphrena pusilla* (Priority 2). The locations of the Priority Flora is presented in Appendix J and illustrated in Figure 4.

A total of 12 Priority Flora have been recorded in the study area from the current and previous surveys. These species are indicated in Table 7. All Priority Flora recorded during the current survey had been previously recorded. The current survey identified an additional population of *Tephrosia rosea* var. *venulosa* on Finucane Island. Additional populations of *Abutilon pritzelianum* were also identified in a number of locations in the far west of the study area. *Heliotropium muticum* was identified from a much larger area than previously with an additional 1287 individuals recorded. This species was recorded mainly throughout the eastern part of the study area.

Goodenia nuda has been recorded from 35 locations in the study area (Woodman 2011; ENV 2009a; ENV 2009e) with a total of 238 individuals recorded from these locations. There is currently some confusion regarding the taxonomy and identification of *Goodenia nuda* and it is possible that some records in this area may represent the non-priority taxon *Goodenia triodiophila* (pers. comm. Steve Dillon, 2011). It should be noted that *Goodenia nuda* was not recorded during the current survey.

Table 7: Number of Individuals of Priority Flora Recorded during Previous Surveys of the Port Hedland Area

Species	Conservation Status	Current Survey	Biota 2004	Biota 2006	Biota 2008a	Biota 2008b	ENV 2008a	ENV 2009a	ENV 2009b	ENV 2009d	ENV 2009e	ENV 2009f	ENV 2009g	ENV 2010b	ENV 2010c	ENV 2010d	ENV 2010e	ENV 2010f	ENV 2011	Maia 2010	Hope Downs 2002	Woodman 2011	Total
<i>Abutilon pritzelianum</i>	P1	31											50										50
<i>Heliotropium muticum</i>	P1	1290						7			11									15			27
<i>Tephrosia rosea</i> var. ? <i>venulosa</i> ¹	P1																					235	235
<i>Tephrosia rosea</i> var. aff. <i>venulosa</i>	P1														95	30							125
<i>Tephrosia rosea</i> var. <i>rosea/venulosa</i>	P1													93					197				290
<i>Tephrosia rosea</i> var. <i>venulosa</i>	P1						10	17	2	352	1431	480			168		232	1595	310				4597
<i>Gomphrena pusilla</i>	P2	1																				1030	1030
<i>Eragrostis crateriformis</i>	P3																					2	2
<i>Gomphrena leptophylla</i>	P3																					1	1
<i>Gymnanthera cunninghamii</i>	P3		1					5														2	7
<i>Phyllanthus aridus</i>	P3																				3		3
<i>Pterocaulon</i> sp. A Kimberley Flora (B.J. Carter 599)	P3							2		2				2									6
<i>Tephrosia</i> aff. <i>bidwillii</i>	P3			1	1	1																	3
<i>Bulbostylis burbidgeae</i>	P4					40																	40
<i>Goodenia nuda</i>	P4							1			236											1	238

¹ See below for explanation about complications with taxonomy.

***Abutilon pritzelianum* MS (Priority 1)**

Abutilon pritzelianum MS is a shrub 1 – 1.5 m with yellow-orange flowers in August (Plate 1). It is currently known from 17 records from Port Hedland and Carnarvon area (WAH 2011). *Abutilon pritzelianum* MS was recorded from 14 locations during the current survey totalling 31 individuals and has previously been recorded from two locations with a total of 50 individuals. These records were made mainly in the west of the survey area from Sandplain B, H, I and N. The locations of *Abutilon pritzelianum* MS are presented in Appendix J and Figure 4. Collections from previous and the current survey have been vouchered with the Western Australian Herbarium.



Plate 1: *Abutilon pritzelianum* MS (Priority 1)

***Heliotropium muticum* (Priority 1)**

Heliotropium muticum is an erect, ascending to spreading perennial herb to 0.3 m with white flowers (Plate 2). It is currently known from seven records in the Port Hedland area (WAH 2011). *Heliotropium muticum* was recorded from 142 locations during the current survey totalling approximately 1290 individuals. Previously this species has been recorded from 22 locations in the study area (ENV 2009a; ENV 2009e; and Maia 2010) with a total of 27 individuals recorded from these locations.

This species was recorded mainly from areas in the east of the survey area with large numbers recorded from areas which had recently been burnt. *Heliotropium muticum* was recorded from Sandplain H, N, Q and S. The locations of *Heliotropium muticum* are presented in Appendix J and Figure 4. ENV and Maia collections of this species have been vouchered with the Western Australian Herbarium.



Plate 2: *Heliotropium muticum* (Priority 1)

***Ptilotus appendiculatus* var. *minor* (Priority 1)**

Ptilotus appendiculatus var. *minor* is a prostrate or ascending perennial herb or shrub and has one record on Florabase (WAH 2011). This record occurs in the study area and was recorded from red brown alluvial sand on an old floodplain near the Turner River in 1969. No recent records of this species have been made.

***Tephrosia rosea* var. *venulosa* MS (Priority 1)**

Tephrosia rosea var. *venulosa* MS is an erect shrub to 1.7 m with red-purple flowers from August to September (Plate 3) and is considered a disturbance specialist. It is currently known from 16 records in the Port Hedland area (WAH 2011). *Tephrosia rosea* var. *venulosa* MS was recorded from eight locations during the current survey totalling 26 individuals. This species was recorded from Finucane Island in vegetation type Dune A. The locations of *Tephrosia rosea* var. *venulosa* MS are presented in Appendix J and Figure 4.

ENV (2011) conducted a targeted regional flora survey in the Port Hedland area for the Priority taxon *Tephrosia rosea* var. *venulosa* (Priority 1) in November 2009. The survey identified three different forms of *Tephrosia rosea* (ENV 2011). The distribution of the three different forms illustrated that the form of *Tephrosia rosea* appeared to change with increasing radial distance from Finucane Island (ENV 2011). *Tephrosia rosea* var. *venulosa* was located on Finucane Island and in a distance of approximately 10 km from the Island (ENV 2011).

The WAH has records of *Tephrosia rosea* var. *venulosa* from other locations in the Pilbara region: in the Yandeyarra Aboriginal Reserve approximately 60 km south-west of Finucane Island; along the Peawah River between 75 - 120 km west-south-west of Finucane Island and at Warrawagine station approximately 230 km east of Port Hedland (WAH 2011). These records suggest that the distribution of *Tephrosia rosea* var. *venulosa* is not restricted to Finucane Island and immediate surrounds (ENV 2011).

The identification of *Tephrosia rosea* specimens to variety level is complicated as this species has not been formally described and more than half the collections of *Tephrosia rosea* lodged at the Western Australian Herbarium have been on loan since 1998 (Dillon 2010).

Due to the need for revision of *Tephrosia rosea* as a species, no definitive conclusion can be made regarding the regional distribution of *Tephrosia rosea* var. *venulosa* until the taxonomy of the species is further clarified (ENV 2011).

It is unlikely that all records identified as *Tephrosia rosea* ? var. *venulosa*, *Tephrosia rosea* var. aff. *venulosa*, and *Tephrosia rosea* var. *rosea/venulosa* actually represent the Priority 1 taxon. However, it has been recommended, based on the precautionary principle (EP Act 1986) that plants or populations identified as *Tephrosia rosea* var. *rosea/venulosa* should be considered in impact assessment and decision making processes as being of conservation significance (ENV 2011).

Tephrosia rosea var. *venulosa* has been previously recorded from 304 locations in the study area (ENV 2009f; ENV 2010g; ENV 2010c; ENV 2010f; ENV 2009a; ENV 2009h; ENV 2008c; ENV 2008b; ENV 2009d, ENV 2011; ENV 2009f; ENV 2010g; ENV 2010c; ENV 2010f; ENV 2009a; ENV 2009h; ENV 2008c; ENV 2009b; ENV 2009d; ENV 2011; ENV 2010e). These records are located throughout the study area in a variety of habitat types (Figure 4). For the purpose of this review, all records considered possible to represent the Priority taxon were indicated on the figure.

A total of 235 individuals identified as *Tephrosia rosea* ? var. *venulosa* have been recorded from in the study area (Woodman 2011). A further 125 individuals identified as *Tephrosia rosea* var. aff. *venulosa* have been recorded from in the study area (ENV 2010c and ENV 2010d). An additional 290 individuals identified as *Tephrosia rosea* var. *rosea/venulosa* have been recorded from in the study area (ENV 2010b and ENV 2011). A total of 4597 individuals identified as *Tephrosia rosea* var. *venulosa* (Priority 1) have been recorded from in the study area (ENV 2008a; ENV 2009a; ENV 2009b; ENV 2009d; ENV 2009e; ENV 2009f; ENV 2010c; ENV 2010e; ENV 2010f and ENV 2011). ENV collections of this species have been vouchered with the Western Australian Herbarium.



Plate 3: *Tephrosia rosea* var. *venulosa* MS (Priority 1)

***Gomphrena pusilla* (Priority 2)**

Gomphrena pusilla is a slender branching annual herb to 0.2 m with white flowers from March to April/June (Plate 4). It is currently known from three records from the Port Hedland area (WAH 2011). *Gomphrena pusilla* was recorded from one location on a Limestone Hill during the current survey with one individual at the location. The location of *Gomphrena pusilla* is presented in Appendix J and Figure 4.

Gomphrena pusilla has been recorded previously from three locations in the study area (Woodman 2011). A total of 1030 individuals were recorded from these locations. These records are located on the low sandy rises that occur in conjunction with the mangroves along the coastline.



Plate 4: *Gomphrena pusilla* (Priority 2)
Source: Australian National Herbarium (2011)

***Eragrostis crateriformis* (Priority 3)**

Eragrostis crateriformis (Plate 5) has been recorded from two locations in the study area (Woodman 2011). A total of two individuals were recorded from these locations. These records are located on the sandplains in the north-western corner of the study area. This species is currently known from eight records at the Western Australian Herbarium from in the Pilbara, Carnarvon and Tanami Desert regions (2011).



Plate 5: *Eragrostis crateriformis* (Priority 3)
Source: Woodman (2011)

***Gomphrena leptophylla* (Priority 3)**

Gomphrena leptophylla has been recorded from one location in the study area (Woodman 2011). Only one individual was observed at this location. This record is located on the sandplains in the north-western corner of the study area. This species is currently known from five records at the Western Australian Herbarium from in the Pilbara and Kimberley regions (2011).

***Gymnanthera cunninghamii* (Priority 3)**

Gymnanthera cunninghamii (Plate 6) has been recorded from 12 locations in the study area (Biota 2004; Woodman 2011; ENV 2009a; ENV 2008b). A total of seven individuals were recorded from these locations. These records are located on low sandy rises near the coast and on creek banks in the north-western section of the study area. This species is currently known from 14 records at the Western Australian Herbarium from the Carnarvon, Pilbara and Great Sandy Desert regions (2011). Previous locations of these species were revisited during the current survey and individuals were still present.



Plate 6: *Gymnanthera cunninghamii* (Priority 3)

***Phyllanthus aridus* (Priority 3)**

Phyllanthus aridus was recorded from three locations during the Hope Downs survey (Hope Downs Management Services 2002). This species is a shrub to 0.25 m high and is found on sandstone, gravel and red sand. This species is usually found in the Kimberley region with two historical records close to the edge of the Pilbara region.

***Pterocaulon* sp. A Kimberley Flora (B.J. Carter 599) (Priority 3)**

Pterocaulon sp. A Kimberley Flora (B.J. Carter 599) (Plate 7) was recorded from four locations in the study area (ENV 2009d; ENV 2010b; ENV 2009a). A total of six individuals were recorded from these locations. These records are located on the sandplains west and north of Wedgefield and near the Port Hedland Airport. This species is currently known from 14 records at the Western Australian Herbarium, with the only two records of this species in the Pilbara being from the surveys mentioned previously (ENV 2009b) and the remaining records from the Kimberley region (2011). ENV collections of this species have been vouchered with the Western Australian Herbarium.



Plate 7: *Pterocaulon* sp. A Kimberley Flora (B.J. Carter 599) (Priority 3)

***Tephrosia* aff. *bidwillii* (Priority 3)**

Tephrosia aff. *bidwillii* has been recorded from three previous surveys in the study area (Biota 2006, Biota 2008a and Biota 2008b). The specific location and number of individuals present was not provided in any of these. Therefore, no locations of this species were able to be presented in Figure 4.

Although these records were unable to be determined as the Priority 3 listed *Tephrosia bidwillii*, it is recommended, based on the precautionary principle (*EP Act 1986*), that plants or populations identified as *Tephrosia* aff. *bidwillii* should be considered in impact assessment and decision making processes as being of conservation significance. *Tephrosia bidwillii* is currently known from 11 records at the Western Australian Herbarium (WAH 2011).

***Bulbostylis burbidgeae* (Priority 4)**

Bulbostylis burbidgeae (Plate 8) has been recorded from two locations in the study area (Biota 2008b). A total of 40 individuals were recorded from these locations. These records are located near the Finucane access road in the north of the study area (Figure 4). It appears from the recent aerial photography that these locations may have undergone development since the species was recorded in 2008, and it should be noted that these locations may no longer support this species (Figure 4). This species is currently known from nine records from in the Pilbara region at the Western Australian Herbarium (2011).



Plate 8: *Bulbostylis burbidgeae* (Priority 4) Source: WAH (2011)

***Goodenia nuda* (Priority 4)**

Goodenia nuda (Plate 9) has been recorded from 35 locations in the study area (Woodman 2011; ENV 2009a; ENV 2009e). A total of 238 individuals were recorded from these locations. These records are located primarily on the sandplains in the north-western corner of the study area with some records also from the sandplains in the centre of the study area (Figure 4). This species is currently known from 21 records at the Western Australian Herbarium from the Pilbara region (2011). ENV collections of this species have been vouchered with the Western Australian Herbarium.



Plate 9: *Goodenia nuda* (Priority 4)

3.4.5 Species of Interest

A total of ten species of interest were identified during all the surveys. Six of the ten species of interest were identified during the current survey and six of the ten species of interest identified in previous surveys. Two of the ten species were recorded during both the current and previous survey. These species are range extensions with the record of the species during the current survey representing in most cases a new record for the region. All of the species collected during the current survey have been

forwarded to the BHPBIO sponsored botanist at the herbarium for confirmation. The locations of these species are presented in Appendix K and are shown on Figure 5.

Mimulus uvedaliae* var. *uvedaliae

Mimulus uvedaliae var. *uvedaliae* is an annual herb to 0.3 m which is usually found in seasonally wet areas in the Kimberley with one record present in the Murchison. The record of this species constitutes a significant extension of its known range. This species was recorded during the current survey and has not been previously recorded in the study area.

Murdannia graminea

Murdannia graminea is a tuberous perennial herb which until recently was only found in the Kimberley region. The record of the species in the study area represents a large south-westerly range extension of the species and a disjunct population. This species was recorded during the current survey and was identified as being of interest after being recorded in previous surveys (ENV 2009a; ENV2009g; and Woodman 2011). One record of the species occurs in the Pilbara, from 60 km to east of the study area (WAH 2011).

Two collections of a liliaceous species made during ENV (2009a) were considered to represent taxa not known from the Pilbara (*pers. comm.*, M. Trudgen). These collections were considered to possibly represent a range extension from the south-west Kimberley and were considered likely to be *Murdannia graminea*.

Bergia ? pusilla

Bergia ? pusilla is a small herb to 0.05 m high which is often found along watercourses (WAH 2011). One record of this species was previously made in Western Australia in the Little Sandy Desert, with the species normally recorded in the Northern Territory. This species was recorded during the current survey and comments relating to the identification have been provided by Steve Dillon. Dillon notes that it is difficult to confirm the identification of the specimen as there is only one other collection of *Bergia pusilla* for reference (Appendix E).

Vigna lanceolata* var. *filiformis

Vigna lanceolata var. *filiformis* is a perennial herb/climber which is usually recorded in the Kimberley region. The presence of this species in the study area represents a large range extension to the south west.

Drosera burmanni

Drosera burmanni is a small perennial herb which is often recorded from sandy damp soils. This species has been previously recorded in the Kimberley, Little Sandy Desert

and Great Sandy Desert regions, and its Pilbara locality represents a range extension. This species was recorded during the current survey.

Tephrosia simplicifolia

Tephrosia simplicifolia is a perennial herb which occurs on sandy soils. This species is usually recorded in the Kimberley region. However, one record has also been made in the Pilbara region, 210 km south east of Port Hedland and one record occurs on the edge of the Pilbara region, 140 km to the east. This species was recorded during the current survey and previous surveys (ENV 2009a and ENV 2010b).

Eriachne sulcata

Eriachne sulcata was identified as being of interest after being collected by ENV (2009a). *Eriachne sulcata* was recorded from seven locations and is commonly recorded in the Kimberley region, but is considered rare in the Pilbara, with only one known record in the Pilbara region, at Nimingarra. The collection of the species in the Port Hedland area was considered a 100 km range extension. Collections of this were made during the current survey and were forwarded to the BHP sponsored botanist. The resulting identification was *Eriachne glauca* var. *glauca* with the explanation given for the mis-identification being that the collection for *Eriachne sulcata* in the reference herbarium is actually *Eriachne glauca* (see Appendix E).

***Goodenia* sp.**

A specimen collected during ENV (2009a) of *Goodenia* sp. was considered of interest as it was in poor condition and could not be identified to species level. The collection was considered to possibly represent the Priority Flora species *Goodenia nuda* (Priority 3) which had been recorded in the area during the same survey. During the current survey the identification of *Goodenia nuda* in the area was questioned and this is detailed in section 3.4.4.

Mitrasacme exserta

Mitrasacme exserta was identified by ENV (2009g) as a range extension, known previously only in the Kimberley region. This species is an annual herb 0.15 - 0.7 m high and is usually found on sand, gravel and clay soils.

***Tecticornia* species**

Tecticornia species were studied in the Nelson Point to Bing siding rail duplication area by Shepherd (2009). This work identified a number of entities in the *Tecticornia halocnemoides* complex which could not be resolved. It was considered that taxa in this complex are unlikely to be of conservation significance. However, as they are unresolved it is suggested they be considered of interest. Specimens of *Tecticornia* that

were unable to be fully identified were recorded from six previous surveys (ENV 2009a, ENV 2010c, ENV 2010d, ENV 2010e, Shepherd 2009 and Woodman 2011).

3.4.6 Introduced Flora

A total of 28 introduced flora have been recorded in the study area from the all surveys (Table 8). Twenty-two of these introduced flora had been previously recorded from the study area and six species were only recorded from the current survey. These six new species were: **Cenchrus setiger*, **Eragrostis curvula*, **Indigofera oblongifolia*, **Physalis angulata*, **Vachellia farnesiana* and **Vaccaria hispanica*.

None of these species are listed as Weeds of National Significance (WoNS) by the Australian Government.

Two of the species recorded in previous surveys are listed as a Declared Plant under the *ARRP Act*: **Opuntia stricta* and **Tamarix aphylla*. **Opuntia stricta* (Prickly Pear) is listed as a P1 and a P2 Declared Plant for all municipal districts in parts of Western Australia which are north of the 26th parallel, with the exception of Exmouth, Carnarvon, Murchison, Upper Gascoyne and Shark Bay (DAFWA 2011). In these areas it is listed as a P4 Declared Plant (DAFWA 2011). **Tamarix aphylla* (Athel pine) is listed as a P1 Declared Plant for the whole of the state (DAFWA 2011).

In accordance with the *ARRP Act*, it is prohibited for P1 Declared Plants to be introduced into an area, or moved in an area. P2 Declared Plants are required to be eradicated from the area (DAFWA 2011).

**Opuntia stricta* (Prickly pear) was recorded from one location in sandplain habitat on Finucane Island and is likely to have been historically planted in the area as it was occurring next to two other commonly occurring garden species: **Yucca aloifolia* and **Aloe vera* (ENV 2010f). **Tamarix aphylla* was recorded from one location in a disturbed drainage trench approximately 1 km east of the Port Hedland airstrip (ENV 2009c).

Of these 28 species, 24 are considered environmental weeds as defined by the Environmental Weed Strategy for Western Australia (CALM 1999). The rating and criteria for these species' inclusion under this strategy are presented in Table 8. **Portulaca oleracea*, **Opuntia stricta*, **Indigofera sessiliflora* and **Flaveria trinervia* are not currently listed under the Environmental Weed Strategy for Western Australia (CALM 1999). The locations of these species are presented in Appendix L and mapped in Figure 6. The approximate density of heavy infestations of weeds in the study area has been indicated on Figure 6.

**Cenchrus ciliaris* was the most commonly occurring weed with records from 17 of the 21 previous surveys; **Aerva javanica* was recorded from 15 of the 21 surveys. These species were also recorded during the current survey. Thirteen of the 21 weed species were recorded from only one survey.



Plate 10: *Aerva javanica* (ENV)



Plate 11: *Cenchrus ciliaris* (ENV)



Plate 12: *Cenchrus setiger* (WAH 2011)



Plate 13: *Chloris barbata* (WAH 2011)



Plate 14: *Citrullus colocynthis* (WAH 2011)



Plate 15: *Cucumis melo* subsp. *agrestis* (WAH 2011)



Plate 16: **Cynodon dactylon* (WAH 2011)



Plate 17: **Echinochloa colona* (WAH 2011)



Plate 18: **Eragrostis curvula* (WAH 2011)



Plate 19: **Indigofera oblongifolia* (WAH 2011)



Plate 20: **Malvastrum americanum* (ENV)



Plate 21: **Merremia dissecta* (WAH 2011)



Plate 22: **Opuntia stricta* (WAH 2011)



Plate 23: **Physalis angulata* (WAH 2011)



Plate 24: **Portulaca oleracea* (Source: ENV)



Plate 25: **Stylosanthes hamata* (WAH 2011)



Plate 26: **Vaccaria hispanica* (WAH 2011)



Plate 27: **Vachellia farnesiana* (ENV)



Plate 28: **Washingtonia filifera* (ENV)



Yucca aloifolia
Photo: R. Randall

Plate 29: **Yucca aloifolia* (ENV)

Table 8: Introduced Flora Recorded in Previous and Current Surveys of the Port Hedland Area

Species Name	Rating (CALM 1999)	ENV 2011 (Current Survey)	Biota 2006	Biota 2008a	Biota 2008b	ENV 2008a	ENV 2009a	ENV 2009b	ENV 2009c	ENV 2009f	ENV 2009g	ENV 2010a	ENV 2010b	ENV 2010c	ENV 2010d	ENV 2010e	ENV 2010f	Maia 2010	Woodman 2011
* <i>Aerva javanica</i>	High	√	√	√	√		√	√	√	√	√	√	√	√		√	√	√	√
* <i>Aloe vera</i>	N/A																√		
* <i>Cenchrus ciliaris</i>	High	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
* <i>Cenchrus setiger</i>	High		√	√	√													√	√
* <i>Chloris barbata</i>	Low		√														√		
* <i>Chloris virgata</i>	Low			√	√	√	√		√	√				√					
* <i>Citrullus colocynthis</i>	Low	√					√		√		√		√					√	
* <i>Cucumis melo</i> subsp. <i>agrestis</i>	TBA	√					√												
* <i>Cynodon dactylon</i>	Moderate			√															
* <i>Digitaria ciliaris</i>	Low						√												
* <i>Echinochloa colona</i>	Mild																	√	
* <i>Eragrostis curvula</i>	High	√																	
* <i>Flaveria trinervia</i>	N/A	√			√		√												
* <i>Indigofera oblongifolia</i>	Moderate	√	√																
* <i>Indigofera sessiliflora</i>	TBA		√															√	
* <i>Malvastrum americanum</i>	Moderate		√															√	
* <i>Merremia dissecta</i>	Low			√			√												
* <i>Opuntia stricta</i>	TBA																	√	
* <i>Physalis angulata</i>	Moderate	√																	
* <i>Portulaca oleracea</i>	N/A	√	√	√			√		√		√					√	√	√	√
* <i>Setaria verticillata</i>	Low						√												
* <i>Stylosanthes hamata</i>	Mild	√		√	√		√		√	√	√			√	√			√	
* <i>Tamarix aphylla</i>	Moderate								√										
* <i>Vaccaria hispanica</i>	Low	√																	
* <i>Vachellia farnesiana</i>	High	√																	
* <i>Vitex trifolia</i> var. <i>subtrisecta</i>	N/A													√	√				
* <i>Washingtonia filifera</i>	Mild			√															
* <i>Yucca aloifolia</i>	Low																	√	

3.5 VEGETATION

3.5.1 Vegetation Associations

The study area comprises seven broad formations and 40 vegetation associations as follows:

- One vegetation association in the Mangrove broad formation;
- Four vegetation associations in the Dune broad formation;
- Two vegetation associations in the Samphire broad formation;
- Two vegetation associations in the Grassland broad formation;
- Eight vegetation associations in the Drainage/Billabong broad formation;
- Four vegetation associations in the Hill/Rocky outcrop broad formations; and
- Nineteen vegetation associations in the Sandplain broad formation.

Disturbed areas and areas of infrastructure have been mapped as DI and areas of bare mud alongside rivers have been mapped as Washouts (W).

The vegetation associations of the study area are mapped in Figure 7, summarised in Table 9 and discussed in the following pages. The vegetation mapping linework is presented in Figure 8. Quadrats completed in each association during the current survey (PI) and example quadrats completed during the Outer Harbour Development Area survey (QT, QN and QR) (ENV 2009a) are included.

A total of six additional vegetation associations were mapped compared to the mapping completed for the Outer Harbour Development Area (ENV 2009a). These associations were Dune D, Major Drainage Line C, D and E, and Sandplain R and S.

Table 9: Vegetation Associations Mapped in the Study Area (including the extent (km²) rounded to two decimal places).

Broad Formation	Mapping Label	Vegetation description	Soil Type	Area in Study Area (km ²)
Mangroves	M	A high closed <i>Rhizophora stylosa</i> and <i>Avicennia marina</i> shrubland.	Brown Mud	25.80
Dunes A	DA	Scattered <i>Acacia bivenosa</i> shrubs over a low open <i>Crotalaria cunninghamii</i> shrubland over a * <i>Cenchrus ciliaris</i> tussock grassland over scattered * <i>Aerva javanica</i> herbs.	Light orange sand	0.77

Broad Formation	Mapping Label	Vegetation description	Soil Type	Area in Study Area (km ²)
Dunes B	DB	An <i>Atalaya hemiglauca</i> , <i>Santalum lanceolatum</i> and <i>Acacia bivenosa</i> shrubland over a <i>*Cenchrus ciliaris</i> tussock grassland.	Light orange sand	0.02
Dunes C	DC	A low open <i>Acacia stellaticeps</i> , <i>Acacia bivenosa</i> and <i>Acacia ampliceps</i> shrubland over a <i>Spinifex longifolius</i> and <i>*Cenchrus ciliaris</i> open grassland over scattered <i>Gomphrena canescens</i> herbs.	Orange beach sand	0.38
Dune D	DD	Scattered <i>Scaevola amblyanthera</i> var. <i>centralis</i> low shrubs over <i>Bonamia alatisemina</i> and <i>*Aerva javanica</i> open herbland over <i>*Cenchrus ciliaris</i> open tussock grassland over <i>Triodia epactia</i> very open hummock grassland.	Light brown sand	0.44
Samphire A	SMA	Scattered <i>Avicennia marina</i> shrubs over a low open <i>Tecticornia halocnemoides</i> , <i>Threlkeldia diffusa</i> and <i>Tecticornia pterygosperma</i> subsp. <i>denticulata</i> shrubland over a very open <i>Eragrostis falcata</i> tussock grassland.	Brown clay, mud	0.38
Samphire B	SMB	Scattered <i>Avicennia marina</i> shrubs over a low open <i>Tecticornia halocnemoides</i> subsp. <i>tenuis</i> , <i>Tecticornia halocnemoides</i> and <i>Trianthema turgidifolia</i> shrubland.	Light red brown clay mud	25.98
Limestone Hill	LSH	An <i>Acacia bivenosa</i> and <i>Hakea lorea</i> subsp. <i>lorea</i> shrubland over scattered low <i>Rhagodia eremaea</i> and <i>Scaevola spinescens</i> shrubs over a scattered <i>Eriachne obtusa</i> tussock grasses.	Skeletal light orange brown loam	0.62
Grassland A	GA	<i>Triodia secunda</i> and <i>Triodia epactia</i> hummock grassland.	Light brown sandy loam	11.63
Grassland B	GB	<i>Triodia epactia</i> hummock grassland.	Light orange brown sand	3.01
Low Hill	LH	An <i>Acacia tumida</i> var. <i>pilbarensis</i> shrubland over a low <i>Acacia stellaticeps</i> shrubland over a <i>Triodia epactia</i> hummock grassland.	Light orange brown sandy loam	11.43
Major Drainage Line A	MDLA	Scattered low <i>Eucalyptus victrix</i> trees over a high open <i>Melaleuca argentea</i> , <i>Acacia ampliceps</i> and <i>Acacia trachycarpa</i> shrubland over scattered <i>Adriana tomentosa</i> var. <i>tomentosa</i> and <i>Pluchea ferdinandi-muelleri</i> shrubs over open <i>Triodia epactia</i> hummock grassland.	Light orange sand	8.02

Broad Formation	Mapping Label	Vegetation description	Soil Type	Area in Study Area (km ²)
Major Drainage Line B	MDLB	Low open <i>Eucalyptus victrix</i> woodland over an <i>Acacia tumida</i> var. <i>pilbarensis</i> and <i>Acacia colei</i> var. <i>colei</i> shrubland over very open <i>Triodia epactia</i> hummock grassland.	Red brown sandy loam	2.37
Major Drainage Line C	MDLC	Low open <i>Corymbia candida</i> subsp. <i>lautifolia</i> woodland over high open <i>Acacia colei</i> var. <i>colei</i> , <i>Acacia trachycarpa</i> and <i>Acacia tumida</i> var. <i>pilbarensis</i> shrubland over <i>Triodia epactia</i> open tussock grassland.	Red brown sandy clay	0.69
Major Drainage Line D	MDLD	Low open <i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i> , <i>Melaleuca lasiandra</i> and <i>Melaleuca argentea</i> woodland over scattered <i>Acacia trachycarpa</i> shrubs over open <i>Cenchrus ciliaris</i> and <i>Chloris pectinata</i> tussock grassland over scattered <i>Triodia epactia</i> hummock grasses.	Orange brown coarse sand	2.40
Major Drainage Line E	MDLE	Open <i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i> woodland over <i>Acacia tumida</i> var. <i>pilbarensis</i> and <i>Cajanus cinereus</i> shrubland over very open <i>Triodia epactia</i> hummock grassland.	Orange brown silty sand	0.50
Rock Outcrop	RO	Scattered <i>Acacia colei</i> var. <i>colei</i> and <i>Acacia inaequilatera</i> shrubs over scattered herbs over scattered <i>Triodia</i> spp. hummock grasses.	Skeletal orange brown sand	0.48
Billabong	B	Scattered low <i>Eucalyptus victrix</i> trees over scattered mixed grasses.	Red brown sandy loam	0.03
Rockpile	R	Scattered low <i>Ficus brachypoda</i> , <i>Clerodendrum tomentosum</i> var. <i>lanceolatum</i> and <i>Carissa lanceolata</i> trees over scattered herbs.	Skeletal soil	0.02
Drainage A	DA	A low open <i>Eucalyptus victrix</i> woodland over a high open <i>Acacia ampliceps</i> and <i>Acacia trachycarpa</i> shrubland over a low open <i>Acacia stellaticeps</i> , <i>Pluchea ferdinandi-muelleri</i> and <i>Corchorus incanus</i> subsp. <i>incanus</i> shrubland over a <i>Triodia epactia</i> hummock grassland over an <i>Aristida holathera</i> var. <i>latifolia</i> , <i>Eriachne obtusa</i> and <i>Cenchrus ciliaris</i> tussock grassland.	Red orange loamy sand	0.38
Drainage B	DB	A low open <i>Eucalyptus victrix</i> woodland over a high open <i>Acacia ampliceps</i> shrubland over a low open <i>Acacia stellaticeps</i> and <i>Pluchea ferdinandi-muelleri</i> shrubland over a closed <i>Triodia epactia</i> and <i>Triodia secunda</i> hummock grassland over an open <i>Eriachne obtusa</i> , <i>Aristida holathera</i> var. <i>latifolia</i> and <i>Cenchrus ciliaris</i> tussock grassland.	Red orange loamy sand	0.02
Sandplain A	SA	Low <i>Acacia stellaticeps</i> shrublands over <i>Triodia epactia</i> and <i>Triodia secunda</i> hummock grasslands/ <i>Triodia epactia</i> and <i>Triodia secunda</i> hummock grasslands mosaic.	Orange brown sandy loam	28.27

Broad Formation	Mapping Label	Vegetation description	Soil Type	Area in Study Area (km ²)
Sandplain B	SB	An open <i>Acacia colei</i> var. <i>colei</i> shrublands over low <i>Acacia stellaticeps</i> shrublands over <i>Triodia epactia</i> and <i>Triodia secunda</i> hummock grasslands/low <i>Acacia stellaticeps</i> shrublands over <i>Triodia epactia</i> and <i>Triodia secunda</i> hummock grasslands mosaic.	Light orange brown sand	54.69
Sandplain C	SC	Low open <i>Corymbia flavescens</i> woodland over open <i>Acacia colei</i> var. <i>colei</i> shrubland over low <i>Acacia stellaticeps</i> shrubland over <i>Triodia epactia</i> hummock grassland/ low <i>Acacia stellaticeps</i> shrublands over <i>Triodia epactia</i> and <i>Triodia secunda</i> hummock grasslands/ <i>Triodia epactia</i> and <i>Triodia secunda</i> hummock grasslands mosaic.	Red brown loam	16.98
Sandplain D	SD	Low <i>Eucalyptus victrix</i> woodland over <i>Acacia colei</i> var. <i>colei</i> shrubland over low open <i>Acacia stellaticeps</i> and <i>Pluchea tetranthera</i> shrubland over <i>Triodia epactia</i> hummock grassland.	Orange sand	0.07
Sandplain E	SE	Low open <i>Corymbia flavescens</i> and <i>Eucalyptus victrix</i> woodland over <i>Acacia colei</i> var. <i>colei</i> and <i>Acacia sericophylla</i> shrubland over low open <i>Acacia stellaticeps</i> shrubland over <i>Triodia epactia</i> hummock grassland.	Red brown sandy loam	0.36
Sandplain F	SF	Open <i>Acacia tumida</i> var. <i>pilbarensis</i> and <i>Acacia colei</i> var. <i>colei</i> shrubland over open <i>Triodia epactia</i> hummock grassland.	Red brown sandy loam	0.05
Sandplain G	SG	Low open <i>Corymbia flavescens</i> woodland over <i>Acacia colei</i> var. <i>colei</i> , <i>Carissa lanceolata</i> and <i>Acacia sericophylla</i> shrubland over <i>Triodia epactia</i> hummock grassland over very open <i>Cenchrus ciliaris</i> , <i>Chrysopogon fallax</i> and <i>Eriachne obtusa</i> tussock grassland.	Red brown sandy loam	0.02
Sandplain H	SH	<i>Acacia tumida</i> var. <i>pilbarensis</i> and <i>Acacia colei</i> var. <i>colei</i> shrubland over a low <i>Acacia stellaticeps</i> shrubland over <i>Triodia epactia</i> hummock grassland/ low <i>Acacia stellaticeps</i> shrubland over <i>Triodia epactia</i> hummock grassland mosaic.	Red brown sandy loam	59.58
Sandplain I	SI	<i>Acacia tumida</i> var. <i>pilbarensis</i> shrubland over low <i>Acacia stellaticeps</i> shrubland over <i>Triodia epactia</i> hummock grassland/ low <i>Acacia stellaticeps</i> shrubland over <i>Triodia epactia</i> hummock grassland/ <i>Triodia epactia</i> hummock grassland mosaic.	Light orange brown sandy loam	77.15

Broad Formation	Mapping Label	Vegetation description	Soil Type	Area in Study Area (km ²)
Sandplain J	SJ	Scattered low <i>Corymbia flavescens</i> trees over open <i>Acacia tumida</i> var. <i>pilbarensis</i> shrubland over low open <i>Acacia stellaticeps</i> shrubland over <i>Triodia epactia</i> and <i>Triodia secunda</i> hummock grassland/ <i>Triodia secunda</i> and <i>Triodia epactia</i> hummock grassland mosaic.	Light orange brown sand	2.78
Sandplain K	SK	Scattered low <i>Owenia reticulata</i> trees over <i>Acacia tumida</i> var. <i>pilbarensis</i> and <i>Acacia colei</i> var. <i>colei</i> shrubland over low <i>Acacia stellaticeps</i> shrubland over <i>Triodia epactia</i> hummock grassland/low <i>Acacia stellaticeps</i> shrubland over <i>Triodia epactia</i> hummock grassland mosaic.	Light orange brown sand	35.64
Sandplain L	SL	Low open <i>Corymbia zygophylla</i> woodland over open <i>Acacia colei</i> var. <i>colei</i> , <i>Acacia inaequilatera</i> and <i>Acacia ancistrocarpa</i> shrubland over low <i>Acacia sericophylla</i> , <i>Acacia stellaticeps</i> , <i>Senna artemisioides</i> aff. subsp. <i>oligophylla</i> (thinly sericeous) and <i>Dodonaea coriacea</i> shrubland over a very open <i>Triodia lanigera</i> and <i>Triodia epactia</i> hummock grassland.	Red brown sandy loam	0.33
Sandplain M	SM	Open <i>Acacia ancistrocarpa</i> , <i>Acacia tumida</i> var. <i>pilbarensis</i> and <i>Acacia inaequilatera</i> shrubland over a <i>Triodia lanigera</i> hummock grassland.	Light orange brown sand	0.52
Sandplain N	SN	Low open <i>Corymbia zygophylla</i> woodland over open <i>Acacia ancistrocarpa</i> , <i>Acacia inaequilatera</i> , <i>Acacia tumida</i> var. <i>pilbarensis</i> and <i>Acacia sericophylla</i> shrubland over <i>Acacia stellaticeps</i> low open shrubland over <i>Triodia epactia</i> and <i>Triodia lanigera</i> hummock grassland.	Light orange brown sand	75.14
Sandplain O	SO	Scattered low <i>Eucalyptus victrix</i> and <i>Corymbia hamersleyana</i> trees over an open <i>Acacia ancistrocarpa</i> , <i>Acacia tumida</i> var. <i>pilbarensis</i> , <i>Acacia inaequilatera</i> and <i>Acacia trudgeniana</i> shrubland over a low open <i>Acacia stellaticeps</i> shrubland over a <i>Triodia epactia</i> and <i>Triodia lanigera</i> hummock grassland.	Light orange brown sand	36.13
Sandplain P	SP	Low open <i>Eucalyptus victrix</i> , <i>Corymbia hamersleyana</i> and <i>Corymbia flavescens</i> woodland over an open <i>Acacia colei</i> var. <i>colei</i> shrubland over a low open <i>Acacia stellaticeps</i> and <i>Pluchea tetranthera</i> shrubland over <i>Triodia epactia</i> hummock grassland.	Red brown clayey loam	4.16
Sandplain Q	SQ	Scattered low <i>Corymbia flavescens</i> trees over open <i>Acacia ancistrocarpa</i> and <i>Acacia bivenosa</i> shrubland over scattered low <i>Acacia stellaticeps</i> shrubs over a <i>Triodia epactia</i> and <i>Triodia lanigera</i> hummock grassland.	Light orange brown sand	23.38

Broad Formation	Mapping Label	Vegetation description	Soil Type	Area in Study Area (km ²)
Sandplain R	SR	Low open <i>Corymbia candida</i> subsp. <i>lausifolia</i> and <i>Corymbia hamersleyana</i> over <i>Acacia colei</i> var. <i>colei</i> and <i>Acacia tumida</i> var. <i>pilbarensis</i> open shrubland over <i>Triodia epactia</i> and <i>Triodia lanigera</i> hummock grassland.	Light orange brown sandy loam	37.85
Sandplain S	SS	Scattered <i>Acacia inaequilatera</i> shrubs over <i>Triodia epactia</i> and <i>Triodia lanigera</i> very open hummock grassland.	Orange brown sandy loam	26.61

Broad Formation: Mangroves

Vegetation Association:

A high closed *Rhizophora stylosa* and *Avicennia marina* shrubland.



Area: 25.80 km²

Quadrats Sampled

PI004, PI015, PI016, PI017, PI162, QT12, QT14, QT17

Landform Description

Location and Landform:

This vegetation association represents the mangroves of the study area.

Soil Attributes: Brown mud

Litter Cover: - Logs, - Twigs and <1% Leaves

Bare Ground: 30%

Vegetation Structure and Floristics

The presence of *Rhizophora stylosa* and *Avicennia marina* are the main diagnostic features of this association.

Stratum	Key Characteristics
Midstorey	
Shrub Layer	A high closed <i>Rhizophora stylosa</i> and <i>Avicennia marina</i> shrubland between 2 -3 m

Vegetation Condition

Condition Rating: Excellent - Pristine

Disturbances: Clearing, nearby tracks and rubbish

Average Fire Age: Old

Broad Formation: Dunes A

Vegetation Association:

Scattered *Acacia bivenosa* shrubs over a low open *Crotalaria cunninghamii* shrubland over a **Cenchrus ciliaris* tussock grassland over scattered **Aerva javanica* herbs.



Area: 0.77 km²

Quadrats Sampled

PI001, PI157
QT02, QT03, QT10

Landform Description

Location and Landform:

This vegetation association is located on the dunes of the study area.

Soil Attributes:

Light orange sand

Litter Cover:

- Logs, <1% Twigs and <1% Leaves

Bare Ground:

10-50%

Vegetation Structure and Floristics

The presence of *Crotalaria cunninghamii* is the main diagnostic feature of this association.

Stratum	Key Characteristics
Midstorey	
Shrub Layer	Scattered <i>Acacia bivenosa</i> shrubs between 2 -3 m
Low Shrub Layer	Low open <i>Crotalaria cunninghamii</i> shrubland to 1.5 m
Understorey	
Tussock Grasses	<i>*Cenchrus ciliaris</i> tussock grassland under 0.5 m
Herbs	Scattered <i>*Aerva javanica</i> herbs under 0.5 m

Vegetation Condition

Condition Rating:

Good - Very Good

Disturbances:

Introduced species - **Cenchrus ciliaris* and **Aerva javanica*

Average Fire Age:

Old

Broad Formation: Dunes B

Vegetation Association:

An *Atalaya hemiglauca*, *Santalum lanceolatum* and *Acacia bivenosa* shrubland over a **Cenchrus ciliaris* tussock grassland.



Area: 0.02 km² **Quadrats Sampled** QT07

Landform Description

Location and Landform: This vegetation association is located on an area of dunes on Finucane Island

Soil Attributes: Light tan, orangey sand with deposited rocks.

Litter Cover: <1% Logs, 1% Twigs and 5% Leaves

Bare Ground: 15-30%

Vegetation Structure and Floristics

The presence of *Atalaya hemiglauca* and *Santalum lanceolatum* are the main diagnostics of this association.

Stratum	Key Characteristics
Midstorey	
Middle Shrub Layer	An <i>Atalaya hemiglauca</i> , <i>Santalum lanceolatum</i> and <i>Acacia bivenosa</i> shrubland between 1 – 3 m
Understorey	
Tussock Grasses	* <i>Cenchrus ciliaris</i> tussock grassland under 0.5 m

Vegetation Condition

Condition Rating: Good

Disturbances: Introduced species - **Cenchrus ciliaris*

Average Fire Age: Old

Broad Formation: Dunes C

Vegetation Association:

A low open *Acacia stellaticeps*, *Acacia bivenosa* and *Acacia ampliceps* shrubland over a *Spinifex longifolius* and **Cenchrus ciliaris* open grassland over scattered *Gomphrena canescens* herbs.



Area: 0.38 km²

Quadrats Sampled

PI003
QT01

Landform Description

Location and

Landform:

This vegetation association is located on the foredunes in the study area

Soil Attributes:

Orange beach sand; small shell fragments

Litter Cover:

<1% Logs, <1% Twigs and <1% Leaves

Bare Ground: 70%

Vegetation Structure and Floristics

The presence of *Spinifex longifolius* is the main diagnostics of this association.

Stratum	Key Characteristics
Midstorey	
Low Shrub Layer	Low open <i>Acacia stellaticeps</i> , <i>Acacia bivenosa</i> and <i>Acacia ampliceps</i> shrubland between 0.3 - 1 m
Understorey	
Tussock Grasses	<i>Spinifex longifolius</i> and <i>*Cenchrus ciliaris</i> tussock grassland under 0.5 m
Herbs	Scattered <i>Gomphrena canescens</i> herbs to 0.2 m

Vegetation Condition

Condition Rating:

Good – Very Good

Disturbances:

Introduced species (**Cenchrus ciliaris*), road construction and fence

Average Fire Age:

Old

Broad Formation: Dunes D

Vegetation Association:

Scattered *Scaevola amblyanthera* var. *centralis* low shrubs over *Bonamia alatisemina* and **Aerva javanica* open herbland over **Cenchrus ciliaris* open tussock grassland over *Triodia epactia* very open hummock grassland.



Area: 0.44 km² **Quadrats Sampled** PI006

Landform Description

Location and Landform: This vegetation association is located on an area of dunes on at 6 Mile.

Soil Attributes: Light brown sand with shell grit

Litter Cover: <1% Logs, 2% Twigs and 10% Leaves **Bare Ground:** 40%

Vegetation Structure and Floristics

The presence of *Scaevola amblyanthera* var. *centralis* low shrubs is the main diagnostic of this association.

Stratum	Key Characteristics
Midstorey	
Low Shrub Layer	<i>Scaevola amblyanthera</i> var. <i>centralis</i> and <i>Acacia stellaticeps</i> low shrubs under 1 m
Understorey	
Hummock Grasses	<i>Triodia epactia</i> very open hummock grassland to 0.4 m
Tussock Grasses	<i>*Cenchrus ciliaris</i> open tussock grassland under 0.3 m
Herbs	<i>Bonamia alatisemina</i> and <i>*Aerva javanica</i> open herbland to 0.5 m

Vegetation Condition

Condition Rating: Very Good - Good

Disturbances: Introduced species (**Cenchrus ciliaris*, **Aerva javanica*), rubbish and tracks

Average Fire Age: Old

Broad Formation: Samphire A

Vegetation Association:

Scattered *Avicennia marina* shrubs over a low open *Tecticornia halocnemoides*, *Threlkeldia diffusa* and *Tecticornia pterygosperma* subsp. *denticulata* shrubland over a very open *Eragrostis falcata* tussock grassland.



Area: 0.38 km² **Quadrats Sampled** QT06

Landform Description

Location and Landform: This vegetation association is located on an area of mudflats on Finucane Island.

Soil Attributes: Brown clay, mud. Some exposed rock.

Litter Cover: <1% Logs, <1% Twigs and 1% Leaves **Bare Ground:** 15%

Vegetation Structure and Floristics

The presence of *Threlkeldia diffusa* is the main diagnostic of this association.

Stratum	Key Characteristics
Midstorey	
Middle Shrub Layer	<i>Avicennia marina</i> shrubs under 2 m
Low Shrub Layer	<i>Tecticornia halocnemoides</i> , <i>Threlkeldia diffusa</i> and <i>Tecticornia pterygosperma</i> subsp. <i>denticulata</i> shrubland to 0.5 m
Understorey	
Tussock Grasses	Very open <i>Eragrostis falcata</i> tussock grassland under 0.2 m

Vegetation Condition

Condition Rating: Excellent

Disturbances: No signs of disturbance noted

Average Fire Age: Very Old

Broad Formation: Samphire B

Vegetation Association:

Scattered *Avicennia marina* shrubs over a low open *Tecticornia halocnemoides* subsp. *tenuis*, *Tecticornia halocnemoides* and *Trianthema turgidifolia* shrubland.



Area: 25.98 km²

Quadrats Sampled

PI002, PI005, PI011, PI012, PI013, PI018, PI038, PI039, QT15, QT19

Landform Description

Location and Landform: This vegetation association is located on an area of mudflats and tidal areas in the study area.

Soil Attributes: Light red brown clay mud

Litter Cover: <1% Logs, <1% Twigs and <1% Leaves

Bare Ground: 75%

Vegetation Structure and Floristics

The presence of *Trianthema turgidifolia* is the main diagnostic of this association.

Stratum	Key Characteristics
Midstorey	
Middle Shrub Layer	<i>Avicennia marina</i> shrubs under 2 m
Low Shrub Layer	Low open <i>Tecticornia halocnemoides</i> subsp. <i>tenuis</i> , <i>Tecticornia halocnemoides</i> and <i>Trianthema turgidifolia</i> shrubland to 0.5 m

Vegetation Condition

Condition Rating: Excellent – Very Good

Disturbances: Nearby tracks

Average Fire Age: Old

Broad Formation: Limestone Hill

Vegetation Association:

An *Acacia bivenosa* and *Hakea lorea* subsp. *lorea* shrubland over scattered low *Rhagodia eremaea* and *Scaevola spinescens* shrubs over a scattered *Eriachne obtusa* tussock grasses.



Area: 0.62 km²

Quadrats Sampled

PI040

QT16

Landform Description

Location and Landform: This vegetation association is located on low limestone hills in the north of the study area.

Soil Attributes: Skeletal light orange brown loam with scattered shells and exposed limestone

Litter Cover: <1% Logs, <1% Twigs and <1% Leaves

Bare Ground: 30%

Vegetation Structure and Floristics

The presence of *Eriachne obtusa* is the main diagnostic of this association.

Stratum	Key Characteristics
Midstorey	
Middle Shrub Layer	An <i>Acacia bivenosa</i> and <i>Hakea lorea</i> subsp. <i>lorea</i> shrubland between 2-3 m
Low Shrub Layer	Scattered low <i>Rhagodia eremaea</i> and <i>Scaevola spinescens</i> shrubs to 0.5 m
Understorey	
Tussock Grasses	Scattered <i>Eriachne obtusa</i> tussock grasses under 0.4 m

Vegetation Condition

Condition Rating: Excellent – Very Good

Disturbances: Nearby tracks and introduced species (**Cenchrus ciliaris*)

Average Fire Age: Old

Broad Formation: Grassland A

Vegetation Association:

Triodia secunda and *Triodia epactia* hummock grassland.



Area: 11.63 km²

Quadrats Sampled

PI007, PI014, PI019, PI121, PI037
QT18

Landform Description

Location and Landform: This vegetation association is located on the sandplains in the study area, mainly near the coast.

Soil Attributes: Light brown sandy loam

Litter Cover: <1% Logs, <1% Twigs and 5% Leaves

Bare Ground: 15%

Vegetation Structure and Floristics

The presence of the *Triodia secunda* and *Triodia epactia* hummock grassland is the main diagnostic of this association.

Stratum	Key Characteristics
Understorey	
Hummock Grasses	<i>Triodia secunda</i> and <i>Triodia epactia</i> hummock grassland under 0.5 m
Tussock Grasses	Open <i>Sporobolus virginicus</i> and <i>*Cenchrus ciliaris</i> tussock grassland to 0.5 m

Vegetation Condition

Condition Rating: Excellent

Disturbances: Rubbish, introduced species (**Cenchrus ciliaris*) and tracks

Average Fire Age: Old

Broad Formation: Grassland B
Vegetation Association:
Triodia epactia hummock grassland



Area: 3.01 km² **Quadrats Sampled** PI064, PI066

Landform Description

Location and Landform: This vegetation association is located between Coolarin Pool and a rockpile

Soil Attributes: Light orange brown sand

Litter Cover: <1% Logs, <1% Twigs and <1% Leaves

Bare Ground: 30%

Vegetation Structure and Floristics

The presence of *Triodia epactia* alone as the dominant *Triodia* is the main diagnostic for this association

Stratum	Key Characteristics
Understorey	
Hummock Grasses	<i>Triodia epactia</i> hummock grassland under 0.5 m

Vegetation Condition

Condition Rating: Very Good

Disturbances: Nearby tracks

Average Fire Age: Mod

Broad Formation: Low Hill

Vegetation Association:

An *Acacia tumida* var. *pilbarensis* shrubland over a low *Acacia stellaticeps* shrubland over *Triodia epactia* hummock grassland.



Area: 11.43 km² **Quadrats Sampled** QN58, QN61, QN65

Landform Description

Location and Landform: This vegetation association is located on a low hill which extends from Boodarie in the north to the Turner River in the south west.

Soil Attributes: Light orange brown sandy loam

Litter Cover: <1% Logs, <1% Twigs and <1% Leaves

Bare Ground: 30-75%

Vegetation Structure and Floristics

The presence of an *Acacia tumida* var. *pilbarensis* shrubland is the main diagnostic of this association.

Stratum	Key Characteristics
Midstorey	
Middle Shrub Layer	<i>Acacia tumida</i> var. <i>pilbarensis</i> between 1-1.5 m
Low Shrub Layer	Low <i>Acacia stellaticeps</i> shrubland to 0.5 m
Understorey	
Hummock Grasses	<i>Triodia epactia</i> hummock grassland under 0.5 m

Vegetation Condition

Condition Rating: Excellent

Disturbances: Nearby tracks and introduced species

Average Fire Age: Recent to Young

Broad Formation: Major Drainage Line A

Vegetation Association:

Scattered low *Eucalyptus victrix* trees over a high open *Melaleuca argentea*, *Acacia ampliceps* and *Acacia trachycarpa* shrubland over scattered *Adriana urticoides* var. *urticoides* and *Pluchea ferdinandi-muelleri* shrubs over open *Triodia epactia* hummock grassland.



Area: 8.02 km²

Quadrats Sampled

PI022, PI041, PI068, PI107
QT74, QT81

Landform Description

Location and Landform:

This vegetation association is located in the major drainage lines of the study area.

Soil Attributes:

Light orange sand with many small pebbles

Litter Cover:

<1% Logs, <1% Twigs and <1% Leaves

Bare Ground:

75-80%

Vegetation Structure and Floristics

The presence of *Eucalyptus victrix* and *Melaleuca argentea* is the main diagnostic of this association.

Stratum	Key Characteristics
Overstorey	
Canopy Layer	Scattered low <i>Eucalyptus victrix</i> trees to a height of 6 m
Midstorey	
Upper Shrub Layer	High open <i>Melaleuca argentea</i> , <i>Acacia ampliceps</i> and <i>Acacia trachycarpa</i> shrubland between 2 – 5 m
Low Shrub Layer	Scattered <i>Adriana urticoides</i> var. <i>urticoides</i> and <i>Pluchea ferdinandi-muelleri</i> shrubs under 1 m
Understorey	
Hummock Grasses	Open <i>Triodia epactia</i> hummock grassland under 0.6 m

Vegetation Condition

Condition Rating:

Excellent – Very Good

Disturbances:

Tracks in river bed

Average Fire Age:

Old

**Broad Formation: Major Drainage Line B
Vegetation Association:**

A low open *Eucalyptus victrix* woodland over an *Acacia tumida* var. *pilbarensis* and *Acacia colei* var. *colei* shrubland over a very open *Triodia epactia* hummock grassland.



Area: 2.37

Quadrats Sampled

PI098, PI115, PI122
QN76

Landform Description

Location and Landform: This vegetation association is located in the major drainage lines in the south east of the study area.

Soil Attributes: Red brown sandy loam

Litter Cover: 1% Logs, 1% Twigs and 2% Leaves

Bare Ground: 30%

Vegetation Structure and Floristics

The presence of low open *Eucalyptus victrix* woodland over an *Acacia tumida* var. *pilbarensis* and *Acacia colei* var. *colei* shrubland are the main diagnostics of this association.

Stratum	Key Characteristics
Overstorey	
Canopy Layer	Scattered low <i>Eucalyptus victrix</i> trees to a height of 6 m
Midstorey	
Middle Shrub Layer	<i>Acacia tumida</i> var. <i>pilbarensis</i> and <i>Acacia colei</i> var. <i>colei</i> shrubland to a height of 1.5 m
Low Shrub Layer	Scattered <i>Pluchea tetranthera</i> and <i>Indigofera monophylla</i> low shrubs under 1 m
Understorey	
Hummock Grasses	Very open <i>Triodia epactia</i> hummock grassland under 0.5 m
Tussock Grasses	Scattered <i>Eragrostis speciosa</i> and <i>Eriachne benthamii</i> tussock grasses under 1 m

Vegetation Condition

Condition Rating: Excellent

Disturbances: Introduced species

Average Fire Age: Old

**Broad Formation: Major Drainage Line C
Vegetation Association:**

Low open *Corymbia candida* subsp. *lautifolia* woodland over high open *Acacia colei* var. *colei*, *Acacia trachycarpa* and *Acacia tumida* var. *pilbarensis* shrubland over *Triodia epactia* open tussock grassland.



Area: 0.69 km² **Quadrats Sampled** PI120

Landform Description

Location and Landform: This vegetation association occurs in open drainage lines in the southeast of the study area

Soil Attributes: Red brown sandy clay with very scattered pebbles

Litter Cover: <1% Logs, <1% Twigs and 1% Leaves **Bare Ground:** 70%

Vegetation Structure and Floristics

The presence of *Corymbia candida* subsp. *lautifolia* is the main diagnostic of this association.

Stratum	Key Characteristics
Overstorey	
Canopy Layer	Low open <i>Corymbia candida</i> subsp. <i>lautifolia</i> woodland between 8-10 m
Midstorey	
Upper Shrub Layer	High open <i>Acacia colei</i> var. <i>colei</i> , <i>Acacia trachycarpa</i> and <i>Acacia tumida</i> var. <i>pilbarensis</i> shrubland to a height of 5 m
Understorey	
Hummock Grasses	<i>Triodia epactia</i> hummock grassland under 0.4 m

Vegetation Condition

Condition Rating: Excellent

Disturbances: Disturbance from cattle

Average Fire Age: Old

**Broad Formation: Major Drainage Line D
Vegetation Association:**

Low open *Eucalyptus camaldulensis* subsp. *refulgens*, *Melaleuca lasiandra* and *Melaleuca argentea* woodland over scattered *Acacia trachycarpa* shrubs over open **Cenchrus ciliaris* and *Chloris pectinata* tussock grassland over scattered *Triodia epactia* hummock grasses.



Area: 2.40 km² **Quadrats Sampled** PI119

Landform Description

Location and Landform: This vegetation association occurs in a major drainage line in the southeast of the study area

Soil Attributes: Orange brown coarse sand

Litter Cover: 1% Logs, 1% Twigs and 1% Leaves

Bare Ground: 80%

Vegetation Structure and Floristics

The presence of *Eucalyptus camaldulensis* subsp. *refulgens*, *Melaleuca lasiandra* and *Melaleuca argentea* are the main diagnostic of this association.

Stratum	Key Characteristics
Overstorey	
Canopy Layer	Low open <i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i> , <i>Melaleuca lasiandra</i> and <i>Melaleuca argentea</i> woodland between 3-4 m
Midstorey	
Middle Shrub Layer	Scattered <i>Acacia trachycarpa</i> shrubs to a height of 1 m
Understorey	
Hummock Grasses	<i>Triodia epactia</i> hummock grassland under 0.4 m
Tussock Grasses	Open <i>*Cenchrus ciliaris</i> and <i>Chloris pectinata</i> tussock grassland under 0.5 m

Vegetation Condition

Condition Rating: Very Good - Good

Disturbances: Introduced species (**Cenchrus ciliaris*) and disturbance from cattle

Average Fire Age: Old

**Broad Formation: Major Drainage Line E
Vegetation Association:**

Open *Eucalyptus camaldulensis* subsp. *refulgens* woodland over *Acacia tumida* var. *pilbarensis* and *Cajanus cinereus* shrubland over Very Open *Triodia epactia* hummock grassland.



Area: 0.50 km² **Quadrats Sampled** PI069, PI146

Landform Description

Location and Landform: This vegetation association occurs in a major drainage line in the west of the study area

Soil Attributes: Orange brown silty sand

Litter Cover: 1% Logs, 3% Twigs and 4% Leaves

Bare Ground: 60%

Vegetation Structure and Floristics

The presence of *Eucalyptus camaldulensis* subsp. *refulgens* and *Cajanus cinereus* are the main diagnostic of this association.

Stratum	Key Characteristics
Overstorey	
Canopy Layer	Open <i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i> woodland, between 10-20 m
Midstorey	
Middle Shrub Layer	<i>Acacia tumida</i> var. <i>pilbarensis</i> and <i>Cajanus cinereus</i> shrubland to a height of 1.7 m
Understorey	
Hummock Grasses	Very Open <i>Triodia epactia</i> hummock grassland under 0.4 m

Vegetation Condition

Condition Rating: Excellent

Disturbances: None recorded

Average Fire Age: Young

Broad Formation: Rock Outcrop

Vegetation Association:

Scattered *Acacia colei* var. *colei* and *Acacia inaequilatera* shrubs over scattered herbs over scattered *Triodia* sp. hummock grasses



Area: 0.48 km²

Quadrats Sampled

PI123, PI160
QTR3

Landform Description

Location and Landform: This vegetation association is located in on quartz and granite outcrops and rock piles in the study area.

Soil Attributes: Skeletal orange brown sand

Litter Cover: <1% Logs, <1% Twigs and <1% Leaves

Bare Ground: 70%

Vegetation Structure and Floristics

The presence of scattered shrubs, herbs and grasses are the main diagnostics of this association.

Stratum	Key Characteristics
Midstorey	
Middle Shrub Layer	Scattered <i>Acacia colei</i> var. <i>colei</i> and <i>Acacia inaequilatera</i> shrubs to a height of 2 m
Understorey	
Hummock Grasses	Scattered <i>Triodia</i> sp. hummock grasses under 0.3 m

Vegetation Condition

Condition Rating: Excellent

Disturbances: No signs of disturbance

Average Fire Age: Old

Broad Formation: Billabong

Vegetation Association:

Scattered low *Eucalyptus victrix* trees over scattered mixed grasses.



Area: 0.03 km² **Quadrats Sampled** QN75

Landform Description

Location and Landform:

This vegetation association is located at Coolarin Pool in the centre of the study area

Soil Attributes: Red brown sandy loam

Litter Cover: <1% Logs, <1% Twigs and 2% Leaves

Bare Ground: 50%

Vegetation Structure and Floristics

The presence of *Eucalyptus victrix* is the main diagnostic of this association.

Stratum	Key Characteristics
Overstorey	
Canopy Layer	Scattered low <i>Eucalyptus victrix</i> trees to a height of 6 m
Midstorey	
Middle Shrub Layer	Open <i>Acacia colei</i> var. <i>colei</i> and <i>Acacia ancistrocarpa</i> open shrubland to a height of 2 m
Understorey	
Hummock Grasses	<i>Triodia epactia</i> hummock grassland under 0.5 m
Tussock Grasses	Open <i>Paraneurachne muelleri</i> and <i>Eriachne benthamii</i> open tussock grassland under 0.5 m

Vegetation Condition

Condition Rating: Very Good

Disturbances: Introduced species, cattle, rubbish and tracks

Average Fire Age: Old

Broad Formation: Rockpile

Vegetation Association:

Scattered low *Ficus brachypoda*, *Clerodendrum tomentosum* var. *lanceolatum* and *Carissa lanceolata* trees over scattered herbs



Area: 0.02 km² **Quadrats Sampled** -

Landform Description

Location and Landform:

This vegetation association is located to the west of Coolarin Pool

Soil Attributes:

Skeletal soil mainly rocks

Litter Cover:

<1% Logs, <1% Twigs and <1% Leaves

Bare Ground: 95%

Vegetation Structure and Floristics

The presence of *Ficus brachypoda*, *Clerodendrum tomentosum* var. *lanceolatum* and *Carissa lanceolata* trees are the main diagnostic of this association.

Stratum	Key Characteristics
Overstorey	
Canopy Layer	Scattered low <i>Ficus brachypoda</i> , <i>Clerodendrum tomentosum</i> var. <i>lanceolatum</i> and <i>Carissa lanceolata</i> trees
Understorey	
Herbs	Scattered herbs under 0.5 m

Vegetation Condition

Condition Rating:

Very Good

Disturbances:

Tracks around rock pile

Average Fire Age:

Old

Broad Formation: Drainage A

Vegetation Association:

A low open *Eucalyptus victrix* woodland over a high open *Acacia ampliceps* and *Acacia trachycarpa* shrubland over a low open *Acacia stellaticeps*, *Pluchea ferdinandi-muelleri* and *Corchorus incanus* subsp. *incanus* shrubland over a *Triodia epactia* hummock grassland over an *Aristida holathera* var. *latifolia*, *Eriachne obtusa* and **Cenchrus ciliaris* tussock grassland.



Area: 0.38 km² **Quadrats Sampled** QT30, QT75

Landform Description

Location and Landform:

This vegetation association occurs in association with Major Drainage Line A

Soil Attributes: Red orange loamy sand

Litter Cover: 1% Logs, 1% Twigs and 5% Leaves

Bare Ground: 15%

Vegetation Structure and Floristics

The presence of a low open *Eucalyptus victrix* woodland over a high open *Acacia ampliceps* and *Acacia trachycarpa* shrubland is the main diagnostic of this association.

Stratum	Key Characteristics
Overstorey	
Canopy Layer	A low open <i>Eucalyptus victrix</i> woodland to a height of 10 m
Midstorey	
Upper Shrub Layer	High open <i>Acacia ampliceps</i> and <i>Acacia trachycarpa</i> shrubland between 1-3 m
Lower Shrub Layer	Low open <i>Acacia stellaticeps</i> , <i>Pluchea ferdinandi-muelleri</i> and <i>Corchorus incanus</i> subsp. <i>incanus</i> shrubland to a height of 1 m
Understorey	
Hummock Grasses	<i>Triodia epactia</i> hummock grassland under 0.5 m
Tussock Grasses	<i>Aristida holathera</i> var. <i>latifolia</i> , <i>Eriachne obtusa</i> and <i>*Cenchrus ciliaris</i> tussock grassland under 0.5 m

Vegetation Condition

Condition Rating: Very Good

Disturbances: Introduced species (**Cenchrus ciliaris*), cattle, rubbish, tracks, fence line and rabbits

Average Fire Age: Old

Broad Formation: Drainage B

Vegetation Association:

A low open *Eucalyptus victrix* woodland over a high open *Acacia ampliceps* shrubland over a low open *Acacia stellaticeps* and *Pluchea ferdinandi-muelleri* shrubland over a closed *Triodia epactia* and *Triodia secunda* hummock grassland over an open *Eriachne obtusa*, *Aristida holathera* var. *latifolia* and **Cenchrus ciliaris* tussock grassland



Area: 0.02 km² **Quadrats Sampled** QT31

Landform Description

Location and Landform: This vegetation association occurs in association with Major Drainage Line A

Soil Attributes: Red orange loamy sand

Litter Cover: <1% Logs, <1% Twigs and 5% Leaves **Bare Ground:** 5%

Vegetation Structure and Floristics

The presence of low open *Eucalyptus victrix* woodland over a high open *Acacia ampliceps* shrubland is the main diagnostic of this association.

Stratum	Key Characteristics
Overstorey	
Canopy Layer	A low open <i>Eucalyptus victrix</i> woodland to a height of 6 m
Midstorey	
Upper Shrub Layer	High open <i>Acacia ampliceps</i> shrubland to 3 m
Lower Shrub Layer	Low open <i>Acacia stellaticeps</i> and <i>Pluchea ferdinandi-muelleri</i> shrubland to a height of 0.5 m
Understorey	
Hummock Grasses	Closed <i>Triodia epactia</i> and <i>Triodia secunda</i> hummock grassland under 0.5 m
Tussock Grasses	Open <i>Eriachne obtusa</i> , <i>Aristida holathera</i> var. <i>latifolia</i> and <i>*Cenchrus ciliaris</i> tussock grassland under 0.5 m

Vegetation Condition

Condition Rating: Excellent

Disturbances: Rail line construction, tracks and erosion

Average Fire Age: Old

Broad Formation: Sandplain A

Vegetation Association:

Low *Acacia stellaticeps* shrublands over *Triodia epactia* and *Triodia secunda* hummock grasslands/ *Triodia epactia* and *Triodia secunda* hummock grasslands mosaic



Area: 28.27 km²

Quadrats Sampled

PI008, PI008a, PI009, PI010, PI036
QT34, QT35

Landform Description

Location and Landform:

This vegetation association occurs on the sandplains in the north of the study area

Soil Attributes:

Orange brown sandy loam

Litter Cover:

<1% Logs, <1% Twigs and 2% Leaves

Bare Ground:

30%

Vegetation Structure and Floristics

The mosaic of the two vegetation types is diagnostic for this association.

Stratum	Key Characteristics
Midstorey	
Lower Shrub Layer	Low <i>Acacia stellaticeps</i> shrubland to a height of 0.6 m
Understorey	
Hummock Grasses	<i>Triodia epactia</i> and <i>Triodia secunda</i> hummock grassland under 0.5 m

Vegetation Condition

Condition Rating:

Excellent

Disturbances:

Introduced species (**Cenchrus ciliaris*) and tracks

Average Fire Age:

Old

Broad Formation: Sandplain B

Vegetation Association:

An open *Acacia colei* var. *colei* shrubland over low *Acacia stellaticeps* shrublands over *Triodia epactia* and *Triodia secunda* hummock grasslands/low *Acacia stellaticeps* shrublands over *Triodia epactia* and *Triodia secunda* hummock grasslands mosaic



Area: 54.69 km²

Quadrats Sampled

PI020, PI021, PI023, PI025, PI026, PI027, PI028, PI029, PI031, PI032, PI042, PI043, PI044, PI070, PI071, PI072
QT43, QT44

Landform Description

Location and Landform:

This vegetation association occurs on the sandplains in the north of the study area

Soil Attributes:

Light orange brown sand

Litter Cover:

<1% Logs, <1% Twigs and 1% Leaves

Bare Ground:

40-55%

Vegetation Structure and Floristics

The mosaic of the two vegetation types is diagnostic for this association.

Stratum	Key Characteristics
Midstorey	
Middle Shrub Layer	Open <i>Acacia colei</i> var. <i>colei</i> shrubland to a height of 2 m
Lower Shrub Layer	Low <i>Acacia stellaticeps</i> shrubland to a height of 0.6 m
Understorey	
Hummock Grasses	<i>Triodia epactia</i> and <i>Triodia secunda</i> hummock grassland under 0.5 m

Vegetation Condition

Condition Rating:

Excellent

Disturbances:

Nearby tracks

Average Fire Age:

Old

Broad Formation: Sandplain C

Vegetation Association:

A low open *Corymbia flavescens* woodland over an open *Acacia colei* var. *colei* shrubland over a low *Acacia stellaticeps* shrubland over a *Triodia epactia* hummock grassland/ low *Acacia stellaticeps* shrublands over *Triodia epactia* and *Triodia secunda* hummock grasslands/ *Triodia epactia* and *Triodia secunda* hummock grasslands mosaic



Area: 16.98 km²

Quadrats Sampled

PI045, PI046, PI047, PI048, PI049
QT63, QT65, QT80, QT85

Landform Description

Location and Landform:

This vegetation association occurs on the sandplains in the north of the study area

Soil Attributes:

Red brown loam

Litter Cover:

2% Logs, 2% Twigs and 10% Leaves

Bare Ground:

15%

Vegetation Structure and Floristics

The mosaic of the three vegetation types is the diagnostic for this association.

Stratum	Key Characteristics
Overstorey	
Canopy Layer	Low open <i>Corymbia flavescens</i> woodland to a height of 5 m
Midstorey	
Middle Shrub Layer	Open <i>Acacia colei</i> var. <i>colei</i> shrubland to a height of 3 m
Low Shrub Layer	Low <i>Acacia stellaticeps</i> shrubland under 1 m
Understorey	
Hummock Grasses	Very open <i>Triodia epactia</i> hummock grassland under 0.5 m
Tussock Grasses	Scattered <i>Eragrostis speciosa</i> and <i>Eriachne benthamii</i> tussock grasses under 1 m

Vegetation Condition

Condition Rating:

Excellent

Disturbances:

Nearby tracks

Average Fire Age:

Old

Broad Formation: Sandplain D

Vegetation Association:

Low *Eucalyptus victrix* woodland over an *Acacia colei* var. *colei* shrubland over a low open *Acacia stellaticeps* and *Pluchea tetranthera* shrubland over a *Triodia epactia* hummock grassland.



Area: 0.07 km² **Quadrats Sampled** QT28

Landform Description

Location and Landform:

This vegetation association occurs on the sandplains in the northwest of the study area

Soil Attributes:

Orange sand

Litter Cover:

<1% Logs, 1% Twigs and 3% Leaves

Bare Ground:

50%

Vegetation Structure and Floristics

The presence of a low *Eucalyptus victrix* woodland over an *Acacia colei* var. *colei* shrubland is the main diagnostic of this association.

Stratum	Key Characteristics
Overstorey	
Canopy Layer	Low <i>Eucalyptus victrix</i> woodland to a height of 3 m
Midstorey	
Middle Shrub Layer	<i>Acacia colei</i> var. <i>colei</i> shrubland to a height of 2 m
Low Shrub Layer	Low open <i>Acacia stellaticeps</i> and <i>Pluchea tetranthera</i> shrubland under 0.6 m
Understorey	
Hummock Grasses	<i>Triodia epactia</i> and <i>Triodia schinzii</i> hummock grassland under 0.5 m
Tussock Grasses	<i>Eragrostis obtusa</i> and <i>Chrysopogon fallax</i> tussock grassland under 0.5 m

Vegetation Condition

Condition Rating:

Excellent

Disturbances:

Nearby tracks

Average Fire Age:

Old

Broad Formation: Sandplain E

Vegetation Association:

A low open *Corymbia flavescens* and *Eucalyptus victrix* woodland over an *Acacia colei* var. *colei* and *Acacia sericophylla* shrubland over a low open *Acacia stellaticeps* shrubland over a *Triodia epactia* hummock grassland.



Area: 0.36 km² **Quadrats Sampled** QT70, QT79

Landform Description

Location and Landform: This vegetation association occurs on the sandplains in the northwest of the study area

Soil Attributes: Red brown sandy loam

Litter Cover: <1% Logs, 2% Twigs and 5% Leaves **Bare Ground:** 25%

Vegetation Structure and Floristics

The presence of *Corymbia flavescens* and *Eucalyptus victrix* is the main diagnostic of this association.

Stratum	Key Characteristics
Overstorey	
Canopy Layer	Low open <i>Corymbia flavescens</i> and <i>Eucalyptus victrix</i> woodland to a height of 3 m
Midstorey	
Middle Shrub Layer	<i>Acacia colei</i> var. <i>colei</i> and <i>Acacia sericophylla</i> shrubland to a height of 3 m
Low Shrub Layer	Low open <i>Acacia stellaticeps</i> shrubland under 0.75 m
Understorey	
Hummock Grasses	<i>Triodia epactia</i> hummock grassland under 0.5 m
Tussock Grasses	<i>Eragrostis benthamii</i> tussock grassland under 0.5 m

Vegetation Condition

Condition Rating: Excellent

Disturbances: Rubbish

Average Fire Age: Old

Broad Formation: Sandplain F

Vegetation Association:

No photo available

An open *Acacia tumida* var. *pilbarensis* and *Acacia colei* var. *colei* shrubland over an open *Triodia epactia* hummock grassland.

Area: 0.05 km² **Quadrats Sampled** -

Landform Description

Location and Landform:

This vegetation association occurs on the sandplains in the northwest of the study area

Soil Attributes: Red brown sandy loam

Litter Cover: <1% Logs, <1% Twigs and 5% Leaves

Bare Ground: 30%

Vegetation Structure and Floristics

The presence of quite dense *Acacia tumida* var. *pilbarensis* and *Acacia colei* var. *colei* is the main diagnostic of this association.

Stratum	Key Characteristics
Midstorey	
Middle Shrub Layer	Open <i>Acacia tumida</i> var. <i>pilbarensis</i> and <i>Acacia colei</i> var. <i>colei</i> shrubland to a height of 2 m
Understorey	
Hummock Grasses	<i>Triodia epactia</i> hummock grassland under 0.5 m

Vegetation Condition

Condition Rating: Good

Disturbances: Track through association

Average Fire Age: Old

Broad Formation: Sandplain G

Vegetation Association:

A low open *Corymbia flavescens* woodland over an *Acacia colei* var. *colei*, *Carissa lanceolata* and *Acacia sericophylla* shrubland over a *Triodia epactia* hummock grassland over a very open **Cenchrus ciliaris*, *Chrysopogon fallax* and *Eriachne obtusa* tussock grassland.



Area: 0.02 km² **Quadrats Sampled** QT69

Landform Description

Location and Landform: This vegetation association occurs on a small area of sandplains in the northwest of the study area

Soil Attributes: Red brown sandy loam

Litter Cover: 1% Logs, 1% Twigs and 10% Leaves **Bare Ground:** 15%

Vegetation Structure and Floristics

The presence of an *Acacia colei* var. *colei*, *Carissa lanceolata* and *Acacia sericophylla* shrubland is the main diagnostic of this association.

Stratum	Key Characteristics
Overstorey	
Canopy Layer	Low open <i>Corymbia flavescens</i> woodland between 2-6 m
Midstorey	
Middle Shrub Layer	<i>Acacia colei</i> var. <i>colei</i> , <i>Carissa lanceolata</i> and <i>Acacia sericophylla</i> shrubland to a height of 5 m
Understorey	
Hummock Grasses	<i>Triodia epactia</i> hummock grassland under 0.6 m
Tussock Grasses	Very open <i>*Cenchrus ciliaris</i> , <i>Chrysopogon fallax</i> and <i>Eriachne obtusa</i> tussock grassland under 0.5 m

Vegetation Condition

Condition Rating: Excellent - Pristine

Disturbances: Introduced species (**Cenchrus ciliaris*)

Average Fire Age: Old to Very Old

Broad Formation: Sandplain H

Vegetation Association:

An *Acacia tumida* var. *pilbarensis* and *Acacia colei* var. *colei* shrubland over a low *Acacia stellaticeps* shrubland over a *Triodia epactia* hummock grassland/ low *Acacia stellaticeps* shrubland over a *Triodia epactia* hummock grassland mosaic.



Area: 59.58 km²

Quadrats Sampled

PI024, PI033, PI035, PI050, PI052, PI053, PI056, PI065, PI073, PI108, PI147, PI148, PI150
QT65, QT66, QT67, QT80

Landform Description

Location and Landform:

This vegetation association occurs on sandplains in the west of the study area

Soil Attributes:

Light orange sandy loam

Litter Cover:

2% Logs, 1% Twigs and 3% Leaves

Bare Ground:

30-50%

Vegetation Structure and Floristics

The mosaic of the two vegetation types is the diagnostic for this association.

Stratum	Key Characteristics
Midstorey	
Middle Shrub Layer	<i>Acacia tumida</i> var. <i>pilbarensis</i> and <i>Acacia colei</i> var. <i>colei</i> shrubland to a height of 3 m
Lower Shrub Layer	Low <i>Acacia stellaticeps</i> shrubland between 0.5-1 m
Understorey	
Hummock Grasses	<i>Triodia epactia</i> hummock grassland under 0.5 m

Vegetation Condition

Condition Rating:

Excellent

Disturbances:

Track nearby

Average Fire Age:

Old

Broad Formation: Sandplain I

Vegetation Association:

An *Acacia tumida* var. *pilbarensis* shrubland over a low *Acacia stellaticeps* shrubland over a *Triodia epactia* hummock grassland/ low *Acacia stellaticeps* shrubland over a *Triodia epactia* hummock grassland/ *Triodia epactia* hummock grassland mosaic.



Area: 77.15 km²

Quadrats Sampled

PI051, PI054, PI055, PI057, PI058, PI061, PI105, PI109, PI110, PI111, PI131, PI132, PI133, PI134, PI136, PI143, PI156
QN40, QN42, QN43, QN44

Landform Description

Location and Landform:

This vegetation association occurs on sandplains in the middle of the study area

Soil Attributes:

Light orange brown sandy loam

Litter Cover:

<1% Logs, <1% Twigs and 1% Leaves

Bare Ground:

30-50%

Vegetation Structure and Floristics

The mosaic of the three vegetation types is the diagnostic for this association.

Stratum	Key Characteristics
Midstorey	
Middle Shrub Layer	<i>Acacia tumida</i> var. <i>pilbarensis</i> shrubland to a height of 1.5 m
Lower Shrub Layer	Low <i>Acacia stellaticeps</i> shrubland between 0.5 m
Understorey	
Hummock Grasses	<i>Triodia epactia</i> and <i>Triodia lanigera</i> hummock grassland under 0.5 m

Vegetation Condition

Condition Rating:

Excellent - Pristine

Disturbances:

-

Average Fire Age:

Old

Broad Formation: Sandplain J

Vegetation Association:

Scattered low *Corymbia flavescens* trees over an open *Acacia tumida* var. *pilbarensis* shrubland over a low open *Acacia stellaticeps* shrubland over a *Triodia epactia* and *Triodia secunda* hummock grassland/*Triodia secunda* and *Triodia epactia* hummock grassland mosaic.



Area: 2.78 km² **Quadrats Sampled** QN55, QN56

Landform Description

Location and Landform: This vegetation association occurs on sandplains in the west of the study area

Soil Attributes: Light orange brown sand

Litter Cover: <1% Logs, <1% Twigs and <1% Leaves

Bare Ground: 75-80%

Vegetation Structure and Floristics

The mosaic of the two vegetation types is the diagnostic for this association.

Stratum	Key Characteristics
Overstorey	
Canopy Layer	Scattered low <i>Corymbia flavescens</i> trees to a height of 2 m
Midstorey	
Middle Shrub Layer	Open <i>Acacia tumida</i> var. <i>pilbarensis</i> shrubland to a height of 1.5 m
Lower Shrub Layer	Low open <i>Acacia stellaticeps</i> shrubland to a height of 0.5 m
Understorey	
Hummock Grasses	<i>Triodia epactia</i> and <i>Triodia secunda</i> hummock grassland under 0.3 m

Vegetation Condition

Condition Rating: Excellent

Disturbances: -

Average Fire Age: Recent

Broad Formation: Sandplain K

Vegetation Association:

Scattered low *Owenia reticulata* trees over an *Acacia tumida* var. *pilbarensis* and *Acacia colei* var. *colei* shrubland over a low *Acacia stellaticeps* shrubland over a *Triodia epactia* hummock grassland/low *Acacia stellaticeps* shrubland over a *Triodia epactia* hummock grassland mosaic.



Area: 35.64 km²

Quadrats Sampled

PI060, PI062, PI063, PI067, PI102, PI103, PI104, PI106
QN94, QN96

Landform Description

Location and Landform:

This vegetation association occurs on sandplains in the middle of the study area

Soil Attributes: Light orange brown sand

Litter Cover: <1% Logs, <1% Twigs and <1% Leaves

Bare Ground: 25-30%

Vegetation Structure and Floristics

The presence of *Owenia reticulata* is the main diagnostic of this association.

Stratum	Key Characteristics
Overstorey	
Canopy Layer	Scattered low <i>Owenia reticulata</i> trees to a height of 2 m
Midstorey	
Middle Shrub Layer	<i>Acacia tumida</i> var. <i>pilbarensis</i> and <i>Acacia colei</i> var. <i>colei</i> shrubland to a height of 2.5 m
Lower Shrub Layer	Low open <i>Acacia stellaticeps</i> shrubland to a height of 0.7 m
Understorey	
Hummock Grasses	<i>Triodia epactia</i> hummock grassland under 0.3 m

Vegetation Condition

Condition Rating: Excellent -Pristine

Disturbances: -

Average Fire Age: Old

Broad Formation: Sandplain L

Vegetation Association:

A low open *Corymbia zygophylla* woodland over an open *Acacia colei* var. *colei*, *Acacia inaequilatera* and *Acacia ancistrocarpa* shrubland over a low *Acacia sericophylla*, *Acacia stellaticeps*, *Senna artemisioides* aff. subsp. *oligophylla* (thinly sericeous) and *Dodonaea coriacea* shrubland over a very open *Triodia lanigera* and *Triodia epactia* hummock grassland.



Area: 0.33 km² **Quadrats Sampled** QN39

Landform Description

Location and Landform:

This vegetation association occurs on sandplains in the middle of the study area

Soil Attributes: Red brown sandy loam

Litter Cover: 1% Logs, 3% Twigs and 3% Leaves

Bare Ground: 25%

Vegetation Structure and Floristics

The presence of *Corymbia zygophylla* is the main diagnostic of this association.

Stratum	Key Characteristics
Overstorey	
Canopy Layer	Low open <i>Corymbia zygophylla</i> woodland to a height of 4 m
Midstorey	
Middle Shrub Layer	Open <i>Acacia colei</i> var. <i>colei</i> , <i>Acacia inaequilatera</i> and <i>Acacia ancistrocarpa</i> shrubland to a height of 2.5 m
Lower Shrub Layer	Low open <i>Acacia stellaticeps</i> shrubland to a height of 0.7 m
Understorey	
Hummock Grasses	<i>Triodia epactia</i> hummock grassland under 0.3 m

Vegetation Condition

Condition Rating: Excellent -Pristine

Disturbances: -

Average Fire Age: Old

Broad Formation: Sandplain M

Vegetation Association:

An open *Acacia ancistrocarpa*, *Acacia tumida* var. *pilbarensis* and *Acacia inaequilatera* shrubland over *Triodia lanigera* hummock grassland.



Area: 0.52 km² **Quadrats Sampled** QT117

Landform Description

Location and Landform: This vegetation association occurs on a small area of sandplain in the middle of the study area

Soil Attributes: Light orange brown sand

Litter Cover: <1% Logs, <1% Twigs and 1% Leaves

Bare Ground: 40%

Vegetation Structure and Floristics

The presence of an open *Acacia ancistrocarpa*, *Acacia tumida* var. *pilbarensis* and *Acacia inaequilatera* shrubland is the main diagnostic of this association.

Stratum	Key Characteristics
Midstorey	
Middle Shrub Layer	Open <i>Acacia ancistrocarpa</i> , <i>Acacia tumida</i> var. <i>pilbarensis</i> and <i>Acacia inaequilatera</i> shrubland to a height of 2 m
Understorey	
Hummock Grasses	<i>Triodia lanigera</i> and <i>Triodia epactia</i> hummock grassland under 0.4 m

Vegetation Condition

Condition Rating: Excellent -Pristine

Disturbances: Tracks and railway line nearby

Average Fire Age: Old

**Broad Formation: Sandplain N
Vegetation Association:**

A low open *Corymbia zygophylla* woodland over an open *Acacia ancistrocarpa*, *Acacia inaequilatera*, *Acacia tumida* var. *pilbarensis* and *Acacia sericophylla* shrubland over *Acacia stellaticeps* low open shrubland over *Triodia epactia* and *Triodia lanigera* hummock grassland.



Area: 75.14 km²

Quadrats Sampled

PI079, PI081, PI083, PI084, PI085, PI096, PI100, PI101, PI112, PI117, PI118, PI129, PI130, PI135, PI137, PI153, PI154, PI161, PIHAR01, PIER01 QN06, QN07, QT122, QT123

Landform Description

Location and Landform:

This vegetation association occurs on sandplains in the east of the study area

Soil Attributes:

Light orange brown sand

Litter Cover:

1% Logs, <1% Twigs and 5% Leaves

Bare Ground: 40%

Vegetation Structure and Floristics

The presence of open *Acacia ancistrocarpa*, *Acacia inaequilatera*, *Acacia tumida* var. *pilbarensis* and *Acacia sericophylla* shrubland is the main diagnostic of this association.

Stratum	Key Characteristics
Overstorey	
Canopy Layer	Low open <i>Corymbia zygophylla</i> woodland to a height of 4 m
Midstorey	
Middle Shrub Layer	Open <i>Acacia ancistrocarpa</i> , <i>Acacia inaequilatera</i> , <i>Acacia tumida</i> var. <i>pilbarensis</i> and <i>Acacia sericophylla</i> shrubland to a height of 3 m
Lower Shrub Layer	<i>Acacia stellaticeps</i> low open shrubland to a height of 1 m
Understorey	
Hummock Grasses	<i>Triodia epactia</i> and <i>Triodia lanigera</i> hummock grassland under 1 m

Vegetation Condition

Condition Rating:

Excellent -Pristine

Disturbances:

-

Average Fire Age:

Old

Broad Formation: Sandplain O

Vegetation Association:

Scattered low *Eucalyptus victrix* and *Corymbia hamersleyana* trees over an open *Acacia ancistrocarpa*, *Acacia tumida* var. *pilbarensis*, *Acacia inaequilatera* and *Acacia trudgeniana* shrubland over a low open *Acacia stellaticeps* shrubland over a *Triodia epactia* and *Triodia lanigera* hummock grassland.



Area: 36.13 km²

Quadrats Sampled

PI059, PI092, PI093, PI094, PI095, PI113, PI114, PI127, PI128, PI138
QN105, QN106

Landform Description

Location and Landform:

This vegetation association occurs on sandplains in the east of the study area

Soil Attributes:

Light orange brown sand

Litter Cover:

<1% Logs, 1% Twigs and 2% Leaves

Bare Ground:

35%

Vegetation Structure and Floristics

The presence of scattered low *Eucalyptus victrix* and *Corymbia hamersleyana* trees is the main diagnostic of this association.

Stratum	Key Characteristics
Overstorey	
Canopy Layer	Scattered low <i>Eucalyptus victrix</i> and <i>Corymbia hamersleyana</i> trees to a height of 6 m
Midstorey	
Middle Shrub Layer	Open <i>Acacia ancistrocarpa</i> , <i>Acacia tumida</i> var. <i>pilbarensis</i> , <i>Acacia inaequilatera</i> and <i>Acacia trudgeniana</i> shrubland between 1-2 m
Lower Shrub Layer	Low open <i>Acacia stellaticeps</i> shrubland to a height of 0.4 m
Understorey	
Hummock Grasses	<i>Triodia epactia</i> and <i>Triodia lanigera</i> hummock grassland under 0.5 m

Vegetation Condition

Condition Rating:

Excellent -Pristine

Disturbances:

-

Average Fire Age:

Old

Broad Formation: Sandplain P

Vegetation Association:

A low open *Eucalyptus victrix*, *Corymbia hamersleyana* and *Corymbia flavescens* woodland over an open *Acacia colei* var. *colei* shrubland over a low open *Acacia stellaticeps* and *Pluchea tetranthera* shrubland over a *Triodia epactia* hummock grassland.



Area: 4.16 km²

Quadrats Sampled

PI080, PI097
QN22

Landform Description

Location and Landform:

This vegetation association occurs on sandplains in the east of the study area

Soil Attributes:

Red brown clayey loam

Litter Cover:

2% Logs, 8% Twigs and 10% Leaves

Bare Ground: 30%

Vegetation Structure and Floristics

The presence of a low open *Eucalyptus victrix*, *Corymbia hamersleyana* and *Corymbia flavescens* woodland is the main diagnostic of this association.

Stratum	Key Characteristics
Overstorey	
Canopy Layer	Low open <i>Eucalyptus victrix</i> , <i>Corymbia hamersleyana</i> and <i>Corymbia flavescens</i> woodland to a height of 7 m
Midstorey	
Middle Shrub Layer	Open <i>Acacia colei</i> var. <i>colei</i> shrubland between 1-3 m
Lower Shrub Layer	Low open <i>Acacia stellaticeps</i> and <i>Pluchea tetranthera</i> shrubland to a height of 0.5 m
Understorey	
Hummock Grasses	<i>Triodia epactia</i> hummock grassland under 0.4 m

Vegetation Condition

Condition Rating:

Excellent -Pristine

Disturbances:

-

Average Fire Age:

Old

Broad Formation: Sandplain Q

Vegetation Association:

Scattered low *Corymbia flavescens* trees over an open *Acacia ancistrocarpa* and *Acacia bivenosa* shrubland over scattered low *Acacia stellaticeps* shrubs over a *Triodia epactia* and *Triodia lanigera* hummock grassland.



Area: 23.38

Quadrats Sampled

PI086, PI087, PI099, PI116, PI124, PI126, PI145
QT108, QT109

Landform Description

Location and Landform:

This vegetation association occurs on sandplains in the east of the study area

Soil Attributes:

Light orange brown sand with clay

Litter Cover:

<1% Logs, <1% Twigs and 1% Leaves

Bare Ground:

45%

Vegetation Structure and Floristics

The presence of an open *Acacia ancistrocarpa* and *Acacia bivenosa* shrubland is the main diagnostic of this association.

Stratum	Key Characteristics
Overstorey	
Canopy Layer	Scattered low <i>Corymbia flavescens</i> trees to a height of 4 m
Midstorey	
Middle Shrub Layer	Open <i>Acacia ancistrocarpa</i> and <i>Acacia bivenosa</i> shrubland to a height of 1.5 m
Lower Shrub Layer	Scattered low <i>Acacia stellaticeps</i> shrubs to a height of 0.8 m
Understorey	
Hummock Grasses	<i>Triodia epactia</i> and <i>Triodia lanigera</i> hummock grassland under 0.4 m

Vegetation Condition

Condition Rating:

Excellent -Pristine

Disturbances:

Roads, fences and rail line nearby

Average Fire Age:

Old

Broad Formation: Sandplain R

Vegetation Association:

Low open *Corymbia candida* subsp. *lautifolia* and *Corymbia hamersleyana* woodland over *Acacia colei* var. *colei* and *Acacia tumida* var. *pilbarensis* open shrubland over *Triodia epactia* and *Triodia lanigera* hummock grassland.



Area: 37.85 km²

Quadrats Sampled

PI030, PI034, PI074, PI075, PI076, PI077, PI078, PI082, PI088, PI089, PI090, PI091, PI141, PI149

Landform Description

Location and Landform:

This vegetation association occurs on sandplains in the east of the study area

Soil Attributes:

Light orange brown sand loam

Litter Cover:

<1% Logs, <1% Twigs and 2% Leaves

Bare Ground:

30-70%

Vegetation Structure and Floristics

The presence of a Low open *Corymbia candida* subsp. *lautifolia* and *Corymbia hamersleyana* woodland is the main diagnostic of this association.

Stratum	Key Characteristics
Overstorey	
Canopy Layer	Low open <i>Corymbia candida</i> subsp. <i>lautifolia</i> and <i>Corymbia hamersleyana</i> woodland between 2-5 m
Midstorey	
Middle Shrub Layer	<i>Acacia colei</i> var. <i>colei</i> and <i>Acacia tumida</i> var. <i>pilbarensis</i> open shrubland to a height of 3 m
Understorey	
Hummock Grasses	<i>Triodia epactia</i> and <i>Triodia lanigera</i> hummock grassland under 0.4 m

Vegetation Condition

Condition Rating:

Excellent -Pristine

Disturbances:

Introduced species and disturbance from cattle

Average Fire Age:

Old

Broad Formation: Sandplain S

Vegetation Association:

Scattered *Acacia inaequilatera* shrubs over *Triodia epactia* and *Triodia lanigera* very open hummock grassland.



Area: 26.61

Quadrats Sampled

PI125, PI139, PI140, PI142, PI152, PIR151

Landform Description

Location and

This vegetation association occurs on sandplains in the east of the study area

Landform:

Soil Attributes:

Orange brown sandy loam with pebbles and cobbles

Litter Cover:

<1% Logs, <1% Twigs and <1% Leaves

Bare Ground:

90%

Vegetation Structure and Floristics

The presence of Scattered *Acacia inaequilatera* shrubs and recent fire history are the main diagnostic of this association.

Stratum	Key Characteristics
Midstorey	
Middle Shrub Layer	Scattered <i>Acacia inaequilatera</i> shrubs to a height of 2 m
Understorey	
Hummock Grasses	<i>Triodia epactia</i> and <i>Triodia lanigera</i> hummock grassland under 0.3 m

Vegetation Condition

Condition Rating:

Excellent

Disturbances:

Rail nearby

Average Fire Age:

Recent - moderate

The most common vegetation types recorded in the study area during previous surveys included:

- Hummock grassland of *Triodia secunda* (Sandplain A);
- Low Open Shrubland of *Tecticornia* spp. on saline flats (Sapphire A and B);
- Low Shrubland of *Acacia stellaticeps* with mixed *Triodia secunda* / *Triodia schinzii* / *Triodia epactia* Open Hummock Grassland (Sandplain B);
- High Closed Shrubland of *Avicennia marina* and *Rhizophora stylosa* (Mangroves); and
- Mixed Tussock grassland of *Eragrostis* spp., **Cenchrus ciliaris*, *Aristida* spp. and *Paraneurachne* spp.

These vegetation types were recorded from the majority of the surveys previously conducted in the Port Hedland area, and during the current survey.

The Hummock Grassland of *Triodia secunda* vegetation type has been recorded from nine of the previous surveys. The Low Open Shrubland of *Tecticornia* spp. on saline flats vegetation type has been recorded from eight of the previous surveys. The Low Shrubland of *Acacia stellaticeps* with mixed *Triodia* spp. Open Hummock Grassland vegetation type has been recorded from ten of the previous surveys. The Mangrove vegetation type has been recorded from four of the previous surveys. The Mixed Tussock Grassland vegetation type has been recorded from three of the previous surveys.

As the previous surveys and reports were completed over a number of years, with differing methods and by a range of personnel, there are variations in the descriptions of these vegetation types throughout the area. Some examples of differences are described below.

The *Triodia secunda* Hummock Grassland, is primarily described as occurring with another co-dominant *Triodia* species (*T. epactia* and *T. schinzii*) (Biota 2008a; Biota 2008b; ENV 2008a; ENV 2010a; ENV 2010b; ENV 2010e; and Woodman 2011). The descriptions in each report vary, with some describing scattered to open tussock grasses present as co-dominant alongside the hummock grasses (Biota 2008a; ENV 2008a; ENV 2010a; and ENV 2010b). The density of the grasslands may reflect fire age.

The low open shrublands of *Tecticornia* spp. are consistently occurring on tidal saline mudflats (Biota 2008a; Biota 2008b; ENV 2008a; ENV 2010b; ENV 2010c; ENV 2010d; ENV 2010e; and Woodman 2011). The descriptions vary in their inclusions of co-occurring taxa, with some describing tussock grasses as co-dominant (ENV 2010b; ENV 2010d; ENV 2010e; and Woodman 2011) and others describing *Muellerolimon salicorniaceum* shrubs as co-dominant in this vegetation type (Biota 2008b; ENV 2010c).

The low shrublands of *Acacia stellaticeps* with mixed *Triodia* spp., consistently occur on sandy areas (Biota 2008b; ENV 2009a; ENV 2009c; ENV 2009f; ENV 2009g; ENV 2010a; ENV 2010b; ENV 2010c; ENV 2010d; Woodman 2011). The descriptions of co-occurring *Triodia* species varies with each report, with some occurring with *T. epactia* and/or *T. secunda* (ENV 2009f; ENV 2009g; ENV 2010c; ENV 2010d and Woodman 2011) and some occurring with *T. schinzii* (ENV 2010a; ENV 2010b; ENV 2010b).

The mangrove vegetation type is consistently described as a high closed shrubland/forest occurring on intertidal mudflats (ENV 2009a; ENV 2009b; ENV 2010c; and Woodman 2011). The dominant mangrove species vary, with some describing *Avicennia marina* and *Ceriops tagal* as the dominants (ENV 2009a and ENV 2010c), one describing *Avicennia marina* and *Rhizophora stylosa* as the dominants (ENV 2009b) and one describing only one dominant mangrove species (Woodman 2011). It should be noted that *Ceriops tagal* is no longer a current taxon in Western Australia and this identification is likely to be of *Rhizophora stylosa*. However, the Western Australian Herbarium has not indicated the current name to which *Ceriops tagal* should now be referred (WAH 2011).

The mixed tussock grassland vegetation type is consistently occurring on sandy areas (ENV 2009g; ENV 2010a and ENV 2010f). The dominant tussock grass species varies, with some describing *Cenchrus ciliaris* as a dominant species (ENV 2010a and ENV 2010f) and some describing *Eragrostis eriopoda*, *Aristida hygrometrica* and *Spinifex longifolius* as dominant species (ENV 2009g and ENV 2010f).

3.5.2 Vegetation Condition

Vegetation condition in the study area ranged from Completely Degraded to Pristine with the majority of vegetation in Very Good to Excellent condition (Figure 9 and Figure 10). The majority of disturbance was located around infrastructure and the towns of Port Hedland and South Hedland. The main disturbances recorded were the presence of introduced species, clearing for infrastructure and tracks, and grazing and trampling by cattle.

The vegetation condition of the northern coastal section of the study area was considered to range from Poor to Excellent (Biota 2008a; Biota 2008b; ENV 2008a; ENV 2009b and Woodman 2011). Biota (2008a) also considered the vegetation of the western coastal area near Finucane Island to be in Very Good condition with few weed species occurring. The Finucane Island access road vegetation was recorded to be in Poor to Good condition with a high level of disturbance in the area from industrial development with the occurrence of weed species to be denser along the access road (Biota 2008b). ENV (2008a) considered the coastal area associated with the port to be in Poor to Good condition, with disturbance from the construction of the nearby conveyor, cattle, vehicle tracks and litter. The Outer Harbour development (ENV 2009b), although experiencing similar disturbances was considered to be in Good to Very Good condition. The disturbance was noticeable greater closer to the Wedgefield Industrial Area (ENV

2009b). Woodman (2011) considered the majority of the vegetation of the coastal area to be in Very Good/Excellent to Excellent condition with few weed species.

The vegetation condition of the centre of the study area was considered to range from Completely Degraded to Excellent (Maia 2010; ENV 2009a and ENV 2009c). Maia (2010) considered the vegetation in the centre of the study area to be in Degraded to Very Good condition with areas associated with tracks, drainage lines and infrastructure having greater levels of disturbance than the surrounding vegetation. ENV (2009a) considered the vegetation in the centre of the study area to be in Good to Excellent condition with disturbances associated with clearing for tracks and infrastructure. ENV (2009c) considered the vegetation in the centre of the study area to be in Completely Degraded to Very Good condition with the existing rail line infrastructure the main source of disturbance.

Biota (2009) considered the vegetation in association with the Wedgefield salt flats to be in Good to Very Good condition with the occurrence of some weed species and other disturbances including vehicle tracks and litter recorded.

3.5.3 Threatened and Priority Ecological Communities

No TECs, listed under *EPBC Act* or as endorsed by the Western Australian Minister for the Environment or PECs, as listed by the DEC, were identified in the study area.

3.5.4 Vegetation of Conservation Significance

One vegetation community considered of conservation significance (mangroves) was identified in the study area (Figure 7). Mangroves are listed as a wetland of subregional significance by Kendrick and Stanley (2001). Guidance Statement No. 1 considers the mangroves of the Port Hedland area to be of high conservation value (EPA 2001). Separate assessments of the mangroves have been conducted for the Port Hedland region and therefore mangroves are not discussed at length in this report.

3.5.5 Vegetation of Interest

Three vegetation associations of interest occur in the study area.

The samphire shrublands (*Tecticornia* spp.) are considered of interest by Biota (2008a) as they are restricted to the narrow mudflat habitats along the coast and are susceptible to disturbance. The samphire shrublands were described in eight reports (Biota 2008a; Biota 2008b; ENV 2008a; ENV 2010b; ENV 2010c; ENV 2010d; ENV 2010e and Woodman 2011).

The grasslands dominated by *Triodia secunda* are considered of interest by Biota (2008a), as this spinifex species has a limited distribution in the Pilbara and appears to be restricted to Port Hedland and its immediately surrounding areas (Biota 2008a and

WAH 2011). This vegetation type was described in four reports (Biota 2008a; ENV 2010f; Maia 2010 and Woodman 2011).

The High Shrubland of *Acacia tumida* var. *pilbarensis* and *A. colei* var. *colei*, with Low Open Shrubland of *Hybanthus aurantiacus* with Very Open Hummock Grassland of *Triodia epactia* on Flood Plains and at the base of Granite Domes and Tors, is considered of interest by Maia (2010) due to its apparently limited regional distribution (Maia 2010). This vegetation type is also considered to be potential habitat for the Priority 4 species, *Bulbostylis burbidgeae* (Maia 2010) as it was recorded in similar habitat previously (Biota 2008b). To date, *Bulbostylis burbidgeae* has not been recorded from this location and no records exist in the area on Florabase (WAH 2011). These areas were mapped as rock outcrops in the south of the study area.

Two broad formations, associated with Limestone Hills and Rock Outcrops, which were mapped of limited extent during the Outer Harbour Development Area (ENV 2009a) were expanded in coverage with new areas of these formations and habitats recorded. The Limestone Hill association covers 0.62 km² and the Rock Outcrops covers 0.48 km². The rock outcrops were also identified as being of significance in the Biota (2004) and Hope Downs Management Services reports (2002).

3.5.6 Groundwater-Dependant Ecosystems

Three phreatophytic species, *Melaleuca argentea* (an obligate phreatophyte), and *Eucalyptus camaldulensis* subsp. *refulgens* and, *Eucalyptus victrix* (both facultative phreatophytes), were recorded during the current survey. Phreatophytic species rely on groundwater sources for water uptake (Halpern, Glick and Maunsell 1999). These species were recorded from two broad formations: Major Drainage Line A and Major Drainage Line D. These taxa indicate the potential presence shallow groundwater, and hence a Groundwater Dependent Ecosystem.

Eucalyptus victrix was also recorded throughout a number of different associations in the study area. Not all of these may represent groundwater dependent ecosystems, but the *Eucalyptus* present may rely on groundwater during drier periods. These other associations were Major Drainage Line B, Billabong, Drainage Line A and B and Sandplain D, E, O and P.

3.5.7 Regional Representation of Vegetation Types

Beard (1975) mapped seven vegetation types in the study area (Table 10). These can be correlated to mapping by Shepherd *et al.* (2001) who attempted to determine the current extent of these vegetation types.

The ENV vegetation associations have generally correlated with the Beard (1975) broad vegetation types (Table 10). Differences exist with the terminology used in the descriptions as they are based on different methods of categorising and characterising vegetation types, and spatial scale of the analysis (*i.e.* region vs. local scale).

The vegetation types mapped by Beard (1975) as occurring in the study area have a large distribution especially in the Pilbara region. In addition, as shown in Table 10, they are considered to exist at between 84 to 100% of their pre-European extent as per Shepherd *et al.* (2001) and DAFWA (2007). Vegetation types that have more than 50% of their pre-European extent are considered of 'Least Concern' as per the Department of Natural Resources and Environment (2002).

Table 10: Regional Representation of Vegetation in the Survey area

Beard / Shepherd Vegetation Unit	Vegetation Association Mapped	Pre-European area (km ²) ¹	Current extent (km ²) ³	Remaining (%) ³	Pre-European % in IUCN Class I-IV Reserves ³	Conservation Status ²
647	Low hill	196,370.7	196,370.7	100	0	Least Concern
93	Sandplain	3,042,113.1	3,042,064	100	0.42	Least Concern
117	N/A	74,554.9	70,441.6	94.48	12.23	Least Concern
127	Samphire B	180,400.9	177,739.1	98.52	0	Least Concern
43	Mangroves	15,057.6	12,712.7	84.43	0	Least Concern
589	Sandplain B	730,717.7	730,682.9	100	1.77	Least Concern
619	Major Drainage Line A	118,704.9	118,704.9	100	0.20	Least Concern

Representation of these units at the bioregional, subregional and local scale are summarised in Table 11.

¹ Shepherd *et al.* (2001) and DAFWA (2007)

² Kendrick and Stanley (2001) and Kendrick and McKenzie (2001)

Table 11: Extent of Beard and Shepherd Vegetation Units at the Bioregional, Subregional and Local Scale

Beard / Shepherd Vegetation Unit	Extent in Pilbara bioregion (km ²)	Extent in Roebourne subregion (km ²)	Extent in Chichester subregion (km ²)	Extent in survey area (km ²)	Vegetation unit in survey area as a % of bioregion
647	196,370.7	189,412.2	6,958.5	300.54	0.15
93	3,042,064	45,770.9	2,940,887.7	118.96	0.004
117	70,441.6	38,698.9	31,742.6	13.61	0.02
127	177,739.1	177,287.3	451.8	75.77	0.04
43	12,712.7	12,051.7	661.0	34.3	0.27
589	730,682.9	680,436	50,246.9	177.48	0.02
619	118,704.9	33,314.4	85,390.6	2.82	0.002

4 SUMMARY

The current and previous surveys of the Port Hedland study area have found the following:

- No flora listed under the *Environment Protection and Biodiversity Conservation Act 1999 (Cth)*, or gazetted as Declared Rare Flora under the *Wildlife Conservation Act 1950 (WA)* were recorded;
- A total of 12 Priority Flora listed by the DEC (WAH 2011) have been recorded in the study area to date;
- A total of 577 taxa (including species, subspecies and varieties), from 67 families and 198 genera, have been recorded from the study area to date;
- A total of 28 introduced flora have been recorded in the study area from the current and previous surveys of which two species are listed as Declared Plants under the *Agriculture and Related Resources Protection Act 1976 (WA)*: **Opuntia stricta* and **Tamarix aphylla*;
- A total of 40 vegetation associations were recorded in the study area. No vegetation associations representing TECs under the *Environment Protection and Biodiversity Conservation Act 1999 (Cth)*, ESAs under the *Environmental Protection Act 1986 (WA)*, or PECs as listed by the DEC were recorded; and
- The survey area contains seven land systems: Littoral, Macroy, Mallina, River, Uaroo, Yamerina and Other, which are well represented and largely widespread in the Pilbara region.

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FIGURES



Legend



Port Hedland Regional Flora and Vegetation Assessment Study Area

Location



SCALE 1 : 1 000 000

0 50

Kilometres

MAP GRID OF AUSTRALIA

Grid based on Transverse Mercator Projection



Client: **BHP BILLITON IRON ORE**

Project: **PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT**

REGIONAL LOCATION

J100489

Date: 8 December 2011

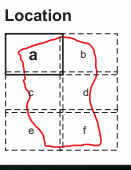
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Author: [REDACTED]

Figure No. **1**

A4 Plan No. **PH-001**

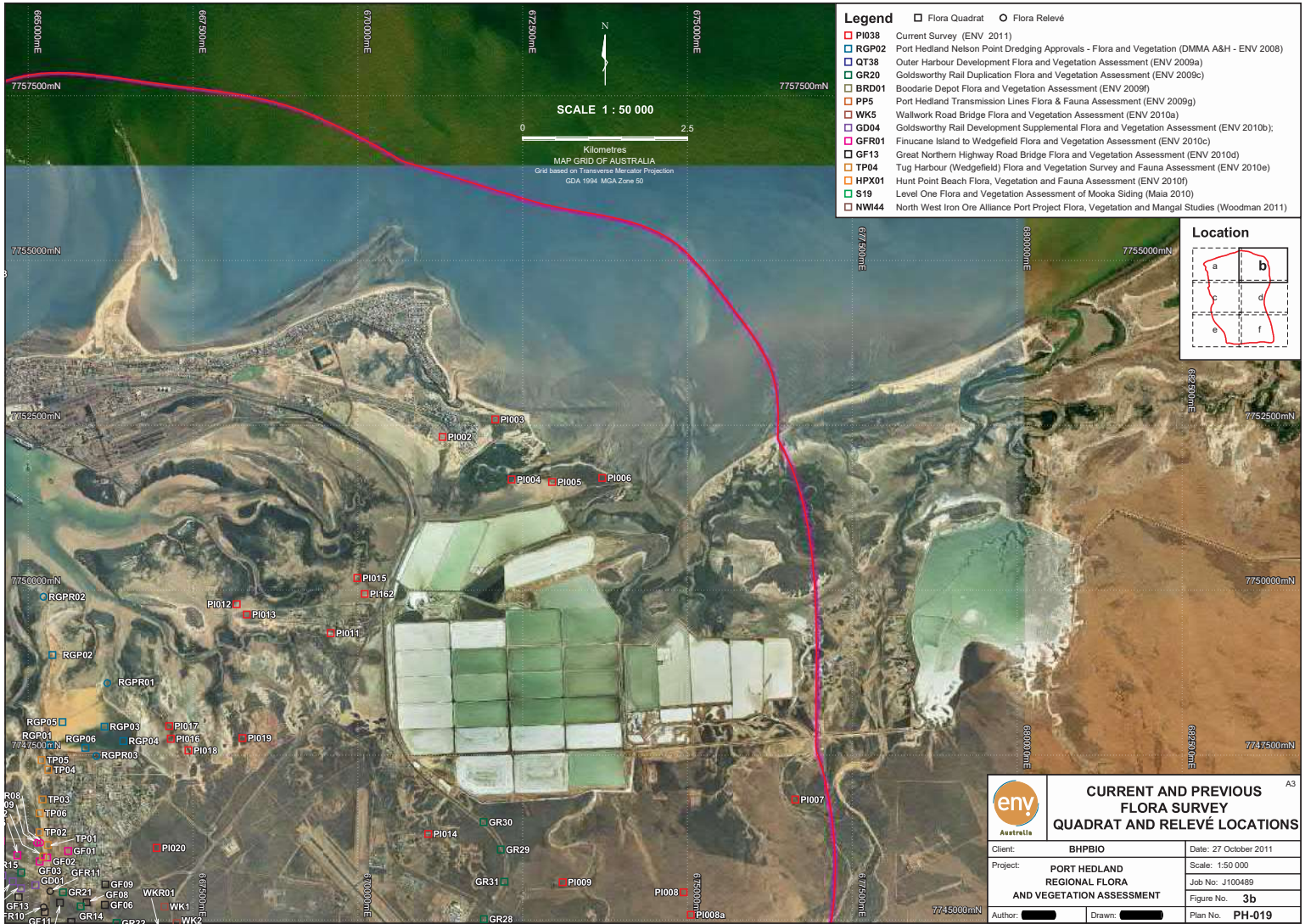
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- PI038 Current Survey (ENV 2011)
 - RGPO2 Port Hedland Nelson Point Dredging Approvals - Flora and Vegetation (DMMA A&H - ENV 2008)
 - QT38 Outer Harbour Development Flora and Vegetation Assessment (ENV 2009a)
 - GR20 Goldsworthy Rail Duplication Flora and Vegetation Assessment (ENV 2009c)
 - BRD01 Boodarie Depot Flora and Vegetation Assessment (ENV 2009f)
 - PP5 Port Hedland Transmission Lines Flora & Fauna Assessment (ENV 2009g)
 - WK5 Wallwork Road Bridge Flora and Vegetation Assessment (ENV 2010a)
 - GD04 Goldsworthy Rail Development Supplemental Flora and Vegetation Assessment (ENV 2010b);
 - GFR01 Finucane Island to Wedgefield Flora and Vegetation Assessment (ENV 2010c)
 - GF13 Great Northern Highway Road Bridge Flora and Vegetation Assessment (ENV 2010d)
 - TP04 Tug Harbour (Wedgefield) Flora and Vegetation Survey and Fauna Assessment (ENV 2010e)
 - HPX01 Hunt Point Beach Flora, Vegetation and Fauna Assessment (ENV 2010f)
 - S19 Level One Flora and Vegetation Assessment of Mooka Siding (Maia 2010)
 - NW144 North West Iron Ore Alliance Port Project Flora, Vegetation and Mangal Studies (Woodman 2011)



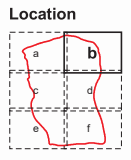
**CURRENT AND PREVIOUS
FLORA SURVEY
QUADRAT AND RELEVÉ LOCATIONS**

A3

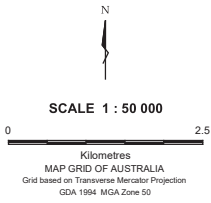
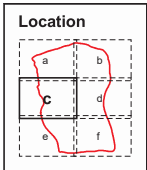
Client: BHPBIO	Date: 27 October 2011
Project: PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT	Scale: 1:50 000
	Job No.: J100489
	Figure No.: 3a
Author: [redacted]	Plan No.: PH-018



- Legend**
- Flora Quadrat ○ Flora Relevé
 - PI038 Current Survey (ENV 2011)
 - RGP02 Port Hedland Nelson Point Dredging Approvals - Flora and Vegetation (DMMA A&H - ENV 2008)
 - QT38 Outer Harbour Development Flora and Vegetation Assessment (ENV 2009a)
 - GR20 Goldsworthy Rail Duplication Flora and Vegetation Assessment (ENV 2009c)
 - BRD01 Boodarie Depot Flora and Vegetation Assessment (ENV 2009f)
 - PP5 Port Hedland Transmission Lines Flora & Fauna Assessment (ENV 2009g)
 - WK5 Wallwork Road Bridge Flora and Vegetation Assessment (ENV 2010a)
 - GD04 Goldsworthy Rail Development Supplemental Flora and Vegetation Assessment (ENV 2010b);
 - GFR01 Finucane Island to Wedgefield Flora and Vegetation Assessment (ENV 2010c)
 - GF13 Great Northern Highway Road Bridge Flora and Vegetation Assessment (ENV 2010d)
 - TP04 Tug Harbour (Wedgefield) Flora and Vegetation Survey and Fauna Assessment (ENV 2010e)
 - HPX01 Hunt Point Beach Flora, Vegetation and Fauna Assessment (ENV 2010f)
 - S19 Level One Flora and Vegetation Assessment of Mooka Siding (Maia 2010)
 - NW44 North West Iron Ore Alliance Port Project Flora, Vegetation and Mangal Studies (Woodman 2011)



	CURRENT AND PREVIOUS FLORA SURVEY QUADRAT AND RELEVÉ LOCATIONS	
	Client: BHPBIO	Date: 27 October 2011
Project: PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT	Scale: 1:50 000	Job No: J100459
Author: [Redacted]	Drawn: [Redacted]	Figure No. 3b
		Plan No. PH-019



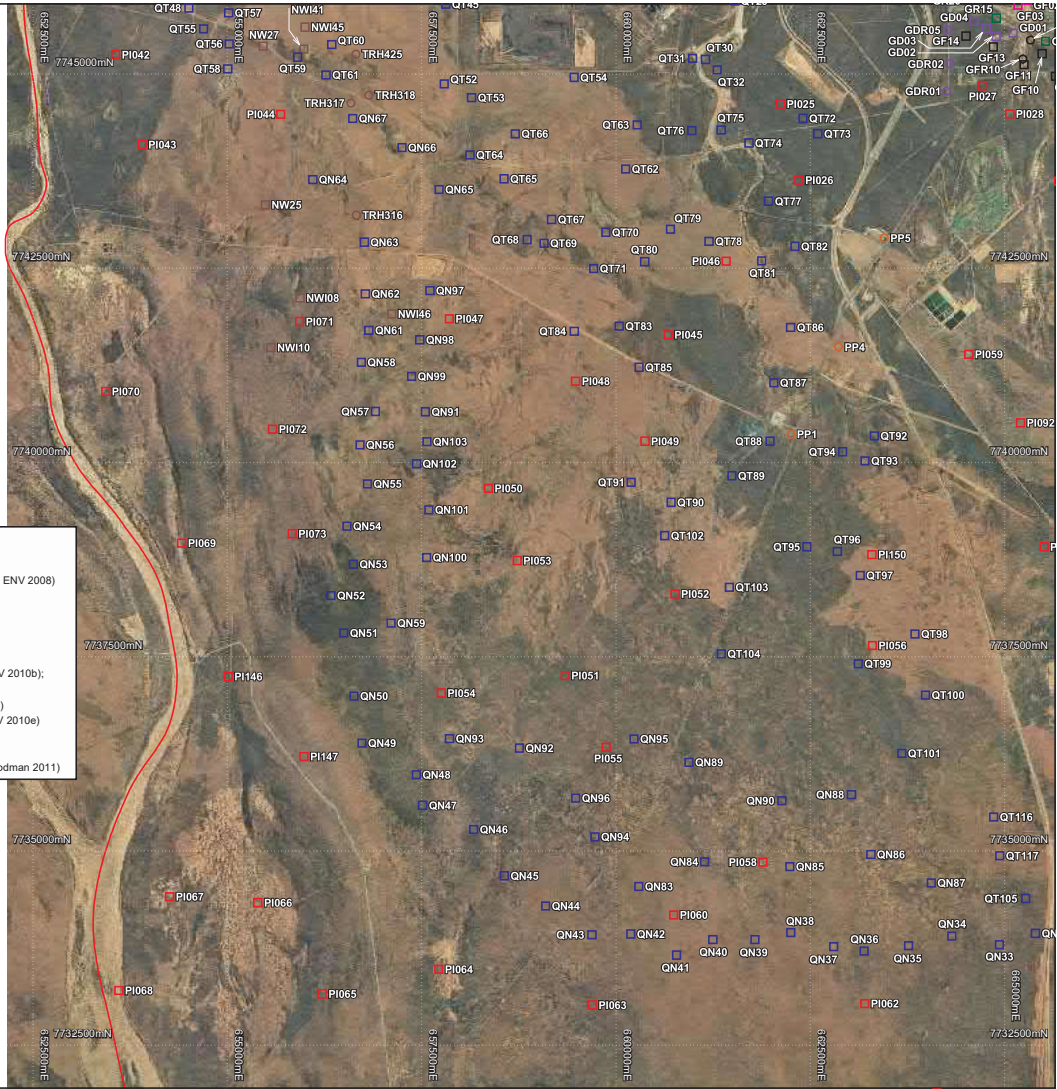
Legend □ Flora Quadrat ○ Flora Relevé

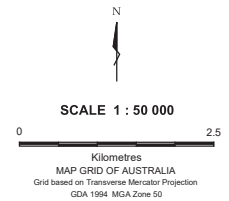
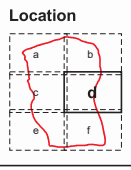
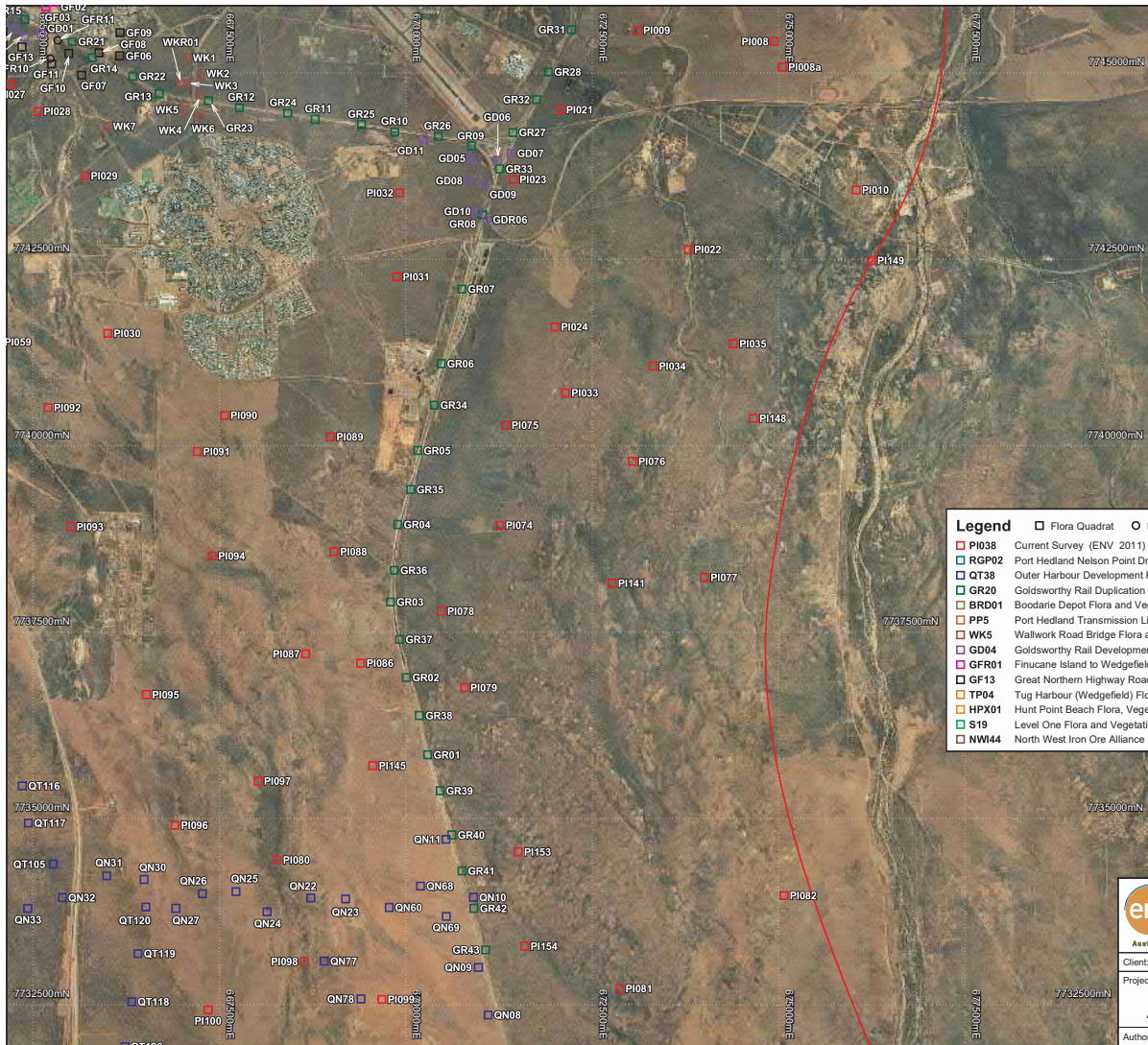
- PI038 Current Survey (ENV 2011)
- RGP02 Port Hedland Nelson Point Dredging Approvals - Flora and Vegetation (DMMA A&H - ENV 2008)
- QT38 Outer Harbour Development Flora and Vegetation Assessment (ENV 2009a)
- QR20 Goldsworthy Rail Duplication Flora and Vegetation Assessment (ENV 2009c)
- BRD01 Boodarie Depot Flora and Vegetation Assessment (ENV 2009f)
- PP5 Port Hedland Transmission Lines Flora & Fauna Assessment (ENV 2009g)
- WKS Walkwork Road Bridge Flora and Vegetation Assessment (ENV 2010a)
- GD04 Goldsworthy Rail Development Supplemental Flora and Vegetation Assessment (ENV 2010b);
- FR01 Finucane Island to Wedgefield Flora and Vegetation Assessment (ENV 2010c);
- GF13 Great Northern Highway Road Bridge Flora and Vegetation Assessment (ENV 2010d)
- TP04 Tug Harbour (Wedgefield) Flora and Vegetation Survey and Fauna Assessment (ENV 2010e)
- HPX01 Hunt Point Beach Flora, Vegetation and Fauna Assessment (ENV 2010f)
- S19 Level One Flora and Vegetation Assessment of Mooka Siding (Maia 2010)
- NWI44 North West Iron Ore Alliance Port Project Flora, Vegetation and Mangal Studies (Woodman 2011)

**CURRENT AND PREVIOUS
FLORA SURVEY
QUADRAT AND RELEVÉ LOCATIONS**

A3

Client: BHPBIO	Date: 27 October 2011
Project: PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT	Scale: 1:50 000
	Job No: J100489
	Figure No: 3c
Author: [Redacted]	Plan No: PH-020
Drawn: [Redacted]	



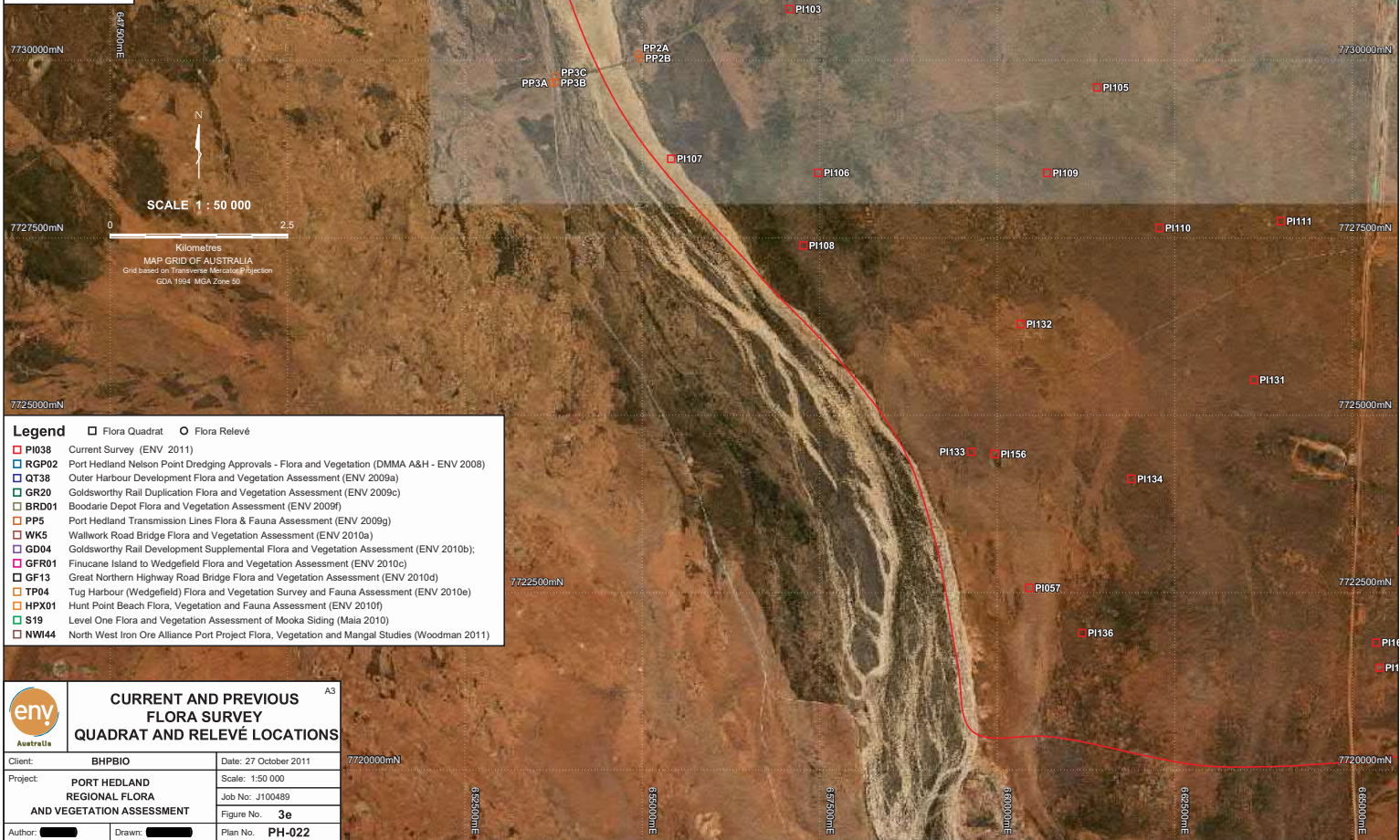
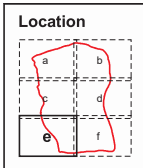


- Legend**
- Flora Quadrat ○ Flora Relevé
 - PI038 Current Survey (ENV 2011)
 - RGP02 Port Hedland Nelson Point Dredging Approvals - Flora and Vegetation (DMMA A&H - ENV 2008)
 - QT38 Outer Harbour Development Flora and Vegetation Assessment (ENV 2009a)
 - GR20 Goldsworthy Rail Duplication Flora and Vegetation Assessment (ENV 2009c)
 - BRD01 Boodarie Depof Flora and Vegetation Assessment (ENV 2009f)
 - PP5 Port Hedland Transmission Lines Flora & Fauna Assessment (ENV 2009g)
 - WK5 Wallwork Road Bridge Flora and Vegetation Assessment (ENV 2010a)
 - GD04 Goldsworthy Rail Development Supplemental Flora and Vegetation Assessment (ENV 2010b)
 - GFR01 Finucane Island to Wedgefield Flora and Vegetation Assessment (ENV 2010c)
 - GF13 Great Northern Highway Road Bridge Flora and Vegetation Assessment (ENV 2010d)
 - TP04 Tug Harbour (Wedgefield) Flora and Vegetation Survey and Fauna Assessment (ENV 2010e)
 - HPX01 Hunt Point Beach Flora, Vegetation and Fauna Assessment (ENV 2010f)
 - S19 Level One Flora and Vegetation Assessment of Mooka Sliding (Maia 2010)
 - NW144 North West Iron Ore Alliance Port Project Flora, Vegetation and Mangal Studies (Woodman 2011)

**CURRENT AND PREVIOUS
FLORA SURVEY
QUADRAT AND RELEVÉ LOCATIONS**

A3

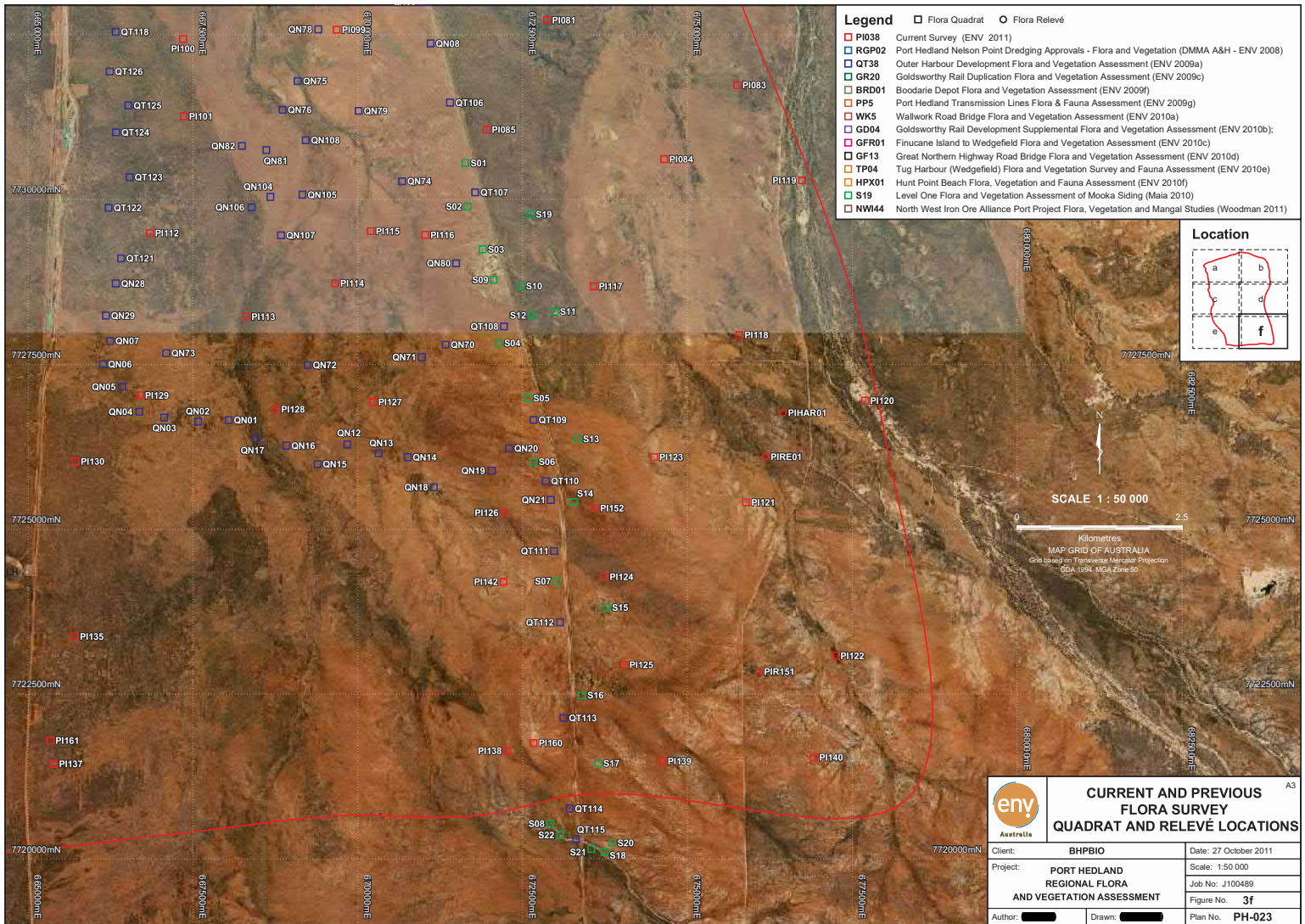
Client: BHPBIO	Date: 27 October 2011
Project: PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT	Scale: 1:50 000
	Job No.: J100459
Author: [REDACTED]	Figure No.: 3d
Drawn: [REDACTED]	Plan No.: PH-021



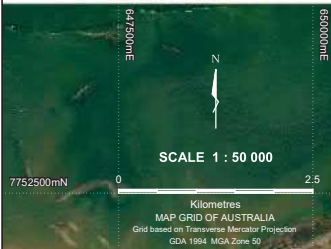
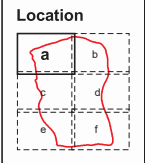
Legend □ Flora Quadrat ○ Flora Relevé

- PI038 Current Survey (ENV 2011)
- RG02 Port Hedland Nelson Point Dredging Approvals - Flora and Vegetation (DMMA A&H - ENV 2008)
- QT38 Outer Harbour Development Flora and Vegetation Assessment (ENV 2009a)
- GR20 Goldsworthy Rail Duplication Flora and Vegetation Assessment (ENV 2009c)
- BRD01 Boodarie Depot Flora and Vegetation Assessment (ENV 2009f)
- PP5 Port Hedland Transmission Lines Flora & Fauna Assessment (ENV 2009g)
- WK5 Wallwork Road Bridge Flora and Vegetation Assessment (ENV 2010a)
- GD04 Goldsworthy Rail Development Supplemental Flora and Vegetation Assessment (ENV 2010b);
- GFR01 Finucane Island to Wedgefield Flora and Vegetation Assessment (ENV 2010c)
- GF13 Great Northern Highway Road Bridge Flora and Vegetation Assessment (ENV 2010d)
- TP04 Tug Harbour (Wedgefield) Flora and Vegetation Survey and Fauna Assessment (ENV 2010e)
- HPX01 Hunt Point Beach Flora, Vegetation and Fauna Assessment (ENV 2010f)
- S19 Level One Flora and Vegetation Assessment of Mooka Siding (Maia 2010)
- NWI44 North West Iron Ore Alliance Port Project Flora, Vegetation and Mangal Studies (Woodman 2011)

		CURRENT AND PREVIOUS FLORA SURVEY QUADRAT AND RELEVÉ LOCATIONS		A3
		Client: BHPBIO	Date: 27 October 2011	7720000mN
Project: PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT		Scale: 1:50 000		
		Job No: J100489		
		Figure No: 3e		
Author: [redacted]	Drawn: [redacted]	Plan No: PH-022		



- Legend**
- Priority Flora Location - Current Survey (ENV 2011)
 - Priority Flora Location - Other Surveys

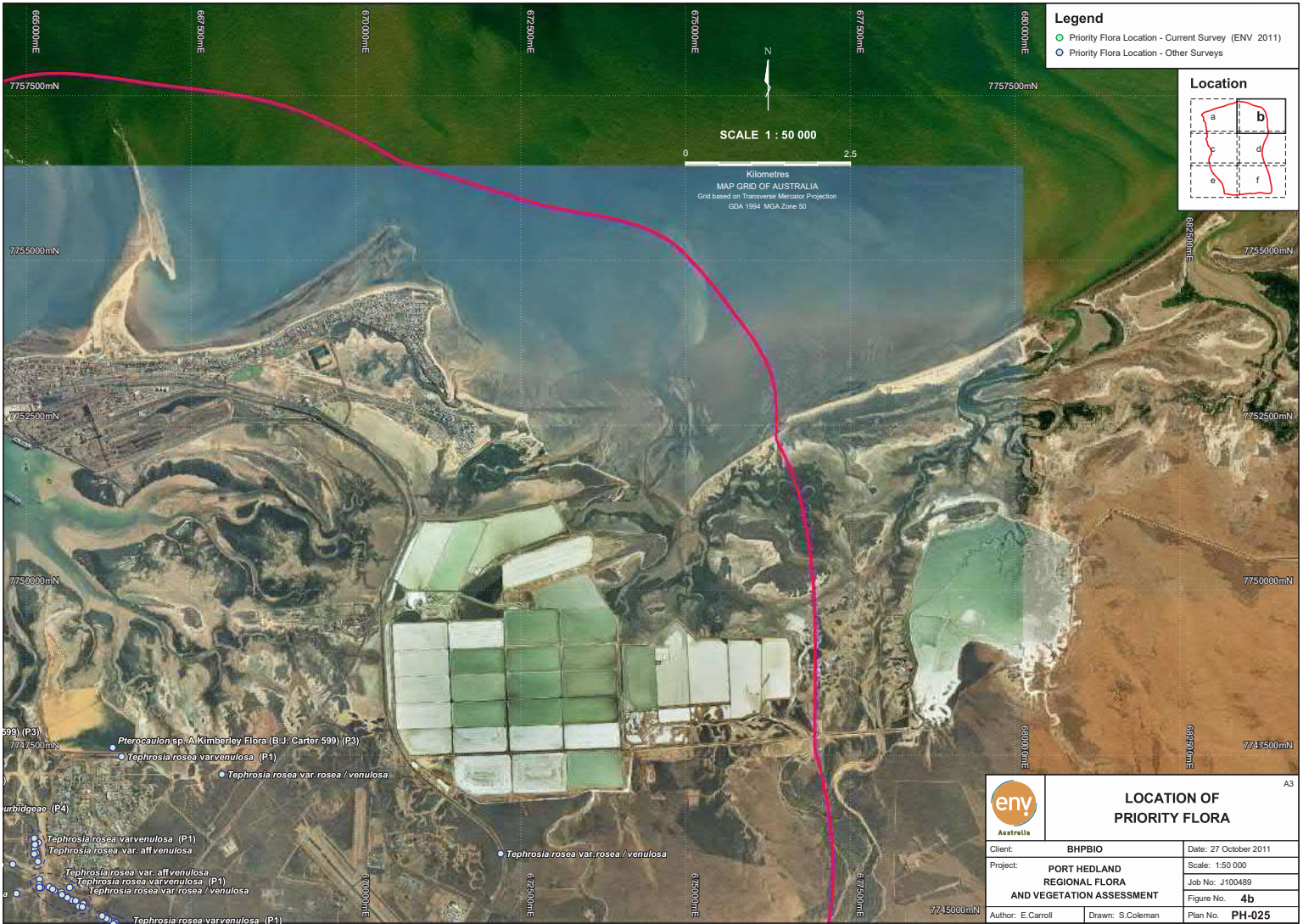


**LOCATION OF
PRIORITY FLORA**

A3

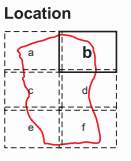
Client: BHPBIO	Date: 27 October 2011
Project: PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT	Scale: 1:50 000
	Job No.: J100489
Author: [Redacted]	Figure No.: 4a
Drawn: [Redacted]	Plan No.: PH-024





Legend

- Priority Flora Location - Current Survey (ENV 2011)
- Priority Flora Location - Other Surveys



SCALE 1 : 50 000

Kilometres
MAP GRID OF AUSTRALIA
Grid based on Transverse Mercator Projection
GDA 1994 MGA Zone 50

	LOCATION OF PRIORITY FLORA		A3
	Client: BHPBIO	Date: 27 October 2011	
Project: PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT	Scale: 1:50 000	Job No: J100489	
Author: E.Carroll	Drawn: S.Coleman	Figure No. 4b	Plan No. PH-025

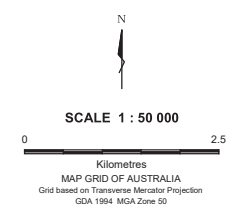
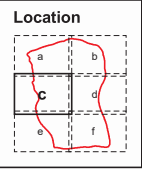
599 (P3)
7747500mN
Pterocaulon sp. A Kimberley Flora (B.J. Carter 599) (P3)
Tephrosia rosea var.venulosa (P1)
Tephrosia rosea var.rosea / venulosa

urbidgeae (P4)
Tephrosia rosea var.venulosa (P1)
Tephrosia rosea var.aff.venulosa
Tephrosia rosea var.aff.venulosa (P1)
Tephrosia rosea var.rosea / venulosa (P1)

Tephrosia rosea var.rosea / venulosa

Legend

- Priority Flora Location - Current Survey (ENV 2011)
- Priority Flora Location - Other Surveys

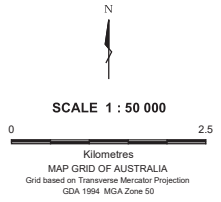
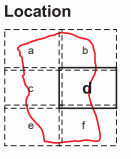



		LOCATION OF PRIORITY FLORA		A3
		Client: BHPBIO	Date: 27 October 2011	
Project: PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT		Scale: 1:50 000	Job No: J100489	
Author: [REDACTED]		Figure No: 4c	Plan No: PH-026	
Drawn: [REDACTED]				



Legend

- Priority Flora Location - Current Survey (ENV 2011)
- Priority Flora Location - Other Surveys

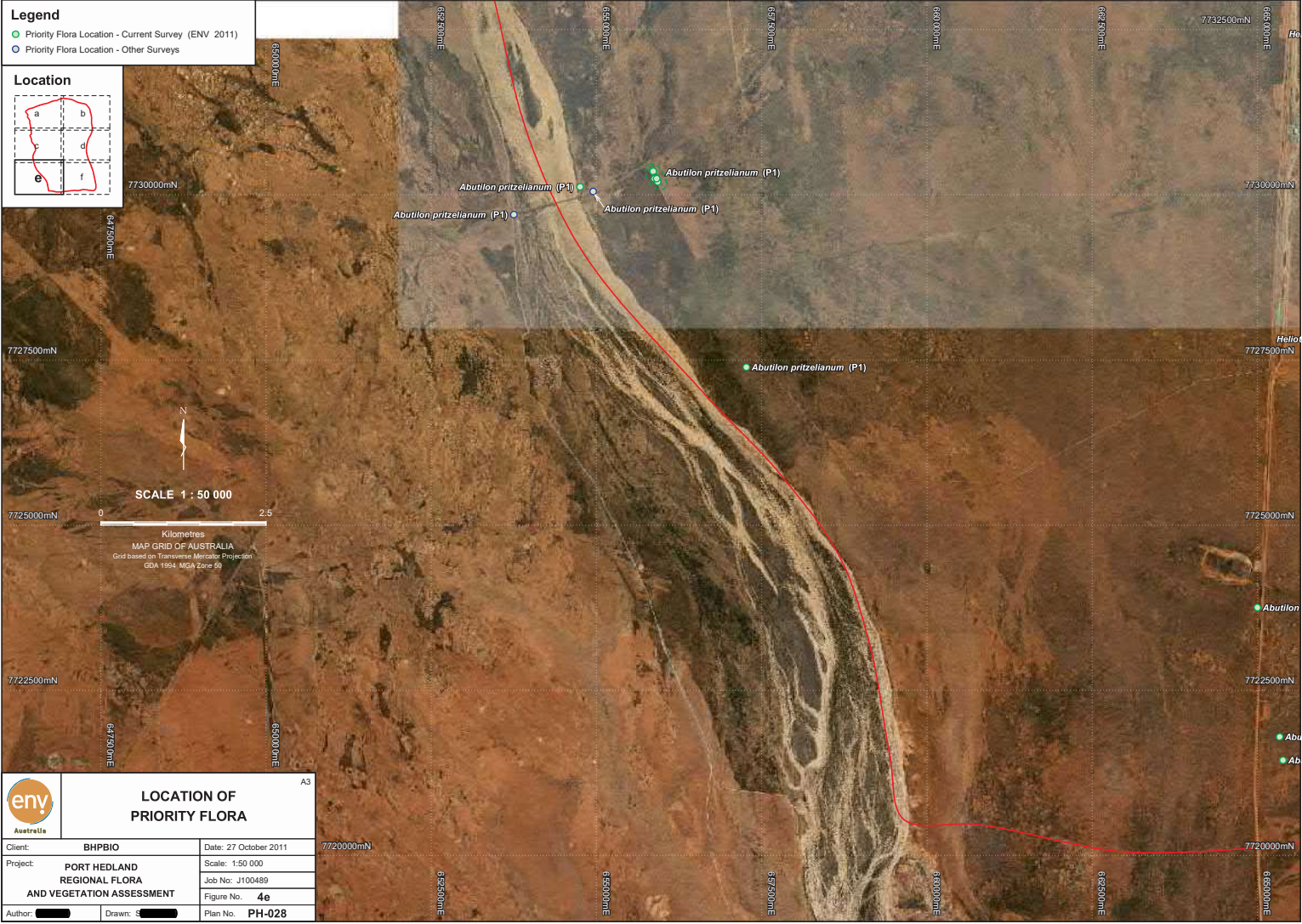
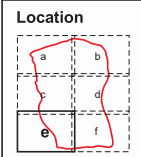



		LOCATION OF PRIORITY FLORA	
		Client: BHPBIO	Date: 27 October 2011
Project: PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT		Scale: 1:50 000	Job No: J100489
Author: [REDACTED]		Figure No. 4d	Plan No. PH-027
Drawn: [REDACTED]			

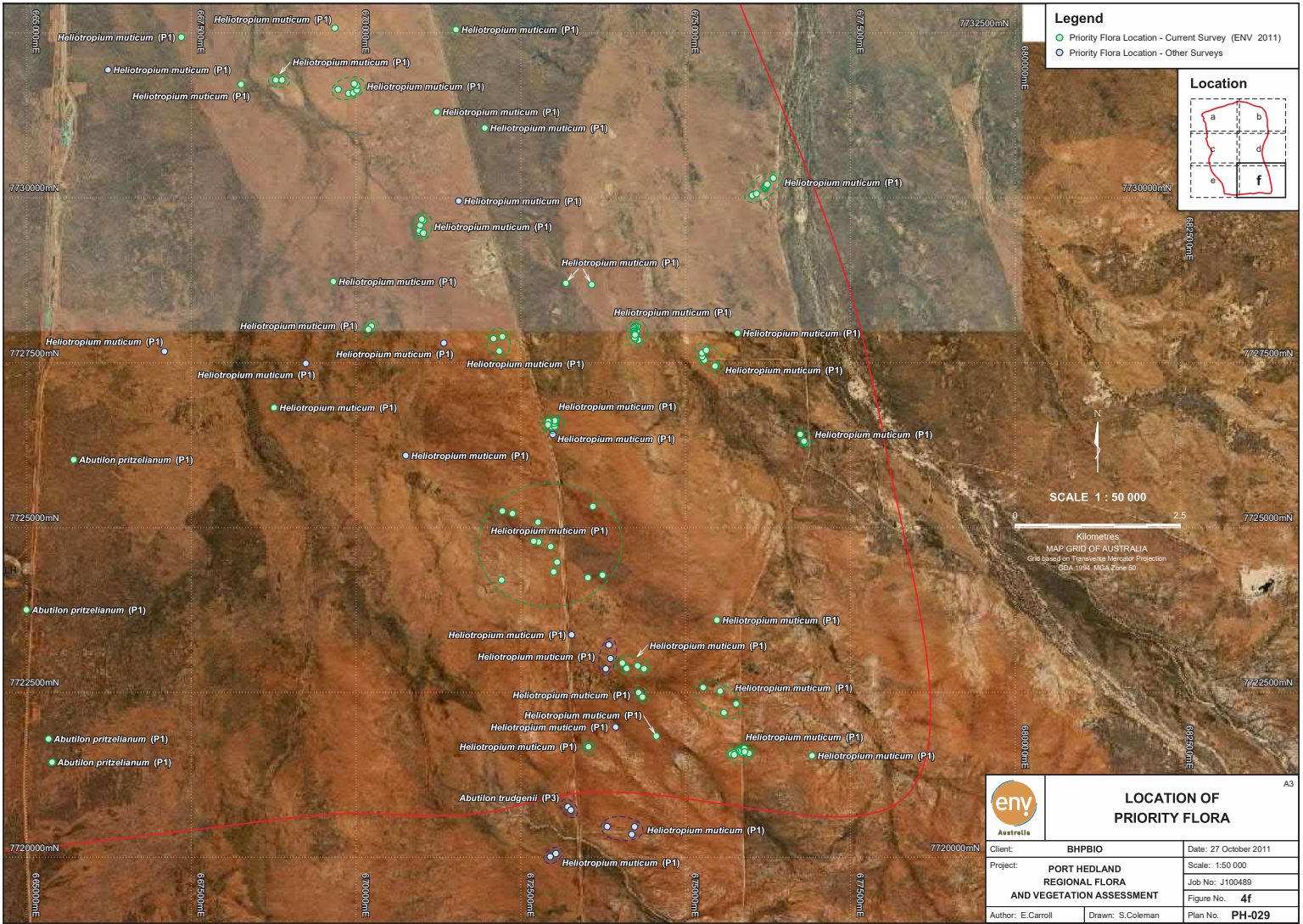
A3

Legend

- Priority Flora Location - Current Survey (ENV 2011)
- Priority Flora Location - Other Surveys

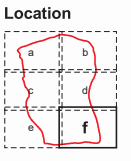


		LOCATION OF PRIORITY FLORA		A3
Client: BHPBIO		Date: 27 October 2011		
Project: PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT		Scale: 1:50 000		
		Job No: J100489		
		Figure No: 4e		
Author: ████████		Drawn: ████████		Plan No: PH-028



Legend

- Priority Flora Location - Current Survey (ENV 2011)
- Priority Flora Location - Other Surveys



SCALE 1 : 50 000

0 2.5 Kilometres

MAP GRID OF AUSTRALIA
Grid based on Transverse Mercator Projection
GDA 1984, MGA Zone 50

	LOCATION OF PRIORITY FLORA	
	Client: BHPBIO	Date: 27 October 2011
	Project: PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT	Scale: 1:50 000 Job No: J100489
	Author: E.Carroll	Drawn: S.Coleman Figure No. 4f Plan No. PH-029



LOCATION OF SPECIES OF INTEREST

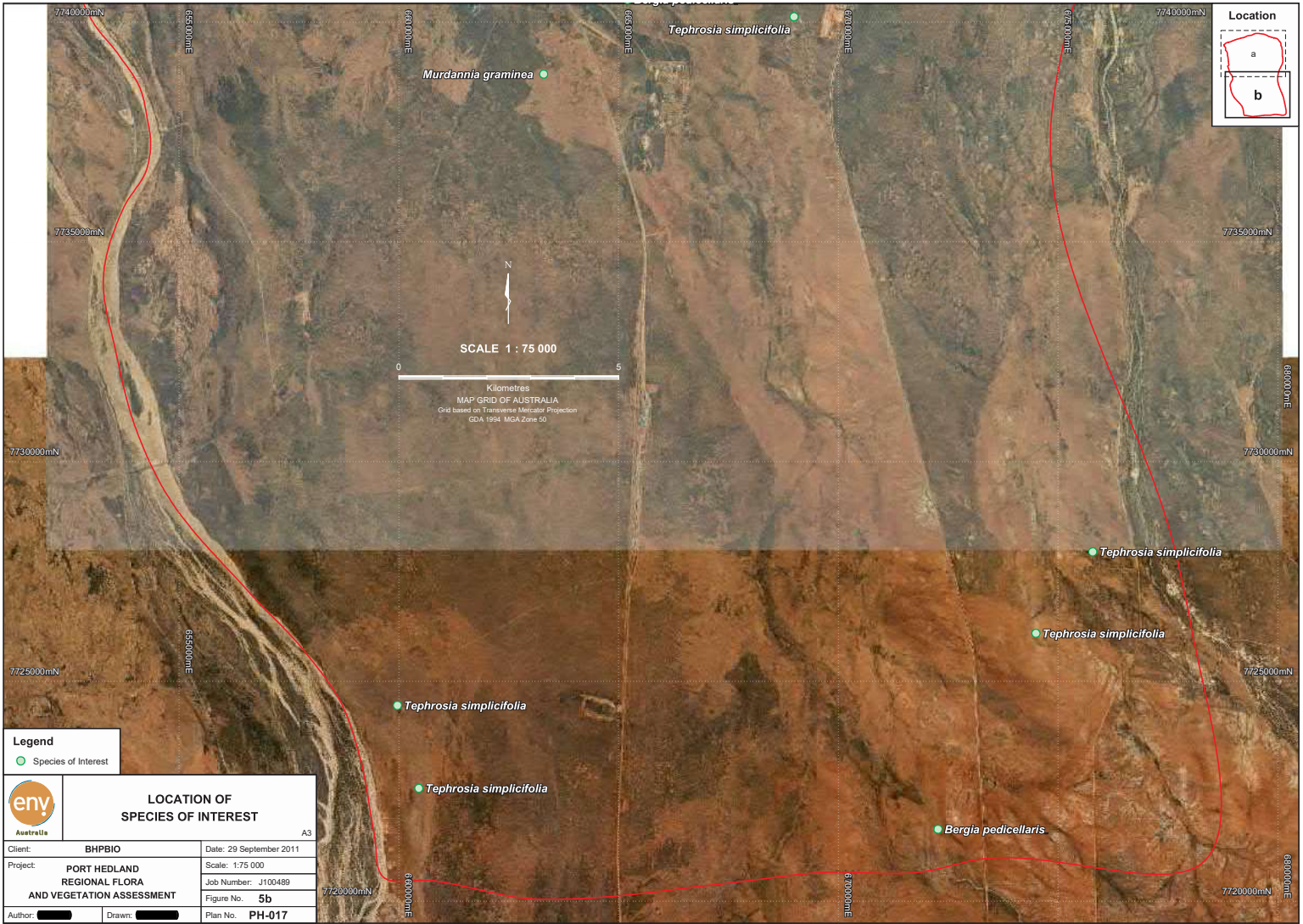
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Client:	BHPBIO	Date:	29 September 2011
Project:	PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT	Scale:	1:75 000
Author:		Job Number:	J100489
Drawn:		Figure No.:	5a
		Plan No.:	PH-016

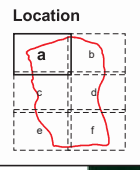
Legend

● Species of Interest





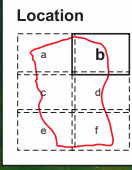
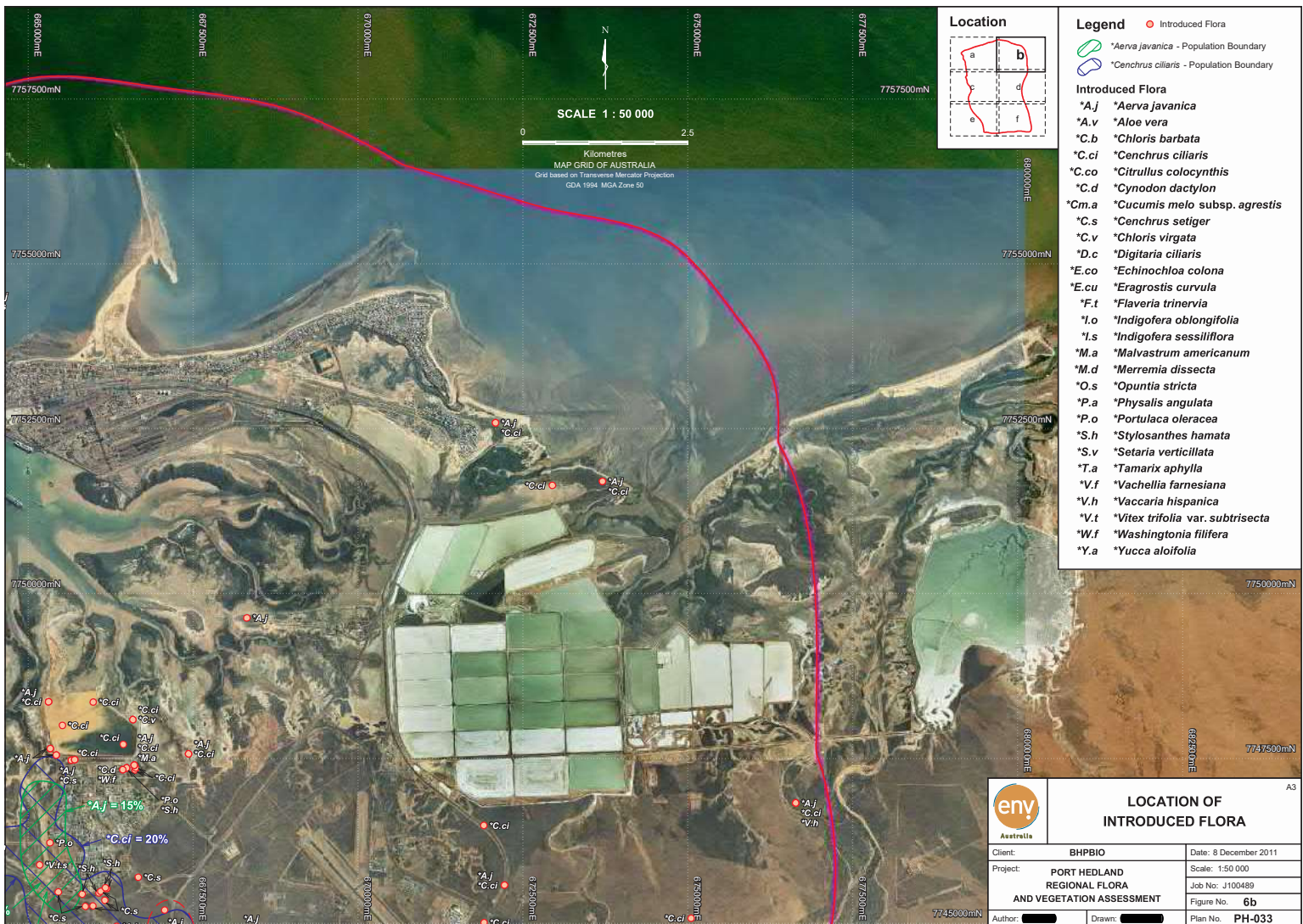
- Legend** ● Introduced Flora
- *Aerva javanica - Population Boundary
 - *Cenchrus ciliaris - Population Boundary
- Introduced Flora**
- *A.j *Aerva javanica
 - *A.v *Aloe vera
 - *C.b *Chloris barbata
 - *C.ci *Cenchrus ciliaris
 - *C.co *Citrullus colocynthis
 - *C.d *Cynodon dactylon
 - *Cm.a *Cucumis melo subsp. agrestis
 - *C.s *Cenchrus setiger
 - *C.v *Chloris virgata
 - *D.c *Digitaria ciliaris
 - *E.co *Echinochloa colona
 - *E.cu *Eragrostis curvula
 - *F.t *Flaveria trinervia
 - *I.o *Indigofera oblongifolia
 - *I.s *Indigofera sessiliflora
 - *M.a *Malvastrum americanum
 - *M.d *Merremia dissecta
 - *O.s *Opuntia stricta
 - *P.a *Physalis angulata
 - *P.o *Portulaca oleracea
 - *S.h *Stylosanthes hamata
 - *S.v *Setaria verticillata
 - *T.a *Tamarix aphylla
 - *V.f *Vachellia farnesiana
 - *V.h *Vaccaria hispanica
 - *V.t *Vitex trifolia var. subtrisecta
 - *W.f *Washingtonia filifera
 - *Y.a *Yucca aloifolia



SCALE 1 : 50 000

Kilometres
MAP GRID OF AUSTRALIA
Grid based on Transverse Mercator Projection
GDA 1984 MGA Zone 50

		LOCATION OF INTRODUCED FLORA	
Client: BHPBIO		Date: 8 December 2011	
Project: PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT		Scale: 1:50 000	
Job No: J100489		Figure No: 6a	
Author: [redacted]		Plan No: PH-032	



- Legend**
- Introduced Flora
 - *Aerva javanica - Population Boundary
 - *Cenchrus ciliaris - Population Boundary
- Introduced Flora**
- *A.j *Aerva javanica
 - *A.v *Aloe vera
 - *C.b *Chloris barbata
 - *C.ci *Cenchrus ciliaris
 - *C.co *Citrus colocythis
 - *C.d *Cynodon dactylon
 - *Cm.a *Cucumis melo subsp. agrestis
 - *C.s *Cenchrus setiger
 - *C.v *Chloris virgata
 - *D.c *Digitaria ciliaris
 - *E.co *Echinochloa colona
 - *E.cu *Eragrostis curvula
 - *F.t *Flaveria trinervia
 - *I.o *Indigofera oblongifolia
 - *I.s *Indigofera sessiliflora
 - *M.a *Malvastrum americanum
 - *M.d *Merremia dissecta
 - *O.s *Opuntia stricta
 - *P.a *Physalis angulata
 - *P.o *Portulaca oleracea
 - *S.h *Stylosanthes hamata
 - *S.v *Setaria verticillata
 - *T.a *Tamarix aphylla
 - *V.f *Vachellia farnesiana
 - *V.h *Vaccaria hispanica
 - *V.t *Vitex trifolia var. subtrisetata
 - *W.f *Washingtonia filifera
 - *Y.a *Yucca aloifolia

		LOCATION OF INTRODUCED FLORA	
		A3	
Client:	BHPBIO	Date:	8 December 2011
Project:	PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT	Scale:	1:50 000
		Job No.:	J100459
		Figure No.:	6b
Author:		Plan No.:	PH-033
		Drawn:	

*A.j = 15%

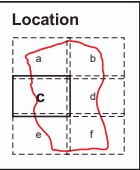
*C.ci = 20%

Legend ● Introduced Flora

- *Aerva javanica - Population Boundary
- *Cenchrus ciliaris - Population Boundary

Introduced Flora

- *A.j *Aerva javanica
- *A.v *Aloe vera
- *C.b *Chloris barbata
- *C.ci *Cenchrus ciliaris
- *C.co *Citrullus colocynthis
- *C.d *Cynodon dactylon
- *Cm.a *Cucumis melo subsp. agrestis
- *C.s *Cenchrus setiger
- *C.v *Chloris virgata
- *D.c *Digitaria ciliaris
- *E.co *Echinochloa colona
- *E.cu *Eragrostis curvula
- *F.t *Flaveria trinervia
- *I.o *Indigofera oblongifolia
- *I.s *Indigofera sessiliflora
- *M.a *Malvastrum americanum
- *M.d *Merremia dissecta
- *O.s *Opuntia stricta
- *P.a *Physalis angulata
- *P.o *Portulaca oleracea
- *S.h *Stylosanthes hamata
- *S.v *Setaria verticillata
- *T.a *Tamarix aphylla
- *V.f *Vachellia farnesiana
- *V.h *Vaccaria hispanica
- *V.t *Vitex trifolia var. subtrisecta
- *W.f *Washingtonia filifera
- *Y.a *Yucca aloifolia




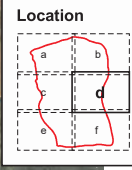
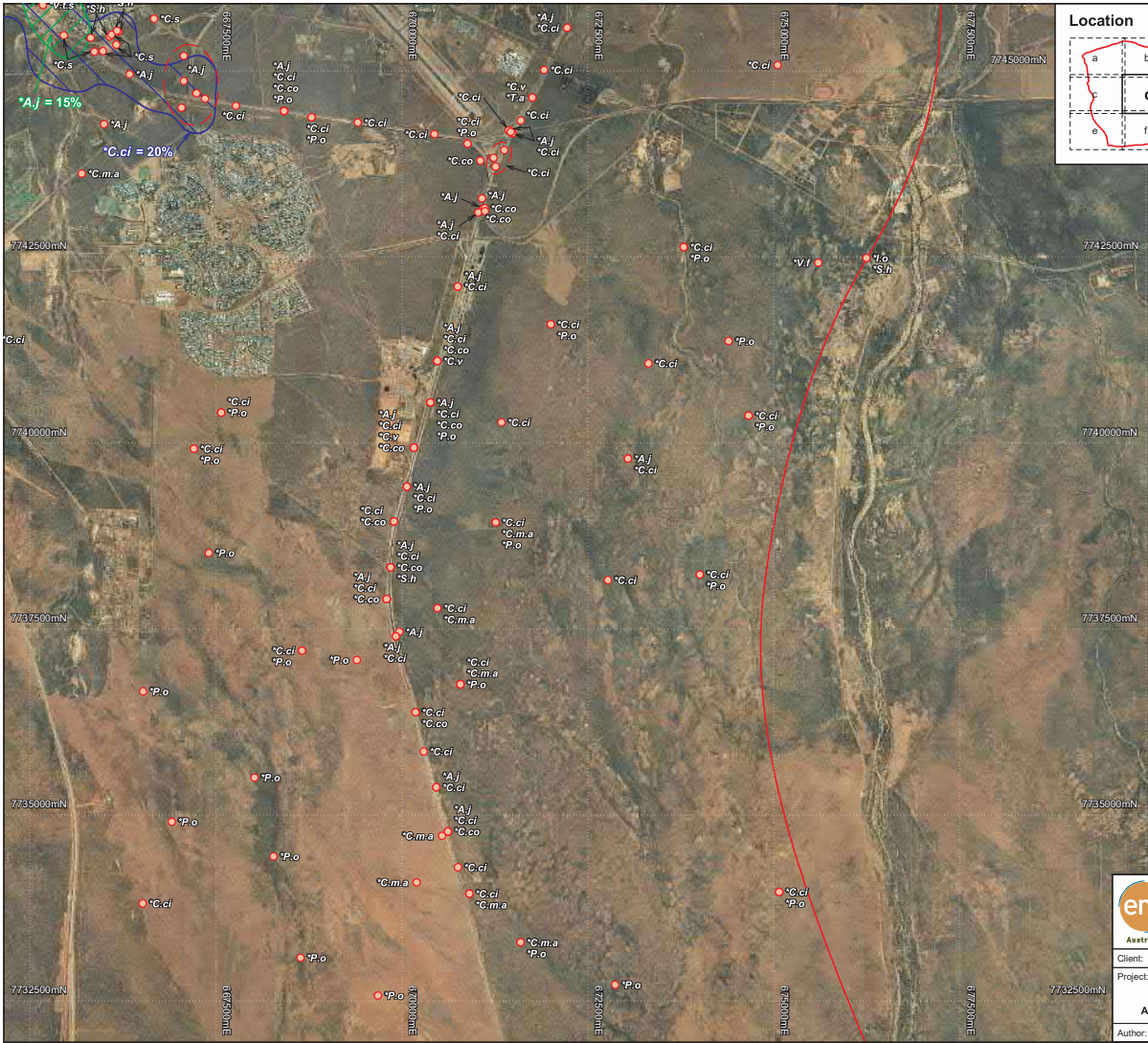
SCALE 1 : 50 000

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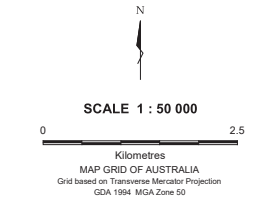
Kilometres

MAP GRID OF AUSTRALIA
Grid based on Transverse Mercator Projection
GDA 1994 MGA Zone 50

 Australia	LOCATION OF INTRODUCED FLORA		A3
	Client: BHPBIO Date: 8 December 2011		
Project: PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT			Scale: 1:50 000
Author: ████████			Job No: J100489
Drawn: ████████			Figure No: 6C
Plan No: PH-034			



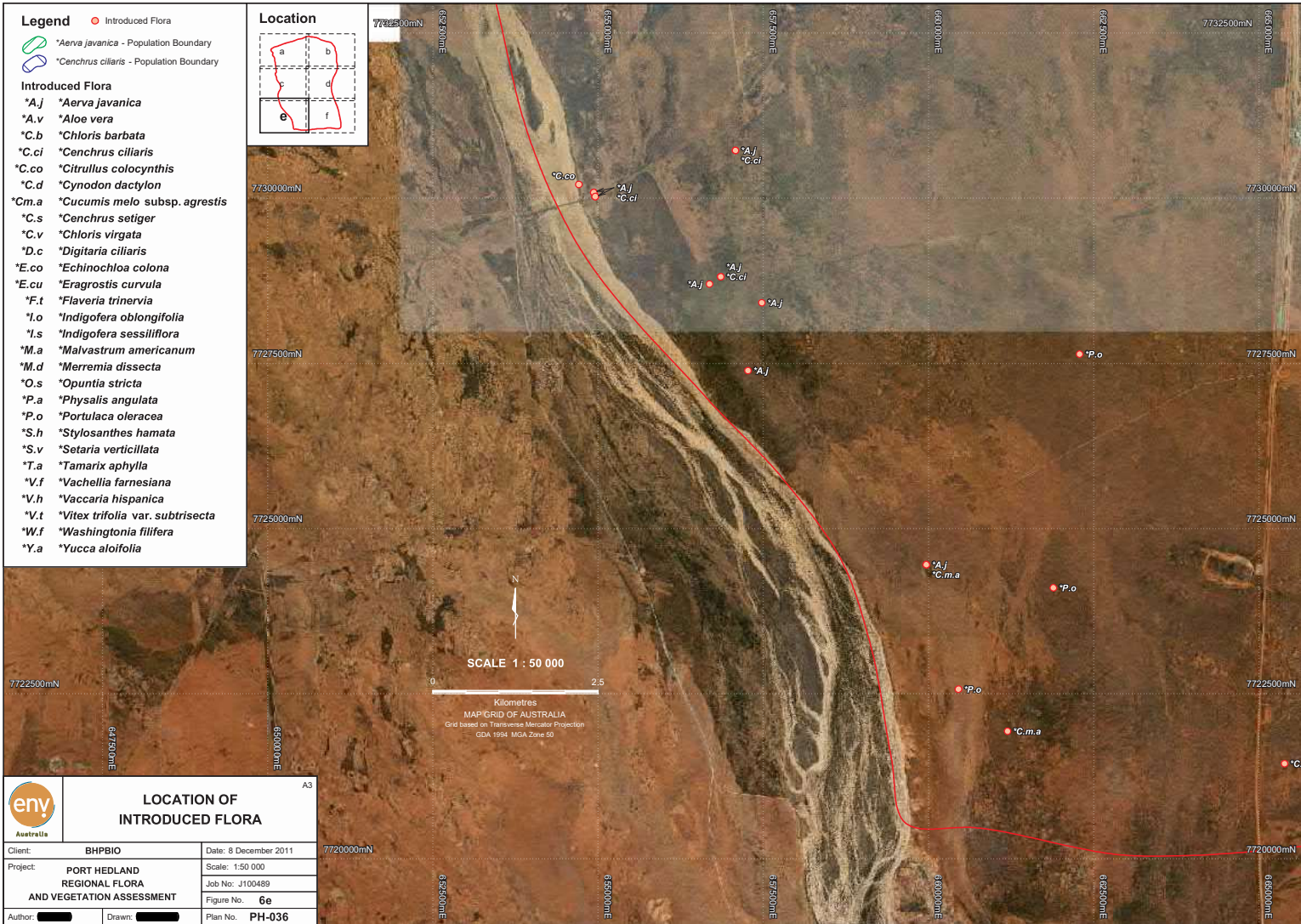
- Legend**
- Introduced Flora
 - *Aerva javanica* - Population Boundary
 - *Cenchrus ciliaris* - Population Boundary
- Introduced Flora**
- *A.j *Aerva javanica*
 - *A.v *Aloe vera*
 - *C.b *Chloris barbata*
 - *C.ci *Cenchrus ciliaris*
 - *C.co *Citrullus colocynthis*
 - *C.d *Cynodon dactylon*
 - *Cm.a *Cucumis melo subsp. agrestis*
 - *C.s *Cenchrus setiger*
 - *C.v *Chloris virgata*
 - *D.c *Digitaria ciliaris*
 - *E.co *Echinochloa colona*
 - *E.cu *Eragrostis curvula*
 - *F.t *Flaveria trinervia*
 - *I.o *Indigofera oblongifolia*
 - *I.s *Indigofera sessiliflora*
 - *M.a *Malvastrum americanum*
 - *M.d *Merremia dissecta*
 - *O.s *Opuntia stricta*
 - *P.a *Physalis angulata*
 - *P.o *Portulaca oleracea*
 - *S.h *Stylosanthes hamata*
 - *S.v *Setaria verticillata*
 - *T.a *Tamarix aphylla*
 - *V.f *Vachellia farnesiana*
 - *V.h *Vaccaria hispanica*
 - *V.t *Vitex trifolia var. subtrisetata*
 - *W.f *Washingtonia filifera*
 - *Y.a *Yucca aloifolia*



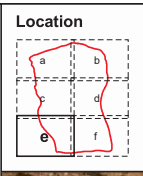
LOCATION OF INTRODUCED FLORA

A3

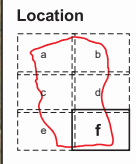
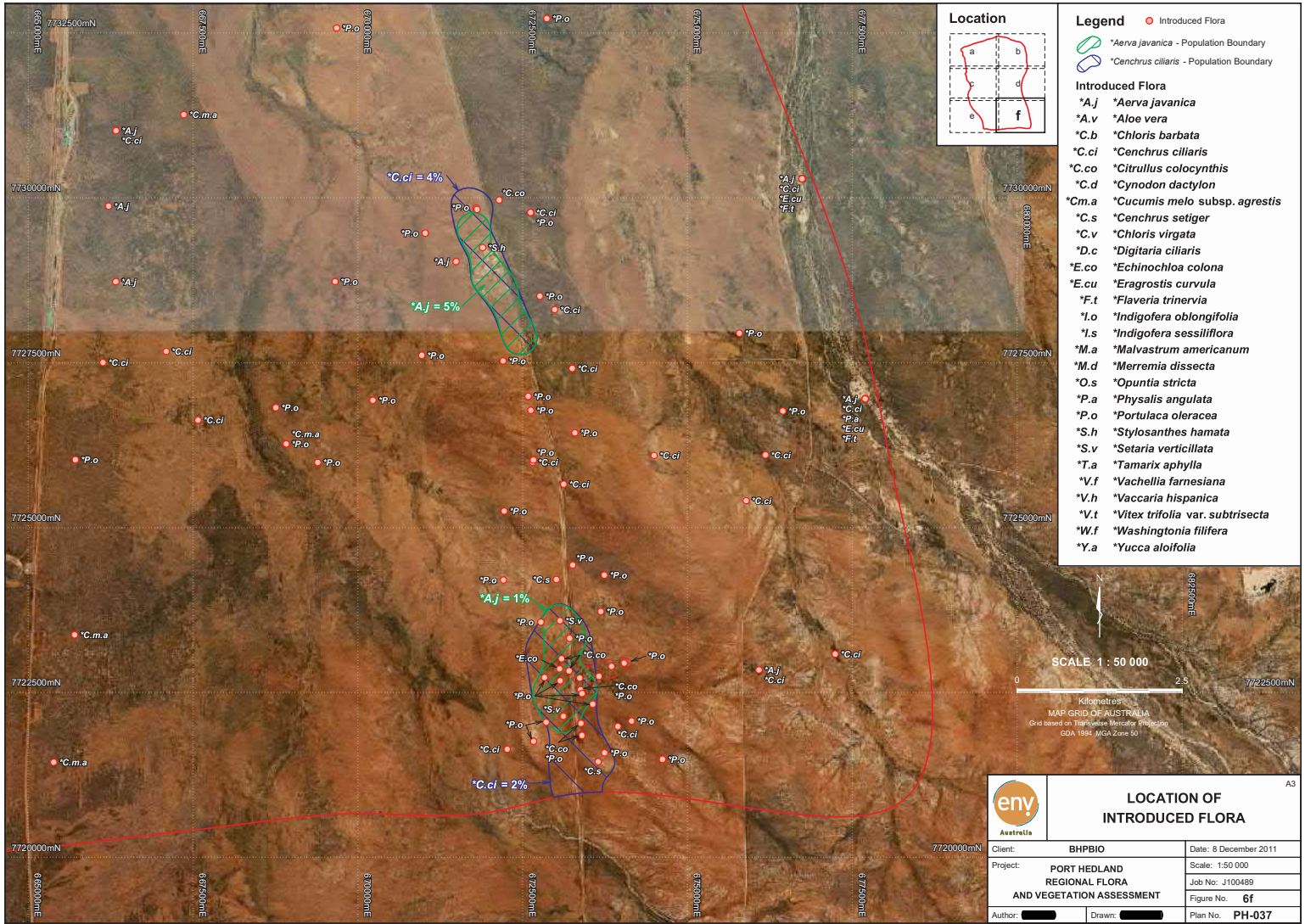
<small>Client:</small> BHPBIO	<small>Date:</small> 8 December 2011
<small>Project:</small> PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT	<small>Scale:</small> 1:50 000
	<small>Job No:</small> J100459
	<small>Figure No.</small> 6d
<small>Author:</small> [Redacted]	<small>Drawn:</small> [Redacted]
	<small>Plan No.</small> PH-035



- Legend**
- Introduced Flora
 - *Aerva javanica - Population Boundary
 - *Cenchrus ciliaris - Population Boundary
- Introduced Flora**
- *A.j *Aerva javanica
 - *A.v *Aloe vera
 - *C.b *Chloris barbata
 - *C.ci *Cenchrus ciliaris
 - *C.co *Citrus colocyntis
 - *C.d *Cynodon dactylon
 - *Cm.a *Cucumis melo subsp. agrestis
 - *C.s *Cenchrus setiger
 - *C.v *Chloris virgata
 - *D.c *Digitaria ciliaris
 - *E.co *Echinochloa colona
 - *E.cu *Eragrostis curvula
 - *F.t *Flaveria trinervia
 - *I.o *Indigofera oblongifolia
 - *I.s *Indigofera sessiliflora
 - *M.a *Malvastrum americanum
 - *M.d *Merremia dissecta
 - *O.s *Opuntia stricta
 - *P.a *Physalis angulata
 - *P.o *Portulaca oleracea
 - *S.h *Stylosanthes hamata
 - *S.v *Setaria verticillata
 - *T.a *Tamarix aphylla
 - *V.f *Vachellia farnesiana
 - *V.h *Vaccaria hispanica
 - *V.t *Vitex trifolia var. subtrisecta
 - *W.f *Washingtonia filifera
 - *Y.a *Yucca aloifolia



		LOCATION OF INTRODUCED FLORA	
		A3	
Client:	BHPBIO	Date:	8 December 2011
Project:	PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT	Scale:	1:50 000
		Job No.:	J100489
Author:	██████	Figure No.:	6e
Drawn:	██████	Plan No.:	PH-036

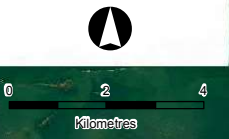
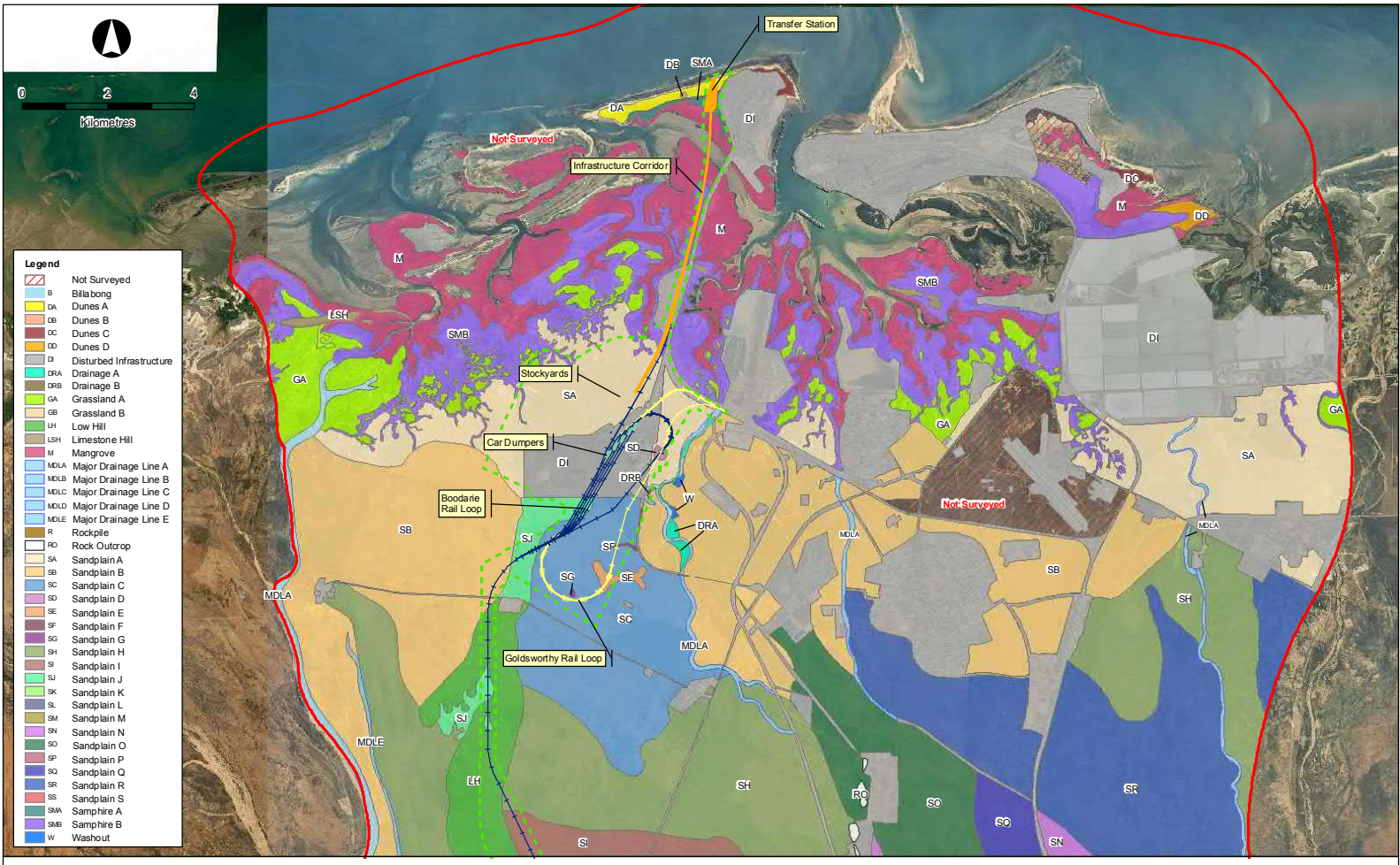


- Legend**
- Introduced Flora
 - ▭ *Aerva javanica - Population Boundary
 - ▭ *Cenchrus ciliaris - Population Boundary
- Introduced Flora**
- *A.j *Aerva javanica
 - *A.v *Aloe vera
 - *C.b *Chloris barbata
 - *C.ci *Cenchrus ciliaris
 - *C.co *Citrus colocythis
 - *C.d *Cynodon dactylon
 - *Cm.a *Cucumis melo subsp. agrestis
 - *C.v *Chloris virgata
 - *D.c *Digitaria ciliaris
 - *E.co *Echinochloa colona
 - *E.cu *Eragrostis curvula
 - *F.t *Flaveria trinervia
 - *I.o *Indigofera oblongifolia
 - *I.s *Indigofera sessiliflora
 - *M.a *Malvastrum americanum
 - *M.d *Merremia dissecta
 - *O.s *Opuntia stricta
 - *P.a *Physalis angulata
 - *P.o *Portulaca oleracea
 - *S.h *Stylosanthes hamata
 - *S.v *Setaria verticillata
 - *T.a *Tamarix aphylla
 - *V.f *Vachellia farnesiana
 - *V.h *Vaccaria hispanica
 - *V.t *Vitex trifolia var. subtrisetata
 - *W.f *Washingtonia filifera
 - *Y.a *Yucca aloifolia

LOCATION OF INTRODUCED FLORA

A3

Client: BHPBIO	Date: 8 December 2011
Project: PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT	Scale: 1:50 000
	Job No: J100489
	Figure No. 6f
Author: ████████	Drawn: ████████
	Plan No. PH-037



- Legend**
- Not Surveyed
 - DA Billa bong
 - DB Dunes A
 - DC Dunes B
 - DD Dunes C
 - DE Dunes D
 - DI Disturbed Infrastructure
 - DRA Drainage A
 - DRB Drainage B
 - GA Grassland A
 - GB Grassland B
 - LH Low Hill
 - LSH Limestone Hill
 - M Mangrove
 - MDLA Major Drainage Line A
 - MDLB Major Drainage Line B
 - MDLC Major Drainage Line C
 - MDLD Major Drainage Line D
 - MDLE Major Drainage Line E
 - R Rockpile
 - RO Rock Outcrop
 - SA Sandplain A
 - SB Sandplain B
 - SC Sandplain C
 - SD Sandplain D
 - SE Sandplain E
 - SF Sandplain F
 - SG Sandplain G
 - SH Sandplain H
 - SI Sandplain I
 - SJ Sandplain J
 - SK Sandplain K
 - SL Sandplain L
 - SM Sandplain M
 - SN Sandplain N
 - SO Sandplain O
 - SP Sandplain P
 - SQ Sandplain Q
 - SR Sandplain R
 - SS Sandplain S
 - SMA Sampshire A
 - SMB Sampshire B
 - W Washout

CLIENT
BHPBIO

AUTHOR
[Redacted]

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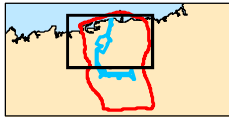
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GDA 94 MGA 50

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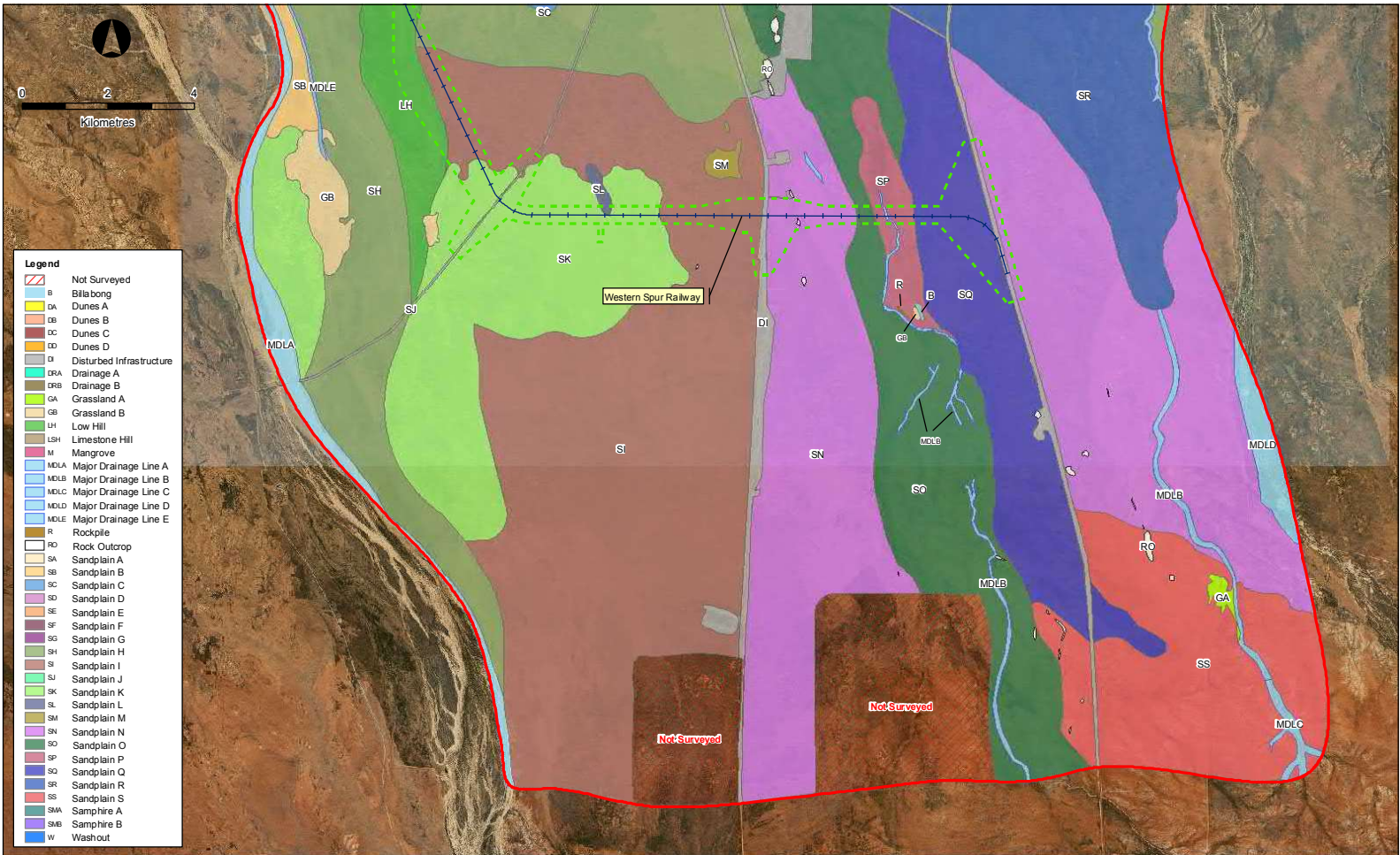
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FIGURE
7a

- Legend**
- PH_Regional_Survey_Boundary
 - Disturbance Envelope
 - Proposed Infrastructure Corridor
 - Proposed Car Dumper
 - Proposed Goldsworthy Rail Loop
 - Proposed Western Spur Railway



Vegetation Mapping
Port Hedland Regional Flora and Vegetation Assessment



- Legend**
- Not Surveyed
 - B Billa bong
 - DA Dunes A
 - DB Dunes B
 - DC Dunes C
 - DD Dunes D
 - DI Disturbed Infrastructure
 - DRA Drainage A
 - DRB Drainage B
 - GA Grassland A
 - GB Grassland B
 - LH Low Hill
 - LSH Limestone Hill
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 - MDLA Major Drainage Line A
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 - MDLE Major Drainage Line D
 - MDLE Major Drainage Line E
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 - SA Sandplain A
 - SB Sandplain B
 - SC Sandplain C
 - SD Sandplain D
 - SE Sandplain E
 - SF Sandplain F
 - SG Sandplain G
 - SH Sandplain H
 - SI Sandplain I
 - SJ Sandplain J
 - SK Sandplain K
 - SL Sandplain L
 - SM Sandplain M
 - SN Sandplain N
 - SO Sandplain O
 - SP Sandplain P
 - SQ Sandplain Q
 - SR Sandplain R
 - SS Sandplain S
 - SMA Sampshire A
 - SMB Sampshire B
 - W Washout

CLIENT
BHPBIO

AUTHOR
[Redacted]

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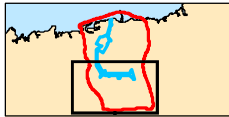
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DATE
30-09-2011

PROJECTION
GDA 94 MGA 50












FIGURE
7b

- Legend**
- PH_Regional_Survey_Boundary
 - Disturbance Envelope
 - Proposed Infrastructure Corridor
 - Proposed Car Dumper
 - Proposed Goldsworthy Rail Loop
 - Proposed Western Spur Railway



Vegetation Mapping
Port Hedland Regional Flora and Vegetation Assessment

Vegetation Legend

	Not Surveyed
	B Billabong - Scattered low <i>Eucalyptus victrix</i> trees over scattered mixed grasses.
	DA Dunes A - Scattered <i>Acacia bivenosa</i> shrubs over a low open <i>Crotalaria cunninghamii</i> shrubland over a <i>Cenchrus ciliaris</i> tussock grassland over scattered <i>Aerva javanica</i> herbs.
	DB Dunes B - An <i>Atalaya hemiglauca</i> , <i>Santalum lanceolatum</i> and <i>Acacia bivenosa</i> shrubland over a <i>Cenchrus ciliaris</i> tussock grassland.
	DC Dunes C - A low open <i>Acacia stellaticeps</i> , <i>Acacia bivenosa</i> and <i>Acacia ampliceps</i> shrubland over a <i>Spinifex longifolius</i> and <i>Cenchrus ciliaris</i> open grassland over scattered <i>Gomphrena canescens</i> herbs.
	DD Dunes D - Scattered <i>Scaevola ambyanthera</i> var. <i>centralis</i> low shrubs over <i>Bonania alatisemina</i> and <i>Aerva javanica</i> open herbland over <i>Cenchrus ciliaris</i> open tussock grassland over <i>Triodia epactia</i> very open hummock grassland.
	DI Disturbed Infrastructure
	DRA Drainage A - A low open <i>Eucalyptus victrix</i> woodland over a high open <i>Acacia ampliceps</i> and <i>Acacia trachycarpa</i> shrubland over a low open <i>Acacia stellaticeps</i> , <i>Pluchea ferdinandi-muelleri</i> and <i>Corchorus incanus</i> subsp. <i>incanus</i> shrubland over a <i>Triodia epactia</i> hummock grassland over an <i>Aristida holathera</i> var. <i>latifolia</i> , <i>Eriachne obtusa</i> and <i>Cenchrus ciliaris</i> tussock grassland.
	DRB Drainage B - A low open <i>Eucalyptus victrix</i> woodland over a high open <i>Acacia ampliceps</i> shrubland over a low open <i>Acacia stellaticeps</i> and <i>Pluchea ferdinandi-muelleri</i> shrubland over a closed <i>Triodia epactia</i> and <i>Triodia secunda</i> hummock grassland over an open <i>Eriachne obtusa</i> , <i>Aristida holathera</i> var. <i>latifolia</i> and <i>Cenchrus ciliaris</i> tussock grassland.
	GA Grassland A - <i>Triodia secunda</i> and <i>Triodia epactia</i> hummock grassland.
	GB Grassland B - <i>Triodia epactia</i> hummock grassland.
	LH Low Hill - An <i>Acacia tumida</i> var. <i>pilbarensis</i> shrubland over a low <i>Acacia stellaticeps</i> shrubland over a <i>Triodia epactia</i> hummock grassland.
	LSH Limestone Hill - An <i>Acacia bivenosa</i> and <i>Hakea lorea</i> subsp. <i>lorea</i> shrubland over scattered low <i>Rhagodia eremaea</i> and <i>Scaevola spinescens</i> shrubs over a scattered <i>Eriachne obtusa</i> tussock grasses.
	M Mangroves - A high closed <i>Rhizophora stylosa</i> and <i>Avicennia marina</i> shrubland.
	MDLA Major Drainage Line A - Scattered low <i>Eucalyptus victrix</i> trees over a high open <i>Melaleuca argentea</i> , <i>Acacia ampliceps</i> and <i>Acacia trachycarpa</i> shrubland over scattered <i>Adriana tomentosa</i> var. <i>tomentosa</i> and <i>Pluchea ferdinandi-muelleri</i> shrubs over an open <i>Triodia epactia</i> hummock grassland.
	MDLB Major Drainage Line B - Low open <i>Eucalyptus victrix</i> woodland over an <i>Acacia tumida</i> var. <i>pilbarensis</i> and <i>Acacia coleii</i> var. <i>coleii</i> shrubland over a very open <i>Triodia epactia</i> hummock grassland.
	MDLC Major Drainage Line C - Low open <i>Corymbia candida</i> subsp. <i>latifolia</i> woodland over high open <i>Acacia coleii</i> var. <i>coleii</i> , <i>Acacia trachycarpa</i> and <i>Acacia tumida</i> var. <i>pilbarensis</i> shrubland over <i>Triodia epactia</i> open tussock grassland.
	MDLD Major Drainage Line D - Low open <i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i> , <i>Melaleuca lasiandra</i> and <i>Melaleuca argentea</i> woodland over scattered <i>Acacia trachycarpa</i> shrubs over open <i>Cenchrus ciliaris</i> and <i>Chloris pectinata</i> tussock grassland over scattered <i>Triodia epactia</i> hummock grasses.
	MDLE Major Drainage Line E - Open <i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i> woodland over <i>Acacia tumida</i> var. <i>pilbarensis</i> and <i>Cajanus cinereus</i> shrubland over very open <i>Triodia epactia</i> hummock grassland.
	R Rockpile - Scattered low <i>Ficus brachypoda</i> , <i>Clerodendrum tomentosum</i> var. <i>lanceolatum</i> and <i>Carissa lanceolata</i> trees over scattered herbs.
	RO Rock Outcrop - Scattered <i>Acacia coleii</i> var. <i>coleii</i> and <i>Acacia inaequilatera</i> shrubs over scattered herbs over scattered <i>Triodia</i> spp. hummock grasses.
	SA Sandplain A - Low <i>Acacia stellaticeps</i> shrublands over <i>Triodia epactia</i> and <i>Triodia secunda</i> hummock grasslands/ <i>Triodia epactia</i> and <i>Triodia secunda</i> hummock grasslands mosaic.

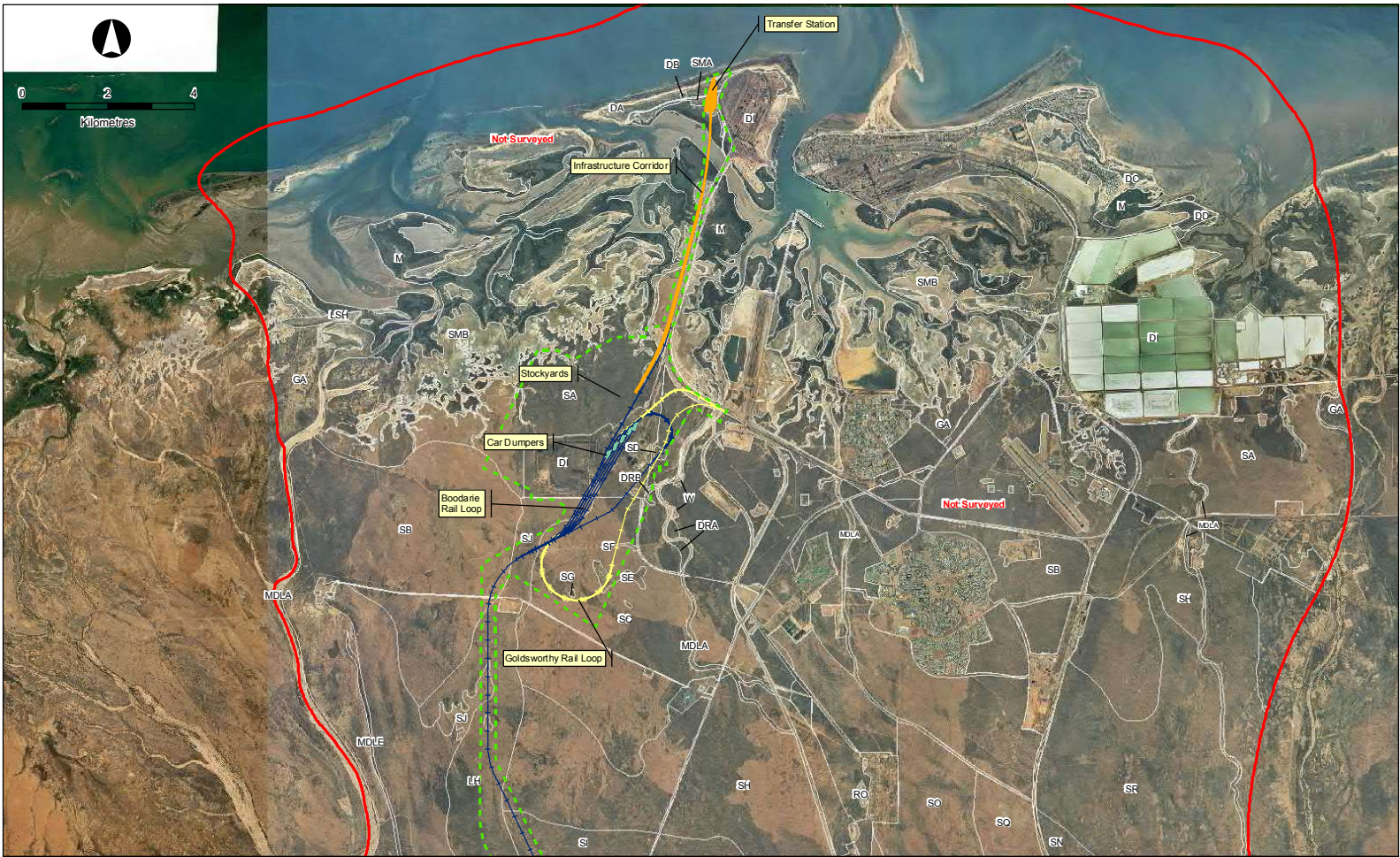
	SB Sandplain B - An open <i>Acacia coleii</i> var. <i>coleii</i> shrublands over low <i>Acacia stellaticeps</i> shrublands over <i>Triodia epactia</i> and <i>Triodia secunda</i> hummock grasslands/low <i>Acacia stellaticeps</i> shrublands over <i>Triodia epactia</i> and <i>Triodia secunda</i> hummock grasslands mosaic.
	SC Sandplain C - Low open <i>Corymbia flavescens</i> woodland over an open <i>Acacia coleii</i> var. <i>coleii</i> shrubland over a low <i>Acacia stellaticeps</i> shrubland over a <i>Triodia epactia</i> hummock grassland/ low <i>Acacia stellaticeps</i> shrublands over <i>Triodia epactia</i> and <i>Triodia secunda</i> hummock grasslands/ <i>Triodia epactia</i> and <i>Triodia secunda</i> hummock grasslands mosaic.
	SD Sandplain D - Low <i>Eucalyptus victrix</i> woodland over an <i>Acacia coleii</i> var. <i>coleii</i> shrubland over a low open <i>Acacia stellaticeps</i> and <i>Pluchea tetranthera</i> shrubland over a <i>Triodia epactia</i> hummock grassland.
	SE Sandplain E - Low open <i>Corymbia flavescens</i> and <i>Eucalyptus victrix</i> woodland over an <i>Acacia coleii</i> var. <i>coleii</i> and <i>Acacia sericophylla</i> shrubland over a low open <i>Acacia stellaticeps</i> shrubland over a <i>Triodia epactia</i> hummock grassland.
	SF Sandplain F - Open <i>Acacia tumida</i> var. <i>pilbarensis</i> and <i>Acacia coleii</i> var. <i>coleii</i> shrubland over an open <i>Triodia epactia</i> hummock grassland.
	SG Sandplain G - Low open <i>Corymbia flavescens</i> woodland over an <i>Acacia coleii</i> var. <i>coleii</i> , <i>Carissa lanceolata</i> and <i>Acacia sericophylla</i> shrubland over a <i>Triodia epactia</i> hummock grassland/ over a very open <i>Cenchrus ciliaris</i> , <i>Chrysopogon fallax</i> and <i>Eriachne obtusa</i> tussock grassland.
	SH Sandplain H - <i>Acacia tumida</i> var. <i>pilbarensis</i> and <i>Acacia coleii</i> var. <i>coleii</i> shrubland over a low <i>Acacia stellaticeps</i> shrubland over a <i>Triodia epactia</i> hummock grassland/ low <i>Acacia stellaticeps</i> shrubland over a <i>Triodia epactia</i> hummock grassland mosaic.
	SI Sandplain I - <i>Acacia tumida</i> var. <i>pilbarensis</i> shrubland over a low <i>Acacia stellaticeps</i> shrubland over a <i>Triodia epactia</i> hummock grassland/ low <i>Acacia stellaticeps</i> shrubland over a <i>Triodia epactia</i> hummock grassland/ <i>Triodia epactia</i> hummock grassland mosaic.
	SJ Sandplain J - Scattered low <i>Corymbia flavescens</i> trees over an open <i>Acacia tumida</i> var. <i>pilbarensis</i> shrubland over a low open <i>Acacia stellaticeps</i> shrubland over a <i>Triodia epactia</i> and <i>Triodia secunda</i> hummock grasslands/ <i>Triodia secunda</i> and <i>Triodia epactia</i> hummock grassland mosaic.
	SK Sandplain K - Scattered low <i>Owenia reticulata</i> trees over an <i>Acacia tumida</i> var. <i>pilbarensis</i> and <i>Acacia coleii</i> var. <i>coleii</i> shrubland over a low <i>Acacia stellaticeps</i> shrubland over a <i>Triodia epactia</i> hummock grassland/ low <i>Acacia stellaticeps</i> shrubland over a <i>Triodia epactia</i> hummock grassland mosaic.
	SL Sandplain L - Open <i>Acacia ancistrocarpa</i> , <i>Acacia tumida</i> var. <i>pilbarensis</i> and <i>Acacia inaequilatera</i> shrubland over a <i>Triodia lanigera</i> hummock grassland.
	SM Sandplain M - Low open <i>Corymbia zygomphala</i> woodland over an open <i>Acacia coleii</i> var. <i>coleii</i> , <i>Acacia inaequilatera</i> and <i>Acacia ancistrocarpa</i> shrubland over a low <i>Acacia sericophylla</i> , <i>Acacia stellaticeps</i> , <i>Senna artemisioides</i> aff. subsp. <i>oligophylla</i> (thinly sericeous) and <i>Dodonaea conacea</i> shrubland over a very open <i>Triodia lanigera</i> and <i>Triodia epactia</i> hummock grassland.
	SN Sandplain N - Open <i>Acacia ancistrocarpa</i> , <i>Acacia tumida</i> var. <i>pilbarensis</i> and <i>Acacia sericophylla</i> shrubland over <i>Acacia stellaticeps</i> low open shrubland over <i>Triodia epactia</i> and <i>Triodia lanigera</i> hummock grassland.
	SO Sandplain O - Scattered low <i>Eucalyptus victrix</i> and <i>Corymbia hamersleyana</i> trees over an open <i>Acacia ancistrocarpa</i> , <i>Acacia tumida</i> var. <i>pilbarensis</i> , <i>Acacia inaequilatera</i> and <i>Acacia trudeniana</i> shrubland over a low open <i>Acacia stellaticeps</i> shrubland over a <i>Triodia epactia</i> and <i>Triodia lanigera</i> hummock grassland.
	SP Sandplain P - Low open <i>Eucalyptus victrix</i> , <i>Corymbia hamersleyana</i> and <i>Corymbia flavescens</i> woodland over an open <i>Acacia coleii</i> var. <i>coleii</i> shrubland over a low open <i>Acacia stellaticeps</i> and <i>Pluchea tetranthera</i> shrubland over a <i>Triodia epactia</i> hummock grassland.
	SQ Sandplain Q - Scattered low <i>Corymbia flavescens</i> trees over an open <i>Acacia ancistrocarpa</i> and <i>Acacia bivenosa</i> shrubland over scattered low <i>Acacia stellaticeps</i> shrubs over a <i>Triodia epactia</i> and <i>Triodia lanigera</i> hummock grassland.
	SR Sandplain R - Low open <i>Corymbia candida</i> subsp. <i>latifolia</i> and <i>Corymbia hamersleyana</i> over <i>Acacia coleii</i> var. <i>coleii</i> and <i>Acacia tumida</i> var. <i>pilbarensis</i> open shrubland over <i>Triodia epactia</i> and <i>Triodia lanigera</i> hummock grassland.
	SS Sandplain S - Scattered <i>Acacia inaequilatera</i> shrubs over <i>Triodia epactia</i> and <i>Triodia lanigera</i> very open hummock grassland.
	SMA Samphire A - Scattered <i>Avicennia marina</i> shrubs over a low open <i>Tecticornia halocnemoides</i> , <i>Threikeldia diffusa</i> and <i>Tecticornia pterygosperma</i> subsp. <i>denticulata</i> shrubland over a very open <i>Eragrostis falcata</i> tussock grassland.
	SMB Samphire B - Scattered <i>Avicennia marina</i> shrubs over a low open <i>Tecticornia halocnemoides</i> subsp. <i>tenuis</i> , <i>Tecticornia halocnemoides</i> and <i>Trianthema turgidifolia</i> shrubland.
	W Washout



CLIENT: BHPBIO
 AUTHOR: [Redacted]
 DRAWN: [Redacted]
 JOB NO.: J100489
 DATE: 06-10-2011
 FIGURE: 7c

Vegetation Mapping Legend

Port Hedland Regional Flora and Vegetation Assessment

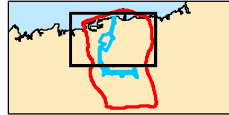


CLIENT
 BHPBIO
AUTHOR
DRAWN
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PROJECTION
 GDA 94 MGA 50

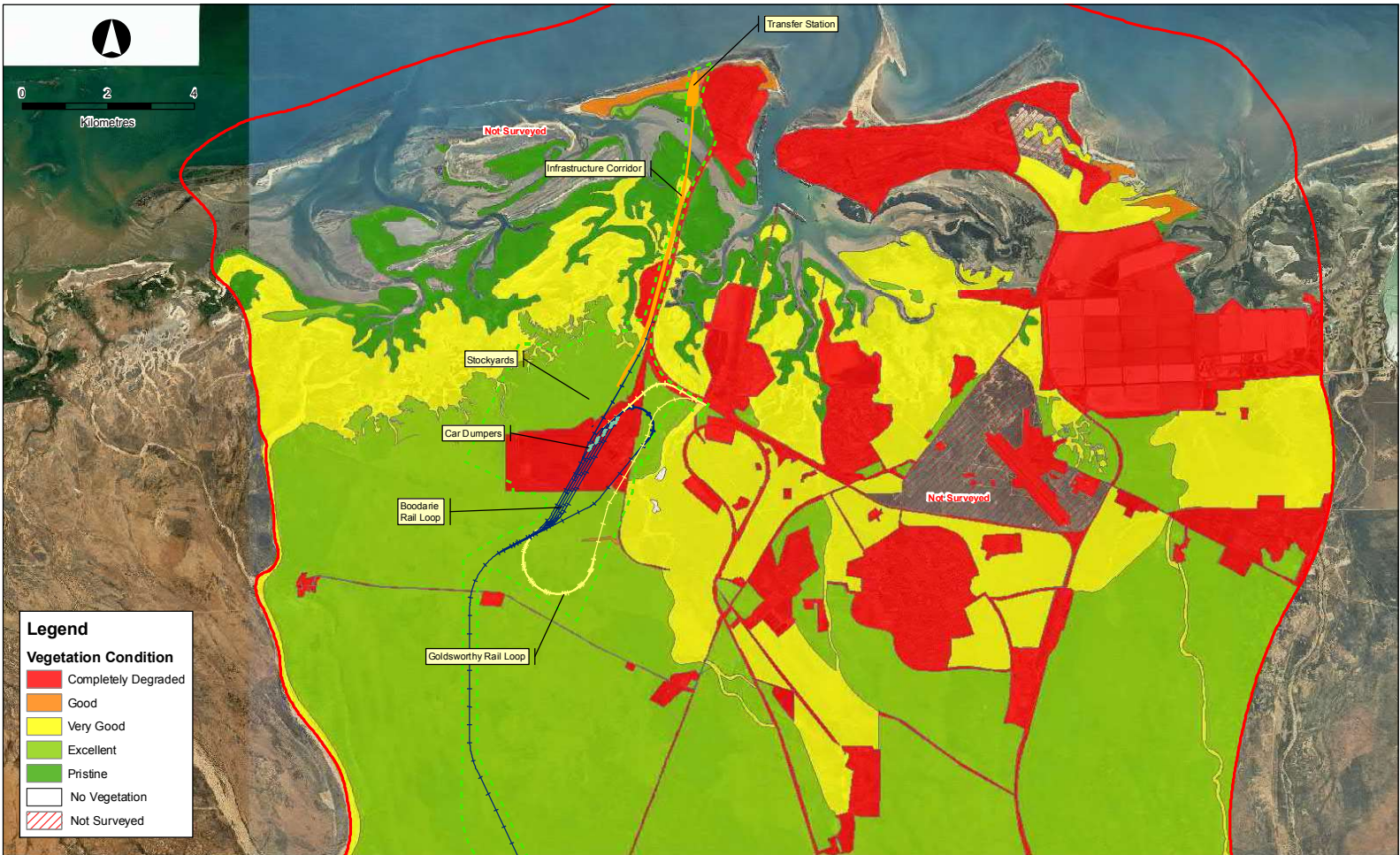
JOB NO.
 J100489
DATE
 13-10-2011
FIGURE
 8a

Legend

- PH_Regional_Survey_Boundary
- Disturbance Envelope
- Proposed Infrastructure Corridor
- Proposed Car Dumper
- Proposed Goldsworthy Rail Loop
- Proposed Western Spur Railway



Vegetation Mapping - Linework
 Port Hedland Regional Flora
 and Vegetation Assessment



Legend

Vegetation Condition

- Completely Degraded
- Good
- Very Good
- Excellent
- Pristine
- No Vegetation
- Not Surveyed



CLIENT
BHPBIO

AUTHOR
[Redacted]

SCALE
1:80,000 @ A3

DRAWN
[Redacted]

PROJECTION
GDA 94 MGA 50

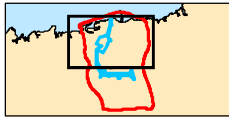
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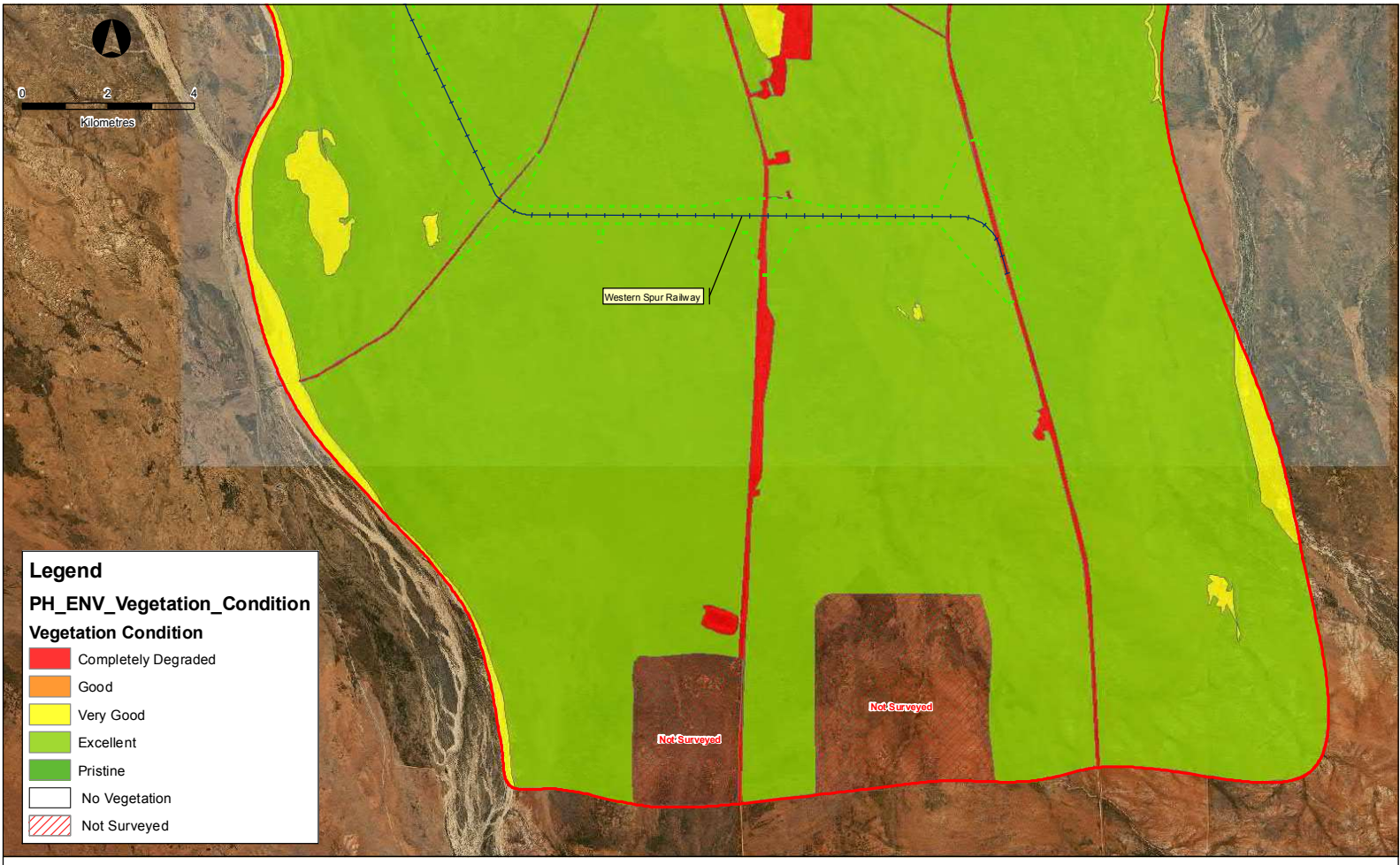
FIGURE
9a

Legend

- PH_Regional_Survey_Boundary
- Disturbance Envelope
- Proposed Infrastructure Corridor
- Proposed Car Dumper
- Proposed Goldsworthy Rail Loop
- Proposed Western Spur Railway



Vegetation Condition
Port Hedland Regional Flora and Vegetation Assessment



Legend
PH_ENV_Vegetation_Condition
Vegetation Condition

- Completely Degraded
- Good
- Very Good
- Excellent
- Pristine
- No Vegetation
- Not Surveyed



CLIENT
BHPBIO

AUTHOR
[Redacted]

SCALE
1:80,000 @ A3

DRAWN
[Redacted]

PROJECTION
GDA 94 MGA 50

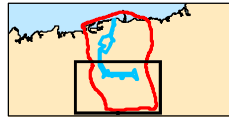
JOB NO.
J100489

DATE
17-10-2011

FIGURE
9b

Legend

- PH_Regional_Survey_Boundary
- Disturbance Envelope
- Proposed Infrastructure Corridor
- Proposed Car Dumper
- Proposed Goldsworthy Rail Loop
- Proposed Western Spur Railway



Vegetation Condition
 Port Hedland Regional Flora and Vegetation Assessment



Key

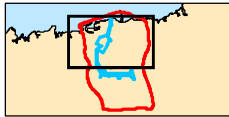
- P - Pristine
- E - Excellent
- VG - Very Good
- G - Good
- CD - Completely Degraded
- NV - No Vegetation
- NS - Not Surveyed



CLIENT: BHPBIO
 AUTHOR: [Redacted]
 SCALE: 1:80,000 @ A3
 JOB NO.: J100489
 DATE: 9-12-2011
 PROJECTION: GDA 94 MGA 50

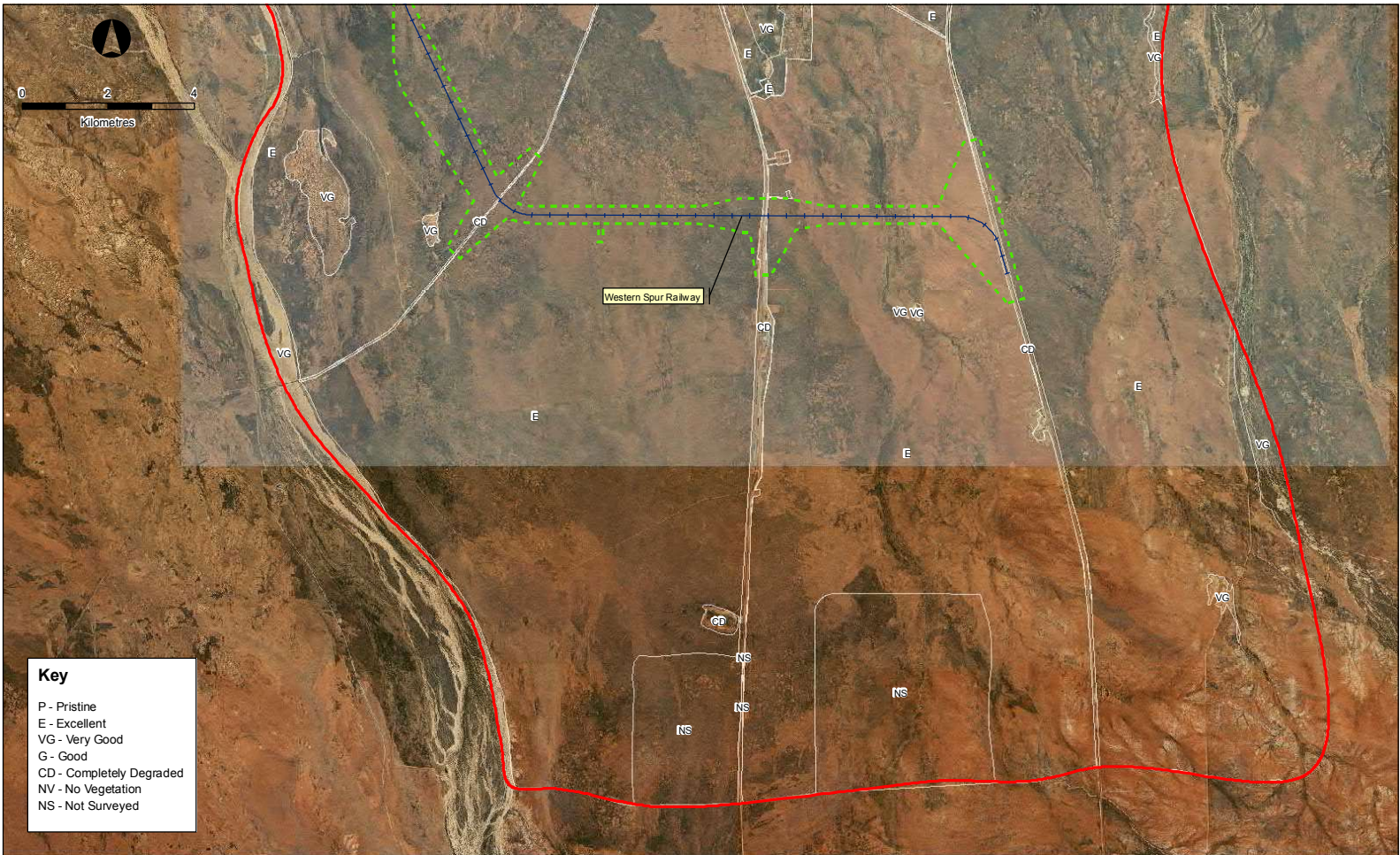
Legend

- PH_Regional_Survey_Boundary
- Disturbance Envelope
- Proposed Infrastructure Corridor
- Proposed Car Dumper
- Proposed Goldsworthy Rail Loop
- Proposed Western Spur Railway



Vegetation Condition - Linework
 Port Hedland Regional Flora and Vegetation Assessment

10a

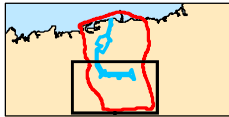


Key

- P - Pristine
- E - Excellent
- VG - Very Good
- G - Good
- CD - Completely Degraded
- NV - No Vegetation
- NS - Not Surveyed

Legend

- PH_Regional_Survey_Boundary
- Disturbance Envelope
- Proposed Infrastructure Corridor
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- Proposed Goldsworthy Rail Loop
- Proposed Western Spur Railway



Vegetation Condition - Linework
 Port Hedland Regional Flora and Vegetation Assessment

env
 Australia

CLIENT: BHPBIO
 AUTHOR: [Redacted]
 SCALE: 1:80,000 @ A3

JOB NO.: J100489
 DATE: 9-12-2011
 PROJECTION: GDA 94 MGA 50

10b

APPENDIX A

**DEFINITION OF DECLARED RARE /
PRIORITY / THREATENED FLORA AND
SIGNIFICANT FLORA POTENTIALLY
OCCURRING IN THE SURVEY AREA**

PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT

APPENDIX A

DEFINITIONS OF DECLARED RARE / PRIORITY / THREATENED FLORA AND SIGNIFICANT FLORA POTENTIALLY OCCURRING IN THE SURVEY AREA

A1: Categories of Declared Rare and Priority Flora

Conservation Code	Category
X	<p>Presumed Extinct Flora (Declared Rare Flora – Extinct)</p> <p>“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 <i>Wildlife Conservation Act 1950</i>).”</p>
T	<p>Threatened Flora (Declared Rare Flora – Extant)</p> <p>“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 <i>Wildlife Conservation Act 1950</i>).”</p> <p>“Threatened Flora (Schedule 1) are further ranked by the Department according to their level of threat using IUCN Red List criteria:</p> <ul style="list-style-type: none"> • 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.”
P1	<p>Priority One: Poorly-known taxa</p> <p>“Taxa which 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. Taxa 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.”</p>
P2	<p>Priority Two: Poorly-known taxa</p> <p>“Taxa which 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. Taxa 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.”</p>
P3	<p>Priority Three: Poorly-known taxa</p> <p>“Taxa which are known from collections or sight records from several localities not under imminent threat, or few but widespread localities with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Taxa 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.”</p>

Conservation Code	Category
P4	<p>Priority Four: Rare, Near Threatened and other taxa in need of monitoring</p> <p>a. Rare. "Taxa which 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 taxa are usually represented on conservation lands."</p> <p>b. Near Threatened. "Taxa that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable."</p> <p>c. "Taxa that have been removed from the list of threatened species during the past five years for reasons other than taxonomy."</p>
P5	<p>Priority Five: Conservation Dependent taxa</p> <p>"Taxa that are not threatened but are subject to a specific conservation program, the cessation of which would result in the taxon becoming threatened within five years."</p>

Source: Department of Environment and Conservation (2010). *Western Australian Flora Conservation Codes*. Department of Environment and Conservation, Perth, Western Australia. Online: <http://florabase.calm.wa.gov.au>.

A2: Categories of Threatened Flora Species

Category Code	Category
Ex	<p>Extinct</p> <p>Taxa which at a particular time if, at the time, there is no reasonable doubt that the last member of the species has died.</p>
ExW	<p>Extinct in the Wild</p> <p>Taxa which is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or it has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.</p>
CE	<p>Critically Endangered</p> <p>Taxa which at a particular time, it is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.</p>
E	<p>Endangered</p> <p>Taxa which is not critically endangered and it is facing a very high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.</p>
V	<p>Vulnerable</p> <p>Taxa which is not critically endangered or endangered and is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.</p>
CD	<p>Conservation Dependent</p> <p>Taxa which at a particular time if, at that time, the species is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.</p>

Source: *Environment Protection and Biodiversity Conservation Act 1999*

A3: Significant Flora Species Potentially Occurring in the Project Area

Priority Taxa	Conservation Status	Habitat Preference (WAH 2011)
<i>Abutilon pritzelianum</i>	P1	Red sand dunes.
<i>Acacia glaucocaesia</i>	P3	Red loam, sandy loam and clay on floodplains.
<i>Acacia levata</i>	P3	Sand or sandy loam over granite on hillslopes.
<i>Acacia</i> sp. Marble Bar (J.G. & M.H. Simmons 3499)	P1	Information unavailable.
<i>Atriplex eremitis</i>	P1	Information unavailable.
<i>Bulbostylis burbidgeae</i>	P4	Granitic soils, granite outcrops, cliff bases
<i>Eragrostis crateriformis</i>	P3	Clayey loam, creek banks, depressions
<i>Euphorbia clementii</i>	P2	Gravelly hillsides and stony grounds.
<i>Gomphrena cucullata</i>	P2	Red sandy loam, clayey sand on open floodplains.
<i>Gomphrena leptophylla</i>	P3	Sand, sandy to clayey loam, granite, quartzite on open flats, sandy creek beds, edges salt pans & marshes and stony hillsides.
<i>Gomphrena pusilla</i>	P2	Fine beach sand behind foredunes, on limestone.
<i>Goodenia nuda</i>	P4	Information unavailable.
<i>Gymnanthera cunninghamii</i>	P3	Sandy soils.
<i>Heliotropium muticum</i>	P1	Loam, sandy loam on plains and floodplains.
<i>Nicotiana umbratica</i>	P3	Shallow soils. Rocky outcrops.
<i>Pityrodia</i> sp. Marble Bar (G. Woodman & D. Coultas GWDC Opp 4)	P1	Skeletal soils over massive ironstone.
<i>Polymeria distigma</i>	P3	Sandy soils.
<i>Pterocaulon</i> sp. A Kimberley Flora (B.J. Carter 599)	P3	Sand on coastal areas, saline sandy flats and pindan sandplains.
<i>Ptilotus appendiculatus</i> var. <i>minor</i>	P1	Information unavailable.
<i>Tephrosia rosea</i> var. <i>venulosa</i>	P1	Red sand near creeks.

Source: Department of Environment and Conservation Database Search (April 2011)

APPENDIX B

DEFINITION OF THREATENED AND PRIORITY ECOLOGICAL COMMUNITIES

PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT

APPENDIX B

DEFINITIONS OF THREATENED AND PRIORITY ECOLOGICAL COMMUNITIES

B1: Definitions of Threatened Ecological Communities

Presumed Totally Destroyed (PD)

An ecological community will be listed as presumed totally destroyed if there are no recent records of the community being extant **and either** of the following applies (A or B);

- A) Records within the last 50 years have not been confirmed despite thorough searches or known or likely habitats **or**
- B) All occurrences recorded within the last 50 years have since been destroyed.

Critically Endangered (CR)

An ecological community will be listed as **Critically Endangered** when it has been adequately surveyed and is found to be facing an extremely high risk of total destruction in the immediate future. This will be determined on the basis of the best available information, by it meeting **any one or more** of the following criteria (A, B or C):

- A) The estimated geographic range, and/or total area occupied, and/or number of discrete occurrences since European settlement have been reduced by at least 90% and **either or both** of the following apply (i or ii)
 - i) geographic range, and/or total area occupied and/or number of discrete occurrences are continuing to decline such that total destruction of the community is imminent (within approximately 5 years)
 - ii) modification throughout its range is continuing such that in the immediate future (within approximately 5 years) the community is unlikely to be capable of being substantially rehabilitated.
- B) Current distribution is limited, and **one or more** of the following apply (i, ii or iii):
 - i) geographic range and/or number of discrete occurrences, and/or area occupied is highly restricted and the community is currently subject to known threatening processes which are likely to result in total destruction throughout its range in the immediate future (within approximately 5 years)
 - ii) there are very few occurrences, each of which is small and/or isolated and extremely vulnerable to known threatening processes
 - iii) there may be many occurrences but total area is very small and each occurrence is small and/or isolated and extremely vulnerable to known threatening processes

- C) The ecological community exists only as highly modified occurrences which may be capable of being rehabilitated if such work begins in the immediate future (within approximately 5 years)

Endangered (EN)

An ecological community will be listed as **Endangered** when it has been adequately surveyed and is not Critically Endangered but is facing a very high risk of total destruction in the near future. This will be determined on the basis of the best available information, by it meeting **any one or more** of the following criteria (A, B or C):

- A) The estimated geographic range, and/or total area occupied, and/or number of discrete occurrences since European settlement have been reduced by at least 70% and **either or both** of the following apply (i or ii)
- i) geographic range, and/or total area occupied and/or number of discrete occurrences are continuing to decline such that total destruction of the community is likely in the short term (within approximately 10 years)
 - ii) modification throughout its range is continuing such that in the short term future (within approximately 10 years) the community is unlikely to be capable of being substantially restored or rehabilitated.
- B) Current distribution is limited, and **one or more** of the following apply (i, ii or iii):
- i) geographic range and/or number of discrete occurrences, and/or area occupied is highly restricted and the community is currently subject to known threatening processes which are likely to result in total destruction throughout its range in the short term future (within approximately 10 years)
 - ii) there are very few occurrences, each of which is small and/or isolated and extremely vulnerable to known threatening processes
 - iii) there may be many occurrences but total area is very small and each occurrence is small and/or isolated and extremely vulnerable to known threatening processes
- C) The ecological community exists only as highly modified occurrences which may be capable of being rehabilitated if such work begins in the short term future (within approximately 10 years).

Vulnerable (VU)

An ecological community will be listed as **Vulnerable** when it has been adequately surveyed and is not Critically Endangered or Endangered but is facing a high risk of total destruction in the medium to long term future. This will be determined on the basis of the best available information, by it meeting **any one or more** of the following criteria (A, B or C):

- A) The ecological community exists largely as modified occurrences which are likely to be capable of being substantially restored or rehabilitated.
- B) The ecological community can be modified or destroyed and would be vulnerable to threatening processes, is restricted in area and/or range and/or is only found at a few locations.

- C) The ecological community may still be widespread but is believed likely to move into a category of higher threat in the medium to long term future because of existing or impending threatening processes.

Source: Department of Environment and Conservation (2010). *Definitions, Categories and Criteria for Threatened and Priority Ecological Communities*. Department of Environment and Conservation, Perth, Western Australia. Online: www.naturebase.net/

B2: Definitions of Priority Ecological Communities

Possible threatened ecological communities that do not meet survey criteria or that are not adequately defined are added to the Priority Ecological Community Lists 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.

Priority One: Poorly known ecological communities Ecological communities with apparently few, small occurrences, all or most not actively managed for conservation (e.g. within agricultural or pastoral lands, urban areas, active mineral leases) and for which current threats exist. Communities may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements, and/or are not well defined, and appear to be under immediate threat from known threatening processes across their range.

Priority Two: Poorly known ecological communities. Communities that are known from few small occurrences, all or most of which are actively managed for conservation (e.g. within national parks, conservation parks, nature reserves, State forest, unallocated Crown land, water reserves, etc.) and not under imminent threat of destruction or degradation.

Communities may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements, and/or are not well defined, and appear to be under threat from known threatening processes.

Priority Three: Poorly known ecological communities

- (i) Communities that are known from several to many occurrences, a significant number or area of which are not under threat of habitat destruction or degradation or:
- (ii) Communities known from a few widespread occurrences, which are either large or within significant remaining areas of habitat in which other occurrences may occur, much of it not under imminent threat, or;
- (iii) Communities made up of large, and/or widespread occurrences, that may or not be represented in the reserve system, but are under threat of modification across much of their range from processes such as grazing by domestic and/or feral stock, and inappropriate fire regimes.

Communities may be included if they are comparatively well known from several localities but do not meet adequacy of survey requirements and/or are not well defined, and known threatening processes exist that could affect them.

Priority Four: Ecological communities that are adequately known, rare but not threatened or meet criteria for Near Threatened, or that have been recently removed from the threatened list. These communities require regular monitoring.

- (a) Rare. Ecological communities known from few occurrences that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These communities are usually represented on conservation lands.
- (b) Near Threatened. Ecological communities that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable.
- (c) Ecological communities that have been removed from the list of threatened communities during the past five years.

Priority Five: Conservation Dependent ecological communities. Ecological communities that are not threatened but are subject to a specific conservation program, the cessation of which would result in the community becoming threatened within five years.

Source: Department of Environment and Conservation (2010). *Definitions, Categories and Criteria for Threatened and Priority Ecological Communities*. Department of Environment and Conservation, Perth, Western Australia. Online: www.naturebase.net/

APPENDIX C

ENVIRONMENTAL WEEDS AND DECLARED PLANT CATEGORIES

PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT

APPENDIX C

ENVIRONMENTAL WEEDS AND DECLARED PLANT CATEGORIES

C1: Criteria used for Ranking Environmental Weeds

The Environmental Weed Strategy for Western Australia (CALM 1999) contains criteria for the assessment and ranking of weeds in terms of their environmental impact on biodiversity. These criteria are as follows:

- **Invasiveness** – ability to invade bushland in good to excellent condition or ability to invade waterways. (Score as yes or no).
- **Distribution** – wide current or potential distribution including consideration of known history of wide spread distribution elsewhere in the world. (Score as yes or no).
- **Environmental Impacts** – ability to change the structure, composition and function of ecosystems. In particular an ability to form a monoculture in a vegetation community. (Score as yes or no).

The rating of each weed is determined by the following scoring system:

- **High** - a weed species would have to score yes for all three criteria. Rating a weed species as high would indicate prioritising this weed for control and/or research i.e. prioritising funding to it.
- **Moderate** -a weed species would have to score yes for two of the above criteria. Rating a weed species as moderate would indicate that control or research effort should be directed to it if funds are available, however it should be monitored (possibly a reasonably high level of monitoring).
- **Mild** – a weed species scoring one of the criteria. A mild rating would indicate monitoring of the weed and control where appropriate.
- **Low** – a weed species would score none of the criteria. A low ranking would mean that this species would require a low level of monitoring.

Source: Department of Conservation and Land Management (1999). *Environmental Weed Strategy for Western Australia*. Department of Conservation and Land Management, Perth, Western Australia.

C2: Standard Meanings of Declared Plant Categories

P1

Prohibits movement.

The movement of plants or their seeds is prohibited within the State.

This prohibits the movement of contaminated machinery and produce including livestock and fodder.

P2

Aim is to eradicate infestation.

Treat all plants 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.

The infested area must be managed 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:

- * Within 50m inside of the boundaries of the infestation;
- * within 50m of roads and high water mark on waterways;
- * within 50m of sheds, stock yards and houses.

Treatment must be done prior to seed set each year.

Properties with less than 20ha of infestation must treat the entire infestation.

Additional areas may be ordered to be treated.

P4

Aims to prevent infestation spreading beyond existing boundaries of infestation

The infested area must be managed 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:

- * within 50m inside of the boundaries of the infested property for one-leaf and 20m for two-leaf;
- * within 50m of roads and high water mark on waterways;
- * within 50m of sheds, stock yards and houses.

Treatment must be done prior to seed set each year. Properties with less than 20ha of infestation must treat the entire infestation.

Additional areas may be ordered to be treated.

Special considerations.

In the case of P4 infestations where they continue across property boundaries there is no requirement to treat the relevant part of the property boundaries as long as the boundaries of the infestation as a whole are treated. There must be agreement between neighbours in relation to the treatment of these areas.

P5

Aims to control infestations on public lands.

Source: Department of Agriculture and Food (2008). *List of Declared Plants*. Department of Agriculture and Food, Western Australia. Online: <http://www.agric.wa.gov.au/>.

APPENDIX D

BUSH FOREVER VEGETATION CONDITION SCALE

PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT

APPENDIX D

BUSH FOREVER VEGETATION CONDITION SCALE

Condition Scale Code	Condition Scale
P	Pristine (1) Pristine or nearly so, no obvious signs of disturbance
E	Excellent (2) Vegetation structure intact, disturbance affecting individual species and weeds are non-aggressive species.
VG	Very Good (3) Vegetation structure altered, obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and grazing.
G	Good (4) Vegetation structure significantly altered by very obvious signs of multiple disturbance. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and grazing.
D	Degraded (5) Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and grazing.
CD	Completely Degraded (6) The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs.

Source: Government of Western Australia (2000). *Bush Forever Volume 2: Directory of Bush Forever Sites*. Department of Environmental Protection, Perth, Western Australia.

APPENDIX F

FLORA QUADRAT AND RELEVÉ DATA SHEETS

PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT

APPENDIX F

FLORA QUADRAT AND RELEVÉ DATA SHEETS

Port Hedland RS Site PI001

Described by EC Date 1/07/2011 Type Q 50x50 m

Location Port Hedland

MGA Zone 50 659705 mE 7754027 mN

Habitat Sand dune

Soil Light orange sand

Rock Type N/A

Vegetation Low Shrubland of *Acacia stellaticeps* over Open
Tussock Grassland of **Cenchrus ciliaris* and *Spinifex
longifolius* over Very Open Herbs of **Aerva javanica*,
Trianthema glossostigma and *Ptilotus exaltatus*

Veg Condition Very good

Fire Age Old

Notes Aspect: Undulating
Bare Ground: 50%
Litter Cover: +% Logs, 5% Twigs, 20% Lvs
Disturbance: Weeds, tracks and rubbish



SPECIES LIST:

Name	Cover	Height	Specimen	Notes
<i>Acacia bivenosa</i>	+	1 m	PI121.09	
<i>Acacia stellaticeps</i>	20%	0.4 m	PI083.01	
<i>*Aerva javanica</i>	5%	0.3 m	PI076.05	
<i>*Cenchrus ciliaris</i>	10%	0.3 m	PI103.06	
<i>Cleome viscosa</i>	+	0.3 m	PI065.17	
<i>Crotalaria cunninghamii</i> subsp. <i>sturtii</i>	+	0.5 m	PI006.06	
<i>Euphorbia alsiniflora</i>	+	0.3 m	PI001.03	
<i>Euphorbia tannensis</i> subsp. <i>eremophila</i>	+	0.3 m	PI013.10	
<i>Ptilotus exaltatus</i>	1%	0.3 m	PI013.01	
<i>Rhynchosia minima</i>	+	0.3 m	PI001.07	
<i>Salsola tragus</i> subsp. <i>grandiflora</i>	1%	0.5 m	PI001.01	
<i>Spinifex longifolius</i>	4%	0.3 m	PI001.02	
<i>Threlkeldia diffusa</i>	+	0.3 m	PI001.04	
<i>Trianthema glossostigma</i>	2%	0.3 m	PI013.09	
<i>Tribulus macrocarpus</i>	+	0.2 m	PI084.11	
<i>Tricoryne corynothecoides</i>	+	0.3 m	PI001.05	
<i>Whiteochloa airoides</i>	+	0.3 m	PI001.06	

Port Hedland RS Site PI006**Described by** EC **Date** 30/06/2011 **Type** Q 50x50 m**Location** Port Hedland**MGA Zone** 50 673706 mE 7751702 mN**Habitat** Sand plain on top of a sand dune**Soil** Light brown sand with shell grit**Rock Type** N/A**Vegetation** Open Hummock Grassland of *Triodia epactia* and Open Tussock Grassland of **Cenchrus ciliaris* with Very Open Herbs of *Bonamia alatisemina* and **Aerva javanica***Veg Condition** Very good to good**Fire Age** Old**Notes** Aspect: N/A
Bare Ground: 40%
Litter Cover: +% Logs, 2% Twigs, 10% Lvs
Disturbance: Weeds, rubbish and tracks**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Adriana tomentosa</i>	+	1 m	PI006.03	
<i>*Aerva javanica</i>	1%	0.4 m	PI076.05	
<i>Bonamia alatisemina</i>	4%	1 m	PI083.10	
<i>*Cenchrus ciliaris</i>	30%	0.3 m	PI103.06	
<i>Chrysopogon fallax</i>	+	0.4 m	PI084.10	
<i>Cleome viscosa</i>	+	0.3 m	PI065.17	
<i>Codonocarpus cotinifolius</i>	+	0.5 m	PI006.04	
<i>Crotalaria cunninghamii</i> subsp. <i>sturtii</i>	+	0.6 m	PI006.06	
<i>Cucumis maderaspatanus</i>	+	cr	PI141.04	
<i>Euphorbia australis</i>	+	0.2 m	PI084.08	
<i>Euphorbia tannensis</i> subsp. <i>eremophila</i>	+	0.3 m	PI013.10	
<i>Melhania oblongifolia</i>	+	0.3 m	PI006.05	
<i>Rhagodia eremaea</i>	+	1 m	PI006.08	
<i>Rhynchosia minima</i>	+	cr	PI094.11	
<i>Scaevola amblyanthera</i> var. <i>centralis</i>	1%	0.3 m	PI006.07	
<i>Tephrosia leptoclada</i>	+	0.5 m	PI006.01	
<i>Triodia epactia</i>	12%	0.4 m	PI006.02	

Port Hedland RS Site PI007

Described by HA **Date** 27/06/2011 **Type** Q 50x50 m

Location Port Hedland

MGA Zone 50 676635 mE 7746825 mN

Habitat Sand plain

Soil Orange brown sandy loam

Rock Type N/A

Vegetation Scattered Low Shrubs of *Triumfetta chaetocarpa* over
Open Hummock Grassland of *Triodia epactia* over
Open Tussock Grassland of **Cenchrus ciliaris*

Veg Condition Very good to Good

Fire Age Old

Notes Aspect: N/A
Bare Ground: 50%
Litter Cover: +% Logs, +% Twigs, 1% Lvs
Disturbance: Buffel, Kapok and cattle

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	+	2.5 m	PI070.38	
* <i>Aerva javanica</i>	+	0.3 m	PI147.05	
<i>Amaranthus undulatus</i>	+	0.6 m	PI007.08	
<i>Bonamia media</i> var. <i>villosa</i>	+	0.1 m	PI007.05	
<i>Bulbostylis barbata</i>	+	0.1 m	PI070.17	
<i>Calandrinia pumila</i>	+	cr	PI086.02	
* <i>Cenchrus ciliaris</i>	25%	0.3 m	PI070.29	
<i>Cleome viscosa</i>	+	0.4 m	PI099.07	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.3 m	PI070.02	
<i>Crotalaria ramosissima</i>	+	0.3 m	PI007.01	
<i>Eriachne benthamii</i>	+	0.1 m	PI007.06	
<i>Eriachne mucronata</i>	+	0.3 m	PI114.03	
<i>Euphorbia alsiniflora</i>	+	0.15 m	PI072.10	
<i>Euphorbia australis</i>	+	cr	PI108.12	
<i>Heliotropium cunninghamii</i>	+	0.2 m	PI046.19	
<i>Hybanthus aurantiacus</i>	+	0.5 m	PI099.02	
<i>Indigofera linifolia</i>	+	0.2 m	PI007.10	
<i>Kennedia prorepens</i>	+	cr	PI007.09	
<i>Mollugo molluginea</i>	+	0.1 m	PI070.35	
<i>Portulaca pilosa</i>	+	0.1 m	PI147.22	
<i>Pterocaulon sphaeranthoides</i>	+	0.1 m	PI007.07	
<i>Tephrosia rosea</i> var. <i>rosea</i>	+	0.3 m	PI007.12	
<i>Tephrosia simplicifolia</i>	+	0.1 m	PI032.08	Range ext
<i>Tephrosia</i> sp. B Kimberley Flora (C.A. Gardner 7300)	+	0.3 m	PI007.11	
<i>Tinospora smilacina</i>	+	cr	PI087.09	
<i>Tricoryne corynothecoides</i>	+	0.4 m	PI007.03	
<i>Triodia epactia</i>	20%	0.4 m	PI007.02	
<i>Triumfetta chaetocarpa</i>	1%	0.3 m	PI007.04	

<i>*Vaccaria hispanica</i>	+	0.2 m	PI007.13
<i>Whiteochloa airoides</i>	+	0.5 m	PI007.14
<i>Zornia muelleriana</i>	+	cr	PI080.05



Port Hedland RS Site PI008**Described by** HA**Date** 27/06/2011 **Type** Q

50x50 m

Location Port Hedland**MGA Zone** 50 674942 mE 7745420 mN**Habitat** Sand plain**Soil** Orange brown sandy loam**Rock Type** N/A**Vegetation** Low Shrubland of *Acacia stellaticeps* over *Triodia epactia* and *Triodia secunda* hummock grasslands/
Triodia epactia and *Triodia secunda* hummock grasslands mosaic.**Veg Condition** Excellent to very good**Fire Age** Young**Notes** Aspect: N/A

Bare Ground: 40%

Litter Cover: +% Logs, +% Twigs, +% Lvs

Disturbance: Cattle scatts

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia stellaticeps</i>	45%	0.3 m	PI070.01	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.3 m	PI070.10	
<i>Bonamia alatisemina</i>	+	cr	PI008.04	
<i>Bonamia rosea</i>	1%	0.3 m	PI008.03	
<i>Bulbostylis barbata</i>	+	0.1 m	PI070.17	
<i>Calandrinia pumila</i>	+	0.2 m	PI086.02	
<i>Chrysopogon fallax</i>	+	1 m	PI070.21	
<i>Cleome viscosa</i>	+	0.4 m	PI099.07	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.3 m	PI070.02	
<i>Dodonaea coriacea</i>	+	0.3 m	PI032.03	
<i>Eriachne mucronata</i>	1%	0.3 m	PI008.01	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.1 m	PI008.06	
<i>Fimbristylis dichotoma</i>	2%	0.3 m	PI081.07	
<i>Goodenia microptera</i>	+	0.2 m	PI008.05	
<i>Hibiscus brachychlaenus</i>	+	0.2 m	PI008.08	
<i>Hybanthus aurantiacus</i>	+	0.4 m	PI099.02	
<i>Indigofera monophylla</i>	+	0.3 m	PI072.03	
<i>Mollugo molluginea</i>	+	0.1 m	PI070.35	
<i>Ptilotus astrolasius</i>	+	0.5 m	PI089.05	
<i>Ptilotus polystachyus</i>	+	0.3 m	PI147.19	
<i>Senna notabilis</i>	+	0.2 m	PI070.14	
<i>Tephrosia</i> sp. B Kimberley Flora (C.A. Gardner 7300)	+	0.2 m	PI007.11	
<i>Triodia epactia</i>	5%	0.5 m	PI008.02	
<i>Triodia schinzii</i>	5%	0.4 m	PI008.07	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI072.06	

Port Hedland RS Site PI008a**Described by** BW **Date** 29/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 675050 mE 7745076 mN
Habitat Sandplain
Soil Orange brown silty sand
Rock Type N/A
Vegetation Scattered Low Shrubs of *Acacia stellaticeps* and *Bonamia rosea* over Very Open Hummock Grassland of *Triodia schinzii* and Scattered Tussock Grass of *Digitaria brownii*
Veg Condition Excellent
Fire Age Young
Notes Aspect: N/A
 Bare Ground: 95%
 Litter Cover: 0% Logs, +% Twigs, +% Lvs
 Disturbance: Cattle and powerlines near by

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia stellaticeps</i>	2%	0.4 m	PI043.01	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.3 m	PI049.07	
<i>Bonamia media</i> var. <i>villosa</i>	+	0.2 m	PI008a.05	
<i>Bonamia rosea</i>	1%	0.3 m	PI030.04	
<i>Bulbostylis barbata</i>	+	0.1 m	PI129.01	
* <i>Cenchrus ciliaris</i>	+	0.4 m	PI052.06	
<i>Cleome viscosa</i>	+	0.3 m	PI101.04	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.3 m	PI042.04	
<i>Corchorus tectus</i>	+	0.3 m	PI030.02	
<i>Corymbia hamersleyana</i>	+	0.8 m	PI008a.04	
<i>Digitaria brownii</i>	1%	0.3 m	PI008a.06	
<i>Eragrostis eriopoda</i>	+	0.4 m	PI047.02	
<i>Eriachne aristidea</i>	+	0.3 m	PI136.03	
<i>Eriachne mucronata</i>	+	0.3 m	PI049.01	
<i>Hibiscus burtonii</i>	+	0.3 m	PI008a.01	
<i>Hybanthus aurantiacus</i>	+	0.4 m	PI043.13	
<i>Indigofera monophylla</i>	+	0.3 m	PI146.02	
<i>Mollugo molluginea</i>	+	0.1 m	PI043.29	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.2 m	PI043.06	
<i>Portulaca pilosa</i>	+	0.3 m	PI030.01	
<i>Ptilotus astrolasius</i>	+	0.4 m	PI056.18	
<i>Ptilotus polystachyus</i>	+	0.3 m	PI030.03	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.1 m	PI043.14	
<i>Solanum diversiflorum</i>	+	0.2 m	PI049.04	
<i>Tephrosia rosea</i>	+	0.4 m	PI008a.02	
<i>Trianthema pilosa</i>	+	0.1 m	PI052.09	
<i>Triodia schinzii</i>	3%	0.3 m	PI008a.07	

Port Hedland RS Site PI009**Described by** LD **Date** 29/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 673107 mE 7745572 mN
Habitat Sandy plain
Soil Orange Brown sandy loam
Rock Type N/A
Vegetation Low Shrubland of *Acacia stellaticeps* over Very Open Hummock Grassland of *Triodia schinzii* and Very Open Tussock Grassland of *Eriachne mucronata*
Veg Condition Excellent
Fire Age Young
Notes Aspect: N/A
 Bare Ground: 80%
 Litter Cover: 0% Logs, +% Twigs, +% Lvs
 Disturbance: Tracks and infrastructure near by

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	+	0.5 m	PI091.12	
<i>Acacia stellaticeps</i>	25%	0.3 m	PI065.01	
<i>Bonamia alatisemina</i>	+	0.1 m	PI117.11	
<i>Bonamia rosea</i>	+	0.3 m	PI090.02	
<i>Bulbostylis barbata</i>	+	0.1 m	PI090.18	
<i>Chrysopogon fallax</i>	+	0.5 m	PI051.04	
<i>Eriachne mucronata</i>	6%	0.4 m	PI109.05	
<i>Euphorbia alsiniflora</i>	+	0.2 m	PI117.03	
<i>Evolvulus alsinoides</i> var. <i>decumbens</i>	+	0.1 m	PI094.10	
<i>Fimbristylis oxystachya</i>	+	0.1 m	PI025.05	
<i>Goodenia forrestii</i>	+	0.2 m	PI009.03	
<i>Hybanthus aurantiacus</i>	+	0.4 m	PI043.13	
<i>Indigofera monophylla</i>	+	0.2 m	PI065.13	
<i>Mollugo molluginea</i>	+	0.1 m	PI132.04	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI058.10	
<i>Ptilotus astrolasius</i>	+	0.2 m	PI009.02	
<i>Ptilotus calostachyus</i>	+	1 m	PI109.10	
<i>Ptilotus fusiformis</i>	+	0.5 m	PI065.28	
<i>Ptilotus polystachyus</i>	+	0.5 m	PI025.13	
<i>Schizachyrium fragile</i>	+	0.2 m	PI075.02	
<i>Trianthes pilosa</i>	+	0.1 m	PI065.03	
<i>Triodia schinzii</i>	8%	0.3 m	PI009.01	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI043.08	

Port Hedland RS Site PI010**Described by** EC **Date** 30/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 676039 mE 7743430 mN
Habitat Plain
Soil Light orange brown sandy loam with pebble cover
Rock Type N/A
Vegetation Scattered Shrubs of *Acacia trachycarpa* over Hummock Grassland of *Triodia epactia* and *Triodia lanigera*
Veg Condition Very good
Fire Age Moderate
Notes Aspect: N/A
 Bare Ground: 70%
 Litter Cover: +% Logs, +% Twigs, 1% Lvs
 Disturbance: Rubbish and diggings

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia pyrifolia</i>	+	1.2 m	PI107.03	
<i>Acacia trachycarpa</i>	1%	1 m	PI010.01	
<i>Acacia trachycarpa</i> x <i>tumida</i>	+	1.2 m	PI010.02	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.3 m	PI123.18	
<i>Bonamia alatisemina</i>	+	cr	PI083.10	
<i>Bonamia rosea</i>	+	0.3 m	PI123.05	
<i>Bulbostylis barbata</i>	+	0.2 m	PI121.05	
<i>Calandrinia pentavalvis</i>	+	0.2 m	PI123.38	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.4 m	PI084.06	
<i>Crotalaria ramosissima</i>	+	0.3 m	PI027.05	
<i>Euphorbia alsiniflora</i>	+	0.3 m	PI123.36	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.2 m	PI123.25	
<i>Fimbristylis dichotoma</i>	+	0.3 m	PI121.06	
<i>Goodenia microptera</i>	+	0.3 m	PI123.12	
<i>Hakea lorea</i> subsp. <i>lorea</i>	+	1 m	PI051.03	
<i>Hybanthus aurantiacus</i>	+	0.3 m	PI123.03	
<i>Indigofera monophylla</i>	+	0.3 m	PI123.02	
<i>Mitrasacme connata</i>	+	0.2 m	PI010.03	
<i>Pluchea tetranthera</i>	+	0.3 m	PI083.11	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.2 m	PI083.12	
<i>Polygala linariifolia</i>	+	0.2 m	PI019.01	
<i>Ptilotus fusiformis</i>	+	0.3 m	PI083.08	
<i>Schizachyrium fragile</i>	+	0.3 m	PI076.06	
<i>Trianthema pilosa</i>	+	0.3 m	PI065.03	
<i>Triodia epactia</i>	30%	0.3 m	PI010.05	
<i>Triodia lanigera</i>	5%	0.3 m	PI010.06	
<i>Triumfetta ramosa</i>	+	0.3 m	PI010.04	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI084.03	

Port Hedland RS **Site** PI012

Described by EC **Date** 30/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 668162 mE 7749789 mN
Habitat Mangroves and flats
Soil Brown silty mud
Rock Type N/A
Vegetation High Shrubland of *Avicennia marina* and *Rhizophora stylosa* over Scattered Low Shrubs of *Tecticornia* sp. Dennys Crossing (K.A. Shepherd & J. English KS 552)
Veg Condition Excellent
Fire Age Old
Notes Aspect: N/A
 Bare Ground: 80%
 Litter Cover: +% Logs, +% Twigs, +% Lvs
 Disturbance: Tracks



SPECIES LIST:

Name	Cover	Height	Specimen	Notes
<i>Avicennia marina</i>	30%	1-3 m	PI012.02	
<i>Rhizophora stylosa</i>	25%	1-4 m	PI012.03	
<i>Tecticornia</i> sp. Dennys Crossing (K.A. Shepherd & J. English KS 552)	1%	0.3 m	PI012.01	

Port Hedland RS Site PI013**Described by** EC **Date** 30/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 668315 mE 7749630 mN
Habitat Low limestone hill
Soil Skeletal light brown loam with exposed rock
Rock Type Limestone
Vegetation Scattered Shrubs of *Scaevola spinescens* and *Acacia bivenosa* over Very Open Hummock Grassland *Triodia schinzii*
Veg Condition Very good
Fire Age Moderate
Notes Aspect: South-east
 Bare Ground: 60%
 Litter Cover: 0% Logs, +% Twigs, 5% Lvs
 Disturbance: Rubbish, Kapok and tracks nearby

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia bivenosa</i>	1%	1 m	PI121.09	
* <i>Aerva javanica</i>	+	0.4 m	PI076.05	
<i>Boerhavia coccinea</i>	+	0.2 m	PI123.29	
<i>Cleome viscosa</i>	+	0.3 m	PI065.17	
<i>Corchorus tectus</i>	+	0.3 m	PI123.35	
<i>Corymbia hamersleyana</i>	+	3 m	PI013.03	
<i>Eriachne mucronata</i>	+	0.3 m	PI076.13	
<i>Euphorbia alsiniflora</i>	+	0.3 m	PI123.36	
<i>Euphorbia tannensis</i> subsp. <i>eremophila</i>	+	0.3 m	PI013.10	
<i>Goodenia microptera</i>	+	0.2 m	PI123.12	
<i>Heliotropium ovalifolium</i>	+	0.3 m	PI013.08	
<i>Heliotropium tenuifolium</i>	+	0.3 m	PI013.11	
<i>Indigofera monophylla</i>	+	0.3 m	PI123.02	
<i>Pluchea tetranthera</i>	+	0.3 m	PI083.11	
<i>Ptilotus axillaris</i>	+	0.2 m	PI013.06	
<i>Ptilotus exaltatus</i>	+	0.3 m	PI013.01	
<i>Scaevola amblyanthera</i> var. <i>centralis</i>	+	0.3 m	PI013.05	
<i>Scaevola spinescens</i>	2%	1.2 m	PI013.02	
<i>Sida</i> sp. verrucose glands (F.H. Mollemans 2423)	+	0.2 m	PI013.07	
<i>Trianthema glossostigma</i>	+	0.3 m	PI013.09	
<i>Tribulus macrocarpus</i>	+	0.1 m	PI084.11	
<i>Triodia schinzii</i>	35%	0.3 m	PI013.04	

Port Hedland RS Site PI014**Described by** EC **Date** 30/06/2011 **Type** Q 50x50 m**Location** Port Hedland**MGA Zone** 50 671068 mE 7746304 mN**Habitat** Sand plain. An island between tidal samphire flats**Soil** Light orange brown loam**Rock Type****Vegetation** Hummock Grassland of *Triodia secunda* over Very Open Tussock Grassland of *Schizachyrium fragile*, *Eragrostis eriopoda* and *Aristida holathera* var. *holathera***Veg Condition** Very good**Fire Age** Moderate**Notes** Aspect: N/A

Bare Ground: 40%

Litter Cover: 0% Logs, +% Twigs, 5% Lvs

Disturbance: Rubbish and tracks near by

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia stellaticeps</i>	+	0.5 m	PI083.01	
<i>Aristida holathera</i> var. <i>holathera</i>	1%	0.3 m	PI123.18	
<i>Bulbostylis barbata</i>	+	0.1 m	PI121.05	
<i>Calandrinia pentavalvis</i>	+	0.3 m	PI123.38	
<i>Cleome viscosa</i>	+	1 m	PI065.17	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.2 m	PI084.06	
<i>Crotalaria ramosissima</i>	+	0.3 m	PI027.05	
<i>Drosera indica</i>	+	0.2 m	PI045.01	
<i>Eragrostis eriopoda</i>	2%	0.3 m	PI084.04	
<i>Euphorbia alsiniflora</i>	+	0.3 m	PI123.36	
<i>Fimbristylis dichotoma</i>	+	0.3 m	PI121.06	
<i>Fimbristylis simulans</i>	+	0.3 m	PI014.02	
<i>Gomphrena sordida</i>	+	cr	PI014.05	
<i>Heliotropium inexplicitum</i>	+	0.2 m	PI014.04	
<i>Hybanthus aurantiacus</i>	+	0.3 m	PI123.03	
<i>Mitrasacme connata</i>	+	0.2 m	PI010.03	
<i>Murdannia graminea</i>	+	0.3 m	PI020.10	
<i>Portulaca pilosa</i>	+	0.3 m	PI123.17	
<i>Ptilotus polystachyus</i>	+	0.3 m	PI076.02	
<i>Schizachyrium fragile</i>	2%	0.3 m	PI076.06	
<i>Senna notabilis</i>	+	0.2 m	PI123.20	
<i>Sida</i> sp. verrucose glands (F.H. Mollemans 2423)	+	0.2 m	PI014.01	
<i>Stackhousia intermedia</i>	+	0.2 m	PI046.03	
<i>Triodia secunda</i>	55%	0.3 m	PI121.07	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.3 m	PI083.02	
<i>Zornia muelleriana</i>	+	0.3 m	PI014.03	

Port Hedland RS Site PI019**Described by** EC **Date** 29/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 668251 mE 7747759 mN
Habitat Sand plain
Soil Light orange brown sandy loam
Rock Type N/A
Vegetation Low Open Shrubland of *Acacia stellaticeps* over Hummock Grassland of *Triodia secunda* over Very Open Tussock Grassland of *Eriachne mucronata*
Veg Condition Excellent to very good
Fire Age Old
Notes Aspect: N/A
 Bare Ground: 25%
 Litter Cover: 0% Logs, 0% Twigs, +% Lvs
 Disturbance: Tracks near by

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	+	0.8 m	PI076.14	
<i>Acacia stellaticeps</i>	2%	0.5 m	PI083.01	
<i>Aristida inaequiglumis</i>	+	0.4 m	PI034.08	
<i>Bulbostylis barbata</i>	+	0.2 m	PI121.05	
<i>Calandrinia pentavalvis</i>	+	0.3 m	PI123.38	
<i>Cassytha capillaris</i>	+	cr	PI019.05	
<i>Commelina ensifolia</i>	(+)	cr	PI019.02	
<i>Crotalaria ramosissima</i>	+	0.2 m	PI027.05	
<i>Cyperus cunninghamii</i> subsp. <i>cunninghamii</i>	+	0.3 m	PI034.06	
<i>Desmodium filiforme</i>	+	cr	PI019.04	
<i>Drosera indica</i>	+	0.2 m	PI045.01	
<i>Eriachne mucronata</i>	10%	0.3 m	PI076.13	
<i>Euphorbia alsiniflora</i>	+	0.2 m	PI123.36	
<i>Fimbristylis dichotoma</i>	+	0.3 m	PI121.06	
<i>Hybanthus aurantiacus</i>	+	0.2 m	PI123.03	
<i>Indigofera linifolia</i>	+	0.3 m	PI076.10	
<i>Indigofera</i> sp.	+	0.2 m	PI019.03	Material inadequate
<i>Mitrasacme connata</i>	+	0.2 m	PI072.07	
<i>Murdannia graminea</i>	+	0.4 m	PI020.10	
<i>Panicum decompositum</i>	+	0.3 m	PI018.03	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.2 m	PI083.12	
<i>Polygala linariifolia</i>	+	0.2 m	PI019.01	
<i>Ptilotus polystachyus</i>	+	0.3 m	PI076.02	
<i>Schizachyrium fragile</i>	+	0.2 m	PI076.06	
<i>Stackhousia intermedia</i>	+	0.3 m	PI046.03	
<i>Triodia secunda</i>	70%	0.3 m	PI121.07	
<i>Vigna lanceolata</i> var. <i>filiiformis</i>	+	0.3 m	PI020.01	
<i>Whiteochloa airoides</i>	+	0.4 m	PI018.01	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI084.03	

Port Hedland RS Site PI020**Described by** EC **Date** 29/06/2011 **Type** Q 50x50 m**Location** Port Hedland**MGA Zone** 50 666950 mE 7746092 mN**Habitat** Plain**Soil** Light orange brown loam**Rock Type****Vegetation** Low Open Shrubland of *Acacia stellaticeps* over Hummock Grassland of *Triodia schinzii* and *Triodia secunda* and Very Open Tussock Grassland of *Eriachne mucronata* and *Bulbostylis barbata***Veg Condition** Excellent to very good**Fire Age** Moderate to old**Notes** Aspect: N/A

Bare Ground: 10%

Litter Cover: 0% Logs, 0% Twigs, 30% Lvs

Disturbance: Tracks near by and in site

Dense but lots of small herbs and dead plants

**SPECIES LIST:**

Quad	Name	Cover	C Class	Height	Specimen	Notes
	<i>Acacia stellaticeps</i>	5%		0.4 m	PI083.01	
	<i>Aristida holathera</i> var. <i>holathera</i>	+		0.3 m	PI123.18	
	<i>Aristida inaequiglumis</i>	+		0.4 m	PI034.08	
	<i>Bulbostylis barbata</i>	1%		0.1 m	PI121.05	
	<i>Calandrinia pentavalvis</i>	+		0.2 m	PI123.38	
	<i>Calandrinia pumila</i>	+		0.1 m	PI020.08	
	<i>Chrysopogon fallax</i>	+		0.3 m	PI084.10	
	<i>Cyperus cunninghamii</i> subsp. <i>cunninghamii</i>	1%		0.4 m	PI020.05	
	<i>Drosera burmanni</i>	+		0.1 m	PI020.07	
	<i>Drosera indica</i>	2%		0.1 m	PI045.01	
	<i>Eriachne mucronata</i>	2%		0.3 m	PI076.13	
	<i>Fimbristylis simulans</i>	+		0.3 m	PI072.08	
	<i>Goodenia stobbsiana</i>	+		0.3 m	PI123.23	
	<i>Mimulus gracilis</i>	+		0.2 m	PI020.06	
	<i>Mitrasacme connata</i>	1%		0.3 m	PI072.07	
	<i>Murdannia graminea</i>	+		0.2 m	PI020.10	Range ext
	<i>Paraneurachne muelleri</i>	+		0.3 m	PI084.09	
	<i>Pluchea rubelliflora</i>	+		0.2 m	PI020.04	
	<i>Polycarpha corymbosa</i> var. <i>corymbosa</i>	+		0.2 m	PI083.12	
	<i>Polygala linariifolia</i>	+		0.1 m	PI033.02	
	<i>Pterocaulon sphacelatum</i>	+		0.2 m	PI020.02	
	<i>Ptilotus fusiformis</i>	+		0.3 m	PI083.08	
	<i>Schizachyrium fragile</i>	+		0.3 m	PI076.06	
	<i>Streptoglossa decurrens</i>	+		0.2 m	PI121.02	
	<i>Synaptantha tillaeacea</i> var. <i>tillaeacea</i>	+		0.1 m	PI020.03	
	<i>Triodia schinzii</i>	5%		0.3 m	PI020.09	
	<i>Triodia secunda</i>	25%		0.3 m	PI121.07	
	<i>Vigna lanceolata</i> var. <i>filiformis</i>	+		0.3 m	PI020.01	

Port Hedland RS Site PI021**Described by** LD **Date** 29/06/2011 **Type** Q 50x50 m

Location Port Hedland

MGA Zone 50 672073 mE 7744505 mN

Habitat Sandy plain

Soil Orange Brown sandy loam

Rock Type N/A

Vegetation Scattered Low Shrubs of *Acacia stellaticeps* over Open Hummock Grassland of *Triodia epactia* over Open Tussock Grassland of *Eriachne mucronata* and *Chrysopogon fallax*

Veg Condition Excellent

Fire Age Moderate

Notes Aspect: N/A
Bare Ground: 42%
Litter Cover: 0% Logs, +% Twigs, +% Lvs
Disturbance: Tracks and mining near by

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia stellaticeps</i>	1%	0.4 m	PI065.01	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	+	1 m	PI150.07	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.4 m	PI094.04	
<i>Bonamia alatisemina</i>	+	0.1 m	PI117.11	
<i>Bulbostylis barbata</i>	+	0.1 m	PI090.18	
<i>Calandrinia pentavalvis</i>	+	0.1 m	PI066.03	
<i>Cassytha capillaris</i>	+	cr	PI091.09	
<i>Chrysopogon fallax</i>	3%	0.6 m	PI051.04	
<i>Cleome viscosa</i>	+	0.3 m	PI065.17	
<i>Cyperus cunninghamii</i> subsp. <i>cunninghamii</i>	+	0.3 m	PI021.06	
<i>Eragrostis speciosa</i>	+	1 m	PI022.20	
<i>Eriachne mucronata</i>	20%	0.3 m	PI021.05	
<i>Euphorbia alsiniflora</i>	+	0.1 m	PI117.03	
<i>Evolvulus alsinoides</i> var. <i>decumbens</i>	+	0.2 m	PI094.10	
<i>Hybanthus aurantiacus</i>	+	0.2 m	PI043.13	
<i>Ipomoea muelleri</i>	+	cr	PI021.04	
<i>Mitrasacme connata</i>	+	0.1 m	PI010.03	
<i>Pluchea tetranthera</i>	1%	0.3 m	PI066.22	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI058.10	
<i>Pterocaulon sphacelatum</i>	+	0.3 m	PI021.02	
<i>Ptilotus fusiformis</i>	+	0.4 m	PI065.28	
<i>Ptilotus polystachyus</i>	+	0.4 m	PI025.13	
<i>Salsola tragus</i> subsp. <i>grandiflora</i>	+	0.2 m	PI091.15	
<i>Schizachyrium fragile</i>	+	0.3 m	PI075.02	
<i>Triodia epactia</i>	28%	0.3 m	PI021.01	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI043.08	

Port Hedland RS Site PI022**Described by** LD **Date** 29/06/2011 **Type** Q 70x30 m

Location Port Hedland
MGA Zone 50 673789 mE 7742632 mN
Habitat Major Drainage line and banks
Soil Orange Brown sandy loam
Rock Type N/A
Vegetation Low Open Woodland of *Eucalyptus victrix* over Open Shrubland of *Acacia trachycarpa* and *Acacia tumida* var. *pilbarensis* over Very Open Hummock Grassland of *Triodia epactia*
Veg Condition Very good
Fire Age Moderate
Notes Aspect: N/A
 Bare Ground: 93%
 Litter Cover: 0% Logs, +% Twigs, 1% Lvs
 Disturbance: Tracks, rubbish and weeds

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia ancistrocarpa</i>	+	1-2 m	PI022.01	Hybrid with unknown
<i>Acacia colei</i> var. <i>colei</i>	+	1-2 m	PI091.12	
<i>Acacia trachycarpa</i>	7%	1.5-2 m	PI107.02	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	2%	1-2 m	PI150.07	
<i>Amaranthus undulatus</i>	+	0.2 m	PI022.10	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.2 m	PI094.04	
<i>Bonamia media</i> var. <i>villosa</i>	+	0.1 m	PI022.04	
<i>Bulbostylis barbata</i>	+	0.1 m	PI090.18	
<i>Calandrinia pentavalvis</i>	+	0.1 m	PI022.02	
* <i>Cenchrus ciliaris</i>	1%	0.4 m	PI103.06	
<i>Chloris pectinata</i>	+	0.3 m	PI022.16	
<i>Chrysopogon fallax</i>	+	0.6 m	PI051.04	
<i>Cleome viscosa</i>	+	0.5 m	PI065.17	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.3 m	PI094.08	
<i>Crotalaria cunninghamii</i> subsp. <i>sturtii</i>	+	0.7 m	PI022.13	PH; 274-275
<i>Cyperus xiiocarpus</i>	+	0.3 m	PI022.03	
<i>Dysphania kalpari</i>	+	0.1 m	PI022.09	
<i>Dysphania saxatilis</i>	+	0.2 m	PI090.11	
<i>Eragrostis cumingii</i>	+	0.2 m	PI080.06	
<i>Eragrostis eriopoda</i>	+	0.2 m	PI090.04	
<i>Eragrostis speciosa</i>	+	0.3-0.7 m	PI022.06	
<i>Eriachne aristidea</i>	+	0.2 m	PI063.03	
<i>Eriachne mucronata</i>	+	0.2 m	PI049.01	
<i>Eucalyptus victrix</i>	4%	7-10 m	PI022.14	
<i>Euphorbia alsiniflora</i>	+	0.2 m	PI117.03	
<i>Euphorbia australis</i>	+	0.3 m	PI139.02	
<i>Fimbristylis oxystachya</i>	+	0.1 m	PI025.05	
<i>Hybanthus aurantiacus</i>	+	0.3 m	PI043.13	

<i>Ipomoea muelleri</i>	+	cr	PI103.12	
<i>Mollugo molluginea</i>	+	0.1 m	PI132.04	
<i>Paspalidium tabulatum</i>	+	0.2 m	PI117.07	
<i>Pluchea rubelliflora</i>	+	0.05 m	PI154.10	
<i>Pluchea tetranthera</i>	+	0.3 m	PI022.18	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI058.10	
* <i>Portulaca oleracea</i>	+	0.05 m	PI128.04	
<i>Portulaca pilosa</i>	+	0.2 m	PI090.15	
<i>Ptilotus fusiformis</i>	+	0.1 m	PI065.28	
<i>Schizachyrium fragile</i>	+	0.1 m	PI075.02	
<i>Senna notabilis</i>	+	0.3 m	PI051.12	
<i>Senna venusta</i>	+	0.6 m	PI022.11	
<i>Setaria dielsii</i>	+	0.3 m	PI022.17	
<i>Sida rohlenae</i> subsp. <i>rohlenae</i>	+	0.2 m	PI154.05	
<i>Sorghum</i> sp.	+	0.8 m	PI022.19	Material inadequate
<i>Stemodia grossa</i>	+	0.2 m	PI022.21	
<i>Striga squamigera</i>	+	0.2 m	PI022.15	
<i>Synaptantha tillaeacea</i> var. <i>tillaeacea</i>	+	0.01 m	PI022.08	
<i>Triodia epactia</i>	5%	0.4 m	PI022.07	
<i>Wahlenbergia tumidifructa</i>	+	0.2 m	PI022.05	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI043.08	

Port Hedland RS Site PI023

Described by BW **Date** 29/06/2011 **Type** Q **50x50 m**

Location Port Hedland
MGA Zone 50 671444 mE 7743570 mN
Habitat Sand plain
Soil Orange brown clayey sand
Rock Type N/A
Vegetation Low Open Shrubland of *Acacia stellaticeps* over Very Open Hummock Grassland of *Triodia schinzii*
Veg Condition Pristine
Fire Age Moderate
Notes Aspect: N/A
 Bare Ground: 95%
 Litter Cover: 0% Logs, +% Twigs, +% Lvs
 Disturbance: None



SPECIES LIST:

Name	Cover	Height	Specimen	Notes
<i>Acacia stellaticeps</i>	6%	0.5 m	PI043.01	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.3 m	PI049.07	
<i>Bonamia rosea</i>	+	0.3 m	PI030.04	
<i>Bulbostylis barbata</i>	+	0.1 m	PI129.01	
<i>Chrysopogon fallax</i>	+	0.4 m	PI042.09	
<i>Crotalaria ramosissima</i>	+	0.3 m	PI029.01	
<i>Eragrostis eriopoda</i>	+	0.3 m	PI047.02	
<i>Eriachne aristidea</i>	+	0.3 m	PI136.03	
<i>Euphorbia alsiniflora</i>	+	0.2 m	PI056.08	
<i>Indigofera monophylla</i>	+	0.3 m	PI052.03	
<i>Mollugo molluginea</i>	+	0.2 m	PI043.29	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.2 m	PI043.06	
<i>Ptilotus astrolasius</i>	+	0.3 m	PI056.18	
<i>Ptilotus calostachyus</i>	+	0.7 m	PI140.03	
<i>Ptilotus fusiformis</i>	+	0.4 m	PI043.11	
<i>Ptilotus polystachyus</i>	+	0.4 m	PI030.03	
<i>Triodia schinzii</i>	4%	0.4 m	PI023.01	

Port Hedland RS Site PI024**Described by** HA**Date** 29/06/2011 **Type** Q

50x50 m

Location Port Hedland**MGA Zone** 50 672001 mE 7741592 mN**Habitat** Sand plain**Soil** Orange brown loamy sand**Rock Type** N/A**Vegetation** Low Open Shrubland of *Acacia stellaticeps* over Hummock Grassland of *Triodia schinzii* and *Triodia lanigera***Veg Condition** Excellent**Fire Age** Moderate**Notes** Aspect: N/A
Bare Ground: 50%
Litter Cover: +% Logs, +% Twigs, +% Lvs
Disturbance: None**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia stellaticeps</i>	5%	0.5 m	PI070.01	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.2 m	PI070.10	
<i>Aristida inaequiglumis</i>	+	0.8 m	PI070.24	
<i>Bonamia rosea</i>	+	0.2 m	PI088.02	
<i>Bulbostylis barbata</i>	+	0.1 m	PI070.17	
* <i>Cenchrus ciliaris</i>	+	0.3 m	PI070.29	
<i>Codonocarpus cotinifolius</i>	+	1 m	PI050.06	
<i>Cucumis maderaspatanus</i>	+	cr	PI077.11	
<i>Dolichandrone heterophylla</i>	+	1 m	PI148.05	
<i>Dysphania saxatilis</i>	+	0.3 m	PI053.07	
<i>Eriachne mucronata</i>	+	0.3 m	PI024.02	
<i>Euphorbia alsiniflora</i>	+	0.15 m	PI072.10	
<i>Fimbristylis dichotoma</i>	+	0.3 m	PI081.07	
<i>Fimbristylis simulans</i>	+	0.1 m	PI072.08	
<i>Goodenia microptera</i>	+	0.4 m	PI040.12	
<i>Goodenia stobbsiana</i>	+	0.5 m	PI024.04	
<i>Hybanthus aurantiacus</i>	+	0.2 m	PI099.02	
<i>Mitrasacme connata</i>	+	0.2 m	PI072.07	
<i>Mollugo molluginea</i>	+	0.1 m	PI070.35	
<i>Pimelea ammocharis</i>	+	0.6 m	PI070.23	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI072.02	
* <i>Portulaca oleracea</i>	+	0.2 m	PI086.11	
<i>Ptilotus calostachyus</i>	+	0.8 m	PI032.04	
<i>Schizachyrium fragile</i>	+	0.3 m	PI110.05	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> x subsp. <i>helmsii</i>	+	1 m	PI024.05	
<i>Triodia lanigera</i>	2%	0.3 m	PI024.03	
<i>Triodia schinzii</i>	45%	0.5 m	PI024.01	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI072.06	

Port Hedland RS Site PI025**Described by** LD **Date** 23/06/2011 **Type** Q

50x50 m

Location Port Hedland
MGA Zone 50 662119 mE 7744614 mN
Habitat Plain
Soil Orange brown sandy loam
Rock Type N/A
Vegetation Low Open Shrubland of *Acacia stellaticeps* over Open Hummock Grassland of *Triodia schinzii* and *Triodia epactia*
Veg Condition Excellent
Fire Age Moderate to old
Notes Aspect: N/A
 Bare Ground: 70%
 Litter Cover: 0% Logs, 1% Twigs, 2% Lvs
 Disturbance: Infrastructure near by

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia stellaticeps</i>	4%	0.6 m	PI065.01	
<i>Bonamia rosea</i>	+	0.4 m	PI025.01	
<i>Bulbostylis barbata</i>	+	0.1 m	PI066.04	
<i>Chrysopogon fallax</i>	+	0.4 m	PI051.04	
<i>Desmodium filiforme</i>	+	0.05 m	PI025.11	
<i>Digitaria brownii</i>	+	0.2 m	PI025.07	
<i>Drosera indica</i>	+	0.1 m	PI045.01	
<i>Eriachne helmsii</i>	+	0.4 m	PI027.02	
<i>Euphorbia alsiniflora</i>	+	0.1 m	PI025.12	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.2 m	PI025.06	
<i>Fimbristylis oxystachya</i>	+	0.1 m	PI025.05	
<i>Hybanthus aurantiacus</i>	+	0.1 m	PI043.13	
<i>Kennedia prorepens</i>	+	cr	PI025.08	
<i>Mitrasacme connata</i>	+	0.2 m	PI025.09	
<i>Mollugo molluginea</i>	+	0.1 m	PI132.04	
<i>Ptilotus fusiformis</i>	+	0.4 m	PI065.28	
<i>Ptilotus polystachyus</i>	+	0.5 m	PI025.13	
<i>Senna notabilis</i>	+	0.1 m	PI051.12	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI058.05	
<i>Sida</i> sp. verrucose glands (F.H. Mollemans 2423)	+	0.3 m	PI025.10	
<i>Solanum diversiflorum</i>	+	0.2 m	PI048.09	
<i>Solanum ellipticum</i>	+	0.4 m	PI065.26	
<i>Triodia epactia</i>	9%	0.4 m	PI025.02	
<i>Triodia schinzii</i>	15%	0.4 m	PI025.03	
<i>Waltheria indica</i>	+	0.3 m	PI065.27	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI043.08	

Port Hedland RS Site PI026**Described by** BW **Date** 23/06/2011 **Type** Q 50x50 m**Location** Port Hedland**MGA Zone** 50 662355 mE 7743634 mN**Habitat** Plain**Soil** Orange brown clayey sand**Rock Type** N/A**Vegetation** Scattered Low Trees of *Eucalyptus victrix* over Low Open Shrubland of *Acacia stellaticeps* over Hummock Grassland of *Triodia schinzii***Veg Condition** Excellent**Fire Age** Old**Notes** Aspect: N/A
Bare Ground: 45%
Litter Cover: +% Logs, 1% Twigs, 3% Lvs
Disturbance: Tracks near by**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia stellaticeps</i>	2%	0.6 m	PI043.01	
<i>Alternanthera nana</i>	+	0.3 m	PI026.07	
<i>Bonamia alatisemina</i>	+	0.2 m	PI026.11	
<i>Bulbostylis barbata</i>	+	0.1 m	PI067.01	
<i>Calandrinia pentavalvis</i>	+	0.1 m	PI049.11	
<i>Carissa lanceolata</i>	+	0.7 m	PI052.07	
<i>Chrysopogon fallax</i>	+	0.6 m	PI042.09	
<i>Cleome viscosa</i>	(+)	0.3 m	PI026.10	
<i>Crotalaria ramosissima</i>	+	0.2 m	PI026.01	
* <i>Cucumis melo subsp. agrestis</i>	+	0.2 m	PI026.08	
<i>Cyperus vaginatus</i>	+	0.3 m	PI026.12	
<i>Drosera indica</i>	+	0.1 m	PIOPBW01a	
<i>Eriachne mucronata</i>	+	0.3 m	PI049.01	
<i>Eucalyptus victrix</i>	1%	7 m	PI026.05	
<i>Glycine canescens</i>	+	0.2 m	PI026.03	
<i>Hybanthus aurantiacus</i>	+	0.2 m	PI026.02	
<i>Mitrasacme connata</i>	+	0.2 m	PI071.03	
<i>Ptilotus fusiformis</i>	+	0.4 m	PI043.11	
<i>Schizachyrium fragile</i>	+	0.3 m	PI026.04	
<i>Senna notabilis</i>	+	0.3 m	PI043.09	
<i>Solanum ellipticum</i>	+	0.3 m	PI026.13	
<i>Triodia schinzii</i>	40%	0.5 m	PI026.06	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI042.06	
<i>Zornia muelleriana</i>	+	0.2 m	PI026.09	

Port Hedland RS Site PI027**Described by** LD **Date** 23/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 664708 mE 7744848 mN
Habitat Plain
Soil Orange brown sandy loam
Rock Type N/A
Vegetation Scattered Low Shrubs of *Acacia stellaticeps* over Very Open Hummock Grassland of *Triodia schinzii* over Very Open Tussock Grassland of *Eriachne helmsii*
Veg Condition Good
Fire Age Moderate
Notes Aspect: N/A
 Bare Ground: 70%
 Litter Cover: 0% Logs, +% Twigs, 1% Lvs
 Disturbance: Powerlines, other infrastructure and a main highway near by

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia stellaticeps</i>	1%	0.6 m	PI065.01	
<i>Bonamia alatisemina</i>	+	0.1 m	PI027.06	
<i>Bonamia media</i> var. <i>villosa</i>	+	0.1 m	PI027.06a	
<i>Bulbostylis barbata</i>	+	0.1 m	PI027.03	
<i>Chrysopogon fallax</i>	+	0.6 m	PI051.04	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.3 m	PI027.04	
<i>Crotalaria ramosissima</i>	+	0.2 m	PI027.05	
<i>Cucumis maderaspatanus</i>	+	cr	PI045.15	
<i>Eragrostis eriopoda</i>	+	0.2 m	PI065.04	
<i>Eriachne helmsii</i>	5%	0.3 m	PI027.02	
<i>Euphorbia alsiniflora</i>	+	0.1 m	PI025.12	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.05 m	PI027.09	
<i>Glycine canescens</i>	+	0.1 m	PI027.08	
<i>Hybanthus aurantiacus</i>	+	0.2 m	PI043.13	
<i>Mollugo molluginea</i>	+	0.1 m	PI132.04	
<i>Portulaca pilosa</i>	+	0.2 m	PI027.11	
<i>Ptilotus fusiformis</i>	+	0.4 m	PI065.28	
<i>Ptilotus polystachyus</i>	+	0.7 m	PI025.13	
<i>Senna notabilis</i>	+	0.2 m	PI051.12	
<i>Sida</i> sp. B Kimberley Flora (A.A. Mitchell 2745)	+	0.3 m	PI027.07	
<i>Solanum ellipticum</i>	+	0.4 m	PI027.12	
<i>Tribulopsis angustifolia</i>	+	cl	PI027.10	
<i>Triodia schinzii</i>	6%	0.3 m	PI027.01	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI043.08	

Port Hedland RS Site PI028**Described by** BW **Date** 23/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 665068 mE 7744485 mN
Habitat Plain
Soil Orange brown sand
Rock Type N/A
Vegetation Low Open Shrubland of *Acacia stellaticeps* over Open Hummock Grassland of *Triodia epactia* and *Triodia schinzii*
Veg Condition Excellent
Fire Age Moderate
Notes Aspect: N/A
 Bare Ground: 80%
 Litter Cover: 0% Logs, +% Twigs, 2% Lvs
 Disturbance:

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia stellaticeps</i>	3%	0.5 m	PI043.01	
<i>Bulbostylis barbata</i>	+	0.05 m	PI067.01	
<i>Calandrinia pentavalvis</i>	+	0.1 m	PI049.11	
<i>Chrysopogon fallax</i>	+	0.6 m	PI042.09	
<i>Digitaria brownii</i>	+	0.3 m	PI028.04	
<i>Drosera indica</i>	+	0.1 m	PIOPBW01a	
<i>Eriachne mucronata</i>	+	0.3 m	PI049.01	
<i>Fimbristylis simulans</i>	+	0.3 m	PI028.03	
<i>Indigofera monophylla</i>	+	0.4 m	PI028.02	
<i>Mitrasacme connata</i>	+	0.2 m	PI071.03	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI043.06	
<i>Polymeria ambigua</i>	+	cr	PI028.01	
<i>Ptilotus fusiformis</i>	+	0.3 m	PI043.11	
<i>Triodia epactia</i>	10%	0.4 m	PI028.05	
<i>Triodia schinzii</i>	4%	0.5 m	PI026.06	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI042.06	

Port Hedland RS Site PI029

Described by BW Date 27/06/2011 Type Q 50x50 m

Location Port Hedland
MGA Zone 50 665697 mE 7743618 mN
Habitat Sand plain
Soil Orange brown clayey sand
Rock Type N/A
Vegetation Low Open Shrubland of *Acacia stellaticeps* and *Bonamia rosea* over Very Open Hummock Grassland of *Triodia epactia*
Veg Condition Excellent
Fire Age Moderate to old
Notes Aspect: N/A
 Bare Ground: 85%
 Litter Cover: 0% Logs, 1% Twigs, 2% Lvs
 Disturbance: Road near by

**SPECIES LIST:**

Name	Cover	Height	Specimen Notes
<i>Acacia colei</i> var. <i>colei</i>	+	1.5 m	PI043.16
<i>Acacia stellaticeps</i>	4%	0.5 m	PI043.01
<i>Bonamia rosea</i>	1%	0.4 m	PI030.04
<i>Bulbostylis barbata</i>	+	0.1 m	PI129.01
<i>Calandrinia stagnensis</i>	+	0.2 m	PI145.04
<i>Chrysopogon fallax</i>	+	0.5 m	PI042.09
<i>Crotalaria ramosissima</i>	+	0.4 m	PI029.01
* <i>Cucumis melo</i> subsp. <i>agrestis</i>	+	cr	PI026.08
<i>Digitaria brownii</i>	+	0.2 m	PI028.04
<i>Dysphania saxatilis</i>	+	0.2 m	PI056.15
<i>Eragrostis eriopoda</i>	+	0.4 m	PI047.02
<i>Eriachne mucronata</i>	+	0.4 m	PI049.01
<i>Euphorbia australis</i>	+	prostrate	PI104.02
<i>Hakea lorea</i> subsp. <i>lorea</i>	+	1.5 m	PI043.07
<i>Indigofera monophylla</i>	+	0.3 m	PI052.03
<i>Portulaca pilosa</i>	+	0.3 m	PI030.01
<i>Ptilotus fusiformis</i>	+	0.4 m	PI043.11
<i>Ptilotus polystachyus</i>	+	0.5 m	PI030.03
<i>Santalum lanceolatum</i>	+	1.2 m	PI029.02
<i>Triodia epactia</i>	8%	0.4 m	PI029.03
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI042.06

Port Hedland RS Site PI030**Described by** BW **Date** 26/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 666006 mE 7741507 mN
Habitat Plain
Soil Orange brown silty sand
Rock Type N/A
Vegetation Scattered Low Trees of *Corymbia candida* subsp. *dipsodes* over Very Open Hummock Grassland of *Triodia epactia* over Very Open Tussock Grassland of *Eriachne mucronata*
Veg Condition Excellent
Fire Age Moderate
Notes Aspect: N/A
 Bare Ground: 90%
 Litter Cover: 0% Logs, +% Twigs, 1% Lvs
 Disturbance: Tracks near by

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia stellaticeps</i>	+	0.4 m	PI043.01	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.4 m	PI049.07	
<i>Bonamia rosea</i>	1%	0.4 m	PI030.04	
<i>Bulbostylis barbata</i>	+	0.1 m	PI056.01	
<i>Calandrinia stagnensis</i>	+	0.2 m	PI145.04	
<i>Carissa lanceolata</i>	+	1.6 m	PI052.07	
<i>Chrysopogon fallax</i>	+	0.6 m	PI042.09	
<i>Cleome viscosa</i>	+	0.5 m	PI026.10	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.4 m	PI042.04	
<i>Corchorus tectus</i>	+	0.4 m	PI030.02	
<i>Corymbia candida</i> subsp. <i>dipsodes</i>	1%	1.8 m	PI146.07	
<i>Eragrostis eriopoda</i>	+	0.4 m	PI047.02	
<i>Eriachne mucronata</i>	6%	0.4 m	PI049.01	
<i>Euphorbia australis</i>	+	prostrate	PI104.02	
<i>Goodenia microptera</i>	+	0.4 m	PI060.02	
<i>Gossypium australe</i>	+	0.6 m	PI104.08	
<i>Heliotropium muticum</i>	+	0.3 m	PI030.06	12 ind. Photo; 592-596 LD
<i>Hybanthus aurantiacus</i>	+	0.4 m	PI043.13	
<i>Indigofera monophylla</i>	+	0.4 m	PI052.03	
<i>Mitrasacme connata</i>	+	0.2 m	PI049.10	
<i>Mollugo molluginea</i>	+	0.2 m	PI043.29	
<i>Paraneurachne muelleri</i>	+	0.2 m	PI043.15	
<i>Pluchea tetranthera</i>	+	0.5 m	PI064.02	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI043.06	
<i>Portulaca pilosa</i>	+	0.3 m	PI030.01	
<i>Ptilotus astrolasius</i>	+	0.4 m	PI056.18	
<i>Ptilotus fusiformis</i>	+	0.4 m	PI043.11	
<i>Ptilotus polystachyus</i>	+	0.6 m	PI030.03	

<i>Senna notabilis</i>	+	0.4 m	PI043.09
<i>Sida clementii</i>	+	0.4 m	PI069.01
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.3 m	PI043.14
<i>Trianthema pilosa</i>	+	0.2 m	PI052.09
<i>Triodia epactia</i>	2%	0.4 m	PI030.05
<i>Waltheria indica</i>	+	0.6 m	PI104.06
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI043.08

Port Hedland RS Site PI031**Described by** LD **Date** 27/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 669879 mE 7742265 mN
Habitat Sandy plain
Soil Orange brown sandy loam
Rock Type N/A
Vegetation Low Open Heath of *Acacia stellaticeps* over Open Hummock Grassland of *Triodia schinzii*
Veg Condition Excellent
Fire Age Moderate
Notes Aspect: N/A
 Bare Ground: 78%
 Litter Cover: 0% Logs, 1% Twigs, 3% Lvs
 Disturbance: Weeds

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia stellaticeps</i>	42%	0.6 m	PI065.01	
<i>Bonamia rosea</i>	+	0.2 m	PI090.02	
<i>Bulbostylis barbata</i>	+	0.1 m	PI090.18	
<i>Chrysopogon fallax</i>	+	0.4 m	PI051.04	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.1 m	PI094.08	
<i>Corymbia candida</i> subsp. <i>dipsodes</i>	+	1 m	PI051.02	
<i>Cucumis maderaspatanus</i>	+	cl	PI045.15	
<i>Euphorbia alsiniflora</i>	+	0.1 m	PI025.12	
<i>Goodenia forrestii</i>	+	0.2 m	PI031.02	
<i>Hybanthus aurantiacus</i>	+	0.3 m	PI043.13	
<i>Indigofera monophylla</i>	+	0.3 m	PI065.13	
<i>Mollugo molluginea</i>	(+)	0.1 m	PI132.04	
<i>Paraneurachne muelleri</i>	+	0.2 m	PI090.12	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.05 m	PI058.10	
<i>Polymeria ambigua</i>	+	cr	PI117.10	
<i>Portulaca pilosa</i>	+	0.1 m	PI090.15	
<i>Ptilotus astrolasius</i>	+	0.4 m	PI090.03	
<i>Ptilotus fusiformis</i>	+	0.3 m	PI065.28	
<i>Senna notabilis</i>	+	0.1 m	PI051.12	
<i>Trianthema pilosa</i>	+	0.1 m	PI065.03	
<i>Triodia schinzii</i>	16%	0.2 m	PI031.01	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI043.08	

Port Hedland RS Site PI032

Described by HA **Date** 27/06/2011 **Type** Q
Season

50x50 m

Location Port Hedland
MGA Zone 50 669913 mE 7743388 mN
Habitat Sand plain
Soil Orange brown sandy loam
Rock Type N/A
Vegetation Low Shrubland of *Acacia stellaticeps* over Hummock
 Grassland of *Triodia schinzii*
Veg Condition Excellent
Fire Age Moderate
Notes Aspect: N/A
 Bare Ground: 30%
 Litter Cover: +% Logs, 1% Twigs, +% Lvs
 Disturbance: None (near by town)

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia stellaticeps</i>	35%	0.5 m	PI070.01	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.3 m	PI070.10	
<i>Bonamia alatisemina</i>	+	cr	PI053.02	
<i>Bonamia rosea</i>	+	0.3 m	PI088.02	
<i>Bulbostylis barbata</i>	+	0.1 m	PI070.17	
<i>Cassyltha capillaris</i>	+	cr	PI055.03	
<i>Chrysopogon fallax</i>	+	0.7 m	PI070.21	
<i>Cleome viscosa</i>	+	0.3 m	PI099.07	
<i>Crotalaria ramosissima</i>	+	0.3 m	PI089.02	
<i>Dodonaea coriacea</i>	+	0.5 m	PI032.03	
<i>Eriachne benthamii</i>	+	0.3 m	PI032.02	
<i>Euphorbia alsiniflora</i>	+	0.15 m	PI072.10	
<i>Hakea lorea</i> subsp. <i>lorea</i>	+	0.7 m	PI070.05	
<i>Heliotropium inexplicitum</i>	+	0.1 m	PI032.09	
<i>Hybanthus aurantiacus</i>	+	0.4 m	PI099.02	
<i>Indigofera monophylla</i>	+	0.4 m	PI072.03	
<i>Keraudrenia velutina</i> subsp. <i>elliptica</i>	+	0.5 m	PI032.06	
<i>Mollugo molluginea</i>	+	0.15 m	PI070.35	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI072.02	
<i>Polygala linariifolia</i>	+	0.1 m	PI032.07	
<i>Polymeria ambigua</i>	+	cr	PI086.06	
<i>Ptilotus astrolasius</i>	+	0.5 m	PI089.05	
<i>Ptilotus calostachyus</i>	+	0.6 m	PI032.04	
<i>Senna notabilis</i>	+	0.15 m	PI070.14	
<i>Tephrosia simplicifolia</i>	+	0.1 m	PI032.08	Range ext
<i>Tribulopsis angustifolia</i>	+	cr	PI032.05	
<i>Triodia schinzii</i>	40%	0.4 m	PI032.01	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI072.06	

Port Hedland RS Site PI033**Described by** EC **Date** 29/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 672141 mE 7740707 mN
Habitat Plain
Soil Light orange brown sand
Rock Type N/A
Vegetation Low Open Shrubland of *Acacia stellaticeps* over Hummock Grassland of *Triodia lanigera* and *Triodia epactia*
Veg Condition Excellent
Fire Age Old
Notes Aspect: N/A
 Bare Ground: 40%
 Litter Cover: 0% Logs, 0% Twigs, 1% Lvs
 Disturbance:

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	+	1.5 m	PI076.14	
<i>Acacia stellaticeps</i>	10%	0.5 m	PI083.01	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.3 m	PI123.18	
<i>Aristida inaequiglumis</i>	+	0.4 m	PI034.08	
<i>Bonamia alatisemina</i>	+	0.1 m	PI083.10	
<i>Bonamia rosea</i>	+	0.3 m	PI033.01	
<i>Bulbostylis barbata</i>	+	0.1 m	PI121.05	
<i>Chrysopogon fallax</i>	+	0.4 m	PI084.10	
<i>Dysphania saxatilis</i>	+	0.1 m	PI090.11	
<i>Eriachne mucronata</i>	+	0.3 m	PI076.13	
<i>Euphorbia alsiniflora</i>	+	0.2 m	PI123.36	
<i>Hakea lorea</i> subsp. <i>lorea</i>	+	1.2 m	PI043.07	
<i>Indigofera monophylla</i>	+	0.3 m	PI123.02	
<i>Paraneurachne muelleri</i>	+	0.3 m	PI084.09	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI083.12	
<i>Polygala linariifolia</i>	+	0.1 m	PI033.02	
<i>Ptilotus calostachyus</i>	+	0.4 m	PI109.10	
<i>Ptilotus fusiformis</i>	+	0.3 m	PI083.08	
<i>Ptilotus polystachyus</i>	+	0.5 m	PI076.02	
<i>Schizachyrium fragile</i>	+	0.3 m	PI076.06	
<i>Solanum ellipticum</i>	+	0.3 m	PI065.26	
<i>Triodia epactia</i>	10%	0.3 m	PI076.16	
<i>Triodia lanigera</i>	40%	0.3 m	PI076.17	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI084.03	

Port Hedland RS Site PI034**Described by** EC **Date** 29/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 673314 mE 7741068 mN
Habitat Plain
Soil Light orange brown sand
Rock Type N/A
Vegetation High Open Shrubland of *Acacia tumida* var. *pilbarensis* over Scattered Shrubs of *Acacia colei* var. *colei* over Low Open Shrubland of *Acacia stellaticeps* over Hummock Grassland of *Triodia epactia* and *Triodia lanigera*
Veg Condition Excellent
Fire Age Old
Notes Aspect: N/A
 Bare Ground: 40%
 Litter Cover: 0% Logs, 0% Twigs, 1% Lvs
 Disturbance: Buffel

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	1%	1-2 m	PI076.14	
<i>Acacia sericophylla</i>	+	1 m	PI034.04	
<i>Acacia stellaticeps</i>	5%	0.5-1 m	PI083.01	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	2%	3.5 m	PI076.15	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.3 m	PI123.18	
<i>Aristida inaequiglumis</i>	+	0.4 m	PI034.08	
<i>Bonamia alatisemina</i>	+	0.1 m	PI083.10	
<i>Bulbostylis barbata</i>	+	0.1 m	PI121.05	
<i>Carissa lanceolata</i>	+	1.2 m	PI034.03	
* <i>Cenchrus ciliaris</i>	+	0.3 m	PI103.06	
<i>Cleome viscosa</i>	+	0.3 m	PI065.17	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.3 m	PI084.06	
<i>Corymbia candida</i> subsp. <i>dipsodes</i>	+	1 m	PI141.08	
<i>Cucumis maderaspatanus</i>	+	cr	PI141.04	
<i>Cyperus cunninghamii</i> subsp. <i>cunninghamii</i>	+	0.3 m	PI034.06	
<i>Eragrostis eriopoda</i>	+	0.3 m	PI084.04	
<i>Eriachne mucronata</i>	+	0.3 m	PI076.13	
<i>Euphorbia alsiniflora</i>	+	0.3 m	PI123.36	
<i>Euphorbia australis</i>	+	0.2 m	PI084.08	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.1 m	PI123.25	
<i>Goodenia microptera</i>	+	0.3 m	PI123.12	
<i>Goodenia triodiophila</i>	+	0.3 m	PI034.10	1 ind
<i>Heliotropium muticum</i>	+	0.2 m	PI034.09	1 ind
<i>Hibiscus leptocladus</i>	+	0.3 m	PI034.01	
<i>Hybanthus aurantiacus</i>	+	0.3 m	PI034.05	
<i>Indigofera monophylla</i>	+	0.3 m	PI123.02	
<i>Mollugo molluginea</i>	+	0.2 m	PI123.09	
<i>Paraneurachne muelleri</i>	+	0.3 m	PI084.09	

<i>Pluchea tetranthera</i>	+	0.3 m	PI083.11
<i>Portulaca pilosa</i>	+	0.3 m	PI123.17
<i>Ptilotus astrolasius</i>	+	0.3 m	PI034.07
<i>Ptilotus polystachyus</i>	+	0.4 m	PI076.02
<i>Schizachyrium fragile</i>	+	0.3 m	PI076.06
<i>Senna notabilis</i>	+	0.1 m	PI123.20
<i>Sida rohlenae</i> subsp. <i>rohlenae</i>	+	0.3 m	PI034.02
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.3 m	PI123.04
<i>Solanum ellipticum</i>	+	0.3 m	PI065.26
<i>Triodia epactia</i>	55%	0.3 m	PI076.16
<i>Triodia lanigera</i>	2%	0.3 m	PI076.17
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI083.02

Port Hedland RS Site PI035

Described by HA Date 29/06/2011 Type Q 50x50 m

Location Port Hedland
MGA Zone 50 674392 mE 7741369 mN
Habitat Sand plain
Soil Orange brown sandy loam
Rock Type
Vegetation Low Open Shrubland of *Acacia stellaticeps* over Hummock Grassland of *Triodia epactia* and *Triodia lanigera*
Veg Condition Excellent
Fire Age Moderate
Notes Aspect: N/A
 Bare Ground: 45%
 Litter Cover: % Logs, % Twigs, % Lvs
 Disturbance: None

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	+	1.2 m	PI070.38	
<i>Acacia sericophylla</i>	+	0.9 m	PI099.13	
<i>Acacia stellaticeps</i>	10%	0.5 m	PI070.01	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.4 m	PI070.10	
<i>Bulbostylis barbata</i>	+	0.1 m	PI070.17	
<i>Chrysopogon fallax</i>	+	1.2 m	PI070.21	
<i>Cleome viscosa</i>	+	0.4 m	PI040.10	
<i>Cucumis maderaspatanus</i>	+	cr	PI147.17	
<i>Eriachne aristidea</i>	+	0.2 m	PI070.28	
<i>Euphorbia australis</i>	+	cr	PI108.12	
<i>Fimbristylis dichotoma</i>	+	0.3 m	PI081.07	
<i>Paraneurachne muelleri</i>	+	0.2 m	PI054.09	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI072.02	
* <i>Portulaca oleracea</i>	+	0.1 m	PI086.11	
<i>Ptilotus calostachyus</i>	+	0.6 m	PI032.04	
<i>Ptilotus fusiformis</i>	+	0.4 m	PI070.22	
<i>Ptilotus polystachyus</i>	+	0.5 m	PI147.19	
<i>Schizachyrium fragile</i>	+	0.3 m	PI110.05	
<i>Solanum lasiophyllum</i>	+	0.2 m	PI070.37	
<i>Triodia epactia</i>	45%	0.5 m	PI035.01	
<i>Triodia lanigera</i>	2%	0.3 m	PI035.02	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI072.06	

Port Hedland RS Site PI036

Described by HA Date 23/06/2011 Type Q 50x50 m

Location Port Hedland
MGA Zone 50 656373 mE 7746513 mN
Habitat Sand plain
Soil
Rock Type N/A
Vegetation Scattered Low Shrubs of *Acacia stellaticeps* over Open Hummock Grassland of *Triodia schinzii* over Very Open Tussock Grassland of *Eriachne mucronata*
Veg Condition Excellent
Fire Age Moderate
Notes Aspect: N/A
 Bare Ground: 60%
 Litter Cover: +% Logs, +% Twigs, +% Lvs
 Disturbance: Some cattle tracks

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	+	0.5 m	PI070.38	
<i>Acacia stellaticeps</i>	1%	0.2 m	PI070.01	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.3 m	PI070.10	
<i>Bonamia alatisemina</i>	+	0.1 m	PI036.04	
<i>Bulbostylis barbata</i>	+	0.1 m	PI070.17	
<i>Calandrinia pentavalvis</i>	+	0.1 m	PI072.14	
<i>Chrysopogon fallax</i>	+	0.4 m	PI070.21	
<i>Cyperus dactylotes</i>	+	0.4 m	PI036.07	
<i>Digitaria brownii</i>	+	0.5 m	PI036.08	
<i>Drosera indica</i>	+	0.1 m	PI053.11	
<i>Eriachne mucronata</i>	10%	0.3 m	PI046.07	
<i>Fimbristylis simulans</i>	+	0.15 m	PI072.08	
<i>Goodenia triodiophila</i>	+	0.3 m	PI036.01	
<i>Hakea lorea</i> subsp. <i>lorea</i>	+	0.5 m	PI070.05	
<i>Hibiscus burtonii</i>	+	0.3 m	PI036.06	
<i>Hybanthus aurantiacus</i>	+	0.3 m	PI099.02	
<i>Leptosema anomalum</i>	+	0.2 m	PI153.13	
<i>Mitrasacme connata</i>	+	0.1 m	PI036.10	
<i>Mollugo molluginea</i>	+	0.15 m	PI070.35	
<i>Murdannia graminea</i>	(+)	0.1 m	PI046.13	Range ext
<i>Pluchea tetranthera</i>	+	0.3 m	PI046.18	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.15 m	PI072.02	
<i>Schizachyrium fragile</i>	+	0.2 m	PI046.12	
<i>Senna notabilis</i>	+	0.4 m	PI070.14	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.3 m	PI070.03	
<i>Stackhousia intermedia</i>	+	0.15 m	PI046.03	
<i>Tephrosia leptoclada</i>	+	0.2 m	PI036.02	
<i>Triodia schinzii</i>	30%	0.2 m	PI036.05	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI072.06	
<i>Zornia muelleriana</i>	+	cr	PI036.09	

Port Hedland RS Site PI037

Described by HA **Date** 23/06/2011 **Type** Q **50x50 m**

Location Port Hedland
MGA Zone 50 654401 mE 7747340 mN
Habitat Sand plain/saline flat
Soil Light orange sand
Rock Type N/A
Vegetation Low Open Shrubland of *Tecticornia auriculata* and *Maireana tomentosa* over Hummock Grassland of *Triodia secunda* over Scattered Tussock Grass of *Sporobolus australasicus*
Veg Condition Very good
Fire Age Old
Notes Aspect: N/A
 Bare Ground: 50%
 Litter Cover: +% Logs, +% Twigs, 1% Lvs
 Disturbance: Cattle and weeds

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
* <i>Aerva javanica</i>	+	0.4 m	PI147.05	
<i>Atriplex codonocarpa</i>	+	0.3 m	PI037.01	
* <i>Cenchrus ciliaris</i>	+	0.3 m	PI070.29	
<i>Chrysopogon fallax</i>	+	0.6 m	PI070.21	
<i>Dactyloctenium radulans</i>	+	0.15 m	PI037.14	
<i>Dichanthium sericeum</i> subsp. <i>humilius</i>	+	0.3 m	PI037.11	
<i>Eragrostis falcata</i>	+	0.3 m	PI037.18	
<i>Euphorbia alsiniflora</i>	+	0.2 m	PI040.14	
<i>Indigofera trita</i>	+	0.4 m	PI037.19	
<i>Maireana tomentosa</i>	1%	0.3 m	PI037.03	
<i>Neptunia dimorphantha</i>	+	0.2 m	PI037.20	
<i>Panicum decompositum</i>	+	0.5 m	PI037.09	
<i>Paspalidium tabulatum</i>	+	0.1 m	PI037.16	
<i>Pluchea rubelliflora</i>	+	0.15 m	PI037.15	
* <i>Portulaca oleracea</i>	+	0.1 m	PI053.03	
<i>Portulaca pilosa</i>	+	0.1 m	PI037.17	
<i>Sarcostemma viminalis</i> subsp. <i>australe</i>	+	0.3 m	PI037.10	
<i>Sesbania cannabina</i>	+	2 m	PI037.08	
<i>Sida fibulifera</i>	+	0.2 m	PI037.12	
<i>Sporobolus australasicus</i>	1%	0.1 m	PI037.07	
<i>Swainsona kingii</i>	+	cr	PI037.06	
<i>Swainsona pterostylis</i>	+	0.2 m	PI037.04	
<i>Tecticornia auriculata</i>	2%	0.6 m	PI037.02	
<i>Trianthema triquetra</i>	+	0.2 m	PI037.05	
<i>Triodia secunda</i>	40%	0.2 m	PI037.13	

Port Hedland RS **Site** PI039

Described by HA **Date** 23/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 658094 mE 7748950 mN
Habitat Mudflat
Soil Brown sandy mud
Rock Type N/A
Vegetation Low Open Heath of *Tecticornia indica* subsp. *bidens*,
Tecticornia halocnemoides subsp. *tenuis* and
Muellerolimon salicorniaceum
Veg Condition Excellent
Fire Age Old
Notes Aspect: N/A
 Bare Ground: 60%
 Litter Cover: +% Logs, +% Twigs, +% Lvs
 Disturbance: Tracks and rubbish



SPECIES LIST:

Name	Cover	Height	Specimen	Notes
<i>Eragrostis falcata</i>	+	0.15 m	PI039.04	
<i>Muellerolimon salicorniaceum</i>	10%	0.2 m	PI039.02	
<i>Tecticornia halocnemoides</i> subsp. <i>tenuis</i>	10%	0.2 m	PI039.01	
<i>Tecticornia indica</i> subsp. <i>bidens</i>	20%	0.2 m	PI039.03	

Port Hedland RS Site PI040**Described by** HA **Date** 23/06/2011 **Type** Q 100x25 m

Location Port Hedland
MGA Zone 50 652988 mE 7749119 mN
Habitat Limestone ridge top
Soil Brown loam with exposed calcrete rock
Rock Type Calcrete
Vegetation Open Shrubland of *Acacia bivenosa* over Open Hummock Grassland of *Triodia epactia* over Open Tussock of **Cenchrus ciliaris*
Veg Condition Good
Fire Age Old
Notes Aspect: N/A
 Bare Ground: 50%
 Litter Cover: +% Logs, +% Twigs, +% Lvs
 Disturbance: Buffel and Kapok

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia bivenosa</i>	3%	2 m	PI040.01	
* <i>Aerva javanica</i>	1-2%	0.4 m	PI147.05	
<i>Boerhavia coccinea</i>	+	cr	PI040.25	
<i>Bulbostylis barbata</i>	+	0.1 m	PI070.17	
* <i>Cenchrus ciliaris</i>	15%	0.4 m	PI070.29	
<i>Cleome viscosa</i>	+	0.3 m	PI040.10	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.4 m	PI070.02	
<i>Enneapogon caeruleascens</i>	+	0.1 m	PI040.17	
<i>Enneapogon</i> sp.	+	0.2 m	PI040.23	Material inadequate
<i>Eriachne mucronata</i>	+	0.3 m	PI040.22	
<i>Euphorbia alsiniflora</i>	+	0.3 m	PI040.14	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.1 m	PI040.16	
<i>Gomphrena pusilla</i>	+	0.2 m	PI040.07	
<i>Goodenia microptera</i>	+	0.2 m	PI040.12	
<i>Hakea lorea</i> subsp. <i>lorea</i>	+	1 m	PI070.05	
<i>Indigofera colutea</i>	+	0.1 m	PI040.18	
<i>Indigofera linifolia</i>	+	0.1 m	PI040.13	
<i>Indigofera monophylla</i>	+	0.3 m	PI072.03	
<i>Indigofera trita</i>	+	0.1 m	PI040.05	
<i>Melhania oblongifolia</i>	+	0.2 m	PI040.06	
<i>Myoporum montanum</i>	+	0.3 m	PI040.11	
* <i>Portulaca oleracea</i>	+	0.1 m	PI040.09	
<i>Ptilotus axillaris</i>	+	cr	PI040.03	
<i>Rhagodia eremaea</i>	+	0.3 m	PI040.15	
<i>Rhynchosia minima</i>	+	cr	PI040.04	
<i>Scaevola amblyanthera</i> var. <i>centralis</i>	+	0.2 m	PI040.08	
<i>Scaevola sericophylla</i>	+	0.2 m	PI040.19	
<i>Solanum lasiophyllum</i>	+	0.4 m	PI070.37	
<i>Trianthema pilosa</i>	+	0.15 m	PI072.13	
<i>Triodia epactia</i>	30%	0.4 m	PI040.02	
<i>Whiteochloa airoides</i>	+	0.5 m	PI040.20	

Port Hedland RS Site PI041**Described by** HA**Date** 23/06/2011 **Type** Q

100x25 m

Location Port Hedland**MGA Zone** 50 652933 mE 7746615 mN**Habitat** Sandy river**Soil** Orange brown sand**Rock Type** N/A**Vegetation** Tall Open Shrubland of *Melaleuca argentea* and *Acacia trachycarpa* over Scattered Tussock Grasses of **Cenchrus ciliaris*, *Eriachne aristidea* and *Aristida holathera* var. *holathera***Veg Condition** Very good to good**Fire Age** Old**Notes** Aspect: N/A

Bare Ground: 98%

Litter Cover: +% Logs, +% Twigs, +% Lvs

Disturbance: Lots of tracks and rubbish.

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia ampliceps</i>	+	0.5 m	PI041.06	
<i>Acacia pyrifolia</i>	+	0.4 m	PI041.02	
<i>Acacia trachycarpa</i>	1%	3 m	PI068.03	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.6 m	PI041.03	
<i>Cajanus cinereus</i>	+	1.5 m	PI068.08	
<i>Calandrinia pentavalvis</i>	+	0.2 m	PI072.14	
<i>Cassytha capillaris</i>	+	cl	PI068.21	
<i>*Cenchrus ciliaris</i>	+	0.3 m	PI070.29	
<i>Crotalaria cunninghamii</i> subsp. <i>sturtii</i>	+	1.8 m	PI041.01	
<i>Cyperus vaginatus</i>	+	0.8 m	PI068.16	
<i>Eriachne aristidea</i>	+	0.4 m	PI041.04	
<i>Euphorbia alsiniflora</i>	+	0.5 m	PI040.14	
<i>Melaleuca argentea</i>	2%	3 m	PI068.10	
<i>Ptilotus fusiformis</i>	+	0.3 m	PI070.22	
<i>Sporobolus virginicus</i>	+	0.3 m	PI041.05	
<i>Tephrosia rosea</i> var. <i>clementii</i>	+	0.4 m	PI041.07	

Port Hedland RS Site PI042**Described by** BW**Date** 21/06/2011 **Type** Q

50x50 m

Location Port Hedland**MGA Zone** 50 653561 mE 7745248 mN**Habitat** Plain**Soil** Orange brown clayey sand**Rock Type** N/A**Vegetation** Low Open Shrubland of *Acacia stellaticeps* over Open Hummock Grassland of *Triodia schinzii***Veg Condition** Pristine**Fire Age** Moderate**Notes** Aspect: N/A

Bare Ground: 70%

Litter Cover: 0% Logs, +% Twigs, 1% Lvs

Disturbance: None

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia stellaticeps</i>	4%	0.5 m	PI043.01	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.5 m	PI042.07	
<i>Bonamia alatisemina</i>	+	0.2 m	PI042.11	
<i>Bulbostylis barbata</i>	+	0.1 m	PI042.02	
<i>Carissa lanceolata</i>	+	0.5 m	PI042.12	
<i>Chrysopogon fallax</i>	+	0.6 m	PI042.09	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.3 m	PI042.04	
<i>Cyperus dactyloides</i>	+	0.5 m	PI042.10	
<i>Eragrostis eriopoda</i>	+	0.4 m	PI042.05	
<i>Goodenia triodiophila</i>	+	0.3 m	PI042.01	
<i>Hybanthus aurantiacus</i>	+	0.4 m	PI043.13	
<i>Paraneurachne muelleri</i>	+	0.3 m	PI043.15	
<i>Pluchea tetranthera</i>	+	0.3 m	PI042.03	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI043.06	
<i>Triodia epactia</i>	+	0.3 m	PI043.03	
<i>Triodia schinzii</i>	22%	0.4 m	PI042.08	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI042.06	

Port Hedland RS Site PI043**Described by** BW**Date** 21/06/2011 **Type** Q

50x50 m

Location Port Hedland**MGA Zone** 50 653904 mE 7744091 mN**Habitat** Plain**Soil** orange brown sandy clay**Rock Type** N/A**Vegetation** Low Open Shrubland of *Acacia stellaticeps* over Open Hummock Grassland *Triodia epactia* and *Triodia lanigera***Veg Condition** Excellent**Fire Age** Moderate**Notes** Aspect: N/A

Bare Ground: 70%

Litter Cover: 0% Logs, +% Twigs, 2% Lvs

Disturbance: Tracks near by

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	+	1.2 m	PI043.16	
<i>Acacia stellaticeps</i>	2%	0.5 m	PI043.01	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.6 m	PI043.25	
<i>Bonamia media</i> var. <i>villosa</i>	+	cr	PI043.19	
<i>Bulbostylis barbata</i>	+	0.02 m	PI043.33	
<i>Chrysopogon fallax</i>	+	0.5 m	PI043.20	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.1 m	PI043.30	
<i>Desmodium filiforme</i>	+	0.1 m	PI043.18	
<i>Drosera indica</i>	+	0.2 m	PIOPBW01a	
<i>Eriachne aristidea</i>	+	0.3 m	PI043.04	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.2 m	PI043.26	
<i>Goodenia lamprosperma</i>	+	0.3 m	PI043.21	
<i>Goodenia triodiophila</i>	+	0.3 m	PI043.05	
<i>Hakea lorea</i> subsp. <i>lorea</i>	+	1 m	PI043.07	
<i>Hybanthus aurantiacus</i>	+	0.4 m	PI043.13	
<i>Mollugo molluginea</i>	+	0.1 m	PI043.29	
<i>Paraneurachne muelleri</i>	+	0.3 m	PI043.10	
<i>Pluchea ferdinandi-muelleri</i>	+	0.3 m	PI043.23	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI043.06	
<i>Polygala linariifolia</i>	+	0.1 m	PI043.12	
<i>Polymeria ambigua</i>	+	0.02 m	PI043.22	
<i>Ptilotus fusiformis</i>	+	0.4 m	PI043.11	
<i>Senna notabilis</i>	+	0.2 m	PI043.09	
<i>Sida fibulifera</i>	+	0.1 m	PI043.32	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI043.14	
<i>Stackhousia muricata</i>	+	0.3 m	PI043.28	
<i>Triodia epactia</i>	25%	0.4 m	PI043.03	
<i>Triodia lanigera</i>	+	0.1 m	PI043.02	
<i>Urochloa holosericea</i> subsp. <i>velutina</i>	+	0.4 m	PI043.24	
<i>Waltheria indica</i>	+	0.3 m	PI043.27	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI043.08	

Port Hedland RS Site PI044**Described by** LD **Date** 23/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 655687 mE 7744480 mN
Habitat Plain
Soil Orange brown sand
Rock Type N/A
Vegetation Scattered Low Shrubs of *Acacia colei* var. *colei* over Very Open Hummock Grassland of *Triodia secunda* and *Triodia epactia*
Veg Condition Excellent
Fire Age Moderate
Notes Aspect: N/A
 Bare Ground: 82%
 Litter Cover: 0% Logs, 0% Twigs, +% Lvs
 Disturbance: Cattle

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	+	0.8 m	PI045.14	
<i>Bergia pedicellaris</i>	+	0.05 m	PI044.11	
<i>Bulbostylis barbata</i>	+	0.1 m	PI066.04	
<i>Calandrinia pumila</i>	+	0.01 m	PI045.18	
<i>Chrysopogon fallax</i>	+	0.7 m	PI051.04	
<i>Cyperus dactylotes</i>	+	0.4 m	PI044.06	
<i>Drosera indica</i>	+	0.1 m	PI045.01	
<i>Eriachne mucronata</i>	+	0.4 m	PI044.02	
<i>Eulalia fulva</i>	+	0.4 m	PI044.04	
<i>Fimbristylis simulans</i>	+	0.1 m	PI044.03	
<i>Marsilea mutica</i>	+	0.02 m	PI044.08	
<i>Mimulus gracilis</i>	+	0.1 m	PI044.10	
<i>Mimulus uvedaliae</i> var. <i>uvedaliae</i>	+	0.1 m	PI044.07	
<i>Mitrasacme connata</i>	+	0.05 m	PI045.04	
<i>Mollugo molluginea</i>	+	0.1 m	PI132.04	
<i>Murdannia graminea</i>	+	0.3 m	PI045.21	Range ext
<i>Pluchea tetranthera</i>	+	0.2 m	PI066.22	
<i>Polygala linariifolia</i>	+	0.1 m	PI045.22	
<i>Ptilotus fusiformis</i>	+	0.7 m	PI065.28	
<i>Rotala diandra</i>	+	0.05 m	PI044.09	
<i>Stylidium desertorum</i>	+	0.05 m	PI045.19	
<i>Triodia epactia</i>	4%	0.3 m	PI044.01	
<i>Triodia secunda</i>	5%	0.3 m	PI048.05	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI065.09	

Port Hedland RS Site PI045**Described by** LD **Date** 22/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 660672 mE 7741644 mN
Habitat Plain
Soil Orange brown sand
Rock Type N/A
Vegetation Low Open Shrubland of *Acacia stellaticeps* over Open Hummock Grassland of *Triodia epactia*
Veg Condition Excellent
Fire Age Moderate
Notes Aspect: N/A
 Bare Ground: 70%
 Litter Cover: 0% Logs, 1% Twigs, +% Lvs
 Disturbance: Cattle

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	+	1.5 m	PI045.14	
<i>Acacia sericophylla</i>	+	2 m	PI045.08	
<i>Acacia stellaticeps</i>	3%	0.6 m	PI065.01	
<i>Acacia tumida</i> var. <i>tumida</i>	+	2 m	PI045.07	
<i>Amaranthus undulatus</i>	+	0.3 m	PI045.16	
<i>Bulbostylis barbata</i>	+	0.1 m	PI066.04	
<i>Calandrinia pentavalvis</i>	+	0.1 m	PI066.03	
<i>Calandrinia pumila</i>	+	0.01 m	PI045.18	
<i>Cassytha capillaris</i>	+	cl	PI051.06	
<i>Chrysopogon fallax</i>	+	0.3 m	PI051.04	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.1 m	PI045.17	
<i>Corymbia candida</i> subsp. <i>dipsodes</i>	+	2 m	PI051.02	
<i>Crotalaria ramosissima</i>	+	0.2 m	PI045.13	
<i>Cucumis maderaspatanus</i>	+	cl	PI045.15	
<i>Desmodium filiforme</i>	+	0.05 m	PI045.24	
<i>Drosera burmanni</i>	+	0.05 m	PI045.02	
<i>Drosera indica</i>	+	0.1 m	PI045.01	
<i>Eragrostis cumingii</i>	+	0.05 m	PI045.23	
<i>Eriachne mucronata</i>	+	0.4 m	PI065.05	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.1 m	PI045.09	
<i>Fimbristylis oxystachya</i>	+	0.1 m	PI025.05	
<i>Fimbristylis simulans</i>	+	0.1 m	PI065.07	
<i>Hibiscus leptocladus</i>	+	0.3 m	PI045.10	
<i>Indigofera monophylla</i>	+	0.3 m	PI065.13	
<i>Mimulus gracilis</i>	+	0.1 m	PI045.20	
<i>Mitrasacme connata</i>	+	0.1 m	PI045.04	
<i>Murdannia graminea</i>	+	0.3 m	PI045.21	Range ext
<i>Pluchea ferdinandi-muelleri</i>	+	0.6 m	PI045.05	
<i>Polygala linariifolia</i>	+	0.1 m	PI045.22	
* <i>Portulaca oleracea</i>	+	0.1 m	PI066.21	
<i>Ptilotus astrolasius</i>	+	0.4 m	PI045.06	
<i>Ptilotus fusiformis</i>	+	0.3 m	PI065.28	
<i>Schizachyrium fragile</i>	+	0.2 m	PI045.12	

<i>Sida</i> sp. dark green fruits (S. van Leeuwen 2260)	+	0.3 m	PI065.23
<i>Solanum ellipticum</i>	+	0.2 m	PI065.26
<i>Stackhousia intermedia</i>	+	0.2 m	PI066.14
<i>Stylidium desertorum</i>	+	0.01 m	PI045.19
<i>Triodia epactia</i>	25%	0.4 m	PI045.03
<i>Waltheria indica</i>	+	0.2 m	PI065.27
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI065.09

Port Hedland RS Site PI046**Described by** HA **Date** 22/06/2011 **Type** Q 50x50 m**Location** Port Hedland**MGA Zone** 50 661418 mE 7742589 mN**Habitat** Sand plain**Soil** Orange brown sand**Rock Type** N/A**Vegetation** Low Open Shrubland of *Acacia stellaticeps* over Hummock Grassland of *Triodia epactia* and *Triodia schinzii* over Scattered Tussock Grass of *Eriachne mucronata***Veg Condition** Excellent**Fire Age** Moderate**Notes** Aspect: N/A
Bare Ground: 55%
Litter Cover: % Logs, % Twigs, % Lvs
Disturbance: Tracks nearby**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	+	0.5 m	PI070.38	
<i>Acacia stellaticeps</i>	5%	0.3 m	PI070.01	
<i>Calandrinia pentavalvis</i>	+	0.2 m	PI072.14	
<i>Carissa lanceolata</i>	+	0.8 m	PI046.14	
<i>Chrysopogon fallax</i>	+	0.8 m	PI070.21	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.4 m	PI070.02	
<i>Desmodium filiforme</i>	+	cr	PI046.11	
<i>Drosera indica</i>	+	0.03 m	PI053.11	
<i>Eragrostis speciosa</i>	+	0.3 m	PI046.15	
<i>Eriachne aristidea</i>	+	0.3 m	PI070.28	
<i>Eriachne mucronata</i>	1%	0.3 m	PI046.07	
<i>Fimbristylis simulans</i>	+	0.1 m	PI072.08	
<i>Heliotropium cunninghamii</i>	+	0.1 m	PI046.19	
<i>Hibiscus burtonii</i>	+	0.3 m	PI046.04	
<i>Hybanthus aurantiacus</i>	+	0.4 m	PI099.02	
<i>Mimulus uvedaliae</i> var. <i>uvedaliae</i>	+	0.1 m	PI046.10	
<i>Mitrasacme connata</i>	+	0.1 m	PI046.01	
<i>Mollugo molluginea</i>	+	0.2 m	PI070.35	
<i>Murdannia graminea</i>	+	0.1 m	PI046.13	Range ext
<i>Pluchea tetranthera</i>	+	0.3 m	PI046.18	
<i>Polygala linariifolia</i>	+	0.2 m	PI046.17	
* <i>Portulaca oleracea</i>	+	0.0.1 m	PI053.03	
<i>Ptilotus fusiformis</i>	+	0.3 m	PI070.22	
<i>Schizachyrium fragile</i>	+	0.2 m	PI046.12	
<i>Senna notabilis</i>	+	0.2 m	PI070.14	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI070.03	
<i>Solanum lasiophyllum</i>	+	0.6 m	PI070.37	
<i>Stackhousia intermedia</i>	+	0.15 m	PI046.03	
<i>Stylidium desertorum</i>	+	0.08 m	PI046.02	
<i>Triodia epactia</i>	30%	0.4 m	PI046.06	
<i>Triodia schinzii</i>	10%	0.5 m	PI046.05	

<i>Triumfetta ramosa</i>	+	0.2 m	PI046.09
<i>Waltheria indica</i>	+	0.5 m	PI053.14
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI046.16



Port Hedland RS Site PI047**Described by** BW **Date** 22/06/2011 **Type** Q 50x50 m

Location Port Hedland

MGA Zone 50 657856 mE 7741848 mN

Habitat Plain

Soil Orange brown silty sand

Rock Type N/A

Vegetation Scattered Shrubs of *Acacia colei* var. *colei* and *Acacia stellaticeps* over Scattered Low Shrubs of *Sida* sp. Pilbara (A.A. Mitchell PRP 1543) over Open Hummock Grassland of *Triodia epactia*

Veg Condition Excellent

Fire Age Young

Notes Aspect: N/A
Bare Ground: 82%
Litter Cover: 0% Logs, +% Twigs, 1% Lvs
Disturbance: Cattle

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	1%	1-1.6 m	PI043.16	
<i>Acacia stellaticeps</i>	+	0.5 m	PI049.02	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.4 m	PI049.07	
<i>Bonamia alatisemina</i>	+	cr	PI047.06	
<i>Bulbostylis barbata</i>	+	0.1 m	PI067.01	
<i>Calandrinia creethiae</i>	+	prostrate	PI064.06	
<i>Chrysopogon fallax</i>	+	0.7 m	PI042.09	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.4 m	PI042.04	
<i>Eragrostis eriopoda</i>	+	0.3 m	PI047.02	
<i>Eriachne mucronata</i>	+	0.2 m	PI049.01	
<i>Fimbristylis dichotoma</i>	+	0.2 m	PI049.15	
<i>Hakea lorea</i> subsp. <i>lorea</i>	+	0.7 m	PI043.07	
<i>Hibiscus burtonii</i>	+	0.4 m	PI049.09	
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>	+	0.3 m	PI047.03	
<i>Hybanthus aurantiacus</i>	+	0.4 m	PI043.13	
<i>Mitrasacme connata</i>	+	0.3 m	PI047.01	
<i>Mollugo molluginea</i>	+	0.2 m	PI043.29	
<i>Pluchea ferdinandi-muelleri</i>	+	0.4 m	PI067.02	
<i>Pluchea tetranthera</i>	+	0.4 m	PI064.02	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.2 m	PI043.06	
<i>Ptilotus fusiformis</i>	+	0.3 m	PI043.11	
<i>Senna notabilis</i>	+	0.3 m	PI043.09	
<i>Sida</i> sp. B Kimberley Flora (A.A. Mitchell 2745)	+	0.3 m	PI047.05	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	1%	0.6 m	PI043.14	
<i>Triodia epactia</i>	16%	0.4 m	PI047.04	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI042.06	

Port Hedland RS Site PI048**Described by** LD **Date** 22/06/2011 **Type** Q 50x50 m**Location** Port Hedland**MGA Zone** 50 659481 mE 7741044 mN**Habitat** Plain**Soil** Orange brown sandy loam**Rock Type****Vegetation** Scattered Shrubs of *Acacia colei* var. *colei* and *Acacia tumida* var. *tumida* over Scattered Low Shrubs of *Acacia stellaticeps* over Open Hummock Grassland of *Triodia secunda* and *Triodia epactia***Veg Condition** Excellent**Fire Age** Young - moderate**Notes** Aspect: N/A
Bare Ground: 80%
Litter Cover: 0% Logs, +% Twigs, +% Lvs
Disturbance: Weeds?**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	+	0.6-2 m	PI045.14	
<i>Acacia stellaticeps</i>	1%	0.4 m	PI065.01	
<i>Acacia tumida</i> var. <i>tumida</i>	+	2 m	PI045.07	
<i>Bonamia alatisemina</i>	+	0.1 m	PI048.06	
<i>Bulbostylis barbata</i>	+	0.1 m	PI066.04	
<i>Calandrinia pentavalvis</i>	+	0.1 m	PI066.03	
<i>Calandrinia pumila</i>	+	0.01 m	PI045.18	
<i>Cassytha capillaris</i>	+	cl	PI051.06	
<i>Chrysopogon fallax</i>	+	0.5 m	PI051.04	
<i>Drosera indica</i>	+	0.1 m	PI045.01	
<i>Eragrostis eriopoda</i>	+	0.5 m	PI065.04	
<i>Eriachne mucronata</i>	+	0.2 m	PI048.10	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.2 m	PI048.03	
<i>Hibiscus burtonii</i>	+	0.3 m	PI048.08	
<i>Mollugo molluginea</i>	+	0.1 m	PI132.04	
<i>Murdannia graminea</i>	+	0.2 m	PI045.21	Range ext
<i>Pluchea ferdinandi-muelleri</i>	+	0.4 m	PI045.05	
<i>Pluchea tetranthera</i>	+	0.2 m	PI066.22	
<i>Polygala linariifolia</i>	+	0.1 m	PI045.22	
<i>Ptilotus fusiformis</i>	+	0.4 m	PI065.28	
<i>Senna notabilis</i>	+	0.2 m	PI051.12	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.3 m	PI048.02	
<i>Solanum diversiflorum</i>	+	0.2 m	PI048.09	
<i>Solanum ellipticum</i>	+	0.3 m	PI065.26	
<i>Stackhousia intermedia</i>	+	0.2 m	PI066.14	
<i>Triodia epactia</i>	8%	0.4 m	PI048.07	
<i>Triodia secunda</i>	12%	0.2 m	PI048.05	
<i>Waltheria indica</i>	+	0.4 m	PI048.01	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI065.09	

Port Hedland RS Site PI049**Described by** BW **Date** 22/06/2011 **Type** Q 50x50 m**Location** Port Hedland**MGA Zone** 50 660374 mE 7740273 mN**Habitat** Plain**Soil** Orange brown slity sand**Rock Type** N/A**Vegetation** Scattered Shrubs of *Acacia inaequilatera* over
Scattered Low Shrubs of *Acacia stellaticeps* over Open
Hummock Grassland of *Triodia epactia***Veg Condition** Excellent**Fire Age** Young**Notes** Aspect: N/A
Bare Ground: 80%
Litter Cover: +% Logs, +% Twigs, +% Lvs
Disturbance: Cattle**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia inaequilatera</i>	+	2 m	PI049.06	
<i>Acacia stellaticeps</i>	+	0.3-1 m	PI049.02	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	+	1.1 m	PI043.01	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.6 m	PI049.07	
<i>Bulbostylis barbata</i>	+	0.1 m	PI067.01	
<i>Calandrinia creethiae</i>	+	prostrate	PI064.06	
<i>Calandrinia pentavalvis</i>	+	0.1 m	PI049.11	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.3 m	PI042.04	
<i>Drosera indica</i>	+	0.2 m	PIOPBW01a	
<i>Eriachne mucronata</i>	+	0.2 m	PI049.01	
<i>Fimbristylis dichotoma</i>	+	0.3 m	PI049.15	
<i>Fimbristylis oxystachya</i>	+	0.3 m	PI049.08	
<i>Hibiscus burtonii</i>	+	0.4 m	PI049.09	
<i>Hybanthus aurantiacus</i>	+	0.2 m	PI049.03	
<i>Leptosema anomalum</i>	+	0.1 m	PI049.12	
<i>Mitrasacme connata</i>	+	0.1 m	PI049.10	
<i>Mollugo molluginea</i>	+	0.2 m	PI043.29	
<i>Pluchea tetranthera</i>	+	0.3 m	PI064.02	
<i>Ptilotus fusiformis</i>	+	0.4 m	PI043.11	
<i>Senna notabilis</i>	+	0.4 m	PI043.09	
<i>Sida</i> sp. B Kimberley Flora (A.A. Mitchell 2745)	+	0.4 m	PI049.05	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI043.14	
<i>Solanum diversiflorum</i>	+	0.3 m	PI049.04	
<i>Stackhousia muricata</i>	+	0.2 m	PI043.28	
<i>Triodia epactia</i>	16%	0.4 m	PI049.13	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI042.06	

Port Hedland RS Site PI050**Described by** HA **Date** 22/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 658359 mE 7739665 mN
Habitat Sand plain
Soil Orange brown sandy loam
Rock Type N/A
Vegetation Low Shrubland of *Acacia stellaticeps* and *Acacia tumida* var. *pilbarensis* over Very Open Hummock Grassland of *Triodia epactia* over Open Tussock Grassland of *Eragrostis eriopoda*
Veg Condition Excellent
Fire Age Young
Notes Aspect: N/A
 Bare Ground: 50%
 Litter Cover: +% Logs, 2% Twigs, 1% Lvs
 Disturbance: Some cattle tracks

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia stellaticeps</i>	10%	0.4 m	PI070.01	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	1%	0.8 m	PI070.30	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.4 m	PI070.10	
<i>Bonamia alatisemina</i>	+		PI053.02	
<i>Bonamia media</i> var. <i>villosa</i>	+	cr	PI050.08	
<i>Bulbostylis barbata</i>	+	0.1 m	PI070.17	
<i>Chrysopogon fallax</i>	+	0.8 m	PI070.21	
<i>Cleome viscosa</i>	(+)	0.3 m	PI050.10	
<i>Codonocarpus cotinifolius</i>	+	0.5 m	PI050.06	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.5 m	PI070.02	
<i>Dysphania saxatilis</i>	+	0.03 m	PI053.07	
<i>Eragrostis eriopoda</i>	25%	0.3 m	PI070.13	
<i>Eriachne aristidea</i>	+	0.2 m	PI070.28	
<i>Euphorbia australis</i>	+	cr	PI147.10	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.1 m	PI050.03	
<i>Hibiscus burtonii</i>	+	0.3 m	PI050.02	
<i>Hybanthus aurantiacus</i>	+	0.3 m	PI099.02	
<i>Indigofera monophylla</i>	+	0.5 m	PI072.03	
<i>Ipomoea muelleri</i>	+	cr	PI050.07	
<i>Mollugo molluginea</i>	+	0.2 m	PI070.35	
<i>Paraneurachne muelleri</i>	+	0.2 m	PI054.09	
<i>Pluchea tetranthera</i>	+	0.4 m	PI050.05	
<i>Ptilotus astrolasius</i>	+	0.4 m	PI050.09	
<i>Senna notabilis</i>	+	0.2 m	PI070.14	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.6 m	PI070.03	
<i>Solanum lasiophyllum</i>	1%	0.5 m	PI070.37	
<i>Triodia epactia</i>	10%	0.3 m	PI050.01	
<i>Waltheria indica</i>	+	0.4 m	PI053.14	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI072.06	

Port Hedland RS Site PI052

Described by BW **Date** 22/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 660761 mE 7738308 mN
Habitat Plain
Soil Orange brown sandy loam
Rock Type N/A
Vegetation Low Open Heath of *Acacia stellaticeps* over Open Hummock Grassland of *Triodia epactia* over Scattered Tussock Grass of **Cenchrus ciliaris*
Veg Condition Excellent
Fire Age Moderate
Notes Aspect: N/A
 Bare Ground: 80%
 Litter Cover: +% Logs, 1% Twigs, 2% Lvs
 Disturbance: Old fence near by

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	+	1.2 m	PI043.16	
<i>Acacia sericophylla</i>	+	1.8 m	PI052.01	
<i>Acacia stellaticeps</i>	40%	0.6 m	PI043.01	
<i>Amaranthus undulatus</i>	+	0.6 m	PI052.10	
<i>Bulbostylis barbata</i>	+	0.1 m	PI067.01	
<i>Bulbostylis turbinata</i>	+	0.2 m	PI052.04	
<i>Carissa lanceolata</i>	+	2 m	PI052.07	
<i>*Cenchrus ciliaris</i>	0.5%	0.4 m	PI052.06	
<i>Chrysopogon fallax</i>	+	0.5 m	PI042.09	
<i>Corymbia candida</i> subsp. <i>dipsodes</i>	+	2 m	PI146.07	
<i>Eriachne benthamii</i>	+	0.1 m	PI052.02	
<i>Eriachne mucronata</i>	+	0.2 m	PI064.04	
<i>Euphorbia alsiniflora</i>	+	0.3 m	PI052.08	
<i>Goodenia forrestii</i>	+	0.3 m	PI052.05	
<i>Indigofera monophylla</i>	+	0.4 m	PI052.03	
<i>Trianthema pilosa</i>	+	prostrate	PI052.09	
<i>Triodia epactia</i>	15%	0.5 m	PI052.11	

Port Hedland RS Site PI053

Described by HA Date 22/06/2011 Type Q 50x50 m

Location Port Hedland
MGA Zone 50 658728 mE 7738738 mN
Habitat Sand plain
Soil Orange brown sandy loam
Rock Type
Vegetation Low Shrubland of *Acacia stellaticeps* and *Acacia colei* var. *colei* over Open Hummock Grassland of *Triodia epactia*
Veg Condition Excellent
Fire Age Young
Notes Aspect: N/A
 Bare Ground: 60%
 Litter Cover: +% Logs, +% Twigs, +% Lvs
 Disturbance:

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	1%	0.5 m	PI070.38	
<i>Acacia inaequilatera</i>	+	1 m	PI054.05	
<i>Acacia stellaticeps</i>	15%	0.2 m	PI070.01	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.3 m	PI070.10	
<i>Aristida inaequiglumis</i>	+	0.2 m	PI053.06	
<i>Bonamia alatisemina</i>	+	cr	PI053.02	
<i>Bulbostylis barbata</i>	+	0.1 m	PI070.17	
<i>Calandrinia stagnensis</i>	+	cr	PI053.04	
<i>Calandrinia pentavalvis</i>	+	0.1 m	PI072.14	
<i>Corymbia candida</i> subsp. <i>dipsodes</i>	+	2.9 m	PI053.08	
<i>Drosera indica</i>	+	0.05 m	PI053.11	
<i>Dysphania saxatilis</i>	+	0.1 m	PI053.07	
<i>Eragrostis eriopoda</i>	+	0.3 m	PI070.13	
<i>Eragrostis speciosa</i>	+	0.1 m	PI053.05	
<i>Eriachne aristidea</i>	+	0.1 m	PI070.28	
<i>Euphorbia australis</i>	+	cr	PI147.10	
<i>Fimbristylis simulans</i>	+	0.1 m	PI053.16	
<i>Hakea lorea</i> subsp. <i>lorea</i>	+	0.2 m	PI070.05	
<i>Hibiscus leptocladus</i>	+	0.1 m	PI053.12	
<i>Hybanthus aurantiacus</i>	+	0.3 m	PI099.02	
<i>Indigofera monophylla</i>	+	0.4 m	PI072.03	
<i>Mitrasacme connata</i>	+	0.2 m	PI072.07	
<i>Paraneurachne muelleri</i>	+	0.3 m	PI054.09	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI072.02	
* <i>Portulaca oleracea</i>	+	cr	PI053.03	
<i>Ptilotus fusiformis</i>	+	0.2 m	PI070.22	
<i>Senna notabilis</i>	+	0.2 m	PI070.14	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI053.09	
<i>Solanum lasiophyllum</i>	+	0.2 m	PI070.37	
<i>Triodia epactia</i>	20%	0.2 m	PI053.01	
<i>Waltheria indica</i>	+	0.4 m	PI053.14	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI072.06	

Port Hedland RS Site PI054

Described by HA Date 22/06/2011 Type Q 50x50 m

Location Port Hedland
MGA Zone 50 657753 mE 7737033 mN
Habitat Sand plain
Soil Orange brown sandy loam
Rock Type
Vegetation Low Open Heath of *Acacia stellaticeps* over Hummock Grassland of *Triodia epactia*
Veg Condition Excellent
Fire Age Old
Notes Aspect: N/A
 Bare Ground: 20%
 Litter Cover: +% Logs, +% Twigs, +% Lvs
 Disturbance: Some cattle tracks

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	+	0.7 m	PI070.38	
<i>Acacia inaequilatera</i>	+	1.5 m	PI054.05	
<i>Acacia pyrifolia</i>	+	0.4 m	PI054.10	
<i>Acacia sericophylla</i>	+	2.5 m	PI070.04	
<i>Acacia stellaticeps</i>	40%	0.7 m	PI070.01	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	+	0.8 m	PI070.30	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.3 m	PI070.10	
<i>Bulbostylis barbata</i>	+	0.1 m	PI070.17	
<i>Bulbostylis turbinata</i>	+	0.15 m	PI054.06	
<i>Chrysopogon fallax</i>	+	0.8 m	PI070.21	
<i>Cleome viscosa</i>	+	0.3 m	PI054.04	
<i>Cucumis maderaspatanus</i>	+	cr	PI147.17	
<i>Eriachne aristidea</i>	+	0.2 m	PI054.03	
<i>Eriachne mucronata</i>	+	0.3 m	PI054.02	
<i>Euphorbia alsiniflora</i>	+	0.1 m	PI072.10	
<i>Euphorbia australis</i>	+	cr	PI147.10	
<i>Indigofera monophylla</i>	+	0.4 m	PI072.03	
<i>Keraudrenia velutina</i> subsp. <i>elliptica</i>	+	0.3 m	PI054.11	
<i>Paraneurachne muelleri</i>	+	0.3 m	PI054.09	
<i>Pimelea ammocharis</i>	+	0.6 m	PI070.23	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI072.02	
<i>Portulaca pilosa</i>	+	0.15 m	PI147.22	
<i>Senna notabilis</i>	+	0.1 m	PI070.14	
<i>Sida</i> sp. verrucose glands (F.H. Mollemans 2423)	+	0.05 m	PI054.08	
<i>Triodia epactia</i>	50%	0.5 m	PI054.01	
<i>Waltheria indica</i>	+	0.01 m	PI054.07	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.05 m	PI072.06	

Port Hedland RS Site PI055**Described by** HA **Date** 24/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 659874 mE 7736335 mN
Habitat Sand plain
Soil Orange brown sandy loam
Rock Type N/A
Vegetation Scattered Shrubs of *Acacia inaequilatera* over Low Shrubland of *Acacia stellaticeps* over Hummock Grassland of *Triodia epactia*
Veg Condition Pristine to excellent
Fire Age Old
Notes Aspect: N/A
 Bare Ground: 30%
 Litter Cover: 1% Logs, 2% Twigs, +% Lvs
 Disturbance: Highway near by

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia inaequilatera</i>	1%	2 m	PI054.05	
<i>Acacia sericophylla</i>	+	2.5 m	PI070.04	
<i>Acacia stellaticeps</i>	20%	0.6 m	PI070.01	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	+	0.8 m	PI070.30	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.4 m	PI070.10	
<i>Aristida inaequiglumis</i>	+	0.2 m	PI070.24	
<i>Bonamia rosea</i>	+	0.1 m	PI055.04	
<i>Bulbostylis barbata</i>	+	0.1 m	PI070.17	
<i>Cassyltha capillaris</i>	+	cr	PI055.03	
<i>Chrysopogon fallax</i>	+	1 m	PI070.21	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.3 m	PI070.02	
<i>Cucumis maderaspatanus</i>	+	cr	PI147.17	
<i>Dysphania saxatilis</i>	+	0.1 m	PI053.07	
<i>Eragrostis eriopoda</i>	+	0.3 m	PI070.13	
<i>Eriachne aristidea</i>	+	0.2 m	PI070.28	
<i>Eriachne mucronata</i>	+	0.3 m	PI055.02	
<i>Hakea lorea</i> subsp. <i>lorea</i>	+	0.2 m	PI070.05	
<i>Indigofera monophylla</i>	+	0.4 m	PI072.03	
<i>Paraneurachne muelleri</i>	+	0.3 m	PI054.09	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI072.02	
<i>Polymeria ambigua</i>	+	cr	PI096.04	
<i>Ptilotus astrolasius</i>	+	0.3 m	PI089.05	
<i>Ptilotus fusiformis</i>	+	0.4 m	PI070.22	
<i>Senna notabilis</i>	+	0.2 m	PI070.14	
<i>Sida</i> sp.	+	0.1 m	PI055.05	Material inadequate
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.2 m	PI070.03	
<i>Triodia epactia</i>	60%	0.5 m	PI055.01	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI072.06	

Port Hedland RS Site PI056**Described by** BW **Date** 23/06/2011 **Type** Q 50x50 m**Location** Port Hedland**MGA Zone** 50 663299 mE 7737645 mN**Habitat** Plain**Soil** Orange brown slity sand**Rock Type** N/A**Vegetation** Scattered Low Trees of *Owenia reticulata* over Low Open Shrubland of *Acacia colei* var. *colei* and *Acacia stellaticeps* over Very Open Hummock Grassland of *Triodia epactia* and *Triodia lanigera***Veg Condition** Excellent**Fire Age** Young**Notes** Aspect: N/A
Bare Ground: 90%
Litter Cover: +% Logs, 1% Twigs, 1% Lvs
Disturbance: Cattle and tracks near by**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	1%	0.7 m	PI043.16	
<i>Acacia inaequilatera</i>	+	1-2 m	PI049.06	
<i>Acacia stellaticeps</i>	1%	0.5 m	PI043.01	
<i>Amaranthus undulatus</i>	+	0.4 m	PI056.05	
<i>Aristida holathera</i> var. <i>holathera</i>	2%	0.5 m	PI049.07	
<i>Boerhavia coccinea</i>	+	0.1 m	PI067.15	
<i>Bulbostylis barbata</i>	+	0.1 m	PI056.01	
<i>Calandrinia pentavalvis</i>	+	0.2 m	PI049.11	
<i>Carissa lanceolata</i>	+	0.8 m	PI052.07	
<i>Cleome viscosa</i>	+	0.4 m	PI026.10	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.4 m	PI042.04	
<i>Dysphania saxatilis</i>	+	0.3 m	PI056.11	
<i>Eragrostis eriopoda</i>	+	0.2 m	PI047.02	
<i>Euphorbia alsiniflora</i>	+	0.2 m	PI056.08	
<i>Euphorbia australis</i>	+	prostrate	PI056.10	
<i>Fimbristylis dichotoma</i>	+	0.2 m	PI049.15	
<i>Fimbristylis simulans</i>	+	0.2 m	PI028.03	
<i>Hakea lorea</i> subsp. <i>lorea</i>	+	0.8 m	PI043.07	
<i>Hibiscus burtonii</i>	+	0.4 m	PI049.09	
<i>Hibiscus leptocladus</i>	+	0.4 m	PI056.14	
<i>Indigofera monophylla</i>	+	0.4 m	PI052.03	
<i>Mollugo molluginea</i>	+	0.1 m	PI043.29	
<i>Owenia reticulata</i>	1%	5-7 m	PI067.17	
<i>Paraneurachne muelleri</i>	+	0.3 m	PI056.16	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.2 m	PI043.06	
<i>Polymeria calycina</i>	+	0.2 m	PI056.06	
* <i>Portulaca oleracea</i>	+	0.1 m	PI056.07	
<i>Ptilotus astrolasius</i>	+		PI056.18	

<i>Ptilotus fusiformis</i>	+	0.4 m	PI043.11
<i>Senna notabilis</i>	+	0.3 m	PI043.09
<i>Sida</i> sp. B Kimberley Flora (A.A. Mitchell 2745)	+	0.4 m	PI056.13
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI056.09
<i>Trianthera pilosa</i>	+	0.1 m	PI056.02
<i>Tribulopsis angustifolia</i>	+	0.2 m	PI056.17
<i>Triodia epactia</i>	5%	0.4 m	PI056.03
<i>Triodia lanigera</i>	1%	0.1 m	PI056.04
<i>Waltheria indica</i>	+	0.3 m	PI056.12
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI042.06

Port Hedland RS Site PI057**Described by** HA **Date** 30/06/2011 **Type** Q 50x50 m**Location** Port Hedland**MGA Zone** 50 660453 mE 7722568 mN**Habitat** Sand plain**Soil** Orange brown loamy sand**Rock Type****Vegetation** High Open Shrubland of *Acacia inaequilatera* and *Acacia colei* var. *colei* over Hummock Grassland of *Triodia epactia***Veg Condition** Excellent**Fire Age** Moderate**Notes** Aspect: N/A
Bare Ground: 60%
Litter Cover: +% Logs, +% Twigs, 1% Lvs
Disturbance: Some cattle tracks**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia ancistrocarpa</i>	+	1.2 m	PI131.04	
<i>Acacia colei</i> var. <i>colei</i>	+	0.9 m	PI070.38	
<i>Acacia inaequilatera</i>	3%	3 m	PI054.05	
<i>Acacia stellaticeps</i>	+	0.3 m	PI070.01	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	1%	0.25 m	PI070.30	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.4 m	PI070.10	
<i>Boerhavia coccinea</i>	+	cr	PI072.12	
<i>Bonamia alatisemina</i>	+	cr	PI053.02	
<i>Bonamia rosea</i>	+	0.3 m	PI088.02	
<i>Bulbostylis barbata</i>	+	0.1 m	PI070.17	
<i>Chrysopogon fallax</i>	+	1.2 m	PI070.21	
<i>Cleome viscosa</i>	+	0.4 m	PI040.10	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.3 m	PI070.02	
<i>Crotalaria ramosissima</i>	+	0.3 m	PI089.02	
<i>Cucumis maderaspatanus</i>	+	cr	PI147.17	
<i>Dysphania saxatilis</i>	+	0.1 m	PI053.07	
<i>Eriachne aristidea</i>	+	0.3 m	PI070.28	
<i>Euphorbia australis</i>	+	cr	PI108.12	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.1 m	PI070.07	
<i>Fimbristylis dichotoma</i>	+	0.2 m	PI081.07	
<i>Goodenia microptera</i>	+	0.3 m	PI096.01	
<i>Hybanthus aurantiacus</i>	+	0.4 m	PI099.02	
<i>Indigofera monophylla</i>	+	0.3 m	PI072.03	
<i>Mollugo molluginea</i>	+	0.1 m	PI070.35	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.15 m	PI072.02	
<i>Polymeria ambigua</i>	+	cr	PI086.06	
* <i>Portulaca oleracea</i>	+	0.1 m	PI086.11	
<i>Ptilotus axillaris</i>	+	0.1 m	PI057.03	

<i>Ptilotus fusiformis</i>	+	0.3 m	PI070.22	
<i>Senna glaucifolia</i>	+	0.6 m	PI057.02	
<i>Senna notabilis</i>	+	0.2 m	PI070.14	
<i>Sida rohlenae</i> subsp. <i>rohlenae</i>	+	0.4 m	PI105.08	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.2 m	PI070.03	
<i>Solanum lasiophyllum</i>	+	0.3 m	PI070.37	
<i>Tephrosia simplicifolia</i>	+	0.1 m	PI032.08	Range ext
<i>Tinospora smilacina</i>	+	cl	PI087.09	
<i>Triodia epactia</i>	40%	0.5 m	PI057.01	
<i>Triumfetta ramosa</i>	+	0.3 m	PI099.05	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI072.06	

Port Hedland RS Site PI058**Described by** LD **Date** 23/06/2011 **Type** Q 50x50 m**Location** Port Hedland**MGA Zone** 50 661891 mE 7734858 mN**Habitat** Plain**Soil** Orange brown sandy loam**Rock Type****Vegetation** Scattered Shrubs of *Acacia trudgeniana* over Low Open Shrubland of *Acacia stellaticeps* over Open Hummock Grassland of *Triodia epactia* and *Triodia lanigera***Veg Condition** Excellent**Fire Age** Old**Notes** Aspect: N/A
Bare Ground: 70%
Litter Cover: +% Logs, 1% Twigs, 1% Lvs
Disturbance: Tracks near by**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia stellaticeps</i>	2%	0.8-1 m	PI065.01	
<i>Acacia trudgeniana</i>	1%	2-3 m	PI065.31	
<i>Acacia tumida</i> var. <i>tumida</i>	+	2-3 m	PI045.07	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.2 m	PI058.07	
<i>Aristida inaequiglumis</i>	+	1 m	PI058.04	
<i>Bonamia alatisemina</i>	+	0.1 m	PI027.06	
<i>Bulbostylis barbata</i>	+	0.1 m	PI066.04	
<i>Chrysopogon fallax</i>	+	0.3 m	PI051.04	
<i>Cucumis maderaspatanus</i>	+	cl	PI045.15	
<i>Dysphania saxatilis</i>	+	0.2 m	PI058.12	
<i>Eriachne helmsii</i>	+	0.4 m	PI027.02	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.2 m	PI058.08	
<i>Fimbristylis oxystachya</i>	+	0.2 m	PI025.05	
<i>Hybanthus aurantiacus</i>	+	0.1 m	PI043.13	
<i>Indigofera monophylla</i>	+	0.3 m	PI065.13	
<i>Paraneurachne muelleri</i>	+	0.3 m	PI058.06	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI058.10	
<i>Ptilotus astrolasius</i>	+	0.2 m	PI058.09	
<i>Ptilotus fusiformis</i>	+	0.3 m	PI065.28	
<i>Scaevola parvifolia</i> subsp. <i>pilbarae</i>	+	0.2 m	PI058.11	
<i>Senna notabilis</i>	+	0.2 m	PI051.12	
<i>Sida clementii</i>	+	0.3 m	PI065.21	
<i>Sida</i> sp. B Kimberley Flora (A.A. Mitchell 2745)	+	0.2 m	PI150.06	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.6 m	PI058.05	
<i>Solanum ellipticum</i>	+	0.2 m	PI065.26	
<i>Triodia epactia</i>	13%	0.4 m	PI058.03	
<i>Triodia lanigera</i>	6%	0.4 m	PI058.01	
<i>Waltheria indica</i>	+	0.3 m	PI065.27	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI043.08	

Port Hedland RS Site PI059**Described by** BW **Date** 27/06/2011 **Type** Q 50x50 m

Location Port Hedland

MGA Zone 50 664541 mE 7741390 mN

Habitat Sand plain

Soil Orange brown silty sand

Rock Type N/A

Vegetation Low Open Woodland of *Eucalyptus victrix* and *Corymbia candida* subsp. *dipsodes* over Very Open Hummock Grassland of *Triodia epactia* over Scattered Grass of *Chrysopogon fallax*

Veg Condition Excellent

Fire Age Moderate

Notes Aspect: N/A
Bare Ground: 88%
Litter Cover: +% Logs, +% Twigs, 2% Lvs
Disturbance: Cattle, weeds and tracks near by

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	+	0.5 m	PI043.16	
<i>Acacia sericophylla</i>	+	2 m	PI104.07	
<i>Acacia stellaticeps</i>	+	0.4 m	PI043.01	
<i>Alternanthera nana</i>	+	0.4 m	PI059.04	
<i>Amaranthus undulatus</i>	+	0.4 m	PI059.08	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.4 m	PI049.07	
<i>Bonamia rosea</i>	+	0.4 m	PI030.04	
<i>Calandrinia stagnensis</i>	+	0.2 m	PI145.04	
<i>Calandrinia pumila</i>	+	prostrate	PI045.18	
<i>Carissa lanceolata</i>	+	0.8 m	PI052.07	
* <i>Cenchrus ciliaris</i>	+	0.5 m	PI052.06	
<i>Chrysopogon fallax</i>	1%	0.6 m	PI042.09	
<i>Cleome viscosa</i>	(+)	0.4 m	NC	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.4 m	PI042.04	
<i>Corchorus tectus</i>	+	0.4 m	PI030.02	
<i>Corymbia candida</i> subsp. <i>dipsodes</i>	1%	3-4 m	PI146.07	
<i>Cyperus dactyloides</i>	+	0.6 m	PI059.10	
<i>Desmodium filiforme</i>	+	0.2 m	PI059.02	
<i>Drosera indica</i>	+	0.2 m	PIOPBW01a	
<i>Eriachne benthamii</i>	+	0.4 m	PI092.06	
<i>Eriachne mucronata</i>	+	0.4 m	PI049.01	
<i>Eucalyptus victrix</i>	4%	7-10 m	PI059.03	
<i>Euphorbia alsiniflora</i>	+	0.4 m	PI056.08	
<i>Goodenia lamprosperma</i>	+	0.4 m	PI043.21	
<i>Goodenia triodiophila</i>	+	0.4 m	PI059.05	
<i>Hakea lorea</i> subsp. <i>lorea</i>	+	0.7 m	PI043.07	
<i>Hybanthus aurantiacus</i>	+	0.4 m	PI043.13	
<i>Indigofera linifolia</i>	+	0.4 m	PI133.06	

<i>Indigofera monophylla</i>	+	0.4 m	PI052.03
<i>Stemodia lathraia</i>	+	0.02 m	PI059.06
<i>Mollugo molluginea</i>	+	0.2 m	PI043.29
<i>Pluchea tetranthera</i>	+	0.4 m	PI066.22
<i>Rhynchosia minima</i>	+	cr	PI059.07
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI043.14
<i>Solanum diversiflorum</i>	+	0.3 m	PI049.04
<i>Stylidium desertorum</i>	+	0.02 m	PI045.19
<i>Tephrosia leptoclada</i>	+	0.2 m	PI059.09
<i>Triodia epactia</i>	7%	0.3 m	PI059.01
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI042.06

Port Hedland RS Site PI060**Described by** BW **Date** 23/06/2011 **Type** Q

50x50 m

Location Port Hedland
MGA Zone 50 660742 mE 7734177 mN
Habitat Plain
Soil Orange brown silty sand
Rock Type N/A
Vegetation Low Open Shrubland of *Acacia stellaticeps* over Open Hummock Grassland of *Triodia lanigera*
Veg Condition Excellent
Fire Age Moderate to old
Notes Aspect: N/A
 Bare Ground: 80%
 Litter Cover: +% Logs, 1% Twigs, 1% Lvs
 Disturbance: Cattle

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia inaequilatera</i>	+	1.6 m	PI049.06	
<i>Acacia stellaticeps</i>	2%	0.6 m	PI043.01	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.3 m	PI049.07	
<i>Bulbostylis barbata</i>	+	0.1 m	PI056.01	
<i>Calandrinia pentavalvis</i>	+	0.2 m	PI049.11	
<i>Crotalaria medicaginea</i> var. <i>neglecta</i>	+	0.4 m	PI060.01	
<i>Digitaria brownii</i>	+	0.4 m	PI028.04	
<i>Dysphania saxatilis</i>	+	0.3 m	PI069.03	
<i>Euphorbia alsiniflora</i>	+	0.2 m	PI056.08	
<i>Fimbristylis dichotoma</i>	+	0.2 m	PI049.15	
<i>Fimbristylis simulans</i>	+	0.2 m	PI028.03	
<i>Goodenia microptera</i>	+	0.4 m	PI060.02	
<i>Hybanthus aurantiacus</i>	+	0.4 m	PI043.13	
<i>Indigofera monophylla</i>	+	0.4 m	PI052.03	
<i>Mollugo molluginea</i>	+	0.2 m	PI043.29	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.2 m	PI043.06	
<i>Polymeria calycina</i>	+	0.2 m	PI060.04	
* <i>Portulaca oleracea</i>	+	0.1 m	PI056.07	
<i>Ptilotus astrolasius</i>	+	0.3 m	PI056.18	
<i>Ptilotus fusiformis</i>	+	0.3 m	PI043.11	
<i>Senna notabilis</i>	+	0.4 m	PI043.09	
<i>Sida rohlenae</i> subsp. <i>rohlenae</i>	+	0.2 m	PI060.05	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.1 m	PI056.09	
<i>Tribulus hirsutus</i>	+	prostrate	PI060.03	
<i>Triodia lanigera</i>	15%	0.4 m	PI060.06	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI042.06	

Port Hedland RS Site PI061**Described by** HA **Date** 30/06/2011 **Type** Q 50x50 m**Location** Port Hedland**MGA Zone** 50 662706 mE 7731505 mN**Habitat** Sand plain**Soil** Orange brown loamy sand**Rock Type** N/A**Vegetation** Low Open Shrubland of *Acacia stellaticeps* over Hummock Grassland of *Triodia lanigera* and *Triodia epactia* over Scattered Tussock Grasses of *Aristida holathera* var. *holathera* over Scattered Sedges of *Fimbristylis dichotoma***Veg Condition** Excellent**Fire Age** Moderate**Notes** Aspect: N/A
Bare Ground: 55%
Litter Cover: +% Logs, +% Twigs, 2% Lvs
Disturbance: None**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia inaequilatera</i>	+	2.3 m	PI054.05	
<i>Acacia sericophylla</i>	+	0.5 m	PI070.04	
<i>Acacia stellaticeps</i>	2%	0.5 m	PI070.01	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	+	3 m	PI070.30	
<i>Aristida holathera</i> var. <i>holathera</i>	1%	0.3 m	PI061.02	
<i>Boerhavia coccinea</i>	+	cr	PI072.12	
<i>Bonamia alatisemina</i>	+	cr	PI053.02	
<i>Bulbostylis barbata</i>	+	0.1 m	PI070.17	
<i>Cleome viscosa</i>	+	0.3 m	PI099.07	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.2 m	PI070.02	
<i>Crotalaria ramosissima</i>	+	0.2 m	PI089.02	
<i>Dolichandrone heterophylla</i>	+	1.2 m	PI061.05	
<i>Dysphania saxatilis</i>	+	0.2 m	PI053.07	
<i>Eriachne aristidea</i>	+	0.3 m	PI070.28	
<i>Euphorbia australis</i>	+	cr	PI108.12	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.1 m	PI070.07	
<i>Fimbristylis dichotoma</i>	1%	0.4 m	PI081.07	
<i>Fimbristylis simulans</i>	+	0.3 m	PI072.08	
<i>Goodenia microptera</i>	+	0.3 m	PI096.01	
<i>Gossypium australe</i>	+	0.3 m	PI105.15	
<i>Hibiscus brachychlaenus</i>	+	0.3 m	PI061.04	
<i>Hybanthus aurantiacus</i>	+	0.4 m	PI099.02	
<i>Indigofera monophylla</i>	+	0.3 m	PI072.03	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI072.02	
<i>Polymeria ambigua</i>	+	cr	PI096.04	
<i>Ptilotus astrolasius</i>	+	0.5 m	PI089.05	
<i>Ptilotus fusiformis</i>	+	0.3 m	PI070.22	
<i>Ptilotus polystachyus</i>	+	0.4 m	PI147.19	

<i>Schizachyrium fragile</i>	+	0.3 m	PI110.05
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	+	1.2 m	PI061.06
<i>Senna notabilis</i>	+	0.2 m	PI070.14
<i>Solanum lasiophyllum</i>	+	0.5 m	PI070.37
<i>Trianthema pilosa</i>	+	cr	PI072.13
<i>Triodia epactia</i>	5%	0.5 m	PI061.03
<i>Triodia lanigera</i>	30%	0.4 m	PI061.01
<i>Triumfetta ramosa</i>	+	0.3 m	PI099.05
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI072.06

Port Hedland RS Site PI062**Described by** BW **Date** 24/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 663201 mE 7733037 mN
Habitat Plain
Soil Orange brown clayey sand
Rock Type N/A
Vegetation Scattered shrubs of *Acacia inaequilatera* over Low Open Shrubland of *Acacia stellaticeps* over Open Hummock Grassland of *Triodia lanigera*
Veg Condition Excellent
Fire Age Moderate
Notes Aspect: N/A
 Bare Ground: 80%
 Litter Cover: +% Logs, +% Twigs, 1% Lvs
 Disturbance: Cattle

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia ancistrocarpa</i>	+	1.5 m	PI062.03	
<i>Acacia colei</i> var. <i>colei</i>	+	1.7 m	PI043.16	
<i>Acacia inaequilatera</i>	1%	1-2 m	PI049.06	
<i>Acacia stellaticeps</i>	3%	0.6 m	PI043.01	
<i>Bulbostylis barbata</i>	+	0.1 m	PI056.01	
<i>Chrysopogon fallax</i>	+	0.6 m	PI042.09	
<i>Corymbia candida</i> subsp. <i>dipsodes</i>	+	1.5 m	PI146.07	
* <i>Cucumis melo</i> subsp. <i>agrestis</i>	+	cr	PI026.08	
<i>Digitaria brownii</i>	+	0.4 m	PI062.05	
<i>Eriachne aristidea</i>	+	0.2 m	PI062.02	
<i>Eriachne mucronata</i>	+	0.2 m	PI049.01	
<i>Euphorbia australis</i>	+	0.2 m	PI062.06	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.1 m	PI062.04	
<i>Fimbristylis dichotoma</i>	+	0.2 m	PI049.15	
<i>Fimbristylis simulans</i>	+	0.2 m	PI028.03	
<i>Goodenia microptera</i>	+	0.4 m	PI060.02	
<i>Hybanthus aurantiacus</i>	+	0.3 m	PI043.13	
<i>Indigofera monophylla</i>	+	0.4 m	PI052.03	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.2 m	PI043.06	
<i>Polymeria calycina</i>	+	0.2 m	PI056.06	
<i>Ptilotus astrolasius</i>	+	0.4 m	PI056.18	
<i>Senna notabilis</i>	+	0.2 m	PI043.09	
<i>Sida clementii</i>	+	0.1 m	PI069.01	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.3 m	PI043.14	
<i>Solanum diversiflorum</i>	+	0.2 m	PI049.04	
<i>Triodia lanigera</i>	15%	0.4 m	PI062.01	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI042.06	

Port Hedland RS Site PI063**Described by** LD **Date** 24/06/2011 **Type** Q 50x50 m**Location** Port Hedland**MGA Zone** 50 659695 mE 7733018 mN**Habitat** Plain**Soil** Orange brown sand**Rock Type** N/A**Vegetation** Low Open Shrubland of *Acacia stellaticeps* over Open Hummock Grassland of *Triodia schinzii* and *Triodia lanigera***Veg Condition** Excellent**Fire Age** Moderate**Notes** Aspect: N/A
Bare Ground: 80%
Litter Cover: 0% Logs, +% Twigs, +% Lvs
Disturbance: Old tracks near by**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia stellaticeps</i>	2%	0.7 m	PI065.01	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	+	0.3 m	PI150.07	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.1 m	PI063.09	
<i>Aristida inaequiglumis</i>	+	0.7 m	PI058.04	
<i>Bonamia media</i> var. <i>villosa</i>	+	0.1 m	PI063.05	
<i>Bulbostylis barbata</i>	+	0.1 m	PI027.03	
<i>Chrysopogon fallax</i>	+	0.5 m	PI051.04	
<i>Digitaria brownii</i>	+	0.4 m	PI063.07	
<i>Eriachne aristidea</i>	+	0.4 m	PI063.03	
<i>Eriachne mucronata</i>	+	0.5 m	PI063.04	
<i>Euphorbia alsiniflora</i>	+	0.1 m	PI025.12	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.1 m	PI063.10	
<i>Fimbristylis oxystachya</i>	+	0.2 m	PI025.05	
<i>Goodenia microptera</i>	+	0.2 m	PI063.14	
<i>Hibiscus brachychlaenus</i>	+	0.1 m	PI063.11	
<i>Hybanthus aurantiacus</i>	+	0.3 m	PI043.13	
<i>Indigofera monophylla</i>	+	0.2 m	PI065.13	
<i>Paraneurachne muelleri</i>	+	0.2 m	PI058.06	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.2 m	PI063.08	
<i>Polymeria calycina</i>	+	0.1 m	PI063.13	
<i>Portulaca pilosa</i>	+	0.2 m	PI090.15	
<i>Ptilotus astrolasius</i>	+	0.2 m	PI045.06	
<i>Ptilotus fusiformis</i>	+	0.3 m	PI065.28	
<i>Ptilotus polystachyus</i>	+	0.6 m	PI025.13	
<i>Senna notabilis</i>	+	0.2 m	PI051.12	
<i>Trianthema pilosa</i>	+	0.1 m	PI065.03	
<i>Triodia lanigera</i>	6%	0.4 m	PI063.01	
<i>Triodia schinzii</i>	11%	0.4 m	PI063.02	
<i>Triumfetta ramosa</i>	+	0.1 m	PI063.12	
<i>Waltheria indica</i>	+	0.05 m	PI063.06	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI043.08	

Port Hedland RS **Site** PI064

Described by BW **Date** 22/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 657719 mE 7733476 mN
Habitat Plain
Soil Orange brown silty clay
Rock Type N/A
Vegetation Hummock Grassland of *Triodia epactia*
Veg Condition Excellent
Fire Age Moderate
Notes Aspect: N/A
 Bare Ground: 65%
 Litter Cover: 0% Logs, +% Twigs, +% Lvs
 Disturbance: Cattle



SPECIES LIST:

Name	Cover	Height	Specimen	Notes
<i>Calandrinia creethiae</i>	+	prostrate	PI064.06	
<i>Cyperus squarrosus</i>	(+)	0.03 m	PI064.08	
<i>Eragrostis dielsii</i>	+	0.03 m	PI064.05	
<i>Eriachne mucronata</i>	+	0.1 m	PI064.04	
<i>Fimbristylis rara</i>	(+)	0.1 m	PI064.03	
<i>Pluchea tetranthera</i>	+	0.4 m	PI064.02	
<i>Triodia epactia</i>	35%	0.3 m	PI064.01	

Port Hedland RS Site PI065**Described by** LD **Date** 22/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 656220 mE 7733162 mN
Habitat Sandy plain
Soil Orange brown sandy loam
Rock Type N/A
Vegetation Scattered Low Shrubs of *Acacia stellaticeps* over Open Hummock Grassland of *Triodia epactia* and *Triodia lanigera* over Scattered Tussock Grasses of *Aristida holathera* var. *holathera* and *Eriachne mucronata*
Veg Condition Excellent
Fire Age Old
Notes Aspect: N/A
 Bare Ground: 75%
 Litter Cover: 0% Logs, +% Twigs, +% Lvs
 Disturbance: Tracks and power lines near by

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia stellaticeps</i>	1%	0.6 m	PI065.01	Fl; yellow
<i>Acacia trudgeniana</i>	+	0.8 m	PI065.31	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	+	0.2 m	PI065.19	
<i>Aristida holathera</i> var. <i>holathera</i>	1%	0.3 m	PI065.06	
<i>Boerhavia coccinea</i>	+	cr	PI065.20	
<i>Bonamia alatisemina</i>	+	cr	PI065.11	
<i>Bonamia media</i> var. <i>villosa</i>	+	0.2 m	PI065.18	
<i>Bulbostylis barbata</i>	+	0.05 m	PI066.04	
<i>Cleome viscosa</i>	+	0.4 m	PI065.17	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.3 m	PI065.15	
<i>Eragrostis eriopoda</i>	+	0.2 m	PI065.04	
<i>Eriachne mucronata</i>	+	0.3 m	PI065.05	
<i>Euphorbia alsiniflora</i>	+	0.1 m	PI065.30	
<i>Euphorbia australis</i>	+	0.1 m	PI065.25	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.3 m	PI065.16	
<i>Fimbristylis simulans</i>	+	0.3 m	PI065.07	
<i>Grevillea pyramidalis</i> subsp. <i>leucadendron</i>	+	1.5 m	PI065.29	
<i>Hakea lorea</i> subsp. <i>lorea</i>	+	2 m	PI065.32	
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>	+	0.2 m	PI065.14	
<i>Hybanthus aurantiacus</i>	+	0.4 m	PI043.13	
<i>Indigofera monophylla</i>	+	0.5 m	PI065.13	Fl; pink
<i>Mollugo molluginea</i>	+	0.1 m	PI132.04	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.2 m	PI065.08	
<i>Portulaca pilosa</i>	+	0.1 m	PI065.24	
<i>Ptilotus fusiformis</i>	+	0.5 m	PI065.28	
<i>Senna notabilis</i>	+	0.1 m	PI051.12	
<i>Sida clementii</i>	+	0.7 m	PI065.21	
<i>Sida</i> sp. dark green fruits (S. van Leeuwen 2260)	+	0.4 m	PI065.23	

<i>Solanum ellipticum</i>	+	0.2 m	PI065.26	
<i>Trianthema pilosa</i>	+	0.1 m	PI065.03	Fl; purple
<i>Triodia epactia</i>	20%	0.6 m	PI065.02	
<i>Triodia lanigera</i>	6%	0.5 m	PI065.12	
<i>Waltheria indica</i>	+	0.2 m	PI065.27	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI065.09	

Port Hedland RS Site PI066**Described by** LD **Date** 22/06/2011 **Type** Q 50x50 m**Location** Port Hedland**MGA Zone** 50 655392 mE 7734336 mN**Habitat** Sandy plain**Soil** Orange brown sandy loam with crust**Rock Type** N/A**Vegetation** Open Hummock Grassland of *Triodia epactia* over Scattered Tussock Grasses of *Sporobolus australasicus* and *Aristida holathera* var. *holathera***Veg Condition** Excellent**Fire Age** Old**Notes** Aspect: N/A
Bare Ground: 80%
Litter Cover: 0% Logs, +% Twigs, 1% Lvs
Disturbance: Cattle**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.2 m	PI066.11	
<i>Bulbostylis barbata</i>	+	0.05 m	PI066.04	
<i>Calandrinia pentavalvis</i>	+	0.1 m	PI066.03	
<i>Centipeda minima</i> subsp. <i>macrocephala</i>	+	0.1 m	PI066.15a	
<i>Dactyloctenium radulans</i>	+	0.1 m	PI066.08	
<i>Eragrostis cumingii</i>	+	0.3 m	PI066.17	
<i>Eragrostis pergracilis</i>	+	0.1 m	PI066.09	
<i>Eriachne aristidea</i>	+	0.2 m	PI066.07	
<i>Fimbristylis dichotoma</i>	+	0.2 m	PI066.06	
<i>Fimbristylis simulans</i>	+	0.1 m	PI065.07	
<i>Gomphrena sordida</i>	+	0.1 m	PI066.10	
<i>Ipomoea coptica</i>	+	cr	PI066.16	
<i>Marsilea hirsuta</i>	+	0.02 m	PI066.20	
<i>Pluchea rubelliflora</i>	+	0.2 m	PI066.16a	
<i>Pluchea tetranthera</i>	+	0.1 m	PI066.22	
* <i>Portulaca oleracea</i>	+	0.1 m	PI066.21	
<i>Pterocaulon sphaeranthoides</i>	+	0.2 m	PI066.19	
<i>Ptilotus murrayi</i>	+	0.01 m	PI066.12	
<i>Senna notabilis</i>	+	0.05 m	PI051.12	
<i>Solanum ellipticum</i>	+	0.1 m	PI066.23	
<i>Sporobolus australasicus</i>	1%	0.1 m	PI066.02	
<i>Stackhousia intermedia</i>	+	0.2 m	PI066.14	
<i>Synaptantha tillaeacea</i> var. <i>tillaeacea</i>	+	0.02 m	PI066.13	
<i>Trianthema triquetra</i>	+	0.1 m	PI066.15	
<i>Triodia epactia</i>	17%	0.4 m	PI066.01	
<i>Xerochloa laniflora</i>	+	0.3 m	PI066.24	

Port Hedland RS Site PI067**Described by** BW **Date** 22/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 654256 mE 7734411 mN
Habitat Plain
Soil Orange brown sandy loam
Rock Type N/A
Vegetation Scattered Low Trees of *Owenia reticulata* over Open Shrubland of *Acacia colei* var. *colei* over Scattered Low Shrubs of *Acacia stellaticeps* over Open Hummock Grassland of *Triodia epactia*
Veg Condition Excellent
Fire Age Old
Notes Aspect: N/A
 Bare Ground: 73%
 Litter Cover: 0% Logs, +% Twigs, +% Lvs
 Disturbance: Cattle

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	2%	1-2 m	PI043.16	
<i>Acacia stellaticeps</i>	1%	0.6 m	PI043.01	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.5 m	PI067.07	
<i>Boerhavia coccinea</i>	+	0.1 m	PI067.15	
<i>Bulbostylis barbata</i>	+	0.1 m	PI067.01	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.5 m	PI067.08	
<i>Cucumis maderaspatanus</i>	+	cr	PI067.16	
<i>Desmodium filiforme</i>	+	prostrate	PI067.10	
<i>Drosera indica</i>	+	0.1 m	PIOPBW01a	
<i>Eragrostis cumingii</i>	+	0.1 m	PI067.04	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.3 m	PI067.14	
<i>Fimbristylis oxystachya</i>	+	0.1 m	PI067.03	
<i>Hakea lorea</i> subsp. <i>lorea</i>	+	0.8 m	PI043.07	
<i>Ipomoea polymorpha</i>	+	0.1 m	PI067.13	
<i>Owenia reticulata</i>	1%	6 m	PI067.17	
<i>Pluchea ferdinandi-muelleri</i>	+	0.4 m	PI067.02	
<i>Polygala linariifolia</i>	+	0.2 m	PI067.09	
<i>Senna notabilis</i>	+	0.1 m	PI043.09	
<i>Sida rohlenae</i> subsp. <i>rohlenae</i>	+	0.4 m	PI069.07	
<i>Solanum lasiophyllum</i>	+	0.6 m	PI067.06	
<i>Stackhousia muricata</i>	+	0.2 m	PI043.28	
<i>Synaptantha tillaeacea</i> var. <i>tillaeacea</i>	+	0.1 m	PI067.12	
<i>Triodia epactia</i>	25%	0.5 m	PI067.18	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI042.06	

Port Hedland RS Site PI068**Described by** HA **Date** 22/06/2011 **Type** Q 50x50 m

Location Port Hedland

MGA Zone 50 653602 mE 7733204 mN

Habitat Major riverbed

Soil Light brown sand

Rock Type N/A

Vegetation Low Open Woodland of *Eucalyptus camaldulensis* subsp. *refulgens* and *Melaleuca argentea* over High Open Shrubland of *Acacia trachycarpa* and *Acacia ampliceps* over Scattered Hummock Grasses of *Triodia lanigera* and *Triodia epactia*

Veg Condition Excellent

Fire Age Old

Notes Aspect: N/A
Bare Ground: 80%
Litter Cover: +% Logs, +% Twigs, +% Lvs
Disturbance: Some buffel

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia ampliceps</i>	1%	3 m	PI068.19	
<i>Acacia dictyophleba</i>	+	3.5 m	PI068.20	
<i>Acacia stellaticeps</i>	+	0.3 m	PI070.01	
<i>Acacia trachycarpa</i>	2%	2.3 m	PI068.03	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	+	3 m	PI070.30	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.4 m	PI068.06	
<i>Cajanus cinereus</i>	+	2 m	PI068.08	
<i>Calandrinia quadrivalvis</i>	+	0.03 m	PI068.11	
<i>Cassytha capillaris</i>	+	cl	PI068.21	
** <i>Cenchrus ciliaris</i>	+	0.5 m	PI070.29	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.5 m	PI068.04	
<i>Cyperus vaginatus</i>	1%	1 m	PI068.16	
<i>Dentella asperata</i>	+	cr	PI068.22	
<i>Eriachne aristidea</i>	+	0.3 m	PI068.05	
<i>Eriachne mucronata</i>	+	0.2 m	PI068.24	
<i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i>	1%	6 m	PI068.01	
<i>Euphorbia alsiniflora</i>	+	0.1 m	PI068.12	
<i>Hybanthus aurantiacus</i>	+	0.5 m	PI099.02	
<i>Melaleuca argentea</i>	2%	4.5 m	PI068.10	
<i>Melaleuca glomerata</i>	+	2.8 m	PI068.09	
<i>Melaleuca linophylla</i>	+	1 m	PI068.02	
<i>Pimelea ammocharis</i>	+	1 m	PI070.23	
<i>Pluchea rubelliflora</i>	+	0.1 m	PI068.18	
<i>Pterocaulon sphaeranthoides</i>	+	0.02 m	PI068.17	
<i>Schoenoplectus laevis</i>	+	0.05 m	PI068.23	
<i>Sida rohlenae</i> subsp. <i>rohlenae</i>	+	1 m	PI068.13	
<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>	+	0.3 m	PI068.15	
<i>Triodia epactia</i>	+	0.5 m	PI068.07	
<i>Triodia lanigera</i>	1%	0.5 m	PI068.14	

Port Hedland RS Site PI069**Described by** BW **Date** 21/06/2011 **Type** Q 50x50 m**Location** Port Hedland**MGA Zone** 50 654412 mE 7738963 mN**Habitat** Wide flat drainage line**Soil** Orange brown silty sand**Rock Type** N/A**Vegetation** Open Woodland of *Eucalyptus camaldulensis* subsp. *refulgens* over High Shrubland *Acacia tumida* var. *pilbarensis*, *Cajanus cinereus* and *Acacia pyrifolia* over Very Open Hummock Grassland of *Triodia epactia***Veg Condition** Excellent**Fire Age** Young**Notes** Aspect: N/A
Bare Ground: 60%
Litter Cover: 1% Logs, 3% Twigs, 4% Lvs
Disturbance: Fire**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia pyrifolia</i>	1%	0.8 m	PI069.06	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	15%	1.7 m	PI069.09	
<i>Bonamia media</i> var. <i>villosa</i>	+	prostrate	PI069.12	
<i>Cajanus cinereus</i>	15%	1.6 m	PI069.04	
<i>Chrysopogon fallax</i>	+	0.5 m	PI042.09	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.4 m	PI042.04	
<i>Crotalaria cunninghamii</i> subsp. <i>sturtii</i>	+	1.2 m	PI069.10	
<i>Dentella asperata</i>	+	prostrate	PI069.11	
<i>Dysphania saxatilis</i>	+	0.1 m	PI069.03	
<i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i>	4%	10-20 m	PI069.08	
<i>Goodenia forrestii</i>	+	0.2 m	PI069.02	
<i>Goodenia triodiophila</i>	+	0.3 m	PI069.13	2 ind.
<i>Hybanthus aurantiacus</i>	+	0.4 m	PI043.13	
<i>Mollugo molluginea</i>	+	0.02 m	PI043.29	
<i>Paraneurachne muelleri</i>	+	0.2 m	PI043.15	
<i>Senna notabilis</i>	+	0.3 m	PI043.09	
<i>Sida clementii</i>	+	0.8 m	PI069.01	
<i>Sida rohlenae</i> subsp. <i>rohlenae</i>	+	1 m	PI069.07	
<i>Triodia epactia</i>	6%	0.4 m	PI069.15	

Port Hedland RS Site PI070

Described by HA Date 21/06/2011 Type Q 50x50 m

Location Port Hedland
MGA Zone 50 653434 mE 7740914 mN
Habitat Sand plain
Soil Orange brown sandy loam
Rock Type N/A
Vegetation Low Open Heath of *Acacia stellaticeps* over Open Hummock Grassland of *Triodia epactia*
Veg Condition
Fire Age
Notes

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Abutilon pritzelianum</i> ms	+	1.2 m	PI070.36	
<i>Acacia colei</i> var. <i>colei</i>	+	1.5 m	PI070.38	
<i>Acacia sericophylla</i>	+	2 m	PI070.04	
<i>Acacia stellaticeps</i>	40%	0.9 m	PI070.01	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	+	2 m	PI070.30	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.5 m	PI070.10	
<i>Aristida inaequiglumis</i>	+	0.7 m	PI070.24	
<i>Bonamia alatisemina</i>	+	cr	PI070.18	
<i>Bonamia media</i> var. <i>villosa</i>	+	cr	PI070.08	
<i>Bulbostylis barbata</i>	+	0.1 m	PI070.17	
<i>Calandrinia pentavalvis</i>	+	cr	PI070.20	
* <i>Cenchrus ciliaris</i>	+	0.2 m	PI070.29	
<i>Chrysopogon fallax</i>	+	1.2 m	PI070.21	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.3 m	PI070.02	
<i>Desmodium filiforme</i>	+	0.1 m	PI070.32	
<i>Eragrostis cumingii</i>	+	0.2 m	PI070.11	
<i>Eragrostis eriopoda</i>	+	0.3 m	PI070.13	
<i>Eriachne aristidea</i>	+	0.2 m	PI070.28	
<i>Eriachne mucronata</i>	+	0.3 m	PI070.12	
<i>Euphorbia australis</i>	+	0.1 m	PI070.06	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.1 m	PI070.07	
<i>Hakea lorea</i> subsp. <i>lorea</i>	+	1.5 m	PI070.05	
<i>Hibiscus burtonii</i>	+	0.4 m	PI070.39	
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>	+	0.4 m	PI070.31	
<i>Mollugo molluginea</i>	+	0.2 m	PI070.35	
<i>Paraneurachne muelleri</i>	+	0.3 m	PI070.19	
<i>Pimelea ammocharis</i>	+	0.7 m	PI070.23	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI070.15	
* <i>Portulaca oleracea</i>	+	cr	PI070.34	
<i>Ptilotus fusiformis</i>	+	0.3 m	PI070.22	
<i>Senna notabilis</i>	+	0.2 m	PI070.14	

<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI070.03
<i>Solanum lasiophyllum</i>	+	0.5 m	PI070.37
<i>Tribulopsis angustifolia</i>	+	cr	PI070.26
<i>Tribulus occidentalis</i>	+	cr	PI070.27
<i>Triodia epactia</i>	20%	0.5 m	PI070.09
<i>Waltheria indica</i>	+	0.3 m	PI070.25

Port Hedland RS Site PI071

Described by BW Date 23/06/2011 Type Q 50x50 m

Location Port Hedland
MGA Zone 50 655929 mE 7741813 mN
Habitat Plain
Soil Orange brown silty sand
Rock Type N/A
Vegetation High Open Shrubland of *Acacia colei* var. *colei* over
 Low Open Shrubland of *Acacia stellaticeps* over Open
 Hummock Grassland of *Triodia epactia*
Veg Condition Excellent
Fire Age Moderate
Notes Aspect: N/A
 Bare Ground: 72%
 Litter Cover: +% Logs, 1% Twigs, 2% Lvs
 Disturbance: Cattle

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	3%	2.5 m	PI043.16	
<i>Acacia stellaticeps</i>	4%	0.7 m	PI043.01	
<i>Bulbostylis barbata</i>	+	0.1 m	PI067.01	
<i>Calandrinia creethiae</i>	+	prostrate	PI064.06	
<i>Calandrinia pentavalvis</i>	+	0.1 m	PI049.11	
<i>Chrysopogon fallax</i>	+	0.6 m	PI042.09	
<i>Cucumis maderaspatanus</i>	+	cr	PI071.01	
<i>Drosera indica</i>	+	0.1 m	PIOPBW01a	
<i>Eriachne mucronata</i>	+	0.3 m	PI049.01	
<i>Fimbristylis dichotoma</i>	+	0.1 m	PI049.15	
<i>Hybanthus aurantiacus</i>	+	0.3 m	PI043.13	
<i>Ipomoea muelleri</i>	+	cr	PI071.02	
<i>Mitrasacme connata</i>	+	0.2 m	PI071.03	
<i>Paspalidium tabulatum</i>	+	0.2 m	PI071.08	
<i>Pluchea ferdinandi-muelleri</i>	+	0.5 m	PI067.02	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.2 m	PI043.06	
<i>Senna notabilis</i>	+	0.3 m	PI043.09	
<i>Sida rohlenae</i> subsp. <i>rohlenae</i>	+	0.1 m	PI071.06	
<i>Stylidium desertorum</i>	+	0.1 m	PI071.05	
<i>Triodia epactia</i>	25%	0.4 m	PI071.09	
<i>Waltheria indica</i>	+	0.3 m	PI071.07	

Port Hedland RS Site PI072**Described by** HA **Date** 21/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 655582 mE 7740428 mN
Habitat Sand plain
Soil Orange brown sandy loam
Rock Type N/A
Vegetation Open Shrubland of *Acacia stellaticeps* and *Acacia tumida* var. *pilbarensis* over Hummock Grassland of *Triodia epactia*
Veg Condition Excellent
Fire Age Young
Notes Aspect: N/A
 Bare Ground: 60%
 Litter Cover: +% Logs, 1% Twigs, +% Lvs
 Disturbance: Young

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	+	0.7 m	PI070.38	
<i>Acacia stellaticeps</i>	3%	0.3 m	PI070.01	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	1%	1.2 m	PI070.30	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.5 m	PI070.10	
<i>Boerhavia coccinea</i>	+	cr	PI072.12	
<i>Bonamia media</i> var. <i>villosa</i>	+	0.1 m	PI072.11	
<i>Bonamia rosea</i>	+	0.4 m	PI072.09	
<i>Bulbostylis barbata</i>	+	0.1 m	PI070.17	
<i>Calandrinia pentavalvis</i>	+	0.1 m	PI072.14	
<i>Chrysopogon fallax</i>	+	0.8 m	PI070.21	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.4 m	PI070.02	
<i>Eragrostis eriopoda</i>	+	0.3 m	PI070.13	
<i>Euphorbia alsiniflora</i>	+	0.1 m	PI072.10	
<i>Fimbristylis simulans</i>	+	0.1 m	PI072.08	
<i>Hibiscus burtonii</i>	+	0.5 m	PI072.15	
<i>Hybanthus aurantiacus</i>	+	0.4 m	PI072.05	
<i>Indigofera monophylla</i>	+	0.4 m	PI072.03	
<i>Mitrasacme connata</i>	+	0.2 m	PI072.07	
<i>Mollugo molluginea</i>	+	0.2 m	PI070.35	
<i>Paraneurachne muelleri</i>			PI054.09	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI072.02	
<i>Ptilotus fusiformis</i>	+	0.2 m	PI070.22	
<i>Senna notabilis</i>	+	0.2 m	PI070.14	
<i>Sida fibulifera</i>	+	0.2 m	PI072.04	
<i>Solanum lasiophyllum</i>	+	0.6 m	PI070.37	
<i>Trianthema pilosa</i>	+	0.2 m	PI072.13	
<i>Triodia epactia</i>	40%	0.5 m	PI072.01	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.05 m	PI072.06	

Port Hedland RS Site PI073**Described by** HA **Date** 21/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 655835 mE 7739083 mN
Habitat Sand plain
Soil Brown sandy loam
Rock Type N/A
Vegetation Open Shrubland of *Acacia tumida* var. *pilbarensis* over Scattered Low Shrubs of *Dolichandrone heterophylla* over Open Hummock Grassland of *Triodia epactia* over Open Tussock Grassland of *Eragrostis eriopoda*
Veg Condition Excellent
Fire Age Young
Notes Aspect: N/A
 Bare Ground: 60%
 Litter Cover: +% Logs, +% Twigs, +% Lvs
 Disturbance: Old cattle tracks

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia stellaticeps</i>	+	0.2 m	PI070.01	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	6%	1.5 m	PI070.30	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.3 m	PI073.02	
<i>Bulbostylis barbata</i>	+	0.1 m	PI070.17	
<i>Chrysopogon fallax</i>	+	0.8 m	PI070.21	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.6 m	PI070.02	
<i>Dolichandrone heterophylla</i>	1%	0.5 m	PI073.01	
<i>Eragrostis eriopoda</i>	20%	0.4 m	PI070.13	
<i>Euphorbia alsiniflora</i>	+	0.1 m	PI072.10	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.1 m	PI073.10	
<i>Grevillea pyramidalis</i> subsp. <i>leucadendron</i>	+	1.5 m	PI073.06	
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>	+	0.2 m	PI073.09	
<i>Hybanthus aurantiacus</i>	+	0.4 m	PI099.02	
<i>Ipomoea polymorpha</i>	+	0.2 m	PI073.13	
<i>Mollugo molluginea</i>	+	0.2 m	PI070.35	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.05 m	PI072.02	
<i>Portulaca pilosa</i>	+	0.1 m	PI073.03	
<i>Senna notabilis</i>	+	0.4 m	PI070.14	
<i>Sida fibulifera</i>	+	cr	PI072.04	
<i>Sida</i> sp. B Kimberley Flora (A.A. Mitchell 2745)	+	0.6 m	PI073.04	
<i>Solanum ellipticum</i>	+	0.3 m	PI073.12	
<i>Solanum lasiophyllum</i>	+	0.1 m	PI070.37	
<i>Trianthema pilosa</i>	+	0.1 m	PI072.13	
<i>Tribulopsis angustifolia</i>	+	cr	PI073.08	
<i>Triodia epactia</i>	15%	0.5 m	PI073.05	
<i>Waltheria indica</i>	+	0.1 m	PI073.11	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI072.06	

Port Hedland RS Site PI074**Described by** LD **Date** 29/06/2011 **Type** Q 50x50 m**Location** Port Hedland**MGA Zone** 50 671261 mE 7738932 mN**Habitat** Plain**Soil** Orange brown sandy loam**Rock Type** N/A**Vegetation** Low Open Woodland of *Corymbia candida* subsp. *dipsodes* over Open Shrubland of *Acacia bivenosa* and *Acacia sphaerostachya* over Low Open Shrubland of *Acacia stellaticeps* over Hummock Grassland of *Triodia lanigera* and *Triodia epactia***Veg Condition** Very good**Fire Age** Moderate to old**Notes** Aspect: N/A
Bare Ground: 50%
Litter Cover: +% Logs, 1% Twigs, 1% Lvs
Disturbance: Tracks, cattle and weeds**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia bivenosa</i>	1%	1 m	PI117.05	
<i>Acacia colei</i> var. <i>colei</i>	+	2 m	PI091.12	
<i>Acacia sericophylla</i>	+	2 m	PI117.14	
<i>Acacia sphaerostachya</i>	1%	2 m	PI134.01	
<i>Acacia stellaticeps</i>	4%	0.7 m	PI065.01	
<i>Acacia trudgeniana</i>	+	2 m	PI065.31	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.2 m	PI094.04	
<i>Bonamia alatisemina</i>	+	0.1 m	PI117.11	
<i>Bonamia rosea</i>	+	0.3 m	PI090.02	
<i>Bulbostylis barbata</i>	+	0.1 m	PI090.18	
<i>Calandrinia pumila</i>	+	0.01 m	PI045.18	
<i>Carissa lanceolata</i>	+	1 m	PI094.09	
* <i>Cenchrus ciliaris</i>	1%	0.4 m	PI103.06	
<i>Chrysopogon fallax</i>	+	0.4 m	PI051.04	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.3 m	PI094.08	
<i>Corymbia candida</i> subsp. <i>dipsodes</i>	3%	3 m	PI074.01	
* <i>Cucumis melo</i> subsp. <i>agrestis</i>	+	cr	PI154.04	
<i>Dysphania saxatilis</i>	+	0.2 m	PI090.11	
<i>Eriachne aristidea</i>	+	0.2 m	PI063.03	
<i>Eriachne mucronata</i>	+	0.3 m	PI109.05	
<i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i>	+	6 m	PI079.01	
<i>Euphorbia alsiniflora</i>	+	0.2 m	PI117.03	
<i>Fimbristylis oxystachya</i>	(+)	0.1 m	PI025.05	
<i>Goodenia lamprosperma</i>	+	0.1 m	PI079.03	
<i>Hybanthus aurantiacus</i>	+	0.3 m	PI043.13	
<i>Mollugo molluginea</i>	+	0.1 m	PI132.04	
<i>Paspalidium tabulatum</i>	+	0.1 m	PI117.07	
<i>Pimelea ammocharis</i>	+	0.8 m	PI090.05	

<i>Polycarpha corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI058.10
* <i>Portulaca oleracea</i>	+	0.05 m	PI128.04
<i>Ptilotus fusiformis</i>	+	0.4 m	PI065.28
<i>Senna notabilis</i>	+	0.2 m	PI051.12
<i>Sida rohlenae</i> subsp. <i>rohlenae</i>	+	0.2 m	PI154.05
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.2 m	PI058.05
<i>Solanum diversiflorum</i>	+	0.2 m	PI048.09
<i>Solanum ellipticum</i>	+	0.4 m	PI103.10
<i>Sporobolus australasicus</i>	+	0.1 m	PI066.02
<i>Triodia epactia</i>	20%	0.6 m	PI074.02
<i>Triodia lanigera</i>	28%	0.6 m	PI074.03
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI043.08

Port Hedland RS Site PI075**Described by** BW **Date** 29/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 671339 mE 7740276 mN
Habitat Port Hedland
Soil Orange brown silty sand
Rock Type N/A
Vegetation Open Shrubland of *Acacia colei* var. *colei* and *Acacia sericophylla* over Low Open Shrubland of *Acacia stellaticeps* over Open Hummock Grassland of *Triodia lanigera*
Veg Condition Excellent
Fire Age Old
Notes Aspect: N/A
 Bare Ground: 70%
 Litter Cover: +% Logs, +% Twigs, 2% Lvs
 Disturbance: Cattle and weeds

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	1%	1-2 m	PI043.16	
<i>Acacia sericophylla</i>	1%	1-2 m	PI104.07	
<i>Acacia stellaticeps</i>	2%	0.6 m	PI043.01	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.4 m	PI049.07	
<i>Aristida inaequiglumis</i>	+	0.5 m	PI075.01	
<i>Bonamia rosea</i>	+	0.4 m	PI030.04	
<i>Bulbostylis barbata</i>	+	0.1 m	PI129.01	
* <i>Cenchrus ciliaris</i>	+	0.4 m	PI052.06	
<i>Chrysopogon fallax</i>	2%	0.5 m	PI042.09	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.5 m	PI042.04	
<i>Corymbia candida</i> subsp. <i>dipsodes</i>	1%	2-3 m	PI146.07	
<i>Crotalaria ramosissima</i>	+	0.3 m	PI029.01	
<i>Digitaria brownii</i>	+	0.3 m	PI028.04	
<i>Dysphania saxatilis</i>	+	0.2 m	PI069.03	
<i>Eriachne mucronata</i>	+	0.4 m	PI049.01	
<i>Euphorbia alsiniflora</i>	+	0.3 m	PI056.08	
<i>Hybanthus aurantiacus</i>	+	0.4 m	PI043.13	
<i>Indigofera monophylla</i>	+	0.3 m	PI052.03	
<i>Mollugo molluginea</i>	+	0.2 m	PI043.29	
<i>Pluchea tetranthera</i>	+	0.4 m	PI064.02	
<i>Polycarpha corymbosa</i> var. <i>corymbosa</i>	+	0.2 m	PI043.06	
<i>Portulaca pilosa</i>	+	0.2 m	PI030.01	
<i>Ptilotus fusiformis</i>	+	0.4 m	PI043.11	
<i>Ptilotus polystachyus</i>	+	0.3 m	PI030.03	
<i>Schizachyrium fragile</i>	+	0.4 m	PI075.02	
<i>Triodia lanigera</i>	20%	0.4 m	PI075.03	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI042.06	

Port Hedland RS Site PI076**Described by** EC **Date** 29/06/2011 **Type** Q 50x50 m

Location Port Hedland

MGA Zone 50 673038 mE 7739789 mN

Habitat Plain

Soil Light orange brown sandy loam

Rock Type N/A

Vegetation Open Shrubland of *Acacia tumida* var. *pilbarensis*, *Acacia stellaticeps*, *Acacia colei* var. *colei* and *Acacia sericophylla* over Open Hummock Grassland of *Triodia lanigera* and *Triodia epactia* over Very Open Tussock Grassland of *Aristida holathera* var. *holathera*

Veg Condition Excellent

Fire Age Old

Notes Aspect: N/A
Bare Ground: 78%
Disturbance: Kapok and Buffel

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	2%	1-3 m	PI076.14	
<i>Acacia pyrifolia</i>	+	0.3 m	PI107.03	
<i>Acacia sericophylla</i>	1%	1.5-2 m	PI141.12	
<i>Acacia stellaticeps</i>	2%	0.7 m	PI083.01	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	3%	1-3 m	PI076.15	
* <i>Aerva javanica</i>	+	0.4 m	PI076.05	
<i>Aristida contorta</i>	+	0.3 m	PI076.04	
<i>Aristida holathera</i> var. <i>holathera</i>	8%	0.4 m	PI076.07	
<i>Boerhavia coccinea</i>	+	0.3 m	PI123.29	
<i>Bonamia alatisemina</i>	+	cr	PI083.10	
<i>Bulbostylis barbata</i>	+	0.1 m	PI121.05	
* <i>Cenchrus ciliaris</i>	+	0.4 m	PI103.06	
<i>Chrysopogon fallax</i>	+	0.3 m	PI084.10	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.3 m	PI084.06	
<i>Corymbia candida</i> subsp. <i>dipsodes</i>	1%	2-3 m	PI141.08	
<i>Cucumis maderaspatanus</i>	+	cr	PI141.04	
<i>Dolichandrone heterophylla</i>	1%	1 m	PI076.11	
<i>Eragrostis eriopoda</i>	+	0.3 m	PI084.04	
<i>Eriachne mucronata</i>	+	0.3 m	PI076.13	
<i>Euphorbia alsiniflora</i>	+	0.2 m	PI123.36	
<i>Euphorbia australis</i>	+	0.2 m	PI084.08	
<i>Goodenia forrestii</i>	+	0.3 m	PI076.08	
<i>Grevillea pyramidalis</i> subsp. <i>leucadendron</i>	+	1 m	PI076.03	
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>	+	0.3 m	PI123.16	
<i>Indigofera linifolia</i>	+	0.3 m	PI076.10	
<i>Indigofera monophylla</i>	+	0.3 m	PI123.02	
<i>Mollugo molluginea</i>	+	0.1 m	PI123.09	
<i>Pimelea ammocharis</i>	+	0.3 m	PI076.01	
<i>Pluchea tetranthera</i>	+	0.3 m	PI083.11	

<i>Polycarpha corymbosa</i> var. <i>corymbosa</i>	+	0.2 m	PI083.12
<i>Portulaca pilosa</i>	+	0.2 m	PI123.17
<i>Ptilotus fusiformis</i>	+	0.3 m	PI083.08
<i>Ptilotus polystachyus</i>	+	0.4 m	PI076.02
<i>Rhynchosia minima</i>	+	0.3 m	PI076.09
<i>Schizachyrium fragile</i>	+	0.3 m	PI076.06
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.3 m	PI123.04
<i>Solanum ellipticum</i>	+	0.3 m	PI065.26
<i>Tinospora smilacina</i>	+	cr	PI076.12
<i>Triodia epactia</i>	5%	0.3 m	PI076.16
<i>Triodia lanigera</i>	15%	0.3 m	PI076.17
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI084.03

Port Hedland RS Site PI077**Described by** HA **Date** 29/06/2011 **Type** Q 50x50 m**Location** Port Hedland**MGA Zone** 50 674005 mE 7738233 mN**Habitat** Sand plain/ flood plain**Soil** Orange brown sandy loam**Rock Type** N/A**Vegetation** Low Woodland of *Corymbia hamersleyana* and *Corymbia candida* subsp. *dipsodes* over High Shrubland of *Acacia tumida* var. *pilbarensis* and *Acacia colei* var. *colei* over Open Hummock Grassland of *Triodia epactia***Veg Condition** Excellent to very good**Fire Age** Old**Notes** Aspect: N/A
Bare Ground: 30%
Litter Cover: 1% Logs, 1% Twigs, 2% Lvs
Disturbance: Some buffel**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	5%	3 m	PI070.38	
<i>Acacia sericophylla</i>	+	1.5 m	PI099.13	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	6%	3 m	PI070.30	
<i>Alternanthera nana</i>	+	cr	PI077.05a	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.3 m	PI070.10	
<i>Atalaya hemiglauca</i>	+	3 m	PI077.05	
<i>Bonamia alatisemina</i>	+	4 m	PI053.02	
<i>Bulbostylis barbata</i>	+	0.1 m	PI070.17	
<i>Carissa lanceolata</i>	+	2 m	PI086.09	
* <i>Cenchrus ciliaris</i>	+	0.5 m	PI070.29	
<i>Chrysopogon fallax</i>	12%	1 m	PI070.21	
<i>Cleome viscosa</i>	+	0.5 m	PI040.10	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.5 m	PI070.02	
<i>Corymbia candida</i> subsp. <i>dipsodes</i>	2%	5 m	PI088.08	
<i>Corymbia hamersleyana</i>	10%	4 m	PI077.01	
<i>Cucumis maderaspatanus</i>	+	cr	PI077.11	
<i>Digitaria</i> sp.	+	0.5 m	PI077.07	sterile
<i>Dysphania saxatilis</i>	+	0.3 m	PI053.07	
<i>Eragrostis cumingii</i>	+	0.1 m	PI077.09	atypical form
<i>Eragrostis cumingii</i>	+	0.3 m	PI077.03	
<i>Eriachne aristidea</i>	+	0.3 m	PI070.28	
<i>Eriachne helmsii</i>	+	0.3 m	PI077.06	
<i>Euphorbia alsiniflora</i>	+	0.2 m	PI072.10	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.2 m	PI070.07	
<i>Goodenia lamprosperma</i>	+	0.4 m	PI094.05	
<i>Goodenia triodiophila</i>	+	0.4 m	PI077.13	
<i>Hybanthus aurantiacus</i>	+	0.3 m	PI099.02	
<i>Marsilea hirsuta</i>	+	0.1 m	PI077.08	

<i>Stemodia lathraia</i>	+	0.2 m	PI077.09
<i>Paspalidium tabulatum</i>	+	0.2 m	PI077.12
<i>Pluchea rubelliflora</i>	+	0.3 m	PI077.04
* <i>Portulaca oleracea</i>	+	0.1 m	PI086.11
<i>Rhynchosia minima</i>	+	cr	PI077.10
<i>Schizachyrium fragile</i>	+	0.3 m	PI110.05
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.2 m	PI070.03
<i>Sporobolus australasicus</i>	+	0.1 m	PI037.07
<i>Streptoglossa decurrens</i>	+	0.3 m	PI115.18
<i>Triodia epactia</i>	30%	0.6 m	PI077.02

Port Hedland RS Site PI078**Described by** BW **Date** 29/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 670478 mE 7737780 mN
Habitat Sandplain
Soil Orange brown sandy clay
Rock Type N/A
Vegetation Low Open Woodland of *Corymbia hamersleyana* over
Open Shrubland of *Acacia colei* var. *colei* over
Hummock Grassland of *Triodia epactia*
Veg Condition Excellent
Fire Age Old
Notes Aspect: N/A
Bare Ground: 35%
Litter Cover: +% Logs, 1% Twigs, +% Lvs
Disturbance: Cattle and weedsl

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Abutilon lepidum</i>	+	0.3 m	PI078.01	
<i>Acacia ancistrocarpa</i>	+	1.2 m	PI062.03	
<i>Acacia colei</i> var. <i>colei</i>	3%	1-2 m	PI043.16	
<i>Acacia sericophylla</i>	+	1.6 m	PI104.07	
<i>Acacia stellaticeps</i>	+	0.6 m	PI043.01	
<i>Amaranthus undulatus</i>	(+)	0.2 m	PI133.03	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.4 m	PI049.07	
<i>Calandrinia stagnensis</i>	+	0.3 m	PI145.04	
* <i>Cenchrus ciliaris</i>	+	0.4 m	PI052.06	
<i>Chrysopogon fallax</i>	1%	0.6 m	PI042.09	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.3 m	PI042.04	
<i>Corymbia hamersleyana</i>	3%	2-4 m	PI113.01	
* <i>Cucumis melo</i> subsp. <i>agrestis</i>	+	cr	PI026.08	
<i>Euphorbia alsiniflora</i>	+	0.4 m	PI056.08	
<i>Euphorbia australis</i>	+	prostrate	PI104.02	
<i>Indigofera monophylla</i>	+	0.4 m	PI052.03	
<i>Mollugo molluginea</i>	+	0.2 m	PI043.29	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI043.06	
<i>Rhynchosia minima</i>	+	cr	PI078.02	
<i>Triodia epactia</i>	60%	0.6 m	PI078.03	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI042.06	

Port Hedland RS Site PI079**Described by** LD **Date** 29/06/2011 **Type** Q 50x50 m**Location** Port Hedland**MGA Zone** 50 670786 mE 7736757 mN**Habitat** Plain**Soil** Orange brown sandy loam**Rock Type****Vegetation** Low Open Woodland of *Eucalyptus camaldulensis* subsp. *refulgens* and *Corymbia zygophylla* over Open Shrubland of *Acacia sphaerostachya* and *Acacia colei* var. *colei* over Open Hummock Grassland of *Triodia epactia* and *Triodia lanigera***Veg Condition** Very good**Fire Age** Old**Notes** Aspect: N/A
Bare Ground: 60%
Litter Cover: +% Logs, +% Twigs, 1% Lvs
Disturbance: Cattle and weeds.**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	1%	1-3 m	PI091.12	
<i>Acacia sericophylla</i>	+	1-2 m	PI117.14	
<i>Acacia sphaerostachya</i>	2%	1.5 m	PI134.01	
<i>Acacia stellaticeps</i>	+	0.6 m	PI065.01	
<i>Acacia trudgeniana</i>	+	1-2.5 m	PI065.31	
<i>Alternanthera nana</i>	+	0.2 m	PI094.07	
<i>Amaranthus undulatus</i>	+	0.3 m	PI045.16	
<i>Aristida inaequiglumis</i>	+	0.4 m	PI058.04	
<i>Boerhavia coccinea</i>	+	0.1 m	PI079.07	
<i>Bonamia alatisemina</i>	+	cr	PI117.11	
<i>Bonamia rosea</i>	+	0.2 m	PI090.02	
<i>Bulbostylis barbata</i>	+	0.1 m	PI090.18	
<i>Calandrinia pentavalvis</i>	+	0.1 m	PI066.03	
<i>Calandrinia pumila</i>	+	0.01 m	PI045.18	
<i>Carissa lanceolata</i>	+	1 m	PI094.09	
* <i>Cenchrus ciliaris</i>	+	0.3 m	PI103.06	
<i>Chrysopogon fallax</i>	1%	0.6 m	PI051.04	
<i>Cleome viscosa</i>	+	0.6 m	PI065.17	
<i>Corymbia zygophylla</i>	2%	2-4 m	PI112.02	
* <i>Cucumis melo</i> subsp. <i>agrestis</i>	+	cr	PI154.04	
<i>Dysphania saxatilis</i>	+	0.1 m	PI090.11	
<i>Eragrostis cumingii</i>	+	0.1 m	PI080.06	
<i>Eragrostis eriopoda</i>	+	0.2 m	PI134.06	
<i>Eriachne aristidea</i>	+	0.2 m	PI063.03	
<i>Eriachne glauca</i> var. <i>glauca</i>	+	0.1 m	PI079.05	
<i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i>	4%	6-9 m	PI079.01	
<i>Goodenia lamprosperma</i>	+	0.1 m	PI079.03	
<i>Goodenia triodiophila</i>	+	0.15 m	PI079.04	

<i>Hybanthus aurantiacus</i>	+	0.2 m	PI043.13
<i>Indigofera monophylla</i>	+	0.2 m	PI065.13
<i>Marsilea mutica</i>	+	0.05 m	PI044.08
<i>Mimulus gracilis</i>	+	0.05 m	PI094.06
<i>Mollugo molluginea</i>	+	0.1 m	PI132.04
<i>Paraneurachne muelleri</i>	+	0.2 m	PI117.09
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI058.10
* <i>Portulaca oleracea</i>	+	0.05 m	PI128.04
<i>Ptilotus fusiformis</i>	+	0.4 m	PI065.28
<i>Senna notabilis</i>	+	0.2 m	PI051.12
<i>Sida rohlenae</i> subsp. <i>rohlenae</i>	+	0.1 m	PI154.05
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.1 m	PI079.08
<i>Sporobolus australasicus</i>	+	0.1 m	PI066.02
<i>Triodia epactia</i>	20%	0.5 m	PI079.02
<i>Triodia lanigera</i>	8%	0.4 m	PI079.06
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI043.08
<i>Zornia muelleriana</i>	+	0.05 m	PI080.05

Port Hedland RS Site PI080**Described by** LD **Date** 26/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 668275 mE 7734444 mN
Habitat Plain
Soil Orange Brown clayey sandy loam
Rock Type N/A
Vegetation Low Open Woodland of *Eucalyptus victrix* over Very Open Hummock Grassland of *Triodia epactia* over Tussock Grassland of *Chrysopogon fallax*
Veg Condition Excellent
Fire Age Old
Notes Aspect: N/A
 Bare Ground: 30%
 Litter Cover: +% Logs, 1% Twigs, 2% Lvs
 Disturbance: Tracks near by

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	+	0.6 m	PI091.12	
<i>Acacia trudgeniana</i>	+	1.5 m	PI065.31	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	3%	1-2 m	PI150.07	
<i>Alternanthera nana</i>	+	0.2 m	PI094.07	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.3 m	PI090.08	
<i>Aristida inaequiglumis</i>	+	0.4 m	PI058.04	
<i>Bulbostylis barbata</i>	+	0.1 m	PI090.18	
<i>Calandrinia pentavalvis</i>	+	0.1 m	PI066.03	
<i>Calandrinia pumila</i>	+	0.01 m	PI045.18	
<i>Chrysopogon fallax</i>	32%	0.6 m	PI051.04	
<i>Cleome viscosa</i>	+	0.3 m	PI065.17	
<i>Corchorus tectus</i>	+	0.3 m	PI091.07	
<i>Corymbia candida</i> subsp. <i>dipsodes</i>	+	2 m	PI051.02	
<i>Crotalaria ramosissima</i>	+	0.2 m	PI027.05	
<i>Ehretia saligna</i> var. <i>saligna</i>	+	0.4 m	PI091.08	
<i>Eragrostis cumingii</i>	+	0.2 m	PI080.06	
<i>Eriachne aristidea</i>	+	0.2 m	PI063.03	
<i>Eriachne glauca</i> var. <i>glauca</i>	+	0.2 m	PI097.03	
<i>Eucalyptus victrix</i>	5%	6 m	PI094.03	
<i>Euphorbia alsiniflora</i>	+	0.2 m	PI025.12	
<i>Euphorbia australis</i>	+	0.01 m	PI103.13	
<i>Goodenia lamprosperma</i>	+	0.2 m	PI094.05	
<i>Goodenia triodiophila</i>	+	0.3 m	PI080.07	
<i>Hybanthus aurantiacus</i>	+	0.4 m	PI043.13	
<i>Indigofera colutea</i>	+	0.1 m	PI103.11	
<i>Indigofera linifolia</i>	+	0.2 m	PI090.13	
<i>Mimulus gracilis</i>	+	0.1 m	PI080.03	
<i>Mollugo molluginea</i>	+	0.1 m	PI132.04	

<i>Perotis rara</i>	+	0.1 m	PI106.11
<i>Pluchea rubelliflora</i>	+	0.2 m	PI080.02
<i>Pluchea tetranthera</i>	+	0.2 m	PI066.22
* <i>Portulaca oleracea</i>	+	0.2 m	PI128.04
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.3 m	PI058.05
<i>Solanum ellipticum</i>	+	0.2 m	PI065.26
<i>Stylidium desertorum</i>	+	0.05 m	PI045.19
<i>Triodia epactia</i>	8%	0.4 m	PI080.04
<i>Vigna lanceolata</i> var. <i>lanceolata</i>	1%	cr	PI080.01
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI043.08
<i>Zornia muelleriana</i>	+	0.1 m	PI080.05

Port Hedland RS Site PI081**Described by** HA **Date** 28/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 672866 mE 7732720 mN
Habitat Sand plain
Soil Orange brown loamy sand
Rock Type N/A
Vegetation Low Open Shrubland of *Acacia stellaticeps* over Hummock Grassland of *Triodia epactia* and *Triodia lanigera* over Very Open Tussock Grassland of *Eriachne mucronata* and *Dactyloctenium radulans*
Veg Condition Excellent
Fire Age Moderate
Notes Aspect: N/A
 Bare Ground: 60%
 Litter Cover: +% Logs, +% Twigs, +% Lvs
 Disturbance: Cattle tracks

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	+	1.2 m	PI070.38	
<i>Acacia inaequilatera</i>	OUT	1.5 m	PI054.05	
<i>Acacia stellaticeps</i>	8%	0.5 m	PI070.01	
<i>Bulbostylis barbata</i>	+	0.1 m	PI070.17	
<i>Dactyloctenium radulans</i>	1%	0.1 m	PI037.14	
<i>Eragrostis cumingii</i>	+	0.1 m	PI081.06	
<i>Eriachne mucronata</i>	1%	0.2 m	PI102.06	
<i>Eriachne glauca</i> var. <i>glauca</i>	+	0.1 m	PI081.02	
<i>Fimbristylis dichotoma</i>	(1%)	0.3 m	PI081.07	
<i>Goodenia lamprosperma</i>	+	0.2 m	PI086.04	
<i>Pluchea rubelliflora</i>	+	0.2 m	PI127.05	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI072.02	
* <i>Portulaca oleracea</i>	+	0.1 m	PI086.11	
<i>Pterocaulon serrulatum</i>	+	0.2 m	PI081.05	
<i>Ptilotus fusiformis</i>	+	0.3 m	PI070.22	
<i>Senna notabilis</i>	+	0.2 m	PI070.14	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI070.03	
<i>Sporobolus australasicus</i>	+	0.2 m	PI037.07	
<i>Trianthema triquetra</i>	+	0.1 m	PI081.03	
<i>Triodia epactia</i>	35%	0.4 m	PI081.01	
<i>Triodia lanigera</i>	+	0.3 m	PI081.04	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI072.06	

Port Hedland RS Site PI082**Described by** HA **Date** 28/06/2011 **Type** Q 50x50 m**Location** Port Hedland**MGA Zone** 50 675071 mE 7733966 mN**Habitat** Sand plain/ flood plain**Soil** Brown orange loamy sand**Rock Type** N/A**Vegetation** Low Open Woodland of *Corymbia candida* subsp. *dipsodes* over Open Shrubland of *Acacia inaequilatera* over Very Open Tussock Grassland of *Chrysopogon fallax***Veg Condition****Fire Age****Notes** Aspect: N/A
Bare Ground: 80%
Litter Cover: +% Logs, 1% Twigs, +% Lvs
Disturbance:**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	+	0.6 m	PI070.38	
<i>Acacia inaequilatera</i>	2%	2 m	PI054.05	
<i>Amaranthus undulatus</i>	+	0.5 m	PI120.10	
<i>Aristida inaequiglumis</i>	+	0.8 m	PI070.24	
<i>Boerhavia coccinea</i>	+	cr	PI072.12	
<i>Bonamia alatisemina</i>	+	cr	PI053.02	
<i>Bulbostylis barbata</i>	+	0.15 m	PI070.17	
<i>Calandrinia pumila</i>	+	cr	PI086.02	
<i>Carissa lanceolata</i>	+	0.15 m	PI086.09	
* <i>Cenchrus ciliaris</i>	+	0.5 m	PI070.29	
<i>Chrysopogon fallax</i>	5%	1.2 m	PI070.21	
<i>Cleome viscosa</i>	+	0.3 m	PI099.07	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	1%	0.4 m	PI070.02	
<i>Corchorus tectus</i>	+	0.3 m	PI095.02	
<i>Corymbia candida</i> subsp. <i>dipsodes</i>	3%	4 m	PI088.08	
<i>Dysphania saxatilis</i>	+	0.2 m	PI053.07	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.15 m	PI070.07	
<i>Fimbristylis dichotoma</i>	+	0.5 m	PI081.07	
<i>Goodenia triodiophila</i>	+	0.3 m	PI082.04	
<i>Hakea lorea</i> subsp. <i>lorea</i>	+	1.5 m	PI070.05	
<i>Heliotropium cunninghamii</i>	+	0.4 m	PI046.19	
<i>Hybanthus aurantiacus</i>	+	0.4 m	PI082.01	
<i>Mollugo molluginea</i>	+	0.1 m	PI070.35	
<i>Paraneurachne muelleri</i>	+	0.2 m	PI054.09	
<i>Pluchea rubelliflora</i>	+	0.1 m	PI127.05	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.15 m	PI072.02	
<i>Polymeria calycina</i>	+	0.1 m	PI082.02	
* <i>Portulaca oleracea</i>	+	0.1 m	PI086.11	

<i>Portulaca pilosa</i>	+	0.4 m	PI147.22
<i>Ptilotus fusiformis</i>	+	0.3 m	PI070.22
<i>Senna notabilis</i>	+	0.3 m	PI070.14
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	1%	0.6 m	PI070.03
<i>Solanum lasiophyllum</i>	+	0.5 m	PI070.37
<i>Synaptantha tillaeacea</i> var. <i>tillaeacea</i>	+	cr	PI082.03
<i>Triodia epactia</i>	+	0.2 m	PI082.05
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI072.06

Port Hedland RS Site PI083**Described by** EC **Date** 28/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 675754 mE 7731735 mN
Habitat Plain
Soil Light orange brown sandy loam with surface crust in areas
Rock Type
Vegetation Low Shrubland of *Acacia stellaticeps* over Hummock Grassland of *Triodia epactia* and *Triodia lanigera*
Veg Condition Excellent
Fire Age Moderate to old
Notes Aspect: N/A
 Bare Ground: 30%
 Litter Cover: 0% Logs, 0% Twigs, +% Lvs
 Disturbance: Cattle

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia stellaticeps</i>	30%	0.8 m	PI083.01	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.3 m	PI123.18	
<i>Bonamia alatisemina</i>	+	cr	PI083.10	
<i>Bulbostylis barbata</i>	+	0.2 m	PI121.05	
<i>Calandrinia stagnensis</i>	+	0.1 m	PI083.04	
<i>Dysphania saxatilis</i>	+	0.1 m	PI090.11	
<i>Eriachne pulchella</i> subsp. <i>dominii</i>	+	0.2 m	PI083.07	
<i>Fimbristylis dichotoma</i>	+	0.3 m	PI083.03	
<i>Indigofera monophylla</i>	+	0.3 m	PI123.02	
<i>Mollugo molluginea</i>	+	0.2 m	PI123.09	
<i>Pluchea rubelliflora</i>	+	0.2 m	PI083.05	
<i>Pluchea tetranthera</i>	+	0.3 m	PI083.11	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.2 m	PI083.12	
<i>Ptilotus calostachyus</i>	+	0.2 m	PI109.10	
<i>Ptilotus fusiformis</i>	+	0.3 m	PI083.08	
<i>Senna notabilis</i>	+	0.2 m	PI123.20	
<i>Sporobolus australasicus</i>	+	0.2 m	PI121.01	
<i>Streptoglossa decurrens</i>	+	0.3 m	PI121.02	
<i>Triodia epactia</i>	35%	0.3 m	PI083.09	
<i>Triodia lanigera</i>	25%	0.3 m	PI083.06	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI083.02	

Port Hedland RS Site PI084**Described by** EC **Date** 28/06/2011 **Type** Q 50x50 m

Location Port Hedland

MGA Zone 50 674644 mE 7730614 mN

Habitat Plain

Soil Light orange brown sandy loam

Rock Type N/A

Vegetation Open Shrubland of *Acacia inaequilatera* and *Acacia tumida* var. *pilbarensis* over Low Shrubland of *Corchorus tectus* and *Sida* sp. Pilbara (A.A. Mitchell PRP 1543) over Very Open Tussock Grassland of *Chrysopogon fallax* and *Eriachne eriopoda* over Scattered Sedges of *Bulbostylis barbata*

Veg Condition Very good

Fire Age Young - moderate

Notes Aspect: N/A
Bare Ground: 75%
Litter Cover: 0% Logs, 0% Twigs, +% Lvs
Disturbance: Cattle

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia inaequilatera</i>	2%	1-1.5 m	PI123.15	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	2%	0.4 m	PI123.08	
<i>Aristida contorta</i>	+	0.2 m	PI084.14	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.3 m	PI123.18	
<i>Bonamia alatisemina</i>	+	cr	PI083.10	
<i>Bulbostylis barbata</i>	1%	0.2 m	PI121.05	
<i>Calandrinia stagnensis</i>	1%	0.1 m	PI083.04	
<i>Calandrinia pentavalvis</i>	+	0.2 m	PI123.38	
<i>Chrysopogon fallax</i>	1%	0.4 m	PI084.10	
<i>Cleome viscosa</i>	+	0.3 m	PI065.17	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.3 m	PI084.06	
<i>Corchorus tectus</i>	10%	0.4 m	PI123.35	
<i>Dysphania saxatilis</i>	+	0.2 m	PI090.11	
<i>Eragrostis eriopoda</i>	1%	0.3 m	PI084.04	
<i>Eriachne glauca</i> var. <i>glauca</i>	+	0.2 m	PI084.13	
<i>Euphorbia australis</i>	+	0.2 m	PI084.08	
<i>Fimbristylis dichotoma</i>	1%	0.3 m	PI083.03	
<i>Goodenia lamprosperma</i>	+	0.2 m	PI084.15	
<i>Goodenia microptera</i>	+	0.3 m	PI123.12	
<i>Hibiscus burtonii</i>	+	0.4 m	PI084.01	
<i>Indigofera colutea</i>	+	0.2 m	PI084.07	
<i>Mitrasacme connata</i>	+	0.2 m	PI072.07	
<i>Mollugo molluginea</i>	+	0.2 m	PI123.09	
<i>Paraneurachne muelleri</i>	+	0.3 m	PI084.09	
<i>Pluchea rubelliflora</i>	+	0.3 m	PI083.05	
<i>Pluchea tetranthera</i>	+	0.2 m	PI083.11	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.2 m	PI083.12	
<i>Portulaca pilosa</i>	+	0.2 m	PI123.17	

<i>Senna notabilis</i>	+	0.3 m	PI123.20
<i>Sida clementii</i>	2%	0.4 m	PI084.02
<i>Sida rohlenae subsp. rohlenae</i>	+	0.3 m	PI084.05
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	10%	0.5 m	PI123.04
<i>Solanum diversiflorum</i>	+	0.3 m	PI048.09
<i>Solanum ellipticum</i>	+	0.4 m	PI065.26
<i>Sporobolus australasicus</i>	+	0.2 m	PI121.01
<i>Streptoglossa decurrens</i>	+	0.3 m	PI121.02
<i>Synaptantha tillaeacea</i> var. <i>tillaeacea</i>	+	0.01 m	PI084.12
<i>Tribulus macrocarpus</i>	+	cr	PI084.11
<i>Triodia epactia</i>	1%	0.3 m	PI083.09
<i>Yakirra australiensis</i> var. <i>australiensis</i>	1%	0.2 m	PI084.03

Port Hedland RS Site PI085**Described by** BW **Date** 28/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 671954 mE 7731060 mN
Habitat Sandplain
Soil Orange brown clayey sand
Rock Type N/A
Vegetation Scattered Shrubs of *Acacia synchronicia* and *Acacia stellaticeps* over Open Hummock Grassland of *Triodia lanigera* and *Triodia epactia*
Veg Condition Excellent
Fire Age Moderate
Notes Aspect: N/A
 Bare Ground: 80%
 Litter Cover: +% Logs, +% Twigs, +% Lvs
 Disturbance: Cattle

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia ancistrocarpa</i>	+	1-2 m	PI062.03	
<i>Acacia inaequilatera</i>	+	1.5-2 m	PI049.06	
<i>Acacia stellaticeps</i>	+	0.6 m	PI043.01	
<i>Acacia synchronicia</i>	1%	1-2 m	PI140.10	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.3 m	PI049.07	
<i>Bulbostylis barbata</i>	+	0.1 m	PI129.01	
<i>Calandrinia stagnensis</i>	+	0.2 m	PI145.04	
<i>Cleome viscosa</i>	+	0.2 m	PI101.04	
<i>Dentella asperata</i>	+	prostrate	PI069.11	
<i>Dysphania saxatilis</i>	+	0.2 m	PI056.15	
<i>Eriachne pulchella</i> subsp. <i>dominii</i>	+	0.2 m	PI140.06	
<i>Euphorbia australis</i>	+	prostrate	PI104.02	
<i>Fimbristylis dichotoma</i>	+	0.3 m	PI049.15	
<i>Gomphrena leptoclada</i> subsp. <i>leptoclada</i>	+	prostrate	PI085.03	
<i>Goodenia microptera</i>	+	0.4 m	PI060.02	
<i>Heliotropium muticum</i>	+	0.2 m	PI030.06	12 ind
<i>Indigofera monophylla</i>	+	0.3 m	PI146.02	
<i>Isotropis atropurpurea</i>	+	0.4 m	PI145.10	
<i>Mollugo molluginea</i>	+	0.2 m	PI043.29	
<i>Pluchea rubelliflora</i>	+	0.2 m	PI122.01	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.2 m	PI043.06	
<i>Polycarpaea holtzei</i>	+	0.1 m	PI140.07	
<i>Polymeria ambigua</i>	+	prostrate	PI145.07	
<i>Ptilotus fusiformis</i>	+	0.4 m	PI043.11	
<i>Senna notabilis</i>	+	0.3 m	PI043.09	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI043.14	
<i>Sporobolus australasicus</i>	+	0.2 m	PI145.03	
<i>Tephrosia supina</i>	+	0.6 m	PI085.01	
<i>Triodia epactia</i>	1%	0.3 m	PI085.04	
<i>Triodia lanigera</i>	15%	0.3 m	PI085.02	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI042.06	

Port Hedland RS Site PI086**Described by** HA **Date** 26/06/2011 **Type** Q 50x50 m**Location** Port Hedland**MGA Zone** 50 669395 mE 7737084 mN**Habitat** Sand plain**Soil** Orange brown sandy loam**Rock Type****Vegetation** Low Open Shrubland of *Indigofera monophylla*, *Corchorus tectus* and *Acacia stellaticeps* over Open Hummock Grassland of *Triodia epactia* and *Triodia lanigera***Veg Condition** Excellent**Fire Age** Young**Notes** Aspect: N/A
Bare Ground: 65%
Litter Cover: +% Logs, 1% Twigs, +% Lvs
Disturbance: Recently burnt**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia ancistrocarpa</i>	+	0.5 m	PI086.05	
<i>Acacia colei</i> var. <i>colei</i>	+	1 m	PI070.38	
<i>Acacia inaequilatera</i>	+	2 m	PI054.05	
<i>Acacia stellaticeps</i>	1%	0.2 m	PI070.01	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.3 m	PI070.10	
<i>Boerhavia coccinea</i>	+	cr	PI072.12	
<i>Bonamia alatisemina</i>	+	cr	PI053.02	
<i>Bulbostylis barbata</i>	+	0.1 m	PI070.17	
<i>Calandrinia pentavalvis</i>	+	0.1 m	PI072.14	
<i>Calandrinia pumila</i>	1%	cr	PI086.02	
<i>Carissa lanceolata</i>	+	0.6 m	PI086.09	
<i>Chrysopogon fallax</i>	+	1.2 m	PI070.21	
<i>Cleome viscosa</i>	+	0.5 m	PI040.10	
<i>Corchorus tectus</i>	2%	0.3 m	PI095.02	
<i>Dysphania saxatilis</i>	+	0.4 m	PI053.07	
<i>Eriachne mucronata</i>	+	0.15 m	PI102.06	
<i>Eriachne glauca</i> var. <i>glauca</i>	1%	0.2 m	PI086.08	
<i>Euphorbia australis</i>	+	cr	PI108.12	
<i>Goodenia lamprosperma</i>	+	0.15 m	PI086.04	
<i>Goodenia microptera</i>	+	0.3 m	PI096.01	
<i>Hakea lorea</i> subsp. <i>lorea</i>	+	1.5 m	PI070.05	
<i>Hibiscus burtonii</i>	+	0.3 m	PI086.10	
<i>Indigofera monophylla</i>	2%	0.3 m	PI072.03	
<i>Mimulus gracilis</i>	+	0.15 m	PI086.03	
<i>Mollugo molluginea</i>	+	0.1 m	PI070.35	
<i>Pluchea rubelliflora</i>	+	0.15 m	PI086.07	
<i>Pluchea tetranthera</i>	+	0.3 m	PI088.09	
<i>Polymeria ambigua</i>	+	cr	PI086.06	

<i>*Portulaca oleracea</i>	+	cr	PI086.11
<i>Ptilotus fusiformis</i>	+	0.4 m	PI070.22
<i>Senna notabilis</i>	+	0.3 m	PI070.14
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.3 m	PI070.03
<i>Streptoglossa decurrens</i>	+	0.2 m	PI115.18
<i>Tribulus occidentalis</i>	+	cr	PI070.27
<i>Triodia epactia</i>	30%	0.3 m	PI086.01
<i>Triodia lanigera</i>	+	0.3 m	PI086.12
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI072.06

Port Hedland RS Site PI087**Described by** HA **Date** 26/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 668658 mE 7737209 mN
Habitat Sand plain
Soil Orange brown sandy loam
Rock Type N/A
Vegetation Open Shrubland of *Acacia stellaticeps* and *Acacia pyrifolia* over Low Open Shrubland of *Sida* sp. Pilbara (A.A. Mitchell PRP 1543), *Bonamia rosea* and *Corchorus tectus* over Hummock Grassland of *Triodia epactia* and *Triodia lanigera*
Veg Condition Very good
Fire Age Young
Notes Aspect: N/A
 Bare Ground: 60%
 Litter Cover: +% Logs, 1% Twigs, +% Lvs
 Disturbance: Buffel

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	+	1.5 m	PI070.38	
<i>Acacia pyrifolia</i>	1%	2 m	PI054.10	
<i>Acacia stellaticeps</i>	2%	0.2 m	PI070.01	
<i>Aristida holathera</i> var. <i>holathera</i>	1%	0.4 m	PI070.10	
<i>Boerhavia coccinea</i>	+	cr	PI072.12	
<i>Bonamia alatisemina</i>	+	cl	PI087.11	
<i>Bonamia rosea</i>	1%	0.4 m	PI088.02	
<i>Bulbostylis barbata</i>	+	0.1 m	PI070.17	
<i>Calandrinia pentavalvis</i>	+	0.1 m	PI072.14	
<i>Carissa lanceolata</i>	+	0.6 m	PI086.09	
* <i>Cenchrus ciliaris</i>	+	0.5 m	PI070.29	
<i>Chrysopogon fallax</i>	+	1 m	PI070.21	
<i>Cleome viscosa</i>	+	0.2 m	PI087.02	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.5 m	PI070.02	
<i>Corchorus tectus</i>	1%	0.4 m	PI095.02	
<i>Corymbia candida</i> subsp. <i>dipsodes</i>	+	1.5 m	PI088.08	
<i>Drosera indica</i>	+	0.1 m	PI053.11	
<i>Dysphania saxatilis</i>	1%	0.2 m	PI053.07	
<i>Eragrostis eriopoda</i>	+	0.3 m	PI088.07	
<i>Eriachne aristidea</i>	+	0.3 m	PI070.28	
<i>Euphorbia australis</i>	+	cr	PI108.12	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.2 m	PI087.03	
<i>Goodenia microptera</i>	+	0.4 m	PI096.01	
<i>Hakea lorea</i> subsp. <i>lorea</i>	+	1 m	PI070.05	
<i>Hibiscus burtonii</i>	+	0.5 m	PI086.10	
<i>Indigofera monophylla</i>	+	0.3 m	PI072.03	
<i>Mollugo molluginea</i>	+	0.1 m	PI070.35	
<i>Paraneurachne muelleri</i>	+	0.3 m	PI087.10	

<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI072.02
<i>Polymeria ambigua</i>	+	cr	PI086.06
* <i>Portulaca oleracea</i>	1%	cr	PI053.03
<i>Ptilotus astrolasius</i>	+	0.4 m	PI089.05
<i>Ptilotus axillaris</i>	ASS	cr	PI087.12
<i>Ptilotus fusiformis</i>	+	0.3 m	PI070.22
<i>Ptilotus polystachyus</i>	+	1 m	PI147.19
<i>Senna notabilis</i>	+	0.2 m	PI070.14
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	1%	0.7 m	PI070.03
<i>Streptoglossa decurrens</i>	+	0.5 m	PI087.12a
<i>Tinospora smilacina</i>	+	cr	PI087.09
<i>Trianthema pilosa</i>	+	cr	PI088.04
<i>Tribulus occidentalis</i>	+	cr	PI070.27
<i>Triodia epactia</i>	30%	0.3 m	PI087.01
<i>Triodia lanigera</i>	2%	0.3 m	PI087.04
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI072.06

Port Hedland RS Site PI088**Described by** HA **Date** 26/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 669040 mE 7738579 mN
Habitat Sand plain
Soil Orange brown sandy loam
Rock Type N/A
Vegetation Low Open Heath of *Acacia stellaticeps* and *Acacia sphaerostachya* over Hummock Grassland of *Triodia epactia*
Veg Condition Excellent
Fire Age Moderate
Notes Aspect: N/A
 Bare Ground: 25%
 Litter Cover: +% Logs, 2% Twigs, 2% Lvs
 Disturbance:

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia ancistrocarpa</i>	+	2 m	PI131.04	
<i>Acacia sphaerostachya</i>	1%	0.8 m	PI088.03	
<i>Acacia stellaticeps</i>	30%	0.5 m	PI070.01	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.3 m	PI070.10	
<i>Bonamia alatisemina</i>	+	cr	PI053.02	
<i>Bonamia rosea</i>	+	0.4 m	PI088.02	
<i>Bulbostylis barbata</i>	+	0.1 m	PI070.17	
<i>Chrysopogon fallax</i>	+	1.2 m	PI070.21	
<i>Cleome viscosa</i>	+	0.4 m	PI040.10	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.1 m	PI070.02	
<i>Corymbia candida</i> subsp. <i>dipsodes</i>	+	3 m	PI088.08	
<i>Cucumis maderaspatanus</i>	+	cr	PI147.17	
<i>Dysphania saxatilis</i>	+	0.1 m	PI053.07	
<i>Eragrostis eriopoda</i>	+	0.3 m	PI088.07	
<i>Eriachne aristidea</i>	+	0.3 m	PI088.06	
<i>Euphorbia alsiniflora</i>	+	0.15 m	PI072.10	
<i>Euphorbia australis</i>	+	cr	PI108.12	
<i>Mollugo molluginea</i>	+	0.1 m	PI070.35	
<i>Pluchea tetranthera</i>	+	0.5 m	PI088.09	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.15 m	PI072.02	
<i>Portulaca pilosa</i>	+	0.2 m	PI147.22	
<i>Ptilotus fusiformis</i>	+	0.3 m	PI070.22	
<i>Senna notabilis</i>	+	0.2 m	PI070.14	
<i>Sida rohlenae</i> subsp. <i>rohlenae</i>	+	0.4 m	PI105.08	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.1 m	PI070.03	
<i>Trianthema pilosa</i>	+	cr	PI088.04	
<i>Triodia epactia</i>	20%	0.5 m	PI088.05	
<i>Triodia lanigera</i>	20%	0.3 m	PI088.01	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.15 m	PI072.06	

Port Hedland RS Site PI089**Described by** HA **Date** 26/06/2011 **Type** Q 50x50 m**Location** Port Hedland**MGA Zone** 50 668991 mE 7740119 mN**Habitat** Sand plain**Soil** Orange brown sandy loam**Rock Type****Vegetation** Low Open Shrubland of *Acacia stellaticeps* over Hummock Grassland of *Triodia schinzii* and *Triodia epactia* over Scattered Tussock Grass of *Eriachne aristidea***Veg Condition** Excellent**Fire Age** Moderate**Notes** Aspect: N/A
Bare Ground: 20%
Litter Cover: +% Logs, 1% Twigs, 1% Lvs
Disturbance: None, tracks near by**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia ancistrocarpa</i>	+	3 m	PI131.04	
<i>Acacia sericophylla</i>	+	2 m	PI070.04	
<i>Acacia stellaticeps</i>	5%	0.4 m	PI070.01	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.3 m	PI070.10	
<i>Bonamia rosea</i>	+	0.4 m	PI088.02	
<i>Bulbostylis barbata</i>	+	0.1 m	PI070.17	
<i>Chrysopogon fallax</i>	+	1 m	PI070.21	
<i>Corymbia candida</i> subsp. <i>dipsodes</i>	+	3 m	PI088.08	
<i>Crotalaria ramosissima</i>	+	0.2 m	PI089.02	
<i>Desmodium filiforme</i>	+	cr	PI089.06	
<i>Drosera indica</i>	+	0.15 m	PI053.11	
<i>Dysphania saxatilis</i>	+	0.15 m	PI053.07	
<i>Eragrostis eriopoda</i>	+	0.3 m	PI088.07	
<i>Eriachne aristidea</i>	1%	0.3 m	PI088.06	
<i>Euphorbia alsiniflora</i>	+	0.2 m	PI072.10	
<i>Gossypium australe</i>	+	0.2 m	PI105.15	
<i>Heliotropium inexplicitum</i>	+	cr	PI089.03	
<i>Hybanthus aurantiacus</i>	+	0.5 m	PI099.02	
<i>Indigofera monophylla</i>	+	0.4 m	PI072.03	
<i>Kennedia prorepens</i>	+	0.2 m	PI089.08	
<i>Mitrasacme connata</i>	+	0.2 m	PI072.07	
<i>Mollugo molluginea</i>	+	0.1 m	PI070.35	
<i>Paraneurachne muelleri</i>	+	0.3 m	PI054.09	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.15 m	PI072.02	
<i>Polymeria ambigua</i>	+	cr	PI096.04	
<i>Portulaca pilosa</i>	+	0.2 m	PI147.22	
<i>Ptilotus astrolasius</i>	+	0.2 m	PI089.05	
<i>Ptilotus fusiformis</i>	+	0.3 m	PI070.22	

<i>Ptilotus polystachyus</i>	+	0.2 m	PI147.19	
<i>Schizachyrium fragile</i>	+	0.3 m	PI110.05	
<i>Senna notabilis</i>	+	0.2 m	PI070.14	
<i>Solanum lasiophyllum</i>	+	0.2 m	PI070.37	
<i>Tephrosia rosea</i> var. <i>clementii</i>	+	0.5 m	PI089.09	
<i>Tephrosia simplicifolia</i>	+	0.3 m	PI089.07	Range ext
<i>Triodia epactia</i>	10%	0.5 m	PI089.04	
<i>Triodia schinzii</i>	60%	0.5 m	PI089.01	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.15 m	PI072.06	

Port Hedland RS Site PI090**Described by** LD **Date** 26/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 667572 mE 7740406 mN
Habitat Sandy plain
Soil Orange brown sand
Rock Type N/A
Vegetation Scattered Low Shrubs of *Bonamia rosea* over Open Hummock Grassland of *Triodia schinzii*
Veg Condition Very good
Fire Age Moderate to old
Notes Aspect: N/A
 Bare Ground: 83%
 Litter Cover: 0% Logs, +% Twigs, +% Lvs
 Disturbance: Weeds, houses near by

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia sericophylla</i>	+	2 m	PI090.17	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.3 m	PI090.08	
<i>Bonamia alatisemina</i>	+	cr	PI090.10	
<i>Bonamia rosea</i>	1%	0.3 m	PI090.02	
<i>Bulbostylis barbata</i>	+	0.1 m	PI090.18	
* <i>Cenchrus ciliaris</i>	+	0.5 m	PI103.06	
<i>Cleome viscosa</i>	+	0.6 m	PI065.17	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.2 m	PI090.20	
<i>Corymbia candida</i> subsp. <i>dipsodes</i>	+	2 m	PI051.02	
<i>Corymbia hamersleyana</i>	+	1.5 m	PI090.21	
<i>Dysphania saxatilis</i>	+	0.3 m	PI090.11	
<i>Eragrostis eriopoda</i>	+	0.5 m	PI090.04	
<i>Euphorbia australis</i>	+	0.01 m	PI103.13	
<i>Goodenia forrestii</i>	+	0.2 m	PI090.06	
<i>Goodenia microptera</i>	+	0.2 m	PI090.14	
<i>Gossypium australe</i>	+	0.4 m	PI090.09	
<i>Grevillea pyramidalis</i> subsp. <i>leucadendron</i>	+	2 m	PI065.29	
<i>Hibiscus leptocladus</i>	+	0.3 m	PI090.16	
<i>Hybanthus aurantiacus</i>	+	0.3 m	PI043.13	
<i>Indigofera linifolia</i>	+	0.3 m	PI090.13	
<i>Mollugo molluginea</i>	+	0.2 m	PI132.04	
<i>Paraneurachne muelleri</i>	+	0.2 m	PI090.12	
<i>Pimelea ammocharis</i>	+	0.9 m	PI090.05	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI058.10	
* <i>Portulaca oleracea</i>	+	0.1 m	PI128.04	
<i>Portulaca pilosa</i>	+	0.2 m	PI090.15	
<i>Ptilotus astrolasius</i>	+	0.3 m	PI090.03	
<i>Ptilotus polystachyus</i>	+	0.9 m	PI025.13	

<i>Scaevola parvifolia</i> subsp. <i>pilbarae</i>	+	0.1 m	PI090.07
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI058.05
<i>Solanum lasiophyllum</i>	+	0.2 m	PI090.22
<i>Tinospora smilacina</i>	+	cl	PI103.08
<i>Trianthera pilosa</i>	+	0.1 m	PI065.03
<i>Tribulus hirsutus</i>	+	0.1 m	PI106.08
<i>Triodia schinzii</i>	12%	0.4 m	PI090.01
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI043.08

Port Hedland RS Site PI091**Described by** LD **Date** 26/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 667204 mE 7739920 mN
Habitat Plain
Soil Orange brown sandy loam
Rock Type N/A
Vegetation Scattered Low Trees of *Corymbia candida* subsp. *dipsodes* over Low Open Shrubland of *Acacia stellaticeps* over Very Open Hummock Grassland of *Triodia epactia*
Veg Condition Excellent - very good
Fire Age Young
Notes Aspect: N/A
 Bare Ground: 90%
 Litter Cover: 0% Logs, +% Twigs, +% Lvs
 Disturbance: Weeds and tracks near by

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Abutilon otocarpum</i>	+	0.4 m	PI091.10	
<i>Acacia colei</i> var. <i>colei</i>	+	0.5 m	PI091.12	
<i>Acacia stellaticeps</i>	2%	0.3 m	PI065.01	
<i>Acacia trudgeniana</i>	+	0.7 m	PI065.31	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.3 m	PI090.08	
<i>Boerhavia coccinea</i>	+	0.2 m	PI103.09	
<i>Bonamia alatisemina</i>	+	cr	PI091.04	
<i>Bonamia rosea</i>	1%	0.3 m	PI090.02	
<i>Bulbostylis barbata</i>	+	0.1 m	PI027.03	
<i>Cassytha capillaris</i>	+	cl	PI091.09	
* <i>Cenchrus ciliaris</i>	+	0.4 m	PI103.06	
<i>Chrysopogon fallax</i>	+	0.5 m	PI051.04	
<i>Cleome viscosa</i>	+	0.3 m	PI065.17	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.3 m	PI090.20	
<i>Corchorus tectus</i>	+	0.3 m	PI091.07	
<i>Corymbia candida</i> subsp. <i>dipsodes</i>	1%	2-3 m	PI051.02	
<i>Dysphania saxatilis</i>	+	0.1 m	PI090.11	
<i>Ehretia saligna</i> var. <i>saligna</i>	+	1 m	PI091.08	
<i>Eriachne aristidea</i>	+	0.2 m	PI063.03	
<i>Eriachne benthamii</i>	+	0.3 m	PI106.01	
<i>Euphorbia australis</i>	+	0.01 m	PI103.13	
<i>Euphorbia tannensis</i> subsp. <i>eremophila</i>	+	0.2 m	PI091.14	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.1 m	PI091.11	
<i>Goodenia microptera</i>	+	0.3 m	PI090.14	
<i>Goodenia triodiophila</i>	+	0.3 m	PI091.03	
<i>Hakea lorea</i> subsp. <i>lorea</i>	+	1 m	PI091.01	
<i>Hibiscus burtonii</i>	+	0.2 m	PI091.06	
<i>Hybanthus aurantiacus</i>	+	0.3 m	PI043.13	

<i>Indigofera linifolia</i>	+	0.2 m	PI090.13
<i>Indigofera monophylla</i>	+	0.2 m	PI065.13
<i>Ipomoea polymorpha</i>	+	0.1 m	PI103.05
<i>Mollugo molluginea</i>	+	0.1 m	PI132.04
<i>Paraneurachne muelleri</i>	+	0.2 m	PI058.06
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI058.10
* <i>Portulaca oleracea</i>	+	0.1 m	PI128.04
<i>Portulaca pilosa</i>	+	0.2 m	PI090.15
<i>Ptilotus astrolasius</i>	+	0.2 m	PI090.03
<i>Ptilotus polystachyus</i>	+	0.7 m	PI025.13
<i>Salsola tragus</i> subsp. <i>grandiflora</i>	+	1 m	PI091.15
<i>Senna glaucifolia</i>	+	1 m	PI091.16
<i>Senna notabilis</i>	+	0.4 m	PI051.12
<i>Sida fibulifera</i>	+	0.1 m	PI091.13
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	1%	0.1-0.6 m	PI091.05
<i>Solanum diversiflorum</i>	+	0.2 m	PI048.09
<i>Tinospora smilacina</i>	+	cl	PI103.08
<i>Trianthema pilosa</i>	+	0.1 m	PI065.03
<i>Tribulus hirsutus</i>	+	0.05 m	PI106.08
<i>Triodia epactia</i>	4%	0.3 m	PI091.02
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI043.08

Port Hedland RS Site PI092**Described by** BW **Date** 26/06/2011 **Type** Q 50x50 m**Location** Port Hedland**MGA Zone** 50 665205 mE 7740510 mN**Habitat** Floodplain**Soil** Orange brown clayey loam**Rock Type** N/A**Vegetation** Low Open Woodland of *Eucalyptus victrix* over Scattered Hummock Grasses of *Triodia epactia* over Very Open Tussock Grassland of *Eriachne benthamii* and *Digitaria brownii***Veg Condition** Excellent**Fire Age** Moderate to old**Notes** Aspect: N/A
Bare Ground: 87%
Litter Cover: +% Logs, 1% Twigs, 5% Lvs
Disturbance: Tracks near by**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	+	0.8 m	PI043.16	
<i>Alternanthera angustifolia</i>	+	0.4 m	PI092.02	
<i>Ammannia multiflora</i>	+	0.03 m	PI092.04	
<i>Bergia pedicellaris</i>	+	0.05 m	PI092.09	
<i>Calandrinia pumila</i>	+	prostrate	PI092.07	
<i>Carissa lanceolata</i>	+	1.1 m	PI052.07	
<i>Chrysopogon fallax</i>	+	0.5 m	PI042.09	
<i>Digitaria brownii</i>	1%	0.6 m	PI028.04	
<i>Eriachne benthamii</i>	4%	0.6 m	PI092.06	
<i>Eucalyptus victrix</i>	5%	7-10 m	PI092.01	
<i>Goodenia lamprosperma</i>	+	0.4 m	PI043.21	
<i>Marsilea mutica</i>	+	0.03 m	PI092.03	
<i>Mimulus gracilis</i>	+	0.05 m	PI092.05	
<i>Triodia epactia</i>	1%	0.4 m	PI092.08	

Port Hedland RS Site PI093**Described by** BW **Date** 26/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 665510 mE 7738915 mN
Habitat Plain
Soil Orange brown clayey loam
Rock Type N/A
Vegetation Low Open Woodland of *Eucalyptus victrix* over Very Open Hummock Grassland of *Triodia epactia* over Very Open Tussock Grassland of *Eriachne benthamii* and *Chrysopogon fallax*
Veg Condition Pristine
Fire Age Moderate
Notes Aspect: N/A
 Bare Ground: 85%
 Litter Cover: +% Logs, 1% Twigs, 2% Lvs
 Disturbance:

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	+	0.8 m	PI043.16	
<i>Aristida contorta</i>	+	0.3 m	PI093.02	
<i>Calandrinia stagnensis</i>	+	0.2 m	PI145.04	
<i>Calandrinia pumila</i>	+	prostrate	PI092.07	
<i>Carissa lanceolata</i>	+	1.2 m	PI052.07	
<i>Chrysopogon fallax</i>	1%	0.6 m	PI042.09	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.4 m	PI042.04	
<i>Corchorus tectus</i>	+	0.4 m	PI030.02	
<i>Corymbia candida</i> subsp. <i>dipsodes</i>	+	2 m	PI146.07	
<i>Dysphania saxatilis</i>	+	0.3 m	PI056.15	
<i>Eriachne benthamii</i>	8%	0.5 m	PI092.06	
<i>Eucalyptus victrix</i>	6%	5-8 m	PI092.01	
<i>Goodenia lamprosperma</i>	+	0.3 m	PI043.21	
<i>Indigofera monophylla</i>	1%	0.5 m	PI052.03	
<i>Mimulus gracilis</i>	+	0.05 m	PI092.05	
<i>Triodia epactia</i>	4%	0.4 m	PI093.01	

Port Hedland RS Site PI094**Described by** LD **Date** 26/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 667405 mE 7738520 mN
Habitat Plain
Soil Brown orange sandy clay
Rock Type
Vegetation Low Open Woodland of *Eucalyptus victrix* over Very Open Hummock Grassland of *Triodia epactia* over Open Tussock Grassland of *Chrysopogon fallax*
Veg Condition Excellent
Fire Age Old
Notes Aspect: N/A
 Bare Ground: 85%
 Litter Cover: +% Logs, 1% Twigs, 1% Lvs
 Disturbance: Cattle, clearing and tracks near by

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	+	0.5 m	PI091.12	
<i>Acacia sericophylla</i>	+	1 m	PI090.17	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	+	1-1.5 m	PI150.07	
<i>Alternanthera nana</i>	+	0.2 m	PI094.07	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.2 m	PI094.04	
<i>Calandrinia pumila</i>	+	0.01 m	PI045.18	
<i>Carissa lanceolata</i>	+	1 m	PI094.09	
<i>Chrysopogon fallax</i>	11%	0.5 m	PI051.04	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.3 m	PI094.08	
<i>Corymbia candida</i> subsp. <i>dipsodes</i>	+	1.5-2 m	PI051.02	
<i>Eriachne benthamii</i>	+	0.3 m	PI106.01	
<i>Eucalyptus victrix</i>	4%	4-7 m	PI094.02	Photo; 203-204 LD
<i>Evolvulus alsinoides</i> var. <i>decumbens</i>	+	0.1 m	PI094.10	
<i>Goodenia lamprosperma</i>	+	0.2 m	PI094.05	
<i>Grevillea pyramidalis</i> subsp. <i>leucadendron</i>	+	0.5 m	PI065.29	
<i>Indigofera monophylla</i>	+	0.2 m	PI065.13	
<i>Marsilea mutica</i>	+	0.1 m	PI044.08	
<i>Mimulus gracilis</i>	+	0.05 m	PI094.06	
<i>Paraneurachne muelleri</i>	+	0.3 m	PI090.12	
<i>Pluchea tetranthera</i>	+	0.3 m	PI066.22	
* <i>Portulaca oleracea</i>	+	0.05 m	PI128.04	
<i>Rhynchosia minima</i>	+	cr	PI094.11	
<i>Sida rohlenae</i> subsp. <i>rohlenae</i>	+	0.3 m	PI103.20	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.2 m	PI058.05	
<i>Solanum ellipticum</i>	+	0.2 m	PI065.26	
<i>Stemodia grossa</i>	+	0.1 m	PI094.12	
<i>Triodia epactia</i>	2%	0.3 m	PI094.01	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI043.08	

Port Hedland RS Site PI095**Described by** HA **Date** 23/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 666523 mE 7736662 mN
Habitat Sand plain
Soil Orange brown sand
Rock Type N/A
Vegetation Scattered Low Trees of *Eucalyptus victrix* over Low Open Shrubland of *Corchorus tectus* and *Acacia stellaticeps* over Open Hummock Grassland of *Triodia epactia* and *Triodia lanigera*
Veg Condition Very good
Fire Age Moderate
Notes Aspect: N/A
 Bare Ground: 70%
 Litter Cover: +% Logs, +% Twigs, +% Lvs
 Disturbance:

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	+	0.5 m	PI070.38	
<i>Acacia stellaticeps</i>	1%	0.2 m	PI070.01	
<i>Amaranthus undulatus</i>	+	0.2 m	PI095.06	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.4 m	PI070.10	
<i>Bonamia alatisemina</i>	+	cr	PI095.13	
<i>Bulbostylis barbata</i>	+	0.1 m	PI070.17	
<i>Calandrinia pentavalvis</i>	+	0.05 m	PI095.10	
<i>Carissa lanceolata</i>	+	0.5 m	PI095.15	
<i>Cassutha capillaris</i>	+	cr	PI095.05	
<i>Chrysopogon fallax</i>	+	0.9 m	PI070.21	
<i>Cleome viscosa</i>	+	0.5 m	PI040.10	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.4 m	PI070.02	
<i>Corchorus tectus</i>	4%	0.3 m	PI095.02	
<i>Eriachne aristidea</i>	+	0.2 m	PI070.28	
<i>Eriachne pulchella</i>	(+)	0.2 m	PI095.12	
<i>Eucalyptus victrix</i>	1%	1.5 m	PI095.01	
<i>Goodenia lamprosperma</i>	+	0.2 m	PI095.19	
<i>Goodenia triodiophila</i>	+	0.2 m	PI095.20	
<i>Hibiscus burtonii</i>	+	0.3 m	PI095.11	
<i>Hybanthus aurantiacus</i>	+	0.2 m	PI099.02	
<i>Ipomoea coptica</i>	+	cr	PI095.17	
<i>Mimulus gracilis</i>	+	0.15 m	PI095.18	
<i>Mitrasacme connata</i>	+	0.15 m	PI072.07	
<i>Mollugo molluginea</i>	+	0.1 m	PI070.35	
<i>Pluchea rubelliflora</i>	+	0.15 m	PI095.14	
<i>Pluchea tetranthera</i>	+	0.3 m	PI095.16	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI072.02	
<i>Polygala isingii</i>	+	0.05 m	PI095.09	

<i>*Portulaca oleracea</i>	+	cr	PI053.03
<i>Senna notabilis</i>	+	0.2 m	PI070.14
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.2 m	PI070.03
<i>Sporobolus australasicus</i>	+	0.1 m	PI037.07
<i>Streptoglossa decurrens</i>	+	0.3 m	PI095.08
<i>Tephrosia uniovulata</i>	+	0.4 m	PI095.04
<i>Triodia epactia</i>	25%	0.3 m	PI095.03
<i>Triodia lanigera</i>	1%	0.4 m	PI095.07
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI072.06

Port Hedland RS Site PI096**Described by** HA **Date** 22/06/2011 **Type** Q 50x50 m**Location** Port Hedland**MGA Zone** 50 666908 mE 7734910 mN**Habitat** Sand plain**Soil** Orange brown sand**Rock Type****Vegetation** Scattered High Shrubs of *Acacia inaequilatera* over Open Hummock Grassland of *Triodia epactia* and *Triodia lanigera* over Open Tussock Grassland of *Aristida holathera* var. *holathera*, *Eriachne aristidea* and *Yakirra australiensis* var. *australiensis***Veg Condition** Excellent**Fire Age** Young**Notes** Aspect: N/A
Bare Ground: 70%
Litter Cover: +% Logs, 1% Twigs, +% Lvs
Disturbance:**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	+	0.2 m	PI070.38	
<i>Acacia inaequilatera</i>	1%	2.5 m	PI054.05	
<i>Acacia stellaticeps</i>	+	0.2 m	PI070.01	
<i>Alternanthera nana</i>	+	0.2 m	PI096.10	
<i>Aristida holathera</i> var. <i>holathera</i>	8%	0.4 m	PI070.10	
<i>Bonamia media</i> var. <i>villosa</i>	+	cr	PI096.02	
<i>Bulbostylis barbata</i>	+	0.1 m	PI070.17	
<i>Calandrinia pentavalvis</i>	+	0.1 m	PI072.14	
<i>Carissa lanceolata</i>	+	0.4 m	PI095.15	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.4 m	PI070.02	
<i>Corchorus tectus</i>	+	0.3 m	PI095.02	
<i>Corymbia candida</i> subsp. <i>dipsodes</i>	+	4 m	PI096.09	
<i>Dysphania saxatilis</i>	+	0.1 m	PI053.07	
<i>Eriachne aristidea</i>	2%	0.3 m	PI070.28	
<i>Euphorbia australis</i>	+	cr	PI096.11	
<i>Goodenia microptera</i>	1%	0.4 m	PI096.01	
<i>Hibiscus burtonii</i>	+	0.6 m	PI096.08	
<i>Hybanthus aurantiacus</i>	+	0.2 m	PI099.02	
<i>Indigofera monophylla</i>	+	0.4 m	PI072.03	
<i>Mollugo molluginea</i>	+	0.2 m	PI070.35	
<i>Paraneurachne muelleri</i>	+	0.3 m	PI054.09	
<i>Phyllanthus erwinii</i>	+	0.3 m	PI096.05	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI072.02	
<i>Polymeria ambigua</i>	+	cr	PI096.04	
* <i>Portulaca oleracea</i>	+	0.1 m	PI053.03	
<i>Ptilotus fusiformis</i>	+	0.3 m	PI070.22	
<i>Senna notabilis</i>	+	0.3 m	PI070.14	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI070.03	

<i>Sporobolus australasicus</i>	+	0.1 m	PI037.07
<i>Synaptantha tillaeacea</i> var. <i>tillaeacea</i>	+	cr	PI096.06
<i>Trianthema pilosa</i>	+	cr	PI072.13
<i>Triodia epactia</i>	20%	0.4 m	PI096.03
<i>Triodia lanigera</i>	+	0.3 m	PI096.07
<i>Yakirra australiensis</i> var. <i>australiensis</i>	1%	0.15 m	PI072.06

Port Hedland RS Site PI097**Described by** LD **Date** 26/06/2011 **Type** Q 50x50 m

Location Port Hedland

MGA Zone 50 668019 mE 7735504 mN

Habitat Plain

Soil Orange Brown sandy clay with crust

Rock Type N/A

Vegetation Low Open Woodland of *Eucalyptus victrix* over Scattered Shrubs of *Acacia tumida* var. *pilbarensis* over Very Open Hummock Grassland of *Triodia epactia* over Very Open Tussock Grassland of *Chrysopogon fallax*

Veg Condition Excellent

Fire Age Moderate - old

Notes Aspect: N/A
Bare Ground: 92%
Litter Cover: +% Logs, +% Twigs, +% Lvs
Disturbance: tracks near by

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	+	1-2 m	PI091.12	
<i>Acacia sericophylla</i>	+	1 m	PI051.08	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	1%	1-2 m	PI150.07	
<i>Aeschynomene indica</i>	+	1.2 m	PI097.07	
<i>Alternanthera nana</i>	+	0.2 m	PI094.07	
<i>Aristida contorta</i>	+	0.2 m	PI097.02	
<i>Aristida inaequiglumis</i>	+	0.5 m	PI058.04	
<i>Atalaya hemiglauca</i>	+	1 m	PI097.04	
<i>Carissa lanceolata</i>	+	1-1.5 m	PI094.09	
<i>Cassytha capillaris</i>	+	cl	PI091.09	
<i>Chrysopogon fallax</i>	3%	0.6 m	PI051.04	
<i>Cleome viscosa</i>	+	0.4 m	PI065.17	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.3 m	PI094.08	
<i>Corymbia candida</i> subsp. <i>dipsodes</i>	+	2 m	PI051.02	
<i>Ehretia saligna</i> var. <i>saligna</i>	+	0.7 m	PI091.08	
<i>Eriachne glauca</i> var. <i>glauca</i>	+	0.2 m	PI097.03	
<i>Eucalyptus victrix</i>	2%	3-7 m	PI094.03	
<i>Fimbristylis oxystachya</i>	+	0.05 m	PI025.05	
<i>Goodenia lamprosperma</i>	+	0.2 m	PI094.05	
<i>Mimulus gracilis</i>	+	0.05 m	PI094.06	
<i>Pluchea rubelliflora</i>	+	0.1 m	PI097.05	
<i>Polymeria ambigua</i>	+	cr	PI097.06	
* <i>Portulaca oleracea</i>	+	0.05 m	PI128.04	
<i>Rhynchosia minima</i>	+	cl	PI094.11	
<i>Sporobolus australasicus</i>	+	0.1 m	PI066.02	
<i>Triodia epactia</i>	2%	0.4 m	PI097.01	

Port Hedland RS Site PI098**Described by** LD **Date** 26/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 668639 mE 7733083 mN
Habitat Plain with minor drainage line
Soil Orange Brown clayey loam with crust
Rock Type N/A
Vegetation Low woodland of *Eucalyptus victrix* over Very Open Hummock Grassland of *Triodia epactia* over Very Open Tussock Grassland of *Chrysopogon fallax*
Veg Condition Excellent
Fire Age Moderate
Notes Aspect: N/A
 Bare Ground: 50%
 Litter Cover: 0% Logs, +% Twigs, 1% Lvs
 Disturbance: Tracks

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	+	0.1 m	PI091.12	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	+	0.8 m	PI150.07	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.2 m	PI090.08	
<i>Bulbostylis barbata</i>	+	0.1 m	PI090.18	
<i>Calandrinia pumila</i>	+	0.01 m	PI045.18	
<i>Carissa lanceolata</i>	+	1 m	PI094.09	
<i>Centipeda minima</i> subsp. <i>macrocephala</i>	+	0.1 m	PI098.02	
<i>Chrysopogon fallax</i>	5%	0.4 m	PI051.04	
<i>Cleome viscosa</i>	+	0.3 m	PI065.17	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.3 m	PI094.08	
<i>Corchorus tectus</i>	+	0.2 m	PI091.07	
<i>Corymbia candida</i> subsp. <i>dipsodes</i>	+	1 m	PI051.02	
<i>Cullen stipulaceum</i>	+	0.3 m	PI098.05	
<i>Eragrostis cumingii</i>	+	0.1 m	PI080.06	
<i>Eucalyptus victrix</i>	11%	2-7 m	PI094.03	
<i>Euphorbia australis</i>	+	0.01 m	PI103.13	
<i>Goodenia lamprosperma</i>	+	0.2 m	PI094.05	
<i>Goodenia triodiophila</i>	+	0.2 m	PI080.07	
<i>Ipomoea optica</i>	+	cr	PI098.07	
<i>Mimulus gracilis</i>	+	0.1 m	PI094.06	
<i>Neptunia dimorphantha</i>	+	0.1 m	PI098.03	
<i>Pluchea rubelliflora</i>	+	0.2 m	PI080.02	
<i>Polymeria ambigua</i>	+	cr	PI098.04	
* <i>Portulaca oleracea</i>	+	0.1 m	PI128.04	
<i>Ptilotus murrayi</i>	+	0.1 m	PI098.06	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.3 m	PI058.05	
<i>Sporobolus australasicus</i>	+	0.1 m	PI066.02	
<i>Stackhousia intermedia</i>	+	0.1 m	PI066.14	
<i>Triodia epactia</i>	8%	0.4 m	PI098.01	
<i>Waltheria indica</i>	+	cr	PI103.15	

Port Hedland RS Site PI099**Described by** HA **Date** 26/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 669678 mE 7732575 mN
Habitat Sand plain
Soil Orange brown sandy loam
Rock Type N/A
Vegetation Scattered Low Trees of *Corymbia candida* subsp. *dipsodes* over Low Open Shrubland of *Acacia Indigofera* *monophylla* and *Tephrosia uniovulata* over Very Open Hummock Grassland of *Triodia lanigera*.
Veg Condition Excellent
Fire Age Young
Notes Aspect: N/A
 Bare Ground: 80%
 Litter Cover: +% Logs, +% Twigs, +% Lvs
 Disturbance:

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia ancistrocarpa</i>	+	0.4 m	PI131.04	
<i>Acacia inaequilatera</i>	+	1.5 m	PI054.05	
<i>Acacia maitlandii</i>	+	0.1 m	PI099.09	
<i>Acacia sericophylla</i>	+	0.5 m (2 m)	PI099.13	
<i>Acacia sphaerostachya</i>	+	0.6 m	PI088.03	
<i>Acacia stellaticeps</i>	+	0.3 m	PI070.01	
<i>Acacia trachycarpa</i>	2%	0.5 m	PI099.10	
<i>Acacia trachycarpa</i> x <i>tumida</i>	+	0.6 m	PI099.14	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.3 m	PI070.10	
<i>Bonamia alatisemina</i>	+	cr	PI053.02	
<i>Bonamia rosea</i>	+	0.3 m	PI088.02	
<i>Bulbostylis barbata</i>	+	0.1 m	PI070.17	
<i>Chrysopogon fallax</i>	+	1.2 m	PI070.21	
<i>Cleome viscosa</i>	+	0.3 m	PI099.07	
<i>Corchorus tectus</i>	+	0.3 m	PI095.02	
<i>Corymbia candida</i> subsp. <i>dipsodes</i>	1%	2.5 m	PI088.08	
<i>Desmodium filiforme</i>	+	cr	PI089.06	
<i>Dysphania saxatilis</i>	+	0.1 m	PI053.07	
<i>Eriachne pulchella</i> subsp. <i>dominii</i>	(+)	0.2 m	PI099.04	
<i>Goodenia microptera</i>	+	0.3 m	PI096.01	
<i>Hakea lorea</i> subsp. <i>lorea</i>	+	1.2 m	PI099.12	
<i>Heliotropium muticum</i>	+	0.3 m	PI099.11	
<i>Hybanthus aurantiacus</i>	+	0.4 m	PI099.02	
<i>Indigofera monophylla</i>	2%	0.3 m	PI099.06	
<i>Mollugo molluginea</i>	+	0.1 m	PI070.35	
<i>Paraneurachne muelleri</i>	+	0.3 m	PI054.09	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.15 m	PI072.02	
* <i>Portulaca oleracea</i>	+	0.1 m	PI086.11	

<i>Ptilotus astrolasius</i>	+	0.2 m	PI089.05
<i>Ptilotus calostachyus</i>	+	0.3 m	PI032.04
<i>Scaevola browniana</i> subsp. <i>browniana</i>	+	0.3 m	PI099.08
<i>Schizachyrium fragile</i>	+	0.2 m	PI110.05
<i>Senna notabilis</i>	+	0.4 m	PI070.14
<i>Sida rohlenae</i> subsp. <i>rohlenae</i>	+	0.4 m	PI105.08
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.5 m	PI070.03
<i>Tephrosia uniovulata</i>	1%	0.3 m	PI099.03
<i>Tinospora smilacina</i>	+	cl	PI087.09
<i>Triodia lanigera</i>	8%	0.3 m	PI099.01
<i>Triumfetta ramosa</i>	+	0.2 m	PI099.05
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI072.06

Port Hedland RS Site PI100**Described by** BW **Date** 26/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 667351 mE 7732436 mN
Habitat Plain
Soil Orange brown silty sand
Rock Type N/A
Vegetation Open Shrubland of *Acacia inaequilatera* and *Acacia stellaticeps* over Very Open Hummock Grassland of *Triodia epactia* and *Triodia lanigera*
Veg Condition Excellent
Fire Age Young
Notes Aspect: N/A
 Bare Ground: 95%
 Litter Cover: +% Logs, +% Twigs, +% Lvs
 Disturbance: Cattle and tracks near by

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia inaequilatera</i>	1%	0.5-2 m	PI049.06	mostly between 1-2 m
<i>Acacia stellaticeps</i>	1%	0.4 m	PI043.01	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.3 m	PI049.07	
<i>Bonamia alatisemina</i>	+	prostrate	PI145.11	
<i>Bonamia rosea</i>	+	0.4 m	PI030.04	
<i>Bulbostylis barbata</i>	+	0.1 m	PI104.01	
<i>Calandrinia stagnensis</i>	+	0.2 m	PI145.04	
<i>Cleome viscosa</i>	+	0.3 m	PI101.04	
<i>Corchorus tectus</i>	+	0.4 m	PI030.02	
<i>Dysphania saxatilis</i>	+	0.2 m	PI069.03	
<i>Eragrostis eriopoda</i>	+	0.4 m	PI047.02	
<i>Eriachne aristidea</i>	+	0.2 m	PI136.03	
<i>Goodenia microptera</i>	+	0.4 m	PI060.02	
<i>Heliotropium muticum</i>	+	0.3 m	PI030.06	26 ind
<i>Hibiscus leptocladus</i>	+	0.4 m	PI145.08	
<i>Indigofera monophylla</i>	+	0.3 m	PI052.03	
<i>Isotropis atropurpurea</i>	+	0.4 m	PI145.10	
<i>Mollugo molluginea</i>	+	0.2 m	PI043.29	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.2 m	PI043.06	
<i>Ptilotus fusiformis</i>	+	0.4 m	PI043.11	
<i>Senna notabilis</i>	+	0.2 m	PI043.09	
<i>Sida clementii</i>	+	0.5 m	PI100.02	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.3 m	PI043.14	
<i>Tephrosia uniovulata</i>	+	0.4 m	PI100.01	
<i>Tribulus hirsutus</i>	+	prostrate	PI060.03	
<i>Triodia epactia</i>	2%	0.4 m	PI100.03	
<i>Triodia lanigera</i>	1%	0.4 m	PI100.04	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI043.08	

Port Hedland RS Site PI101**Described by** BW **Date** 26/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 667361 mE 7731262 mN
Habitat Plain
Soil Orange brown silty sand
Rock Type N/A
Vegetation Scattered Low Trees of *Corymbia candida* subsp. *dipsodes* over Open Shrubland of *Acacia inaequilatera* and *Acacia stellaticeps* over Open Hummock Grassland of *Triodia lanigera*
Veg Condition Excellent
Fire Age Moderate
Notes Aspect: N/A
 Bare Ground: 85%
 Litter Cover: +% Logs, +% Twigs, +% Lvs
 Disturbance: Cattle and tracks near by

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia ancistrocarpa</i>	+	1.5 m	PI062.03	
<i>Acacia inaequilatera</i>	2%	1-3 m	PI049.06	
<i>Acacia sericophylla</i>	+	1.5 m	PI101.01	
<i>Acacia stellaticeps</i>	2%	0.6 m	PI043.01	
<i>Amaranthus undulatus</i>	+	0.3 m	PI133.03	
<i>Boerhavia coccinea</i>	+	prostrate	PI067.15	
<i>Bulbostylis barbata</i>	+	0.1 m	PI104.01	
<i>Calandrinia stagnensis</i>	+	prostrate	PI145.04	
<i>Cleome viscosa</i>	+	0.3 m	PI101.04	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.3 m	PI042.04	
<i>Corymbia candida</i> subsp. <i>dipsodes</i>	1%	2-3 m	PI146.07	
<i>Crotalaria medicaginea</i> var. <i>neglecta</i>	+	0.4 m	PI101.03	
<i>Cucumis maderaspatanus</i>	+	cr	PI067.16	
* <i>Cucumis melo</i> subsp. <i>agrestis</i>	+	cr	PI026.08	
<i>Dysphania saxatilis</i>	+	0.1 m	PI069.03	
<i>Eragrostis eriopoda</i>	+	0.3 m	PI047.02	
<i>Eriachne mucronata</i>	+	0.4 m	PI049.01	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.1 m	PI104.04	
<i>Goodenia microptera</i>	+	0.4 m	PI060.02	
<i>Gossypium australe</i>	+	0.4 m	PI104.08	
<i>Hibiscus austrinus</i> var. <i>austrinus</i>	+	0.3 m	PI101.02	
<i>Hybanthus aurantiacus</i>	+	0.3 m	PI043.13	
<i>Indigofera monophylla</i>	+	0.4 m	PI052.03	
<i>Isotropis atropurpurea</i>	+	0.2 m	PI145.10	
<i>Mollugo molluginea</i>	+	0.2 m	PI043.29	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI043.06	
<i>Ptilotus astrolasius</i>	+	0.2 m	PI056.18	
<i>Ptilotus fusiformis</i>	+	0.4 m	PI043.11	

<i>Senna notabilis</i>	+	0.3 m	PI043.09
<i>Sida rohlenae</i> subsp. <i>rohlenae</i>	+	0.3 m	PI069.07
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.2 m	PI043.14
<i>Trianthera pilosa</i>	+	0.2 m	PI052.09
<i>Tribulus hirsutus</i>	+	0.2 m	PI060.03
<i>Triodia lanigera</i>	12%	0.4 m	PI101.05
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI043.08

Port Hedland RS Site PI102**Described by** HA **Date** 24/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 655108 mE 7731283 mN
Habitat Sand plain
Soil Orange brown sandy loam
Rock Type N/A
Vegetation High Open Shrubland of *Acacia colei* var. *colei* over
 Low Open Heath of *Acacia stellaticeps* over Open
 Hummock Grassland of *Triodia epactia*
Veg Condition Pristine to excellent
Fire Age Old
Notes Aspect: N/A
 Bare Ground: 30%
 Litter Cover: +% Logs, 2% Twigs, 1% Lvs
 Disturbance: None

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	2%	3 m	PI070.38	
<i>Acacia inaequilatera</i>	+	0.1 m	PI054.05	
<i>Acacia stellaticeps</i>	50%	1 m	PI070.01	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	+	3.5 m	PI070.30	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.3 m	PI070.10	
<i>Aristida inaequiglumis</i>	+	1 m	PI070.24	
<i>Bulbostylis barbata</i>	+	0.1 m	PI070.17	
<i>Chrysopogon fallax</i>	+	1.1 m	PI070.21	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.4 m	PI070.02	
<i>Drosera indica</i>	+	0.1 m	PI053.11	
<i>Dysphania saxatilis</i>	+	0.1 m	PI053.07	
<i>Eragrostis eriopoda</i>	+	0.3 m	PI070.13	
<i>Eriachne aristidea</i>	+	0.3 m	PI070.28	
<i>Eriachne mucronata</i>	+	0.4 m	PI102.06	
<i>Mitrasacme connata</i>	+	0.2 m	PI072.07	
<i>Paraneurachne muelleri</i>	+	0.3 m	PI054.09	
<i>Pluchea tetranthera</i>	+	0.05 m	PI102.04	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI072.02	
<i>Senna notabilis</i>	+	0.15 m	PI070.14	
<i>Sida fibulifera</i>	+	cr	PI102.07	
<i>Solanum lasiophyllum</i>	+	0.5 m	PI070.37	
<i>Synaptantha tillaeacea</i> var. <i>tillaeacea</i>	+	cr	PI102.02	
<i>Triodia epactia</i>	30%	0.6 m	PI102.01	

Port Hedland RS Site PI103**Described by** LD **Date** 24/06/2011 **Type** Q 50x50 m

Location Port Hedland

MGA Zone 50 657079 mE 7730724 mN

Habitat Plain

Soil Orange brown sand

Rock Type N/A

Vegetation Scattered Low Trees of *Owenia reticulata* over Low Open Shrubland of *Acacia stellaticeps* over Very Open Hummock Grassland of *Triodia epactia* and *Triodia lanigera* over Very Open Tussock Grassland of *Aristida holathera* var. *holathera*, *Eragrostis eriopoda* and **Cenchrus ciliaris*

Veg Condition Very good

Fire Age Old

Notes Aspect: N/A
Bare Ground: 80%
Litter Cover: +% Logs, +% Twigs, 1% Lvs
Disturbance: Weeds

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Abutilon otocarpum</i>	+	0.5 m	PI103.18	
<i>Acacia stellaticeps</i>	2%	0.6 m	PI065.01	
<i>Acacia trudgeniana</i>	+	2 m	PI065.31	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	+	1-2 m	PI150.07	
* <i>Aerva javanica</i>	+	0.6 m	PI103.07	
<i>Amaranthus undulatus</i>	+	0.3 m	PI045.16	
<i>Aristida holathera</i> var. <i>holathera</i>	5%	0.3 m	PI103.03	
<i>Boerhavia coccinea</i>	+	0.1 m	PI103.09	
<i>Bulbostylis barbata</i>	+	0.1 m	PI027.03	
* <i>Cenchrus ciliaris</i>	1%	0.3 m	PI103.06	
<i>Chrysopogon fallax</i>	+	0.8 m	PI051.04	
<i>Cleome viscosa</i>	+	0.6 m	PI065.17	
<i>Cucumis maderaspatanus</i>	+	cl	PI045.15	
<i>Eragrostis eriopoda</i>	3%	0.3 m	PI103.02	
<i>Eriachne aristidea</i>	+	0.2 m	PI063.03	
<i>Euphorbia australis</i>	+	0.01 m	PI103.13	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.2 m	PI103.19	
<i>Grevillea pyramidalis</i> subsp. <i>leucadendron</i>	+	0.3 m	PI065.29	
<i>Indigofera colutea</i>	+	0.2 m	PI103.11	
<i>Indigofera monophylla</i>	+	0.2 m	PI065.13	
<i>Ipomoea muelleri</i>	+	cl	PI103.12	
<i>Ipomoea polymorpha</i>	+	0.1 m	PI103.05	
<i>Owenia reticulata</i>	1%	2-3 m	PI103.01	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI058.10	
<i>Portulaca pilosa</i>	+	0.2 m	PI090.15	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> x	+	1-1.5 m	PI103.14	
<i>Senna notabilis</i>	+	0.1 m	PI051.12	
<i>Sida rohlenae</i> subsp. <i>rohlenae</i>	+	0.3 m	PI103.20	

<i>Solanum ellipticum</i>	+	0.2 m	PI103.10
<i>Tinospora smilacina</i>	+	cl	PI103.08
<i>Trianthera pilosa</i>	+	0.1 m	PI065.03
<i>Triodia epactia</i>	2%	0.4 m	PI103.17
<i>Triodia lanigera</i>	+	0.05 m	PI063.01
<i>Triumfetta ramosa</i>	+	0.4 m	PI103.16
<i>Waltheria indica</i>	+	0.3 m	PI103.15
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI043.08

Port Hedland RS Site PI104**Described by** BW **Date** 25/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 660082 mE 7731299 mN
Habitat Plain
Soil Orange brown silty sand
Rock Type N/A
Vegetation Scattered Shrubs of *Acacia inaequilatera* over Open Hummock Grassland of *Triodia lanigera*
Veg Condition Excellent
Fire Age Old
Notes Aspect: N/A
 Bare Ground: 85%
 Litter Cover: +% Logs, 1% Twigs, 1% Lvs
 Disturbance: Cattle

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia ancistrocarpa</i>	+	1.6 m	PI062.03	
<i>Acacia colei</i> var. <i>colei</i>	+	0.7 m	PI043.16	
<i>Acacia inaequilatera</i>	1%	1-2 m	PI049.06	
<i>Acacia sericophylla</i>	+	1.8 m	PI104.07	
<i>Acacia stellaticeps</i>	+ (6%)	0.1-0.6 m	PI043.01	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.4 m	PI049.07	
<i>Boerhavia coccinea</i>	+	prostrate	PI067.15	
<i>Bonamia rosea</i>	+	0.4 m	PI111.01	
<i>Bulbostylis barbata</i>	+	0.1 m	PI104.01	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.4 m	PI042.04	
<i>Dentella asperata</i>	+	prostrate	PI069.11	
<i>Dysphania saxatilis</i>	+	0.2 m	PI069.03	
<i>Eragrostis eriopoda</i>	+	0.4 m	PI047.02	
<i>Eriachne aristidea</i>	+	0.4 m	PI136.03	
<i>Euphorbia australis</i>	+	prostrate	PI104.02	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.2 m	PI104.04	
<i>Fimbristylis simulans</i>	+	0.3 m	PI136.07	
<i>Goodenia microptera</i>	+	0.4 m	PI060.02	
<i>Gossypium australe</i>	+	0.6 m	PI104.08	
<i>Hybanthus aurantiacus</i>	+	0.4 m	PI043.13	
<i>Indigofera linifolia</i>	+	0.2 m	PI133.06	
<i>Indigofera monophylla</i>	+	0.4 m	PI052.03	
<i>Mollugo molluginea</i>	+	0.1 m	PI043.29	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.2 m	PI043.06	
<i>Ptilotus astrolasius</i>	+	0.4 m	PI056.18	
<i>Scaevola parvifolia</i> subsp. <i>pilbarae</i>	+	0.3 m	PI104.05	
<i>Senna notabilis</i>	+	0.3 m	PI043.09	
<i>Triodia lanigera</i>	12%	0.4 m	PI104.03	
<i>Triumfetta chaetocarpa</i>	+	0.4 m	PI133.04	
<i>Waltheria indica</i>	+	0.7 m	PI104.06	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI042.06	

Port Hedland RS Site PI105**Described by** HA **Date** 25/06/2011 **Type** Q 50x50 m**Location** Port Hedland**MGA Zone** 50 661410 mE 7729619 mN**Habitat** Sand plain**Soil** Orange brown sandy loam**Rock Type****Vegetation** Scattered Shrubs of *Acacia tumida* var. *pilbarensis* over Low Open Shrubland of *Acacia stellaticeps* over Open Hummock Grassland of *Triodia epactia* and *Triodia lanigera* over Very Open Tussock Grassland of *Eriachne mucronata* and *Eragrostis eriopoda***Veg Condition** Excellent**Fire Age** Moderate**Notes** Aspect: N/A
Bare Ground: 55%
Litter Cover: 1% Logs, 2% Twigs, +% Lvs
Disturbance:**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Abutilon otocarpum</i>	+	0.4 m	PI105.13	
<i>Acacia inaequilatera</i>	+	3.2 m	PI054.05	
<i>Acacia sericophylla</i>	+	2.5 m	PI070.04	
<i>Acacia stellaticeps</i>	10%	0.5 m	PI070.01	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	1%	2 m	PI070.30	
<i>Achyranthes aspera</i>	+	0.3 m	PIOPLD01a	
<i>Amaranthus undulatus</i>	+	0.2 m	PI105.06	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.4 m	PI070.10	
<i>Bonamia alatisemina</i>	+	cr	PI053.02	
<i>Bulbostylis barbata</i>	+	0.15 m	PI070.17	
<i>Bulbostylis turbinata</i>	+	0.3 m	PI105.03	
<i>Chrysopogon fallax</i>	+	1.2 m	PI070.21	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.2 m	PI070.02	
<i>Corymbia zygophylla</i>	+	3 m	PI105.07	
<i>Crotalaria ramosissima</i>	+	0.2 m	PI105.05	
<i>Cucumis maderaspatanus</i>	+	cr	PI147.17	
<i>Dolichandrone heterophylla</i>	+	0.5 m	PI108.10	
<i>Dysphania saxatilis</i>	+	0.15 m	PI053.07	
<i>Eragrostis eriopoda</i>	1%	0.3 m	PI070.13	
<i>Eriachne mucronata</i>	2%	0.3 m	PI105.02	
<i>Euphorbia australis</i>	+	cr	PI105.14	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	cr	PI070.07	
<i>Goodenia forrestii</i>	+	0.3 m	PI131.07	
<i>Goodenia microptera</i>	+	0.4 m	PI096.01	
<i>Gossypium australe</i>	+	0.3 m	PI105.15	
<i>Heliotropium inexplicitum</i>	+	0.15 m	PI105.17	
<i>Hibiscus brachychlaenus</i>	+	0.3 m	PI105.18	
<i>Hybanthus aurantiacus</i>	+	0.4 m	PI099.02	

<i>Indigofera monophylla</i>	+	0.4 m	PI072.03	
<i>Ipomoea polymorpha</i>	+	0.1 m	PI105.10	Infected plant
<i>Mollugo molluginea</i>	+	0.1 m	PI070.35	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI072.02	
<i>Portulaca pilosa</i>	+	0.2 m	PI147.22	
<i>Ptilotus fusiformis</i>	+	0.3 m	PI070.22	
<i>Schizachyrium fragile</i>	+	0.2 m	PI110.05	
<i>Sida rohlenae</i> subsp. <i>rohlenae</i>	+	0.4 m	PI105.08	
<i>Sida</i> sp. dark green fruits (S. van Leeuwen 2260)	+	0.2 m	PI105.11	
<i>Solanum ellipticum</i>	+	0.3 m	PI073.12	
<i>Solanum lasiophyllum</i>	+	0.2 m	PI105.04	
<i>Trianthema pilosa</i>	+	cr	PI072.13	
<i>Tribulus occidentalis</i>	+	cr	PI105.09	
<i>Triodia epactia</i>	15%	0.4 m	PI105.01	
<i>Triodia lanigera</i>	10%	0.3 m	PI105.16	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI072.06	

Port Hedland RS Site PI106**Described by** LD **Date** 24/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 657477 mE 7728418 mN
Habitat Plain
Soil Orange brown sandy loam
Rock Type N/A
Vegetation Low Open Shrubland of *Acacia stellaticeps* over Very Open Hummock Grassland of *Triodia epactia* over Very Open Tussock Grassland of *Aristida holathera* var. *holathera* and *Eriachne benthamii*
Veg Condition Very good
Fire Age Old
Notes Aspect: N/A
 Bare Ground: 70%
 Litter Cover: +% Logs, 1% Twigs, 1% Lvs
 Disturbance: Weeds and cattle

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia stellaticeps</i>	3%	0.8 m	PI065.01	
<i>Acacia trudgeniana</i>	+	2-2.5 m	PI065.31	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	+	1-2 m	PI150.07	
* <i>Aerva javanica</i>	+	0.5 m	PI103.07	
<i>Aristida holathera</i> var. <i>holathera</i>	2%	0.3 m	PI103.03	
<i>Aristida inaequiglumis</i>	+	0.8 m	PI058.04	
<i>Boerhavia coccinea</i>	+	0.1 m	PI103.09	
<i>Bonamia rosea</i>	+	0.3 m	PI106.06	
<i>Bulbostylis barbata</i>	+	0.1 m	PI027.03	
<i>Chrysopogon fallax</i>	+	0.6 m	PI051.04	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.3 m	PI094.08	
<i>Cucumis maderaspatanus</i>	+	cr	PI045.15	
<i>Eragrostis eriopoda</i>	+	0.3 m	PI103.02	
<i>Eriachne aristidea</i>	+	0.2 m	PI063.03	
<i>Eriachne benthamii</i>	1%	0.3 m	PI106.01	
<i>Euphorbia australis</i>	+	0.01 m	PI103.13	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.05 m	PI103.19	
<i>Fimbristylis oxystachya</i>	+	0.2 m	PI025.05	
<i>Grevillea pyramidalis</i> subsp. <i>leucadendron</i>	+	2-3 m	PI065.29	
<i>Hybanthus aurantiacus</i>	+	0.3 m	PI043.13	
<i>Indigofera colutea</i>	+	0.1 m	PI103.11	
<i>Ipomoea muelleri</i>	+	cr	PI103.12	
<i>Ipomoea polymorpha</i>	+	0.05 m	PI106.07	
<i>Owenia reticulata</i>	++	0.3 m	PI103.01	
<i>Perotis rara</i>	+	0.1 m	PI106.11	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI058.10	
<i>Polymeria calycina</i>	+	0.05 m	PI106.10	
<i>Ptilotus fusiformis</i>	+	0.3 m	PI065.28	

<i>Senna notabilis</i>	+	0.2 m	PI051.12
<i>Sida</i> sp. verrucose glands (F.H. Mollemans 2423)	+	0.1 m	PI106.03
<i>Solanum ellipticum</i>	+	0.2 m	PI103.10
<i>Tribulus hirsutus</i>	+	0.05 m	PI106.08
<i>Triodia epactia</i>	4%	0.6 m	PI106.02
<i>Triumfetta chaetocarpa</i>	+	0.1 m	PI106.09
<i>Triumfetta ramosa</i>	+	0.3 m	PI103.16
<i>Urochloa holosericea</i> subsp. <i>velutina</i>	+	0.1 m	PI106.05
<i>Waltheria indica</i>	+	0.3 m	PI106.04
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI043.08

Port Hedland RS Site PI107
Described by BW **Date** 24/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 655407 mE 7728614 mN
Habitat Major drainage line/ River
Soil Orange brown sand with scattered river pebbles
Rock Type Mixed
Vegetation Scattered Low Trees of *Melaleuca argentea*
Veg Condition Excellent
Fire Age Very old
Notes Aspect: N/A
 Bare Ground: 99%
 Litter Cover: +% Logs, +% Twigs, +% Lvs
 Disturbance: Tracks through river



SPECIES LIST:

Name	Cover	Height	Specimen Notes
<i>Acacia pyrifolia</i>	out	1.4 m	PI107.03
<i>Acacia trachycarpa</i>	out	1.2 m	PI107.02
<i>Melaleuca argentea</i>	1%	1-7 m	PI107.01



Port Hedland RS Site PI108**Described by** HA **Date** 24/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 657268 mE 7727390 mN
Habitat Sand plain
Soil Brown orange sand
Rock Type N/A
Vegetation Shrubland of *Acacia stellaticeps*, *Acacia tumida* var. *pilbarensis* and *Acacia inaequilatera* over Open Hummock Grassland of *Triodia epactia* over Tussock Grassland of *Aristida holathera* var. *holathera* and *Eriachne mucronata*
Veg Condition Very good
Fire Age Old
Notes Aspect: N/A
 Bare Ground: 70%
 Litter Cover: +% Logs, +% Twigs, +% Lvs
 Disturbance: Weeds (Kapok) and cattle tracks

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Abutilon otocarpum</i>	+	0.4 m	PI108.04	
<i>Abutilon pritzelianum</i> MS	+	1 m	PI108.07	
<i>Acacia inaequilatera</i>	1%	2 m	PI054.05	
<i>Acacia stellaticeps</i>	10%	1.3 m	PI070.01	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	5%	2.5 m	PI070.30	
* <i>Aerva javanica</i>	+	0.6 m	PI147.05	
<i>Amaranthus undulatus</i>	+	0.5 m	PI147.06	
<i>Aristida holathera</i> var. <i>holathera</i>	50%	0.4 m	PI108.01	
<i>Boerhavia coccinea</i>	+	cr	PI108.09	
<i>Bonamia media</i> var. <i>villosa</i>	+	0.2 m	PI108.03	
<i>Bulbostylis barbata</i>	+	0.1 m	PI070.17	
<i>Cleome viscosa</i>	+	0.4 m	PI040.10	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.4 m	PI070.02	
<i>Crotalaria ramosissima</i>	+	0.3 m	PI108.15	
<i>Cucumis maderaspatanus</i>	+	cr	PI147.17	
<i>Dolichandrone heterophylla</i>	+	1.5 m	PI108.10	
<i>Eragrostis eriopoda</i>	+	0.4 m	PI070.13	
<i>Eriachne aristidea</i>	+	0.2 m	PI070.28	
<i>Eriachne mucronata</i>	5%	0.5 m	PI108.06	
<i>Euphorbia alsiniflora</i>	+	0.15 m	PI072.10	
<i>Euphorbia australis</i>	+	cr	PI108.12	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.1 m	PI070.07	
<i>Indigofera colutea</i>	+	0.1 m	PI108.02	
<i>Indigofera linifolia</i>	+	0.3 m	PI108.14	
<i>Indigofera monophylla</i>	+	0.4 m	PI072.03	
<i>Ipomoea muelleri</i>	+	cr	PI108.11	
<i>Mollugo molluginea</i>	+	0.2 m	PI070.35	
<i>Pimelea ammocharis</i>	+	0.5 m	PI070.23	

<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI072.02
<i>Portulaca pilosa</i>	+	0.2 m	PI147.22
<i>Senna notabilis</i>	+	0.5 m	PI070.14
<i>Sida fibulifera</i>	+	cr	PI102.07
<i>Sida rohlenae</i> subsp. <i>rohlenae</i>	+	0.4 m	PI108.05
<i>Solanum ellipticum</i>	+	0.2 m	PI073.12
<i>Solanum lasiophyllum</i>	+	0.3 m	PI070.37
<i>Triodia epactia</i>	15%	0.4 m	PI108.08
<i>Triumfetta chaetocarpa</i>	+	0.2 m	PI108.13
<i>Waltheria indica</i>	+	0.5 m	PI053.14
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI072.06

Port Hedland RS Site PI109**Described by** LD **Date** 25/06/2011 **Type** Q 50x50 m

Location Port Hedland

MGA Zone 50 660703 mE 7728415 mN

Habitat Sandy plain

Soil Orange brown sandy loam

Rock Type N/A

Vegetation Scattered Low Trees of *Corymbia candida* subsp. *dipsodes* over Low Open Shrubland of *Acacia stellaticeps* over Open Hummock Grassland of *Triodia epactia* and *Triodia lanigera*

Veg Condition Excellent

Fire Age Moderate

Notes Aspect: N/A
Bare Ground: 82%
Litter Cover: +% Logs, 1% Twigs, +% Lvs
Disturbance: Weeds, fence near by

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Abutilon lepidum</i>	+	0.3 m	PI109.09	
<i>Acacia stellaticeps</i>	3%	0.6 m	PI065.01	
<i>Acacia trudgeniana</i>	+	2-2.5 m	PI065.31	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	+	1-2 m	PI150.07	
<i>Amaranthus undulatus</i>	+	0.3 m	PI109.07	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.3 m	PI066.11	
<i>Aristida inaequiglumis</i>	+	0.8 m	PI058.04	
<i>Bonamia alatisemina</i>	+	0.05 m	PI027.06	
<i>Bonamia media</i> var. <i>villosa</i>	+	0.05 m	PI109.03	
<i>Bulbostylis barbata</i>	+	0.1 m	PI027.03	
<i>Cassutha capillaris</i>	+	cl	PI051.06	
<i>Chrysopogon fallax</i>	+	0.6 m	PI051.04	
<i>Corymbia candida</i> subsp. <i>dipsodes</i>	3%	2-3 m	PI051.02	
<i>Cucumis maderaspatanus</i>	+	cl	PI045.15	
<i>Dysphania saxatilis</i>	+	0.05 m	PI058.12	
<i>Eragrostis eriopoda</i>	+	0.2 m	PI134.06	
<i>Eriachne aristidea</i>	+	0.2 m	PI063.03	
<i>Eriachne mucronata</i>	+	0.4 m	PI109.05	
<i>Euphorbia australis</i>	+	0.05 m	PI103.13	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.1 m	PI063.10	
<i>Grevillea pyramidalis</i> subsp. <i>leucadendron</i>	+	1 m	PI065.29	
<i>Hibiscus brachychlaenus</i>	+	0.4 m	PI109.06	
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>	+	0.2 m	PI109.08	
<i>Hybanthus aurantiacus</i>	+	0.2 m	PI043.13	
<i>Indigofera monophylla</i>	+	0.3 m	PI065.13	
<i>Ipomoea polymorpha</i>	+	0.05 m	PI103.05	
<i>Mollugo molluginea</i>	+	0.1 m	PI132.04	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI058.10	

<i>Ptilotus astrolasius</i>	+	0.3 m	PI045.06
<i>Ptilotus calostachyus</i>	+	0.7 m	PI109.10
<i>Ptilotus fusiformis</i>	+	0.3 m	PI065.28
<i>Scaevola parvifolia</i> subsp. <i>pilbarae</i>	+	0.2 m	PI058.11
<i>Senna notabilis</i>	+	0.2 m	PI051.12
<i>Sida rohlenae</i> subsp. <i>rohlenae</i>	+	0.4 m	PI109.04
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.3 m	PI058.05
<i>Solanum ellipticum</i>	+	0.2 m	PI103.10
<i>Tinospora smilacina</i>	+	cl	PI103.08
<i>Trianthema pilosa</i>	+	0.1 m	PI065.03
<i>Triodia epactia</i>	11%	0.3 m	PI109.01
<i>Triodia lanigera</i>	6%	0.3 m	PI109.02
<i>Urochloa holosericea</i> subsp. <i>velutina</i>	+	0.1 m	PI106.05
<i>Waltheria indica</i>	+	0.3 m	PI106.04
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI043.08

Port Hedland RS Site PI110**Described by** HA **Date** 24/06/2011 **Type** Q 50x50 m**Location** Port Hedland**MGA Zone** 50 662286 mE 7727640 mN**Habitat** Sand plain**Soil** Orange brown sandy loam**Rock Type** N/A**Vegetation** Low Open Shrubland of *Acacia stellaticeps* over Hummock Grassland of *Triodia lanigera* and *Triodia epactia* over Very Open Tussock Grassland of *Aristida inaequiglumis* and *Eriachne mucronata***Veg Condition** Excellent**Fire Age** Moderate**Notes** Aspect: N/A

Bare Ground: 55%

Litter Cover: +% Logs, 1% Twigs, +% Lvs

Disturbance: Some cattle tracks

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia ancistrocarpa</i>	+	1.3 m	PI131.04	
<i>Acacia inaequilatera</i>	+	0.3 m	PI054.05	
<i>Acacia sphaerostachya</i>	+	1.2 m	PI110.07	
<i>Acacia stellaticeps</i>	5%	0.5 m	PI070.01	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	+	1.5 m	PI070.30	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.2 m	PI110.02	
<i>Aristida inaequiglumis</i>	1%	0.7 m	PI070.24	
<i>Bulbostylis barbata</i>	+	0.15 m	PI070.17	
<i>Cassyltha capillaris</i>	+	cl	PI055.03	
<i>Chrysopogon fallax</i>	+	0.3 m	PI070.21	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.2 m	PI070.02	
<i>Cucumis maderaspatanus</i>	+	cr	PI147.17	
<i>Dysphania saxatilis</i>	+	0.15 m	PI053.07	
<i>Eragrostis eriopoda</i>	+	0.3 m	PI070.13	
<i>Eriachne aristidea</i>	+	0.2 m	PI070.28	
<i>Eriachne benthamii</i>	+	0.3 m	PI110.04	
<i>Eriachne mucronata</i>	1%	0.3 m	PI102.06	
<i>Eriachne pulchella</i> subsp. <i>dominii</i>	+	0.15 m	PI131.03	
<i>Euphorbia australis</i>	+	cr	PI108.12	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.1 m	PI110.03	
<i>Goodenia forrestii</i>	+	0.2 m	PI131.07	
<i>Goodenia microptera</i>	+	0.3 m	PI096.01	
<i>Hakea lorea</i> subsp. <i>lorea</i>	+	0.4 m	PI070.05	
<i>Hibiscus brachychlaenus</i>	+	0.5 m	PI110.09	
<i>Hybanthus aurantiacus</i>	+	0.5 m	PI099.02	
<i>Indigofera monophylla</i>	+	0.3 m	PI072.03	
<i>Mollugo molluginea</i>	+	0.2 m	PI070.35	
<i>Paraneurachne muelleri</i>	+	0.3 m	PI054.09	

<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI072.02
* <i>Portulaca oleracea</i>	+	0.1 m	PI053.03
<i>Portulaca pilosa</i>	+	0.2 m	PI147.22
<i>Ptilotus astrolasius</i>	+	0.4 m	PI089.05
<i>Ptilotus fusiformis</i>	+	0.3 m	PI070.22
<i>Scaevola parvifolia</i> subsp. <i>pilbarae</i>	+	0.2 m	PI131.05
<i>Schizachyrium fragile</i>	+	0.2 m	PI110.05
<i>Senna notabilis</i>	+	0.2 m	PI070.14
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.6 m	PI070.03
<i>Solanum ellipticum</i>	+	0.2 m	PI073.12
<i>Solanum lasiophyllum</i>	+	0.2 m	PI070.37
<i>Tribulus hirsutus</i>	+	cr	PI110.10
<i>Triodia epactia</i>	+	0.4 m	PI110.06
<i>Triodia lanigera</i>	40%	0.4 m	PI110.01
<i>Urochloa holosericea</i> subsp. <i>velutina</i>	+	0.2 m	PI110.08
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.15 m	PI072.06

Port Hedland RS Site PI111**Described by** BW**Date** 24/06/2011 **Type** Q

50x50 m

Location Port Hedland**MGA Zone** 50 663996 mE 7727735 mN**Habitat** Plain**Soil** Orange brown clayey sand**Rock Type** N/A**Vegetation** Low Open Shrubland of *Acacia stellaticeps* over Very Open Hummock Grassland of *Triodia lanigera***Veg Condition** Excellent**Fire Age** Moderate**Notes** Aspect: N/A

Bare Ground: 87%

Litter Cover: +% Logs, +% Twigs, 1% Lvs

Disturbance: Cattle

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia ancistrocarpa</i>	+	1-2 m	PI062.03	
<i>Acacia colei</i> var. <i>colei</i>	+	1.5 m	PI043.16	
<i>Acacia inaequilatera</i>	+	1-2 m	PI049.06	
<i>Acacia sphaerostachya</i>	+	1.2 m	PI136.04	
<i>Acacia stellaticeps</i>	10%	0.7 m	PI043.01	
<i>Boerhavia coccinea</i>	+	prostrate	PI067.15	
<i>Bonamia rosea</i>	+	0.4 m	PI111.01	
<i>Bulbostylis barbata</i>	+	0.1 m	PI056.01	
<i>Cassytha capillaris</i>	+	cr	PI111.02	
<i>Chrysopogon fallax</i>	+	0.4 m	PI042.09	
<i>Cleome viscosa</i>	+	0.4 m	PI111.04	
<i>Corymbia candida</i> subsp. <i>dipsodes</i>	out	1.5 m	PI146.07	
<i>Dysphania saxatilis</i>	+	0.2 m	PI056.15	
<i>Eragrostis eriopoda</i>	+	0.4 m	PI047.02	
<i>Eriachne aristidea</i>	+	0.3 m	PI136.03	
<i>Goodenia microptera</i>	+	0.3 m	PI060.02	
<i>Hakea lorea</i> subsp. <i>lorea</i>	+	0.8 m	PI043.07	
<i>Indigofera monophylla</i>	+	0.4 m	PI052.03	
<i>Mollugo molluginea</i>	+	0.2 m	PI043.29	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.2 m	PI043.06	
<i>Senna notabilis</i>	+	0.2 m	PI043.09	
<i>Sida echinocarpa</i>	+	0.2 m	PI111.03	
<i>Triodia lanigera</i>	9%	0.4 m	PI136.06	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI042.06	

Port Hedland RS Site PI112**Described by** LD **Date** 27/06/2011 **Type** Q 50x50 m

Location Port Hedland

MGA Zone 50 666848 mE 7729492 mN

Habitat Plain

Soil Orange brown sandy loam

Rock Type N/A

Vegetation Low Open Woodland of *Corymbia zygophylla* over Open Shrubland of *Acacia sphaerostachya* and *Acacia stellaticeps* over Hummock Grassland of *Triodia epactia* and *Triodia lanigera*

Veg Condition Excellent

Fire Age Old

Notes Aspect: N/A
Bare Ground: 60%
Litter Cover: +% Logs, +% Twigs, +% Lvs
Disturbance: Tracks near by and cattle

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia sericophylla</i>	+	0.9 m	PI090.17	
<i>Acacia sphaerostachya</i>	3%	1-1.5 m	PI134.01	
<i>Acacia stellaticeps</i>	3%	0.7 m	PI065.01	
<i>Acacia trudgeniana</i>	+	1-2 m	PI065.31	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.2 m	PI094.04	
<i>Boerhavia coccinea</i>	+	0.1 m	PI112.04	
<i>Bonamia alatisemina</i>	+	0.1 m	PI027.06	
<i>Bonamia media</i> var. <i>villosa</i>	+	0.1 m	PI112.11	
<i>Bonamia rosea</i>	+	0.3 m	PI090.02	
<i>Bulbostylis barbata</i>	+	0.1 m	PI090.18	
<i>Chrysopogon fallax</i>	+	0.6 m	PI051.04	
<i>Cleome viscosa</i>	+	0.2 m	PI112.06	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.1 m	PI094.08	
<i>Corymbia zygophylla</i>	2%	1-3 m	PI112.02	
<i>Cucumis maderaspatanus</i>	+	cr	PI045.15	
<i>Dysphania saxatilis</i>	+	0.1 m	PI090.11	
<i>Eragrostis eriopoda</i>	+	0.3 m	PI090.04	
<i>Eriachne aristidea</i>	+	0.2 m	PI063.03	
<i>Eriachne mucronata</i>	+	0.3 m	PI109.05	
<i>Euphorbia australis</i>	+	0.05 m	PI112.12	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.1 m	PI112.05	
<i>Fimbristylis oxystachya</i>	+	0.1 m	PI025.05	
<i>Goodenia microptera</i>	+	0.2 m	PI112.09	
<i>Hibiscus brachychlaenus</i>	+	0.7 m	PI112.08	
<i>Hybanthus aurantiacus</i>	+	0.3 m	PI043.13	
<i>Indigofera monophylla</i>	+	0.2 m	PI065.13	
<i>Mollugo molluginea</i>	+	0.1 m	PI132.04	
<i>Paraneurachne muelleri</i>	+	0.2 m	PI058.06	

<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI058.10
<i>Ptilotus astrolasius</i>	+	0.3 m	PI090.03
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>	+	1 m	PI112.10
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> x subsp. <i>helmsii</i>	+	1 m	PI112.07
<i>Senna notabilis</i>	+	0.3 m	PI051.12
<i>Trianthera pilosa</i>	+	0.1 m	PI065.03
<i>Triodia epactia</i>	30%	0.6 m	PI112.03
<i>Triodia lanigera</i>	4%	0.4 m	PI112.01
<i>Waltheria indica</i>	+	0.1 m	PI103.15
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI043.08

Port Hedland RS Site PI113**Described by** BW **Date** 27/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 668309 mE 7728225 mN
Habitat Floodplain
Soil Orange brown clayey loam
Rock Type N/A
Vegetation Low Open Woodland of *Eucalyptus victrix* and *Corymbia hamersleyana* over Shrubland of *Acacia colei* var. *colei* over Open Hummock Grassland of *Triodia epactia*
Veg Condition Excellent
Fire Age Young
Notes Aspect: N/A
 Bare Ground: 80%
 Litter Cover: +% Logs, 1% Twigs, 3% Lvs
 Disturbance: Cattle

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	15%	1-3 m	PI043.16	
<i>Acacia stellaticeps</i>	+	0.3 m	PI043.01	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.3 m	PI049.07	
<i>Bulbostylis barbata</i>	+	0.1 m	PI104.01	
<i>Chrysopogon fallax</i>	+	0.5 m	PI042.09	
<i>Corchorus tectus</i>	+	0.5 m	PI030.02	
<i>Corymbia hamersleyana</i>	2%	3 m	PI113.01	
<i>Eragrostis cumingii</i>	+	0.4 m	PI113.04	
<i>Eragrostis eriopoda</i>	+	0.4 m	PI047.02	
<i>Eucalyptus victrix</i>	2%	6-10 m	PI113.02	
<i>Goodenia lamprosperma</i>	+	0.4 m	PI043.21	
<i>Hybanthus aurantiacus</i>	+	0.4 m	PI043.13	
<i>Indigofera monophylla</i>	+	0.4 m	PI052.03	
<i>Mimulus gracilis</i>	+	0.1 m	PI092.05	
<i>Mollugo molluginea</i>	+	0.2 m	PI043.29	
<i>Polymeria ambigua</i>	+	cr	PI113.05	
<i>Rhynchosia minima</i>	+	cr	PI113.03	
<i>Senna notabilis</i>	+	0.4 m	PI043.09	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.5 m	PI043.14	
<i>Triodia epactia</i>	15%	0.4 m	PI113.06	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI042.06	

Port Hedland RS Site PI114**Described by** HA **Date** 27/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 669656 mE 7728731 mN
Habitat Sand plain
Soil Brown orange very sandy loam
Rock Type N/A
Vegetation Low Open Woodland of *Eucalyptus camaldulensis* subsp. *refulgens* over Hummock Grassland of *Triodia epactia* and *Triodia lanigera* over Very Open Tussock Grassland of *Aristida holathera* var. *holathera*
Veg Condition Excellent
Fire Age Young
Notes Aspect: N/A
 Bare Ground: 60%
 Litter Cover: +% Logs, 1% Twigs, +% Lvs
 Disturbance:

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia ancistrocarpa</i>	+	0.3 m	PI086.05	
<i>Acacia colei</i> var. <i>colei</i>	+	0.5 m	PI070.38	
<i>Acacia inaequilatera</i>	+	1.2 m	PI054.05	
<i>Acacia sericophylla</i>	+	0.6 m	PI099.13	
<i>Acacia stellaticeps</i>	+	0.2 m	PI070.01	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	+	0.6 m	PI070.30	
<i>Aristida holathera</i> var. <i>holathera</i>	2%	0.5 m	PI070.10	
<i>Bonamia alatisemina</i>	+	cr	PI053.02	
<i>Bulbostylis barbata</i>	+	0.1 m	PI070.17	
<i>Calandrinia pumila</i>	+	cr	PI086.02	
<i>Chrysopogon fallax</i>	+	1.2 m	PI070.21	
<i>Cleome viscosa</i>	+	0.3 m	PI099.07	
<i>Corchorus tectus</i>	+	0.3 m	PI095.02	
<i>Corymbia candida</i> subsp. <i>dipsodes</i>	+	3 m	PI088.08	
<i>Cyperus cunninghamii</i> subsp. <i>cunninghamii</i>	+	0.5 m	PI114.08	
<i>Eragrostis eriopoda</i>	+	0.3 m	PI088.07	
<i>Eriachne mucronata</i>	+	0.3 m	PI114.03	
<i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i>	4%	6 m	PI068.01	
<i>Fimbristylis simulans</i>	+	0.1 m	PI072.08	
<i>Goodenia lamprosperma</i>	+	0.3 m	PI086.04	
<i>Goodenia microptera</i>	+	0.4 m	PI096.01	
<i>Hakea lorea</i> subsp. <i>lorea</i>	+	0.9 m	PI070.05	
<i>Heliotropium muticum</i>	+	0.3 m	PI114.04	
<i>Hybanthus aurantiacus</i>	+	0.4 m	PI099.02	
<i>Indigofera monophylla</i>	1%	0.3 m	PI072.03	
<i>Isotropis atropurpurea</i>	+	0.4 m	PI114.07	
<i>Mimulus gracilis</i>	+	0.1 m	PI114.05	
<i>Mollugo molluginea</i>	+	0.15 m	PI070.35	

<i>Pluchea tetranthera</i>	+	0.4 m	PI088.09
<i>Polymeria ambigua</i>	+	cr	PI086.06
<i>Polymeria calycina</i>	+	cr	PI114.06
* <i>Portulaca oleracea</i>	+	0.1 m	PI086.11
<i>Ptilotus fusiformis</i>	+	0.3 m	PI070.22
<i>Senna notabilis</i>	+	0.2 m	PI070.14
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI070.03
<i>Stackhousia muricata</i>	+	0.2 m	PI114.02
<i>Triodia epactia</i>	30%	0.4 m	PI114.01
<i>Triodia lanigera</i>	2%	0.3 m	PI114.09
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI072.06

Port Hedland RS Site PI115**Described by** HA **Date** 26/06/2011 **Type** Q 50x50 m**Location** Port Hedland**MGA Zone** 50 670195 mE 7729520 mN**Habitat** Small creek**Soil** Orange brown sand**Rock Type** N/A**Vegetation** Low Woodland of *Eucalyptus camaldulensis* subsp. *refulgens* of Hummock Grassland of *Triodia epactia* and *Triodia longiceps* over Very Open Tussock Grassland of *Panicum decompositum* and *Chrysopogon fallax***Veg Condition** Excellent**Fire Age** Moderate**Notes** Aspect: N/A
Bare Ground: 50%
Litter Cover: +% Logs, +% Twigs, 1% Lvs
Disturbance: None**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	+	0.5 m	PI070.38	
<i>Acacia stellaticeps</i>	+	0.5 m	PI070.01	
<i>Acacia synchronicia</i>	+	0.3 m	PI115.20	
<i>Acacia trachycarpa</i> x <i>tumida</i>	+	0.5 m	PI099.14	
<i>Bonamia rosea</i>	+	0.2 m	PI088.02	
<i>Calandrinia pentavalvis</i>	+	0.1 m	PI072.14	
<i>Carissa lanceolata</i>	1%	0.9 m	PI086.09	
<i>Cassytha capillaris</i>	+	cl	PI055.03	
<i>Centipeda minima</i> subsp. <i>macrocephala</i>	+	0.2 m	PI115.06	
<i>Chrysopogon fallax</i>	1%	1.2 m	PI070.21	
<i>Cleome viscosa</i>	+	0.5 m	PI040.10	
<i>Corchorus tectus</i>	+	0.4 m	PI095.02	
<i>Ehretia saligna</i> var. <i>saligna</i>	+	1 m	PI115.24	
<i>Eragrostis tenellula</i>	+	0.2 m	PI115.15	
<i>Eriachne benthamii</i>	+	0.6 m	PI115.10	
<i>Eriachne glauca</i> var. <i>glauca</i>	+	0.15 m	PI115.05	
<i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i>	15%	4 m	PI115.01	
<i>Eulalia fulva</i>	+	0.6 m	PI115.07	
<i>Euphorbia alsiniflora</i>	+	0.3 m	PI072.10	
<i>Goodenia lamprosperma</i>	+	0.2 m	PI086.04	
<i>Goodenia triodiophila</i>	+	0.3 m	PI115.23	
<i>Hakea lorea</i> subsp. <i>lorea</i>	+	1 m	PI099.12	
<i>Indigofera monophylla</i>	+	0.3 m	PI072.03	
<i>Ipomoea optica</i>	+	cr	PI115.13	
<i>Mollugo molluginea</i>	+	0.1 m	PI070.35	
<i>Neptunia dimorphantha</i>	+	cr	PI115.14	
<i>Panicum decompositum</i>	2%	0.8 m	PI115.11	
<i>Phyllanthus maderaspatensis</i>	+	0.8 m	PI115.08	

<i>Pluchea ferdinandi-muelleri</i>	+	0.5 m	PI115.21
<i>Pluchea rubelliflora</i>	+	0.2 m	PI115.04
<i>Polymeria ambigua</i>	+	cr	PI086.06
<i>Pterocaulon sphaeranthoides</i>	+	0.5 m	PI115.09
<i>Ptilotus fusiformis</i>	+	0.3 m	PI070.22
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> x	+	0.9 m	PI115.22
<i>Sesbania cannabina</i>	+	0.5 m	PI115.12
<i>Streptoglossa decurrens</i>	+	0.3 m	PI115.18
<i>Tinospora smilacina</i>	+	cr	PI087.09
<i>Trianthema triquetra</i>	+	0.1 m	PI115.19
<i>Triodia epactia</i>	45%	0.5 m	PI115.02
<i>Triodia longiceps</i>	+	0.2 m	PI115.03

Port Hedland RS Site PI116**Described by** LD **Date** 26/09/2011 **Type** Q 50x50 m**Location** Port Hedland**MGA Zone** 50 671022 mE 7729465 mN**Habitat** Plain**Soil** Orange brown sandy loam.**Rock Type** N/A**Vegetation** Scattered Shrubs of *Acacia ancistrocarpa* and *Acacia stellaticeps* over Very Open Hummock Grassland of *Triodia lanigera***Veg Condition** Excellent**Fire Age** Young**Notes** Aspect: N/A

Bare Ground: 90%

Litter Cover: 0% Logs, +% Twigs, +% Lvs

Disturbance: Trcks near by, cattle and horse tracks

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia ancistrocarpa</i>	+	1 m	PI116.07	
<i>Acacia stellaticeps</i>	+	0.3 m	PI065.01	
<i>Acacia trudgeniana</i>	+	0.8 m	PI065.31	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.2 m	PI094.04	
<i>Bonamia alatisemina</i>	+	0.1 m	PI027.06	
<i>Bulbostylis barbata</i>	+	0.1 m	PI090.18	
<i>Corchorus tectus</i>	+	0.3 m	PI091.07	
<i>Eragrostis pergracilis</i>	+	0.05 m	PI116.05	
<i>Euphorbia alsiniflora</i>	+	0.1 m	PI116.09	
<i>Euphorbia australis</i>	+	0.01	PI103.13	
<i>Goodenia microptera</i>	+	0.3 m	PI090.14	
<i>Goodenia triodiophila</i>	+	0.3 m	PI091.03	
<i>Heliotropium muticum</i>	+	0.2 m	PI116.03	15 ind within quadrat. Mostly occurring on the west side.
<i>Hybanthus aurantiacus</i>	+	0.2 m	PI043.13	
<i>Indigofera monophylla</i>	+	0.3 m	PI116.02	
<i>Isotropis atropurpurea</i>	+	0.2 m	PI125.05	
<i>Mollugo molluginea</i>	+	0.1 m	PI132.04	
<i>Pluchea rubelliflora</i>	+	0.2 m	PI080.02	
<i>Polycarpha corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI058.10	
<i>Polymeria ambigua</i>	+	cr	PI117.10	
<i>Polymeria calycina</i>	+	0.1 m	PI116.08	
* <i>Portulaca oleracea</i>	+	0.1 m	PI128.04	
<i>Ptilotus fusiformis</i>	+	0.3 m	PI065.28	
<i>Senna notabilis</i>	+	0.2 m	PI051.12	
<i>Sporobolus australasicus</i>	+	0.2 m	PI066.02	
<i>Streptoglossa decurrens</i>	+	0.2 m	PI116.11	
<i>Tephrosia supina</i>	+	0.2 m	PI116.10	
<i>Tephrosia uniovulata</i>	+	0.3 m	PI116.04	
<i>Triodia lanigera</i>	3%	0.3 m	PI116.01	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI043.08	

Port Hedland RS Site PI117**Described by** LD **Date** 28/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 673576 mE 7728683 mN
Habitat Sandy plain
Soil Orange brown sandy loam
Rock Type N/A
Vegetation Scattered Low Trees of *Eucalyptus camaldulensis* subsp. *refulgens* over open shrubland of *Acacia sericophylla* over Scattered Tussock Grass of *Paspalidium tabulatum*
Veg Condition Excellent
Fire Age Young
Notes Aspect: N/A
 Bare Ground: 93%
 Litter Cover: 0% Logs, +% Twigs, +% Lvs
 Disturbance: Cattle

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia bivenosa</i>	+	0.3 m	PI117.05	
<i>Acacia sericophylla</i>	2%	1 m	PI117.14	
<i>Acacia sphaerostachya</i>	+	0.5 m	PI134.01	
<i>Acacia trudgeniana</i>	+	0.5-1.5 m	PI065.31	
<i>Alternanthera nana</i>	+	0.1 m	PI094.07	
<i>Amaranthus undulatus</i>	+	0.3 m	PI117.08	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.2 m	PI117.13	
<i>Boerhavia coccinea</i>	+	cr	PI117.17	
<i>Bonamia alatisemina</i>	+	0.1 m	PI117.11	
<i>Bonamia rosea</i>	+	0.4 m	PI090.02	
<i>Bulbostylis barbata</i>	+	0.1 m	PI027.03	
<i>Calandrinia pumila</i>	+	0.01 m	PI045.18	
<i>Cleome viscosa</i>	+	0.2 m	PI112.06	
<i>Corchorus tectus</i>	+	0.3 m	PI091.07	
<i>Dysphania saxatilis</i>	+	0.1 m	PI090.11	
<i>Eriachne aristidea</i>	+	0.2 m	PI063.03	
<i>Eriachne mucronata</i>	+	0.2 m	PI117.12	
<i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i>	1%	2-3 m	PI117.01	
<i>Euphorbia alsiniflora</i>	+	0.2 m	PI117.03	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.1 m	PI117.06	
<i>Goodenia microptera</i>	+	0.3 m	PI112.09	
<i>Heliotropium muticum</i>	+	0.2 m	PI117.04	7 ind. Within quadrat
<i>Hybanthus aurantiacus</i>	+	0.1 m	PI043.13	
<i>Indigofera monophylla</i>	1%	0.4 m	PI065.13	
<i>Mollugo molluginea</i>	+	0.1 m	PI132.04	
<i>Paraneurachne muelleri</i>	+	0.2 m	PI117.09	
<i>Paspalidium tabulatum</i>	1%	0.2 m	PI117.07	
<i>Polycarpha corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI058.10	

<i>Polycarpha holtzei</i>	+	0.05 m	PI117.16
<i>Polymeria ambigua</i>	+	cr	PI117.10
<i>Polymeria calycina</i>	+	0.1 m	PI125.06
<i>Ptilotus calostachyus</i>	+	0.8 m	PI109.10
<i>Ptilotus fusiformis</i>	+	0.4 m	PI065.28
<i>Senna notabilis</i>	+	0.2 m	PI051.12
<i>Sida</i> sp. B Kimberley Flora (A.A. Mitchell 2745)	+	0.2 m	PI150.06
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI058.05
<i>Solanum ellipticum</i>	+	0.6 m	PI065.26
<i>Sporobolus australasicus</i>	+	0.1 m	PI117.15
<i>Swainsona formosa</i>	+	0.3 m	PIR151.06
<i>Tephrosia supina</i>	+	0.1 m	PI125.08
<i>Tephrosia uniovulata</i>	+	0.3 m	PI128.07
<i>Triodia lanigera</i>	+	0.2 m	PI117.02
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI043.08

Port Hedland RS Site PI118

Described by HA Date 28/06/2011 Type Q 50x50 m

Location Port Hedland

MGA Zone 50 675787 mE 7727948 mN

Habitat Sand plain

Soil Brown orange loamy sand

Rock Type N/A

Vegetation Open Shrubland of *Acacia colei* var. *colei* over Low Open Shrubland of *Corchorus lasiocarpus* subsp. *lasiocarpus*, *Sida* sp. Pilbara (A.A. Mitchell PRP 1543), *Heliotropium muticum* and *Indigofera monophylla* over Very Open Hummock Grassland of *Triodia epactia* over Very Open Tussock Grassland *Eragrostis cumingii*, *Eriachne aristidea* and *Fimbristylis dichotoma*



Veg Condition Excellent to very good

Fire Age Young

Notes Aspect: N/A
Bare Ground: 70%
Litter Cover: +% Logs, +% Twigs, +% Lvs
Disturbance: Cattle tracks

SPECIES LIST:

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	5%	0.9 (3) m	PI070.38	
<i>Acacia inaequilatera</i>	+	0.9 m	PI054.05	
<i>Bonamia alatisemina</i>	+	clPI053.02		
<i>Bulbostylis barbata</i>	+	0.1 m	PI070.17	
<i>Cajanus cinereus</i>	+	0.5 m	PI118.14	
<i>Calandrinia pentavalvis</i>	+	0.1 m	PI072.14	
<i>Calandrinia pumila</i>	+	cr	PI086.02	
<i>Chrysopogon fallax</i>	1%	1 m	PI070.21	
<i>Cleome viscosa</i>	+	0.4 m	PI099.07	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	5%	0.4 m	PI070.02	
<i>Corchorus tectus</i>	+	0.3 m	PI095.02	
<i>Crotalaria ramosissima</i>	+	0.3 m	PI089.02	
<i>Dactyloctenium radulans</i>	+	0.1 m	PI118.12	
<i>Desmodium filiforme</i>	+	cr	PI118.13	
<i>Dysphania saxatilis</i>	+	0.3 m	PI053.07	
<i>Eragrostis cumingii</i>	2%	0.2 m	PI118.05	
<i>Eriachne aristidea</i>	1%	0.3 m	PI118.02	
<i>Euphorbia alsiniflora</i>	+	0.3 m	PI072.10	
<i>Euphorbia australis</i>	+	cr	PI108.12	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.3 m	PI118.09	
<i>Fimbristylis dichotoma</i>	1%	0.4 m	PI081.07	
<i>Goodenia lamprosperma</i>	+	0.3 m	PI118.06	
<i>Goodenia microptera</i>	+	0.4 m	PI096.01	
<i>Heliotropium muticum</i>	1%	0.3 m	PI118.08	
<i>Heliotropium ovalifolium</i>	+	0.4 m	PI118.07	
<i>Hibiscus burtonii</i>	+	0.5 m	PI118.10	
<i>Hybanthus aurantiacus</i>	+	0.4 m	PI099.02	
<i>Indigofera monophylla</i>	1%	0.3 m	PI072.03	

<i>Mollugo molluginea</i>	+	0.1 m	PI070.35	
<i>Pluchea rubelliflora</i>	+	0.2 m	PI127.05	
<i>Pluchea tetranthera</i>	+	0.1 m	PI118.03	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.15 m	PI072.02	
<i>Polymeria calycina</i>	+	cr	PI118.04	
* <i>Portulaca oleracea</i>	+	0.1 m	PI086.11	
<i>Ptilotus fusiformis</i>	+	0.3 m	PI070.22	
<i>Senna notabilis</i>	+	0.2 m	PI070.14	
<i>Sida rohlenae</i> subsp. <i>rohlenae</i>	+	0.3 m	PI105.08	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	2%	0.6 m	PI118.11	
<i>Solanum lasiophyllum</i>	+	0.5 m	PI070.37	
<i>Sporobolus australasicus</i>	+	0.1 m	PI037.07	
<i>Streptoglossa decurrens</i>	+	0.2 m	PI115.18	
<i>Tephrosia simplicifolia</i>	+	0.1 m	PI032.08	Range ext
<i>Tephrosia uniovulata</i>	+	0.2 m	PI099.03	
<i>Triodia epactia</i>	3%	0.3 m	PI118.01	
<i>Waltheria indica</i>	+	0.2 m	PI118.16	

Port Hedland RS Site PI119**Described by** HA **Date** 28/06/2011 **Type** Q 50x50 m

Location Port Hedland

MGA Zone 50 676737 mE 7730289 mN

Habitat Major river

Soil Orange brown coarse sand

Rock Type N/A

Vegetation Low Woodland of *Melaleuca lasiandra* and *Eucalyptus camaldulensis* subsp. *refulgens* over High Open Shrubland of *Acacia trachycarpa* over Very Open Hummock Grassland of *Triodia epactia* over Open Tussock Grassland of **Cenchrus ciliaris* and *Chloris pectinata*

Veg Condition Very good to good

Fire Age Old

Notes Aspect: N/A
Bare Ground: 60%
Litter Cover: 1% Logs, 1% Twigs, 2% Lvs
Disturbance: Buffel and cattle

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia trachycarpa</i>	2%	3 m	PI068.03	
* <i>Aerva javanica</i>	+	0.6 m	PI147.05	
<i>Amaranthus undulatus</i>	+	0.4 m	PI120.10	
<i>Ammannia multiflora</i>	+	0.3 m	PI120.04	
<i>Cajanus cinereus</i>	+	2 m	PI119.04	
<i>Calandrinia pentavalvis</i>	+	0.1 m	PI072.14	
<i>Cassytha capillaris</i>	+	cr	PI055.03	
* <i>Cenchrus ciliaris</i>	15%	0.5 m	PI070.29	
<i>Chloris pectinata</i>	3%	0.3 m	PI120.05	
<i>Cleome viscosa</i>	+	0.4 m	PI040.10	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.5 m	PI070.02	
<i>Crotalaria cunninghamii</i> subsp. <i>sturtii</i>	+	0.5 m	PI120.09	
<i>Cucumis maderaspatanus</i>	+	cr	PI147.17	
<i>Cynanchum floribundum</i>	+	cr	PI119.07	
<i>Cyperus vaginatus</i>	+	0.7 m	PI068.16	
<i>Desmodium filiforme</i>	+	cr	PI046.11	
<i>Eragrostis cumingii</i>	+	0.2 m	PI118.05	
<i>Eragrostis tenellula</i>	+		PI119.06	
<i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i>	1%	8 m	PI068.01	
<i>Euphorbia alsiniflora</i>	+	0.2 m	PI123.36	
* <i>Flaveria trinervia</i>	+	0.4 m	PI120.16	
<i>Goodenia lamprosperma</i>	+	0.3 m	PI094.05	
<i>Hibiscus austrinus</i> var. <i>austrinus</i>	+	0.8 m	PI120.06	
<i>Hybanthus aurantiacus</i>	+	0.6 m	PI099.02	
<i>Melaleuca lasiandra</i>	18%	3 m	PI120.01	
<i>Phyllanthus maderaspatensis</i>	+	0.1 m	PI119.03	
<i>Pluchea rubelliflora</i>	+	0.3 m	PI119.09	
<i>Polycarpha longiflora</i>	+	0.3 m	PI119.01	

<i>Polymeria ambigua</i>	+	cr	PI086.06
<i>Pterocaulon sphaeranthoides</i>	+	0.3 m	PI119.05
<i>Sesbania cannabina</i>	+	0.9 m	PI120.02
<i>Streptoglossa decurrens</i>	+	0.2 m	PI115.18
<i>Striga squamigera</i>	+	0.1 m	PI120.17
<i>Tephrosia</i> sp. B Kimberley Flora (C.A. Gardner 7300)	+	0.2 m	PI120.15
<i>Triodia epactia</i>	2%	0.4 m	PI119.02
<i>Wahlenbergia tumidifructa</i>	+	0.4 m	PI119.08

Port Hedland RS Site PI120**Described by** HA **Date** 28/06/2011 **Type** Q 100x25 m**Location** Port Hedland**MGA Zone** 50 677694 mE 7726952 mN**Habitat** Creekbed/ riverbed**Soil** Orange brown coarse sand**Rock Type** N/A**Vegetation** Low Woodland of *Melaleuca lasiandra*, *Melaleuca argentea* and *Eucalyptus camaldulensis* subsp. *refulgens* over Open Tussock Grassland of *Chloris pectinata* and **Cenchrus ciliaris***Veg Condition** Good**Fire Age** Old**Notes** Aspect: N/A
Bare Ground: 80%
Litter Cover: 1% Logs, 1% Twigs, +% Lvs
Disturbance: Cattle and buffel**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia ampliceps</i>	+	0.5 m	PI068.19	
<i>Acacia colei</i> var. <i>colei</i>	+	1.5 m	PI070.38	
<i>Acacia trachycarpa</i>	+	0.9 m	PI068.03	
<i>*Aerva javanica</i>	+	0.5 m	PI147.05	
<i>Amaranthus undulatus</i>	+	0.3 m	PI120.10	
<i>Ammannia multiflora</i>	1%	0.4 m	PI120.04	
<i>Calandrinia pentavalvis</i>	+	cr	PI072.14	
<i>Cassutha capillaris</i>	+	cr	PI055.03	
<i>*Cenchrus ciliaris</i>	3%	0.5 m	PI070.29	
<i>Chloris pectinata</i>	(8%)	0.5 m	PI120.05	
<i>Chrysopogon fallax</i>	+	1.2 m	PI070.21	
<i>Cleome viscosa</i>	+	0.5 m	PI040.10	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.5 m	PI070.02	
<i>Crotalaria cunninghamii</i> subsp. <i>sturtii</i>	+	0.4 m	PI120.09	
<i>Cyperus cunninghamii</i> subsp. <i>cunninghamii</i>	+	0.1 m	PI120.11	
<i>Cyperus vaginatus</i>	+	0.6 m	PI068.16	
<i>Eragrostis cumingii</i>	+	0.2 m	PI118.05	
<i>*Eragrostis curvula</i>	+	6.6 m	PI120.08	Range extension
<i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i>	1%	4 m	PI068.01	
<i>Fimbristylis littoralis</i>	+	0.2 m	PI120.03	
<i>*Flaveria trinervia</i>	+	0.5 m	PI120.16	
<i>Hibiscus austrinus</i> var. <i>austrinus</i>	+	1 m	PI120.06	
<i>Melaleuca argentea</i>	1%	3 m	PI068.10	
<i>Melaleuca lasiandra</i>	10%	3 m	PI120.01	
<i>*Physalis angulata</i>	+	0.3 m	PI120.13	Range extension
<i>Pluchea rubelliflora</i>	+	0.1 m	PI127.05	
<i>Sesbania cannabina</i>	+	0.5 m	PI120.02	
<i>Stemodia viscosa</i>	+	0.5 m	PI120.12	

<i>Streptoglossa decurrens</i>	+	0.2 m	PI115.18
<i>Striga squamigera</i>	+	0.5 m	PI120.17
<i>Tephrosia</i> sp. B Kimberley Flora (C.A. Gardner 7300)	+	0.5 m	PI120.15
<i>Triodia epactia</i>	+	0.4 m	PI120.14

Port Hedland RS Site PI121

Described by EC Date 28/06/2011 Type Q 50x50 m

Location Port Hedland
MGA Zone 50 675890 mE 7725408 mN
Habitat Plain with depression
Soil Light orange brown sandy loam with scattered pebbles and deep areas having cracking surface
Rock Type Quartz
Vegetation Hummock Grassland of *Triodia secunda* over Open Tussock Grassland of *Sporobolus australasicus* and *Sporobolus actinocladus*
Veg Condition Excellent to very good
Fire Age Old
Notes Aspect: N/A
 Bare Ground: 30%
 Litter Cover: 0% Logs, 0% Twigs, +% Lvs
 Disturbance: Cattle and tracks

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia bivenosa</i>	+	1 m	PI121.09	
<i>Bulbostylis barbata</i>	+	0.2 m	PI121.05	
<i>Calandrinia pentavalvis</i>	+	0.2 m	PI123.38	
* <i>Cenchrus ciliaris</i>	+	0.3 m	PI103.06	
<i>Corchorus tectus</i>	+	0.3 m	PI123.35	
<i>Euphorbia alsiniflora</i>	+	0.2 m	PI123.36	
<i>Fimbristylis dichotoma</i>	+	0.3 m	PI121.06	
<i>Plucheia tetranthera</i>	+	0.2 m	PI121.08	
<i>Portulaca pilosa</i>	+	0.2 m	PI123.17	
<i>Sporobolus actinocladus</i>	1%	0.3 m	PI121.04	
<i>Sporobolus australasicus</i>	20%	0.2 m	PI121.01	
<i>Streptoglossa decurrens</i>	+	0.3 m	PI121.02	
<i>Trianthema triquetra</i>	+	0.2 m	PI121.03	
<i>Triodia secunda</i>	50%	0.3 m	PI121.07	

Port Hedland RS Site PI122**Described by** BW **Date** 28/06/2011 **Type** Q 50x50 m

Location Port Hedland

MGA Zone 50 677239 mE 7723082 mN

Habitat Wide drainage line

Soil Orange brown sandy clay with very scattered pebbles

Rock Type Granite pebbles

Vegetation Low Open Woodland of *Corymbia candida* subsp. *dipsodes* over High Open Shrubland of *Acacia colei* var. *colei*, *Acacia trachycarpa* and *Acacia trachycarpa* x *tumida* over Low Open Shrubland of *Acacia stellaticeps* over Open Hummock Grassland of *Triodia epactia*

Veg Condition Excellent

Fire Age Old

Notes Aspect: N/A
Bare Ground: 70%
Litter Cover: +% Logs, +% Twigs, 1% Lvs
Disturbance: Cattle

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	1%	5 m	PI122.07	
<i>Acacia stellaticeps</i>	5%	0.7 m	PI043.01	
<i>Acacia synchronicia</i>	+	1.5 m	PI140.10	
<i>Acacia trachycarpa</i>	3%	3-4 m	PI107.02	
<i>Acacia trachycarpa</i> x <i>tumida</i>	1%	5 m	PI122.06	
<i>Achyranthes aspera</i>	+	0.6 m	PI122.05	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.4 m	PI049.07	
<i>Bulbostylis barbata</i>	+	0.1 m	PI129.01	
<i>Cajanus cinereus</i>	+	1.2 m	PI122.10	
<i>Calandrinia stagnensis</i>	+	0.2 m	PI145.04	
* <i>Cenchrus ciliaris</i>	1%	0.5 m	PI052.06	
<i>Cleome viscosa</i>	(+)	0.5 m	NC	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.4 m	PI042.04	
<i>Corchorus tectus</i>	+	0.4 m	PI030.02	
<i>Corymbia candida</i> subsp. <i>dipsodes</i>	2%	8-10 m	PI146.07	
<i>Crotalaria ramosissima</i>	+	0.3 m	PI029.01	
<i>Cyperus vaginatus</i>	+	0.7 m	PI122.11	
<i>Eragrostis cumingii</i>	+	0.3 m	PI113.04	
<i>Fimbristylis dichotoma</i>	+	0.2 m	PI049.15	
<i>Gossypium australe</i>	+	0.5 m	PI104.08	
<i>Hibiscus austrinus</i> var. <i>austrinus</i>	+	0.4 m	PI122.04	
<i>Indigofera colutea</i>	+	0.1 m	PI122.03	
<i>Indigofera hirsuta</i>	+	0.4 m	PI122.02	
<i>Indigofera monophylla</i>	+	0.4 m	PI052.03	
<i>Pluchea rubelliflora</i>	+	0.4 m	PI122.01	
<i>Pluchea tetranthera</i>	+	0.3 m	PI064.02	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.2 m	PI043.06	
<i>Portulaca pilosa</i>	+	0.2 m	PI030.01	

<i>Senna notabilis</i>	+	0.2 m	PI043.09
<i>Sida clementii</i>	+	0.5 m	PI100.02
<i>Sida rohlenae</i> subsp. <i>rohlenae</i>	+	0.6 m	PI069.07
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI043.14
<i>Sporobolus australasicus</i>	+	0.2 m	PI145.03
<i>Streptoglossa decurrens</i>	+	0.4 m	PI122.08
<i>Striga squamigera</i>	+	0.3 m	PI122.09
<i>Trianthema pilosa</i>	+	0.2 m	PI052.09
<i>Triodia epactia</i>	25%	0.4 m	PI122.12
<i>Waltheria indica</i>	+	0.1 m	PI122.13
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI042.06

Port Hedland RS Site PI123**Described by** EC **Date** 28/06/2011 **Type** Q 100x25 m

Location Port Hedland
MGA Zone 50 674494 mE 7726093 mN
Habitat Low hill with quartz outcrops
Soil Light brown sandy loam with a cover of cobbles, pebbles and exposed rock and some boulders
Rock Type Quartz
Vegetation Open Shrubland of *Acacia tumida* var. *pilbarensis*, *Acacia inaequilatera* and *Acacia orthocarpa* over Very Open Hummock Grassland of *Triodia epactia* over Open Tussock Grassland of *Aristida holathera* var. *holathera*, **Cenchrus ciliaris* and *Eriachne ciliata*

**Veg Condition** Excellent**Fire Age** Moderate

Notes Aspect: Ridge runs North-south and slopes to the East and North
 Bare Ground: 75%
 Litter Cover: 0% Logs, +% Twigs, +% Lvs
 Disturbance: Buffel

SPECIES LIST:

Name	Cover	Height	Specimen	Notes
<i>Abutilon lepidum</i>	+	0.3 m	PI123.31	
<i>Acacia ancistrocarpa</i>	+	1.5 m	PI123.13	
<i>Acacia inaequilatera</i>	1%	1-2 m	PI123.15	
<i>Acacia maitlandii</i>	+	1 m	PI123.01	
<i>Acacia orthocarpa</i>	1%	1 m	PI123.34	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	3%	0.5-1 m	PI123.08	
<i>Amaranthus undulatus</i>	+	0.3 m	PI123.32	
<i>Aristida holathera</i> var. <i>holathera</i>	10%	0.3 m	PI123.18	
<i>Boerhavia coccinea</i>	+	cr	PI123.29	
<i>Bonamia rosea</i>	1%	0.3 m	PI123.05	
<i>Calandrinia pentavalvis</i>	+	0.3 m	PI123.38	
* <i>Cenchrus ciliaris</i>	1%	0.3 m	PI103.06	
<i>Cleome viscosa</i>	+	0.3 m	PI065.17	
<i>Corchorus tectus</i>	+	0.3 m	PI123.35	
<i>Eriachne ciliata</i>	1%	0.2 m	PI123.19	
<i>Euphorbia alsiniflora</i>	+	0.3 m	PI123.36	
<i>Euphorbia australis</i>	+	0.1 m	PI123.11	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.2 m	PI123.25	
<i>Gomphrena cunninghamii</i>	+	0.2 m	PI123.10	
<i>Goodenia microptera</i>	+	0.3 m	PI123.12	
<i>Goodenia stobbsiana</i>	+	0.3 m	PI123.23	
<i>Gossypium australe</i>	+	0.4 m	PI123.24	
<i>Grevillea pyramidalis</i> subsp. <i>leucadendron</i>	+	1.5 m	PI123.39	
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>	+	0.3 m	PI123.16	
<i>Hybanthus aurantiacus</i>	1%	0.3 m	PI123.21	
<i>Indigofera monophylla</i>	+	0.3 m	PI123.02	
<i>Mollugo molluginea</i>	+	0.2 m	PI123.09	
<i>Polycarpaea holtzei</i>	+	0.1 m	PI123.07	

<i>Polygala isingii</i>	+	0.1 m	PI123.14	
<i>Portulaca pilosa</i>	+	0.2 m	PI123.17	
<i>Ptilotus calostachyus</i>	+	0.3 m	PI109.10	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	+	0.6 m	PI123.22	
<i>Senna notabilis</i>	+	0.4 m	PI123.20	
<i>Sida rohlenae</i> subsp. <i>rohlenae</i>	+	0.3 m	PI123.26	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI123.04	
<i>Solanum diversiflorum</i>	+	0.3 m	PI048.09	
<i>Solanum ellipticum</i>	+	1 m	PI065.26	
<i>Tephrosia simplicifolia</i>	+	0.3 m	PI123.37	Range ext
<i>Tephrosia supina</i>	+	0.1 m	PI123.06	
<i>Tinospora smilacina</i>	+	cr	PI123.28	
<i>Trachymene oleracea</i> subsp. <i>oleracea</i>	+	0.3 m	PI123.30	
<i>Triodia epactia</i>	10%	0.3 m	PI123.33	
<i>Waltheria indica</i>	+	0.3 m	PI123.27	

Port Hedland RS Site PI124**Described by** LD **Date** 28/06/2011 **Type** Q 50x50 m

Location Port Hedland

MGA Zone 50 673739 mE 7724279 mN

Habitat Plain

Soil Orange brown sandy loam with some cobbles and pebbles

Rock Type Quartz

Vegetation Open Shrubland of *Acacia bivenosa* and *Acacia trudgeniana* over Low Open Shrubland of *Acacia stellaticeps* over Open Hummock Grassland of *Triodia lanigera* and *Triodia epactia*

Veg Condition Excellent

Fire Age Moderate

Notes Aspect: N/A
Bare Ground: 80%
Litter Cover: 0% Logs, +% Twigs, +% Lvs
Disturbance: Cattle

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia bivenosa</i>	2%	1-2 m	PI117.05	
<i>Acacia sphaerostachya</i>	+	1 m	PI134.01	
<i>Acacia stellaticeps</i>	4%	0.6 m	PI065.01	
<i>Acacia trudgeniana</i>	1%	1-3 m	PI065.31	
<i>Aristida holathera</i> var. <i>holathera</i>	(+)	0.3 m	PI090.08	
<i>Bonamia rosea</i>	+	0.3 m	PI090.02	
<i>Bulbostylis barbata</i>	+	0.1 m	PI090.18	
<i>Cleome viscosa</i>	+	0.3 m	PI065.17	
<i>Corchorus tectus</i>	+	0.2 m	PI091.07	
<i>Cullen cinereum</i>	+	0.2 m	PI124.02	
<i>Eriachne pulchella</i> subsp. <i>dominii</i>	(+)	0.1 m	PI128.03	
<i>Euphorbia alsiniflora</i>	+	0.2 m	PI117.03	
<i>Euphorbia australis</i>	+	0.3 m	PI139.02	
<i>Gossypium australe</i>	+	0.2 m	PI124.06	
<i>Heliotropium muticum</i>	+	0.2 m	PI124.07	
<i>Hibiscus brachychlaenus</i>	+	0.2 m	PI134.04	
<i>Hybanthus aurantiacus</i>	+	0.2 m	PI043.13	
<i>Indigofera monophylla</i>	+	0.3 m	PI065.13	
<i>Mollugo molluginea</i>	+	0.1 m	PI132.04	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI058.10	
<i>Polycarpaea holtzei</i>	+	0.05 m	PI117.16	
<i>Polymeria ambigua</i>	+	cr	PI117.10	
<i>Polymeria calycina</i>	+	0.1 m	PI125.06	
* <i>Portulaca oleracea</i>	+	0.1 m	PI128.04	
<i>Ptilotus astrolasius</i>	+	0.3 m	PI090.03	
<i>Ptilotus fusiformis</i>	+	0.3 m	PI065.28	
<i>Salsola tragus</i> subsp. <i>grandiflora</i>	+	0.3 m	PI124.05	
<i>Senna notabilis</i>	+	0.3 m	PI051.12	

<i>Sida</i> sp. B Kimberley Flora (A.A. Mitchell 2745)	+	0.3 m	PI150.06
<i>Swainsona formosa</i>	+	0.3 m	PIR151.06
<i>Tephrosia supina</i>	+	0.1 m	PI125.08
<i>Tribulus hirsutus</i>	+	0.1 m	PI106.08
<i>Triodia epactia</i>	2%	0.3 m	PI124.04
<i>Triodia lanigera</i>	18%	0.3 m	PI124.01
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI043.08

Port Hedland RS Site PI125**Described by** LD **Date** 28/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 674039 mE 7722945 mN
Habitat Plain
Soil Orange Brown sandy loam with gravel, rocks, cobbles and pebbles
Rock Type Granit and quartz
Vegetation Open Shrubland of *Acacia inaequilatera* over Open Hummock Grassland of *Triodia epactia* and *Triodia lanigera*
Veg Condition Excellent
Fire Age Moderate
Notes Aspect: N/A
 Bare Ground: 85%
 Litter Cover: 0% Logs, +% Twigs, +% Lvs
 Disturbance: Cattle prints and rail near by

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia inaequilatera</i>	2%	0.5-2 m	PI125.01	
<i>Acacia sphaerostachya</i>	+	0.8 m	PI134.01	
<i>Acacia stellaticeps</i>	+	0.6 m	PI065.01	
<i>Bonamia alatisemina</i>	+	0.1 m	PI027.06	
<i>Bonamia rosea</i>	+	0.2 m	PI090.02	
<i>Bulbostylis barbata</i>	+	0.1 m	PI090.18	
<i>Cleome viscosa</i>	+	0.2 m	PI065.17	
<i>Corchorus tectus</i>	+	0.3 m	PI091.07	
<i>Eriachne pulchella</i> subsp. <i>dominii</i>	(+)	0.1 m	PI128.03	
<i>Euphorbia australis</i>	+	0.05 m	PI103.13	
<i>Gomphrena cunninghamii</i>	+	0.1 m	PI125.10	
<i>Goodenia microptera</i>	+	0.3 m	PI112.09	
<i>Gossypium australe</i>	+	0.4 m	PI125.09	
<i>Heliotropium muticum</i>	+	0.2 m	PI125.02	
<i>Hybanthus aurantiacus</i>	+	0.1 m	PI043.13	
<i>Indigofera monophylla</i>	+	0.2 m	PI065.13	
<i>Isotropis atropurpurea</i>	+	0.4 m	PI125.05	
<i>Keraudrenia velutina</i> subsp. <i>elliptica</i>	+	0.3 m	PI134.07	
<i>Mollugo molluginea</i>	+	0.1 m	PI132.04	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI058.10	
<i>Polymeria calycina</i>	+	0.1 m	PI125.06	
* <i>Portulaca oleracea</i>	+	0.05 m	PI128.04	
<i>Ptilotus axillaris</i>	+	cr	PI125.11	
<i>Ptilotus fusiformis</i>	+	0.2 m	PI065.28	
<i>Sporobolus australasicus</i>	+	0.1 m	PI066.02	
<i>Tephrosia supina</i>	+	0.1 m	PI125.08	
<i>Tephrosia uniovulata</i>	+	0.4 m	PI128.07	
<i>Triodia epactia</i>	8%	0.4 m	PI125.04	
<i>Triodia lanigera</i>	6%	0.4 m	PI125.03	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI043.08	

Port Hedland RS Site PI126**Described by** LD **Date** 30/06/2011 **Type** Q 50x50 m

Location Port Hedland

MGA Zone 50 672219 mE 7725250 mN

Habitat Sandy plain

Soil Orange Brown sandy loam with rocks

Rock Type Quartz

Vegetation Open Shrubland of *Acacia sphaerostachya* over Low Shrubland of *Isotropis atropurpurea*, *Indigofera monophylla*, *Corchorus tectus* and *Tephrosia uniovulata* over Very Open Hummock Grassland of *Triodia lanigera*

Veg Condition Excellent

Fire Age Moderate

Notes Aspect: N/A
Bare Ground: 91%
Litter Cover: 0% Logs, +% Twigs, +% Lvs
Disturbance: Tracks near by



To the South-west *Acacia inaequilatera* is dominate in the landscape. At this quadrat not so much.

SPECIES LIST:

Name	Cover	Height	Specimen	Notes
<i>Acacia sphaerostachya</i>	2%	0.3-2 m	PI134.01	
<i>Acacia trudgeniana</i>	+	1-2 m	PI065.31	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	+	1 m	PI150.07	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.2 m	PI094.04	
<i>Bonamia alatisemina</i>	+	cr	PI117.11	
<i>Bonamia rosea</i>	+	0.3 m	PI090.02	
<i>Bulbostylis barbata</i>	+	0.1 m	PI090.18	
<i>Cleome viscosa</i>	+	0.2 m	PI112.06	
<i>Corchorus tectus</i>	1%	0.2 m	PI091.07	
<i>Dysphania saxatilis</i>	+	0.1 m	PI090.11	
<i>Eriachne pulchella</i> subsp. <i>dominii</i>	+	0.1 m	PI128.03	
<i>Goodenia microptera</i>	+	0.3 m	PI112.09	
<i>Heliotropium muticum</i>	+	0.2 m	PI126.02	
<i>Hibiscus brachychlaenus</i>	+	0.5 m	PI134.04	
<i>Indigofera monophylla</i>	2%	0.2 m	PI065.13	
<i>Isotropis atropurpurea</i>	8%	0.4 m	PI126.03	
<i>Mollugo molluginea</i>	+	0.1 m	PI132.04	
<i>Paraneurachne muelleri</i>	+	0.2 m	PI117.09	
<i>Polycarpha corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI058.10	
<i>Polymeria ambigua</i>	+	cr	PI117.10	
<i>Polymeria calycina</i>	+	cr	PI125.06	
* <i>Portulaca oleracea</i>	+	0.05 m	PI128.04	
<i>Ptilotus astrolasius</i>	+	0.3 m	PI090.03	
<i>Ptilotus calostachyus</i>	+	1.2 m	PI109.10	
<i>Ptilotus fusiformis</i>	+	0.3 m	PI065.28	
<i>Senna curvistyla</i>	+	0.1 m	PI126.04	
<i>Senna notabilis</i>	+	0.05 m	PI051.12	

<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.3 m	PI058.05
<i>Solanum diversiflorum</i>	+	0.2 m	PI048.09
<i>Tephrosia uniovulata</i>	1%	0.4 m	PI128.07
<i>Trianthema pilosa</i>	+	0.1 m	PI065.03
<i>Tribulus hirsutus</i>	+	0.1 m	PI126.05
<i>Triodia lanigera</i>	4%	0.2 m	PI126.01
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI043.08

Port Hedland RS Site PI127

Described by HA Date 27/06/2011 Type Q 50x50 m

Location Port Hedland
MGA Zone 50 670229 mE 7726930 mN
Habitat Sand plain
Soil Orange brown sandy loam
Rock Type N/A
Vegetation Low Shrubland of *Acacia stellaticeps*, *Acacia ancistrocarpa* and *Acacia colei* var. *colei* and *Isotropis atropurpurea* over Hummock Grassland of *Triodia epactia*
Veg Condition Excellent
Fire Age Young
Notes Aspect: N/A
 Bare Ground: 50%
 Litter Cover: +% Logs, 1% Twigs, +% Lvs
 Disturbance: Cattle tracks

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia ancistrocarpa</i>	1%	0.3 m	PI086.05	
<i>Acacia colei</i> var. <i>colei</i>	1%	1.5 m	PI070.38	
<i>Acacia inaequilatera</i>	+	1 m	PI054.05	
<i>Acacia stellaticeps</i>	10%	0.3 m	PI070.01	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	1%	0.6 m	PI070.30	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.3 m	PI070.10	
<i>Bonamia alatisemina</i>	+	cr	PI053.02	
<i>Bulbostylis barbata</i>	+	0.1 m	PI070.17	
<i>Calandrinia pentavalvis</i>	+	0.1 m	PI072.14	
<i>Calandrinia pumila</i>	+	cr	PI086.02	
<i>Chrysopogon fallax</i>	+	1.2 m	PI070.21	
<i>Cleome viscosa</i>	+	0.3 m	PI099.07	
<i>Corchorus tectus</i>	+	0.3 m	PI095.02	
<i>Drosera indica</i>	+	0.05 m	PI053.11	
<i>Eriachne pulchella</i> subsp. <i>dominii</i>	+	0.15 m	PI127.04	
<i>Eriachne glauca</i> var. <i>glauca</i>	+	0.1 m	PI127.03	
<i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i>	+	5 m	PI068.01	
<i>Goodenia lamprosperma</i>	+	0.3 m	PI086.04	
<i>Goodenia microptera</i>	+	0.2 m	PI096.01	
<i>Goodenia triodiophila</i>	+	0.3 m	PI127.06	
<i>Hakea lorea</i> subsp. <i>lorea</i>	+	0.6 m	PI070.05	
<i>Hybanthus aurantiacus</i>	+	0.4 m	PI099.02	
<i>Indigofera monophylla</i>	+	0.2 m	PI072.03	
<i>Isotropis atropurpurea</i>	2%	0.3 m	PI114.07	
<i>Mollugo molluginea</i>	+	0.1 m	PI070.35	
<i>Pluchea rubelliflora</i>	+	0.15 m	PI127.05	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI072.02	
<i>Polymeria ambigua</i>	+	cr	PI086.06	

<i>*Portulaca oleracea</i>	+	0.1 m	PI086.11
<i>Ptilotus fusiformis</i>	+	0.4 m	PI070.22
<i>Senna notabilis</i>	+	0.1 m	PI070.14
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI070.03
<i>Solanum lasiophyllum</i>	+	0.3 m	PI105.04
<i>Stackhousia muricata</i>	+	0.1 m	PI114.02
<i>Stylidium desertorum</i>	+	0.1 m	PI127.02
<i>Triodia epactia</i>	40%	0.3 m	PI127.01
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.13 m	PI072.06

Port Hedland RS Site PI128**Described by** LD **Date** 27/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 668756 mE 7726818 mN
Habitat Plain
Soil Orange brown sandy loam with some mixed rocks
Rock Type Quartz and ironstone (mixed)
Vegetation Open Shrubland of *Acacia trudgeniana* over Low Open Shrubland of *Acacia sphaerostachya* and *Acacia stellaticeps* over Open Hummock Grassland of *Triodia lanigera* and *Triodia epactia*
Veg Condition Excellent
Fire Age Young- moderate
Notes Aspect: N/A
 Bare Ground: 83%
 Litter Cover: 0% Logs, +% Twigs, +% Lvs
 Disturbance: Tracks near by

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	+	0.6 m	PI091.12	
<i>Acacia sphaerostachya</i>	1%	0.8 m	PI134.01	
<i>Acacia stellaticeps</i>	1%	0.4 m	PI065.01	
<i>Acacia trudgeniana</i>	3%	1-2 m	PI065.31	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	+	1-1.5 m	PI150.07	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.1 m	PI094.04	
<i>Bonamia alatisemina</i>	+	0.1 m	PI027.06	
<i>Bulbostylis barbata</i>	+	0.05 m	PI066.04	
<i>Cassyltha capillaris</i>	+	cr	PI091.09	
<i>Cleome viscosa</i>	+	0.3 m	PI112.06	
<i>Corchorus tectus</i>	+	0.3 m	PI091.07	
<i>Dysphania saxatilis</i>	+	0.1 m	PI090.11	
<i>Eriachne aristidea</i>	+	0.2 m	PI063.03	
<i>Eriachne pulchella</i> subsp. <i>dominii</i>	(+)	0.1 m	PI128.03	
<i>Goodenia forrestii</i>	+	0.3 m	PI128.06	
<i>Heliotropium muticum</i>	+	0.2 m	PI128.09	6 ind. Within quadrat
<i>Hybanthus aurantiacus</i>	+	0.2 m	PI043.13	
<i>Isotropis atropurpurea</i>	+	0.4 m	PI128.10	
<i>Mollugo molluginea</i>	+	0.1 m	PI132.04	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI058.10	
<i>Polymeria ambigua</i>	+	cr	PI128.08	
* <i>Portulaca oleracea</i>	+	0.1 m	PI128.04	
<i>Senna notabilis</i>	+	0.2 m	PI051.12	
<i>Sida echinocarpa</i>	+	0.6 m	PI128.05	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI058.05	
<i>Solanum diversiflorum</i>	+	0.2 m	PI048.09	
<i>Solanum ellipticum</i>	+	0.6 m	PI065.26	
<i>Tephrosia uniovulata</i>	+	0.4 m	PI128.07	
<i>Triodia epactia</i>	3%	0.3 m	PI128.01	
<i>Triodia lanigera</i>	12%	0.3 m	PI128.02	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI043.08	

Port Hedland RS Site PI129

Described by BW Date 27/06/2011 Type Q 50x50 m

Location

MGA Zone 50 666694 mE 7727031 mN
Habitat Sand plain
Soil Orange brown silty sand
Rock Type N/A
Vegetation Scattered High Shrubs of *Hakea lorea* subsp. *lorea* over Open Shrubland of *Acacia colei* var. *colei*, *Acacia inaequilatera* and *Acacia stellaticeps* over Very Open Hummock Grassland of *Triodia epactia* and *Triodia lanigera*

Veg Condition Excellent**Fire Age** Young

Notes Aspect: N/A
 Bare Ground: 87%
 Litter Cover: +% Logs, +% Twigs, +% Lvs
 Disturbance: Cattle and fence near by

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia ancistrocarpa</i>	+	0.6 m	PI062.03	
<i>Acacia colei</i> var. <i>colei</i>	1%	0.5-1 m	PI043.16	
<i>Acacia inaequilatera</i>	1%	0.6-2 m	PI049.06	
<i>Acacia stellaticeps</i>	1%	0.4 m	PI043.01	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.3 m	PI049.07	
<i>Bonamia alatisemina</i>	+	cr	PI145.11	
<i>Bonamia rosea</i>	+	0.4 m	PI030.04	
<i>Bulbostylis barbata</i>	+	0.1 m	PI129.01	
<i>Chrysopogon fallax</i>	+	0.6 m	PI042.09	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.4 m	PI129.04	
<i>Corchorus tectus</i>	+	0.4 m	PI030.02	
<i>Dysphania saxatilis</i>	+	0.2 m	PI069.03	
<i>Eragrostis eriopoda</i>	+	0.4 m	PI047.02	
<i>Eriachne aristidea</i>	+	0.4 m	PI136.03	
<i>Euphorbia australis</i>	+	prostrate	PI104.02	
<i>Hakea lorea</i> subsp. <i>lorea</i>	1%	1.5 m	PI043.07	
<i>Indigofera monophylla</i>	+	0.3 m	PI052.03	
<i>Mollugo molluginea</i>	+	0.3 m	PI043.29	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI043.06	
<i>Ptilotus astrolasius</i>	+	0.4 m	PI056.18	
<i>Ptilotus fusiformis</i>	+	0.4 m	PI043.11	
<i>Senna notabilis</i>	+	0.2 m	PI043.09	
<i>Sida clementii</i>	+	0.4 m	PI100.02	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI043.14	
<i>Solanum lasiophyllum</i>	+	0.6 m	PI067.06	
<i>Trianthema pilosa</i>	+	prostrate	PI052.09	
<i>Triodia epactia</i>	8%	0.4 m	PI129.03	
<i>Triodia lanigera</i>	+	0.4 m	PI129.02	

Port Hedland RS Site PI130**Described by** LD **Date** 27/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 665717 mE 7726029 mN
Habitat Sandy plain
Soil Orange brown sandy loam
Rock Type N/A
Vegetation Low Open Woodland of *Corymbia zygophylla* over High Open Shrubland of *Acacia tumida* var. *pilbarensis* over Hummock Grassland of *Triodia epactia* and *Triodia lanigera*
Veg Condition Excellent
Fire Age Old
Notes Aspect: N/A
 Bare Ground: 70%
 Litter Cover: +% Logs, +% Twigs, 2% Lvs
 Disturbance: Cattle

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Abutilon lepidum</i>	+	0.4 m	PI130.08	
<i>Abutilon pritzelianum</i> MS	+	1.5 m	PI130.05	
<i>Acacia colei</i> var. <i>colei</i>	+	2-3 m	PI091.12	
<i>Acacia sericophylla</i>	+	1-3 m	PI130.03	
<i>Acacia sphaerostachya</i>	+	2 m	PI134.01	
<i>Acacia stellaticeps</i>	1%	0.7 m	PI065.01	
<i>Acacia trudgeniana</i>	+	1-3 m	PI065.31	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	4%	2-4 m	PI150.07	
<i>Amaranthus undulatus</i>	+	0.3 m	PI045.16	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.2 m	PI090.08	
<i>Aristida inaequiglumis</i>	+	0.6 m	PI058.04	
<i>Boerhavia coccinea</i>	+	0.2 m	PI130.04	
<i>Bonamia alatisemina</i>	+	0.1 m	PI027.06	
<i>Bulbostylis barbata</i>	+	0.1 m	PI090.18	
<i>Cassytha capillaris</i>	+	cl	PI091.09	
<i>Chrysopogon fallax</i>	+	0.5 m	PI051.04	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.1 m	PI094.08	
<i>Corymbia zygophylla</i>	7%	2-5 m	PI112.02	
<i>Cucumis maderaspatanus</i>	+	cl	PI045.15	
<i>Dolichandrone heterophylla</i>	+	0.4 m	PI130.06	
<i>Dysphania saxatilis</i>	+	0.2 m	PI090.11	
<i>Eragrostis eriopoda</i>	+	0.3 m	PI090.04	
<i>Eriachne aristidea</i>	+	0.2 m	PI063.03	
<i>Eriachne benthamii</i>	+	0.3 m	PI106.01	
<i>Euphorbia australis</i>	+	0.05 m	PI132.05	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.1 m	PI091.11	
<i>Fimbristylis oxystachya</i>	+	0.2 m	PI025.05	
<i>Hybanthus aurantiacus</i>	+	0.2 m	PI043.13	

<i>Indigofera monophylla</i>	+	0.3 m	PI065.13
<i>Mollugo molluginea</i>	+	0.1 m	PI132.04
<i>Owenia reticulata</i>	+	3 m	PI103.01
<i>Paraneurachne muelleri</i>	+	0.1 m	PI058.06
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI058.10
* <i>Portulaca oleracea</i>	+	0.05 m	PI128.04
<i>Scaevola parvifolia</i> subsp. <i>pilbarae</i>	+	0.2 m	PI090.07
<i>Senna notabilis</i>	+	0.2 m	PI051.12
<i>Sida rohlenae</i> subsp. <i>rohlenae</i>	+	0.2 m	PI103.20
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.6 m	PI058.05
<i>Tinospora smilacina</i>	+	cl	PI103.08
<i>Trianthema pilosa</i>	+	0.1 m	PI065.03
<i>Tribulus hirsutus</i>	+	0.05 m	PI106.08
<i>Triodia epactia</i>	20%	0.6 m	PI130.01
<i>Triodia lanigera</i>	12%	0.4 m	PI130.02
<i>Triumfetta clementii</i>	+	0.2 m	PI130.07
<i>Waltheria indica</i>	+	0.1 m	PI103.15
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI043.08

Port Hedland RS Site PI131**Described by** HA **Date** 24/06/2011 **Type** Q 50x50 m**Location** Port Hedland**MGA Zone** 50 663616 mE 7725498 mN**Habitat** Sand plain**Soil** Orange brown sandy loam**Rock Type** N/A**Vegetation** High Open Shrubland of *Acacia ancistrocarpa*, *Acacia tumida* var. *pilbarensis* and *Acacia inaequilatera* over Low Open Shrubland of *Acacia stellaticeps* and *Bonamia rosea* over Hummock Grassland of *Triodia lanigera***Veg Condition** Pristine**Fire Age** Old**Notes** Aspect: N/A
Bare Ground: 50%
Litter Cover: +% Logs, 1% Twigs, +% Lvs
Disturbance: None**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia ancistrocarpa</i>	3%	2 m	PI131.04	
<i>Acacia colei</i> var. <i>colei</i>	+	1 m	PI070.38	
<i>Acacia inaequilatera</i>	1%	2.5 m	PI054.05	
<i>Acacia sericophylla</i>	+	1.5 m	PI070.04	
<i>Acacia sphaerostachya</i>	+	0.4 m	PI131.13	
<i>Acacia stellaticeps</i>	5%	0.7 m	PI070.01	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	1%	2.5 m	PI070.30	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.4 m	PI070.10	
<i>Bonamia alatisemina</i>	+	cr	PI131.08	
<i>Bonamia rosea</i>	1%	0.5 m	PI131.02	
<i>Bulbostylis barbata</i>	+	0.15 m	PI070.17	
<i>Cassyltha capillaris</i>	+	cr	PI055.03	
<i>Chrysopogon fallax</i>	+	0.5 m	PI070.21	
<i>Cleome viscosa</i>	+	0.3 m	PI040.10	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.3 m	PI070.02	
<i>Cucumis maderaspatanus</i>	+	cr	PI147.17	
<i>Eragrostis eriopoda</i>	+	0.3 m	PI070.13	
<i>Eriachne mucronata</i>	+	0.4 m	PI102.06	
<i>Eriachne pulchella</i> subsp. <i>dominii</i>	+	0.15 m	PI131.03	
<i>Euphorbia alsiniflora</i>	+	0.15 m	PI131.12	
<i>Euphorbia australis</i>	+	cr	PI108.12	
<i>Goodenia forrestii</i>	+	0.2 m	PI131.07	
<i>Gossypium australe</i>	+	0.5 m	PI131.06	
<i>Hybanthus aurantiacus</i>	+	0.5 m	PI099.02	
<i>Indigofera monophylla</i>	+	0.4 m	PI072.03	
<i>Mollugo molluginea</i>	+	0.2 m	PI070.35	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI072.02	
<i>Portulaca pilosa</i>	+	0.3 m	PI147.22	

<i>Ptilotus astrolasius</i>	+	0.5 m	PI089.05
<i>Ptilotus fusiformis</i>	+	0.4 m	PI070.22
<i>Ptilotus polystachyus</i>	+	0.5 m	PI131.11
<i>Scaevola parvifolia</i> subsp. <i>pilbarae</i>	+	0.2 m	PI131.05
<i>Senna glaucifolia</i>	+	0.3 m	PI131.09
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.5 m	PI070.03
<i>Solanum ellipticum</i>	+	0.3 m	PI073.12
<i>Tinospora smilacina</i>	+	cr	PI131.10
<i>Trianthema pilosa</i>	+	cr	PI072.13
<i>Triodia lanigera</i>	40%	0.3 m	PI131.01
<i>Waltheria indica</i>	+	0.4 m	PI053.14
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.15 m	PI072.06

Port Hedland RS Site PI132**Described by** LD **Date** 24/06/2011 **Type** Q 50x50 m

Location Port Hedland

MGA Zone 50 660333 mE 7726285 mN

Habitat Sandy plain with small depressions

Soil Orange brown sand

Rock Type N/A

Vegetation Scattered Shrubs of *Acacia tumida* var. *pilbarensis* over Low Open Shrubland of *Acacia stellaticeps* over Open Hummock Grassland of *Triodia epactia* and *Triodia lanigera*

Veg Condition Excellent

Fire Age Moderate

Notes Aspect: N/A
Bare Ground: 80%
Litter Cover: 0% Logs, +% Twigs, +% Lvs
Disturbance: Cattle

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia sphaerostachya</i>	+	1-1.5 m	PI134.01	
<i>Acacia stellaticeps</i>	5%	0.6 m	PI065.01	
<i>Acacia trudgeniana</i>	+	1-2 m	PI065.31	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	1%	1-2.5 m	PI150.07	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.2 m	PI066.11	
<i>Aristida inaequiglumis</i>	+	1 m	PI058.04	
<i>Bulbostylis barbata</i>	+	0.1 m	PI027.03	
<i>Calandrinia pumila</i>	+	0.01 m	PI045.18	
<i>Cassyltha capillaris</i>	+	cl	PI051.06	
<i>Chrysopogon fallax</i>	+	0.3 m	PI051.04	
<i>Drosera indica</i>	+	0.1 m	PI045.01	
<i>Dysphania saxatilis</i>	+	0.2 m	PI058.12	
<i>Eriachne aristidea</i>	+	0.1 m	PI063.03	
<i>Eriachne benthamii</i>	+	0.4 m	PI106.01	
<i>Euphorbia australis</i>	+	0.01 m	PI132.05	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.1 m	PI063.10	
<i>Heliotropium inexplicitum</i>	+	0.05 m	PI132.06	
<i>Hybanthus aurantiacus</i>	+	0.2 m	PI043.13	
<i>Indigofera monophylla</i>	+	0.4 m	PI065.13	
<i>Keraudrenia velutina</i> subsp. <i>elliptica</i>	+	0.5 m	PI132.09	
<i>Leptosema anomalum</i>	+	0.2 m	PI150.03	range ext
<i>Mollugo molluginea</i>	+	0.1 m	PI132.04	
<i>Paraneurachne muelleri</i>	+	0.2 m	PI058.06	
<i>Pluchea tetranthera</i>	+	0.2 m	PI066.22	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI058.10	
<i>Ptilotus astrolasius</i>	+	0.2 m	PI045.06	
<i>Ptilotus fusiformis</i>	+	0.3 m	PI065.28	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.8 m	PI132.07	

<i>Synaptantha tillaeacea</i> var. <i>tillaeacea</i>	+	0.01 m	PI132.03
<i>Triodia epactia</i>	11%	0.4 m	PI132.02
<i>Triodia lanigera</i>	9%	0.4 m	PI132.01
<i>Triumfetta chaetocarpa</i>	+	0.4 m	PI132.08
<i>Waltheria indica</i>	+	0.5 m	PI065.27
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI043.08

Port Hedland RS Site PI133**Described by** BW **Date** 24/06/2011 **Type** Q 50x50 m**Location** Port Hedland**MGA Zone** 50 659634 mE 7724485 mN**Habitat** Plain**Soil** Orange brown silty sand**Rock Type** N/A**Vegetation** High Open Shrubland of *Acacia inaequilatera* over Scattered Hummock Grasses of *Triodia epactia* over Open Tussock Grassland of *Eragrostis eriopoda*, *Eriachne mucronata* and *Aristida holathera* var. *holathera***Veg Condition** Excellent**Fire Age** Moderate to old**Notes** Aspect: N/A
Bare Ground: 85%
Litter Cover: +% Logs, 1% Twigs, 2% Lvs
Disturbance: Cattle**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Abutilon otocarpum</i>	+	0.4 m	PI133.02	
<i>Acacia colei</i> var. <i>colei</i>	+	1.2 m	PI043.16	
<i>Acacia inaequilatera</i>	2%	2-3 m	PI049.06	
<i>Acacia sericophylla</i>	+	prostrate	PI052.01	
<i>Acacia stellaticeps</i>	+	0.5 m	PI043.01	
<i>Amaranthus undulatus</i>	+	0.4 m	PI133.03	
<i>Aristida holathera</i> var. <i>holathera</i>	1%	0.3 m	PI049.07	
<i>Boerhavia coccinea</i>	+	prostrate	PI067.15	
<i>Bulbostylis barbata</i>	+	0.1 m	PI056.01	
<i>Chrysopogon fallax</i>	+	0.4 m	PI042.09	
<i>Cleome viscosa</i>	+	0.3 m	PI026.10	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.3 m	PI042.04	
<i>Crotalaria ramosissima</i>	+	0.2 m	PI133.08	
<i>Digitaria brownii</i>	+	0.2 m	PI028.04	
<i>Dysphania saxatilis</i>	+	0.1 m	PI069.03	
<i>Eragrostis eriopoda</i>	10%	0.4 m	PI047.02	
<i>Eriachne mucronata</i>	1%	0.3 m	PI049.01	
<i>Euphorbia alsiniflora</i>	+	0.2 m	PI056.08	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	prostrate/c	PI062.04	
<i>Fimbristylis simulans</i>	+	0.2 m	PI028.03	
<i>Grevillea pyramidalis</i> subsp. <i>leucadendron</i>	+	1.2 m	PI133.05	
<i>Hybanthus aurantiacus</i>	+	0.3 m	PI043.13	
<i>Indigofera linifolia</i>	+	0.1 m	PI133.06	
<i>Ipomoea muelleri</i>	+	0.2 m	PI133.01	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI043.06	
<i>Sida rohlenae</i> subsp. <i>rohlenae</i>	+	0.4 m	PI069.07	
<i>Solanum lasiophyllum</i>	+	0.2 m	PI067.06	
<i>Triodia epactia</i>	1%	0.4 m	PI133.07	
<i>Triumfetta chaetocarpa</i>	+	0.2 m	PI133.04	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI042.06	

Port Hedland RS Site PI134**Described by** LD **Date** 24/06/2011 **Type** Q 50x50 m**Location** Port Hedland**MGA Zone** 50 661890 mE 7724103 mN**Habitat** Sandy plain**Soil** Orange brown sand**Rock Type****Vegetation** Scattered Shrubs of *Acacia sphaerostachya* over Low Open Shrubland of *Acacia stellaticeps* over Very Open Hummock Grassland of *Triodia lanigera* and *Triodia epactia***Veg Condition** Excellent**Fire Age** Moderate**Notes** Aspect: N/A
Bare Ground: 85%
Litter Cover: +% Logs, +% Twigs, +% Lvs
Disturbance: Cattle**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia sphaerostachya</i>	1%	1-1.5 m	PI134.01	
<i>Acacia stellaticeps</i>	6%	0.6 m	PI065.01	
<i>Acacia trudgeniana</i>	+	1-2 m	PI065.31	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	+	1-2 m	PI150.07	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.3 m	PI103.03	
<i>Bulbostylis barbata</i>	+	0.1 m	PI027.03	
<i>Cassytha capillaris</i>	+	cl	PI051.06	
<i>Chrysopogon fallax</i>	+	0.5 m	PI051.04	
<i>Cleome viscosa</i>	+	0.3 m	PI065.17	
<i>Cucumis maderaspatanus</i>	+	cl	PI045.15	
<i>Dysphania saxatilis</i>	+	0.2 m	PI058.12	
<i>Eragrostis eriopoda</i>	+	0.2 m	PI134.06	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.05 m	PI063.10	
<i>Fimbristylis oxystachya</i>	+	0.2 m	PI025.05	
<i>Hibiscus brachychlaenus</i>	+	0.1 m	PI134.04	
<i>Indigofera monophylla</i>	+	0.3 m	PI065.13	
<i>Keraudrenia velutina</i> subsp. <i>elliptica</i>	+	0.6 m	PI134.07	
<i>Mimulus gracilis</i>	+	0.3 m	PI044.10	
<i>Mollugo molluginea</i>	+	0.1 m	PI132.04	
<i>Paraneurachne muelleri</i>	+	0.2 m	PI058.06	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI058.10	
* <i>Portulaca oleracea</i>	+	0.05 m	PI134.05	
<i>Portulaca pilosa</i>	+	0.05 m	PI090.15	
<i>Ptilotus astrolasius</i>	+	0.3 m	PI045.06	
<i>Ptilotus fusiformis</i>	+	0.3 m	PI065.28	
<i>Ptilotus polystachyus</i>	+	0.3 m	PI025.13	
<i>Scaevola parvifolia</i> subsp. <i>pilbarae</i>	+	0.1 m	PI058.11	
<i>Senna notabilis</i>	+	0.2 m	PI051.12	

<i>Sida</i> sp. B Kimberley Flora (A.A. Mitchell 2745)	+	0.1 m	PI150.06
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.2 m	PI134.08
<i>Trianthera pilosa</i>	+	0.1 m	PI065.03
<i>Triodia epactia</i>	3%	0.5 m	PI134.03
<i>Triodia lanigera</i>	4%	0.3 m	PI134.02
<i>Waltheria indica</i>	+	0.1 m	PI103.15
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI043.08

Port Hedland RS Site PI135**Described by** BW **Date** 27/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 665706 mE 7723373 mN
Habitat Sand plain
Soil Orange brown clayey sand
Rock Type N/A
Vegetation High Open Shrubland of *Acacia colei* var. *colei* and *Acacia inaequilatera* over Low Scattered Shrubs of *Acacia stellaticeps* over Open Hummock Grassland of *Triodia lanigera* and *Triodia epactia*
Veg Condition Excellent
Fire Age Moderate - old
Notes Aspect: N/A
 Bare Ground: 86%
 Litter Cover: +% Logs, +% Twigs, 1% Lvs
 Disturbance: Cattle

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	1%	2-3 m	PI043.16	
<i>Acacia inaequilatera</i>	1%	2-3 m	PI049.06	
<i>Acacia sericophylla</i>	+	2.5 m	PI104.07	
<i>Acacia stellaticeps</i>	1%	0.8 m	PI043.01	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.4 m	PI049.07	
<i>Boerhavia coccinea</i>	+	prostrate	PI067.15	
<i>Bulbostylis barbata</i>	+	0.1 m	PI129.01	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.3 m	PI042.04	
* <i>Cucumis melo</i> subsp. <i>agrestis</i>	+	cr	PI026.08	
<i>Dolichandrone heterophylla</i>	+	1.5 m	PI135.01	
<i>Eragrostis eriopoda</i>	+	0.4 m	PI047.02	
<i>Eriachne aristidea</i>	+	0.4 m	PI136.03	
<i>Eriachne mucronata</i>	+	0.4 m	PI049.01	
<i>Euphorbia australis</i>	+	prostrate	PI104.02	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.2 m	PI104.04	
<i>Gossypium australe</i>	+	0.8 m	PI104.08	
<i>Indigofera monophylla</i>	+	0.4 m	PI052.03	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI043.06	
<i>Senna notabilis</i>	+	0.2 m	PI043.09	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.3 m	PI043.14	
<i>Trianthema pilosa</i>	+	0.2 m	PI052.09	
<i>Triodia epactia</i>	1%	0.5 m	PI135.04	
<i>Triodia lanigera</i>	10%	0.4 m	PI135.02	
<i>Triumfetta ramosa</i>	+	0.3 m	PI135.03	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI042.06	

Port Hedland RS Site PI136**Described by** BW **Date** 24/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 661197 mE 7721932 mN
Habitat Plain
Soil Orange brown sandy clay
Rock Type N/A
Vegetation Open Shrubland of *Acacia ancistrocarpa* and *Acacia inaequilatera* over Low Open Shrubland of *Acacia stellaticeps* over Open Hummock Grassland of *Triodia lanigera* and *Triodia epactia*
Veg Condition Excellent
Fire Age Moderate
Notes Aspect: N/A
 Bare Ground: 85%
 Litter Cover: +% Logs, 1% Twigs, 2% Lvs
 Disturbance: Cattle

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia ancistrocarpa</i>	1%	1-2 m	PI062.03	
<i>Acacia colei</i> var. <i>colei</i>	+	1.2 m	PI043.16	
<i>Acacia inaequilatera</i>	1%	1-2 m	PI049.06	
<i>Acacia sericophylla</i>	+	1.6 m	PI052.01	
<i>Acacia sphaerostachya</i>	+	1.2 m	PI136.04	
<i>Acacia stellaticeps</i>	8%	0.7 m	PI043.01	
<i>Boerhavia coccinea</i>	+	0.1 m	PI067.15	
<i>Bulbostylis barbata</i>	+	0.1 m	PI056.01	
<i>Chrysopogon fallax</i>	+	0.4 m	PI042.09	
<i>Cleome viscosa</i>	+	0.4 m	PI026.10	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.2 m	PI042.04	
* <i>Cucumis melo</i> subsp. <i>agrestis</i>	+	cr	PI026.08	
<i>Dentella asperata</i>	+	prostrate	PI069.11	
<i>Dysphania saxatilis</i>	+	0.1 m	PI056.15	
<i>Eriachne aristidea</i>	+	0.2 m	PI136.03	
<i>Eriachne mucronata</i>	+	0.4 m	PI049.01	
<i>Euphorbia alsiniflora</i>	+	0.2 m	PI056.08	
<i>Fimbristylis simulans</i>	+	0.3 m	PI136.07	
<i>Hibiscus brachychlaenus</i>	+	0.2 m	PI136.02	
<i>Mimulus uvedaliae</i> var. <i>uvedaliae</i>	+	0.4 m	PI044.07	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.2 m	PI043.06	
<i>Ptilotus fusiformis</i>	+	0.4 m	PI043.11	
<i>Senna notabilis</i>	+	0.2 m	PI043.09	
<i>Sida clementii</i>	+	0.1 m	PI069.01	
<i>Triodia epactia</i>	4%	0.4 m	PI136.05	
<i>Triodia lanigera</i>	8%	0.3 m	PI136.06	
<i>Triumfetta chaetocarpa</i>	+	0.2 m	PI133.04	
<i>Waltheria indica</i>	+	0.2 m	PI136.01	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI042.06	

Port Hedland RS Site PI137**Described by** BW **Date** 30/06/2011 **Type** Q 50x50 m**Location** Port Hedland**MGA Zone** 50 665388 mE 7721440 mN**Habitat** Sand plain**Soil** Orange brown silty sand**Rock Type** N/A**Vegetation** A low open *Corymbia zygophylla* woodland over an open *Acacia ancistrocarpa*, *Acacia inaequilatera*, *Acacia tumida* var. *pilbarensis* and *Acacia sericophylla* shrubland over *Acacia stellaticeps* low open shrubland over *Triodia epactia* and *Triodia lanigera* hummock grassland**Veg Condition** Excellent**Fire Age** Moderate**Notes** Aspect: N/A

Bare Ground: 66%

Litter Cover: +% Logs, +% Twigs, 1% Lvs

Disturbance: Cattle

SPECIES LIST:

Name	Cover	Height	Specimen	Notes
<i>Abutilon pritzelianum</i> MS	+	0.4 m	PI137.04	
<i>Acacia colei</i> var. <i>colei</i>	2%	3-5 m	PI043.16	
<i>Acacia inaequilatera</i>	1%	1-2 m	PI049.06	
<i>Acacia sericophylla</i>	+	1.8 m	PI104.07	
<i>Acacia stellaticeps</i>	+	0.7 m	PI043.01	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	+	1.8 m	PI137.05	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.3 m	PI049.07	
<i>Boerhavia coccinea</i>	(+)	prostrate	PI067.15	
<i>Bulbostylis barbata</i>	+	0.1 m	PI129.01	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.3 m	PI042.04	
<i>Corymbia candida</i> subsp. <i>dipsodes</i>	+	4 m	PI146.07	
* <i>Cucumis melo</i> subsp. <i>agrestis</i>	+	cr	PI026.08	
<i>Eragrostis eriopoda</i>	+	0.3 m	PI047.02	
<i>Eriachne mucronata</i>	+	0.3 m	PI049.01	
<i>Euphorbia alsiniflora</i>	+	0.3 m	PI056.08	
<i>Euphorbia australis</i>	+	prostrate	PI104.02	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.2 m	PI043.06	
<i>Polymeria calycina</i>	+	0.2 m	PI137.01	
<i>Schizachyrium fragile</i>	+	0.2 m	PI075.02	
<i>Senna notabilis</i>	+	1.5 m	PI043.09	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI043.14	
<i>Solanum lasiophyllum</i>	+	0.5 m	PI067.06	
<i>Triodia epactia</i>	1%	0.4 m	PI137.02	
<i>Triodia lanigera</i>	35%	0.4 m	PI137.03	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI042.06	

Port Hedland RS Site PI138**Described by** EC **Date** 30/06/2011 **Type** Q 50x50 m**Location** Port Hedland**MGA Zone** 50 672266 mE 7721638 mN**Habitat** Plain**Soil** Light orange brown loam**Rock Type****Vegetation** Scattered Shrubs of *Acacia inaequilatera* over Low Open Shrubland of *Corchorus tectus* over Hummock Grassland of *Triodia epactia* over Scattered Tussock Grass of *Sporobolus australasicus***Veg Condition** Excellent**Fire Age** Moderate**Notes** Aspect: N/A

Bare Ground: 30%

Litter Cover: +% Logs, +% Twigs, 1% Lvs

Disturbance: Cattle tracks and has clayey depressions where cows congregate, just inside

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia ancistrocarpa</i>	+	0.4 m	PI123.13	
<i>Acacia colei</i> var. <i>colei</i>	+	1.2 m	PI076.14	
<i>Acacia inaequilatera</i>	1%	1 m	PI123.15	
<i>Alternanthera angustifolia</i>	+	0.3 m	PI138.16	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.3 m	PI123.18	
<i>Bergia pedicellaris</i>	+	0.1 m	PI138.09	
<i>Bulbostylis barbata</i>	+	0.1 m	PI121.05	
<i>Calandrinia stagnensis</i>	+	0.1 m	PI083.04	
<i>Calandrinia pentavalvis</i>	+	0.1 m	PI138.11	
* <i>Cenchrus ciliaris</i>	+	0.3 m	PI103.06	
<i>Chloris pectinata</i>	+	0.3 m	PI138.14	
<i>Chrysopogon fallax</i>	+	0.4 m	PI084.10	
<i>Cleome viscosa</i>	+	0.3 m	PI065.17	
<i>Corchorus tectus</i>	2%	0.3 m	PI123.35	
<i>Cullen cinereum</i>	+	0.1 m	PI138.08	
<i>Dichanthium sericeum</i> subsp. <i>humilius</i>	+	0.3 m	PI138.03	
<i>Dysphania saxatilis</i>	+	0.3 m	PI090.11	
<i>Eragrostis eriopoda</i>	+	0.3 m	PI084.04	
<i>Eragrostis speciosa</i>	+	0.3 m	PI138.10	
<i>Euphorbia australis</i>	+	0.1 m	PI084.08	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.2 m	PI123.25	
<i>Fimbristylis dichotoma</i>	+	0.3 m	PI121.06	
<i>Goodenia lamprosperma</i>	+	0.3 m	PI141.02	
<i>Goodenia microptera</i>	+	0.3 m	PI123.12	
<i>Indigofera monophylla</i>	+	0.3 m	PI123.02	
<i>Mollugo molluginea</i>	+	0.1 m	PI123.09	
<i>Neptunia dimorphantha</i>	+	0.2 m	PI138.15	
<i>Pluchea ferdinandi-muelleri</i>	+	0.4 m	PI138.12	
<i>Pluchea rubelliflora</i>	+	0.3 m	PI138.17	
<i>Pluchea tetranthera</i>	+	0.3 m	PI083.11	
<i>Polymeria ambigua</i>	+	cr	PI138.04	

<i>Polymeria calycina</i>	+	0.3 m	PI138.01
<i>Portulaca pilosa</i>	+	0.2 m	PI123.17
<i>Pterocaulon serrulatum</i>	+	0.3 m	PI138.05
<i>Senna notabilis</i>	+	0.2 m	PI123.20
<i>Sida clementii</i>	+	0.3 m	PI138.02
<i>Sporobolus australasicus</i>	1%	0.2 m	PI121.01
<i>Stemodia grossa</i>	+	0.1 m	PI138.07
<i>Streptoglossa decurrens</i>	+	0.3 m	PI138.06
<i>Triodia epactia</i>	40%	0.3 m	PI138.18
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI084.03

Port Hedland RS Site PI139**Described by** LD **Date** 28/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 674619 mE 7721485 mN
Habitat Plain
Soil Orange Brown sandy loam with gravel and rocks
Rock Type Quartz and granite
Vegetation Scattered Shrubs of *Acacia inaequilatera* over Very Open Hummock Grassland of *Triodia epactia* and *Triodia lanigera*
Veg Condition Excellent
Fire Age moderate
Notes Aspect: N/A
 Bare Ground: 90%
 Litter Cover: 0% Logs, +% Twigs, +% Lvs
 Disturbance: Rail and tracks near by

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia inaequilatera</i>	1%	0.7-2 m	PI125.01	
<i>Acacia sphaerostachya</i>	+	0.8 m	PI134.01	
<i>Boerhavia coccinea</i>	+	0.2 m	PI139.04	
<i>Bulbostylis barbata</i>	+	0.1 m	PI090.18	
<i>Cleome viscosa</i>	+	0.3 m	PI065.17	
<i>Corchorus tectus</i>	+	0.3 m	PI091.07	
<i>Dysphania saxatilis</i>	+	0.1 m	PI090.11	
<i>Eriachne pulchella</i> subsp. <i>dominii</i>	(+)	0.1 m	PI128.03	
<i>Euphorbia australis</i>	+	0.1 m	PI139.02	
<i>Goodenia microptera</i>	+	0.3 m	PI139.01	
<i>Hybanthus aurantiacus</i>	+	0.2 m	PI043.13	
<i>Indigofera monophylla</i>	+	0.3 m	PI065.13	
<i>Mollugo molluginea</i>	+	0.1 m	PI132.04	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI058.10	
<i>Polymeria calycina</i>	+	0.2 m	PI125.06	
* <i>Portulaca oleracea</i>	+	0.05 m	PI128.04	
<i>Senna notabilis</i>	+	0.1 m	PI051.12	
<i>Sida echinocarpa</i>	+	0.6 m	PI139.03	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI058.05	
<i>Sporobolus australasicus</i>	+	0.1 m	PI066.02	
<i>Synaptantha tillaeacea</i> var. <i>tillaeacea</i>	+	0.01 m	PI139.05	
<i>Tephrosia supina</i>	+	0.1 m	PI125.08	
<i>Tephrosia uniovulata</i>	+	0.3 m	PI128.07	
<i>Tribulus hirsutus</i>	+	0.1 m	PI106.08	
<i>Triodia epactia</i>	5%	0.3 m	PI125.04	
<i>Triodia lanigera</i>	3%	0.3 m	PI125.03	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI043.08	

Port Hedland RS Site PI140**Described by** BW **Date** 28/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 676917 mE 7721539 mN
Habitat Stony plain
Soil Orange brown sandy loam with scattered cobbles and pebbles
Rock Type Quartz, ironstone and? Granite
Vegetation Open Shrubland of *Acacia ancistrocarpa* and *Acacia inaequilatera* over Very Open Hummock Grassland of *Triodia epactia* over Scattered Tussock Grass of *Eriachne pulchella* subsp. *dominii*
Veg Condition Excellent
Fire Age Young to moderate
Notes Aspect: N/A
 Bare Ground: 90%
 Litter Cover: +% Logs, +% Twigs, +% Lvs
 Disturbance: Cattle

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia ancistrocarpa</i>	1%	0.8 m	PI062.03	
<i>Acacia inaequilatera</i>	1%	0.5-3 m	PI049.06	
<i>Acacia stellaticeps</i>	+	0.4 m	PI043.01	
<i>Acacia synchronicia</i>	+	1.2 m	PI140.10	
<i>Bulbostylis barbata</i>	+	0.1 m	PI129.01	
<i>Cassyltha capillaris</i>	+	prostrate	PI140.09	
<i>Cleome viscosa</i>	+	0.4 m	PI101.04	
<i>Corchorus tectus</i>	+	0.4 m	PI030.02	
<i>Eriachne pulchella</i> subsp. <i>dominii</i>	1%	0.1 m	PI140.06	
<i>Goodenia microptera</i>	+	0.5 m	PI060.02	
<i>Heliotropium muticum</i>	+	0.2 m	PI140.01	
<i>Indigofera monophylla</i>	+	0.3 m	PI052.03	
<i>Mollugo molluginea</i>	+	0.2 m	PI043.29	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.2 m	PI043.06	
<i>Polycarpaea holtzei</i>	+	0.05 m	PI140.07	
<i>Polymeria calycina</i>	+	0.4 m	PI140.02	
<i>Ptilotus astrolasius</i>	+	0.4 m	PI056.18	
<i>Ptilotus auriculifolius</i>	+	0.4 m	PI140.08	
<i>Ptilotus axillaris</i>	+	prostrate	PI140.04	
<i>Ptilotus calostachyus</i>	+	0.6 m	PI140.03	
<i>Ptilotus fusiformis</i>	+	0.4 m	PI043.11	
<i>Scaevola amblyanthera</i> var. <i>centralis</i>	+	0.4 m	PI140.05	Photo; 649-653 BW
<i>Senna notabilis</i>	+	0.2 m	PI043.09	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI043.14	
<i>Sporobolus australasicus</i>	+	0.1 m	PI145.03	
<i>Triodia epactia</i>	5%	0.3 m	PI140.11	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI042.06	

Port Hedland RS Site PI141**Described by** EC **Date** 28/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 672769 mE 7738157 mN
Habitat Plain
Soil Light orange brown loam
Rock Type N/A
Vegetation Low Open Woodland of *Corymbia candida* subsp. *dipsodes* over Open Shrubland of *Acacia colei* over Hummock Grassland of *Triodia epactia* over Very Open Tussock Grassland of *Chrysopogon fallax* and *Eragrostis eriopoda*
Veg Condition Excellent
Fire Age Old
Notes Aspect: N/A
 Bare Ground: 55%
 Litter Cover: +% Logs, +% Twigs, +% Lvs
 Disturbance: Buffel

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i>	3%	1-2 m	PI141.03	
<i>Acacia sericophylla</i>	+	1.2 m	PI141.12	
<i>Acacia stellaticeps</i>	+	0.5 m	PI083.01	
<i>Alternanthera nana</i>	+	0.3 m	PI141.09	
<i>Amaranthus undulatus</i>	+	0.3 m	PI123.32	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.3 m	PI123.18	
<i>Bonamia alatisemina</i>	+	cr	PI083.10	
<i>Bonamia media</i> var. <i>villosa</i>	+	0.1 m	PI141.10	
<i>Bulbostylis barbata</i>	+	0.1 m	PI121.05	
<i>Calandrinia stagnensis</i>	+	0.1 m	PI083.04	
* <i>Cenchrus ciliaris</i>	+	0.3 m	PI103.06	
<i>Chrysopogon fallax</i>	1%	0.3 m	PI084.10	
<i>Corymbia candida</i> subsp. <i>dipsodes</i>	3%	2-5 m	PI141.08	
<i>Cucumis maderaspatanus</i>	+	cr	PI141.04	
<i>Ehretia saligna</i> var. <i>saligna</i>	+	1.5 m	PI141.06	
<i>Eragrostis eriopoda</i>	1%	0.3 m	PI084.04	
<i>Euphorbia alsiniflora</i>	+	0.2 m	PI123.36	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.1 m	PI123.25	
<i>Goodenia lamprosperma</i>	+	0.3 m	PI141.02	
<i>Goodenia triodiophila</i>	+	0.3 m	PI141.11	1 ind
<i>Hybanthus aurantiacus</i>	+	0.3 m	PI123.03	
<i>Stemodia lathraia</i>	+	0.1 m	PI141.01	
<i>Mollugo molluginea</i>	+	0.2 m	PI123.09	
<i>Paspalidium tabulatum</i>	+	0.3 m	PI141.13	
<i>Pluchea tetranthera</i>	+	0.3 m	PI083.11	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI083.12	
<i>Polygala linariifolia</i>	+	0.1 m	PI141.05	
<i>Portulaca pilosa</i>	+	0.1 m	PI123.17	

<i>Ptilotus calostachyus</i>	+	0.2 m	PI109.10
<i>Ptilotus fusiformis</i>	+	0.3 m	PI083.08
<i>Senna notabilis</i>	+	0.2 m	PI123.20
<i>Sida rohlenae</i> subsp. <i>rohlenae</i>	+	0.3 m	PI141.07
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.2 m	PI123.04
<i>Sporobolus australasicus</i>	+	0.2 m	PI121.01
<i>Stylidium desertorum</i>	+	0.1 m	PI141.16
<i>Triodia epactia</i>	40%	0.3 m	PI141.14
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI083.02

Port Hedland RS Site PI142**Described by** EC **Date** 30/06/2011 **Type** Q 50x50 m**Location** Port Hedland**MGA Zone** 50 672209 mE 7724203 mN**Habitat** Plain off a low quartz hill, slightly undulating with small

depressions

Soil Light orange brown loam with scatters of pebbles**Rock Type** Quartz**Vegetation** Open Shrubland of *Acacia ancistrocarpa* and *Acacia inaequilatera* over Low Open Shrubland of *Corchorus tectus* and *Indigofera monophylla* over Very Open hummock Grassland of *Triodia epactia* over Tussock Grassland of *Eriachne pulchella* subsp. *dominii*, *Aristida contorta* and *Aristida holathera* var. *holathera***Veg Condition** Excellent**Fire Age** Young**Notes** Aspect: N/A

Bare Ground: 60%

Litter Cover: +% Logs, +% Twigs, +% Lvs

Disturbance: Cattle

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Abutilon trudgenii</i> MS	+	0.3 m	PI142.04	
<i>Acacia ancistrocarpa</i>	1%	0.5 m	PI123.13	
<i>Acacia inaequilatera</i>	1%	0.3-2 m	PI123.15	
<i>Aristida contorta</i>	15%	0.3 m	PI142.03	
<i>Aristida holathera</i> var. <i>holathera</i>	1%	0.4 m	PI123.18	
<i>Bulbostylis barbata</i>	+	0.1 m	PI121.05	
<i>Cleome viscosa</i>	+	0.4 m	PI065.17	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.1 m	PI042.04	
<i>Corchorus tectus</i>	1%	0.3 m	PI123.35	
<i>Dysphania saxatilis</i>	+	0.3 m	PI090.11	
<i>Eragrostis eriopoda</i>	+	0.3 m	PI084.04	
<i>Eriachne pulchella</i> subsp. <i>dominii</i>	15%	0.3 m	PI142.01	
<i>Euphorbia alsiniflora</i>	+	0.3 m	PI123.36	
<i>Euphorbia australis</i>	+	0.1 m	PI084.08	
<i>Gomphrena cunninghamii</i>	+	0.1 m	PI123.10	
<i>Goodenia microptera</i>	+	0.3 m	PI123.12	
<i>Gossypium australe</i>	+	0.3 m	PI142.08	
<i>Heliotropium muticum</i>	+	0.3 m	PI034.09	
<i>Indigofera monophylla</i>	2%	0.3 m	PI123.02	
<i>Mollugo molluginea</i>	+	0.2 m	PI123.09	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.2 m	PI083.12	
<i>Polycarpaea holtzei</i>	+	0.1 m	PI123.07	
<i>Polymeria ambigua</i>	+	cr	PI138.04	
<i>Polymeria calycina</i>	+	0.2 m	PI138.01	
* <i>Portulaca oleracea</i>	+	0.1 m	PI142.06	
<i>Portulaca pilosa</i>	+	0.2 m	PI123.17	
<i>Ptilotus auriculifolius</i>	+	0.4 m	PI142.09	
<i>Ptilotus fusiformis</i>	+	0.3 m	PI083.08	

<i>Salsola tragus</i> subsp. <i>grandiflora</i>	+	0.2 m	PI142.02
<i>Schizachyrium fragile</i>	+	0.3 m	PI076.06
<i>Senna glutinosa</i> subsp. <i>x luerssenii</i>	+	0.6 m	PI142.07
<i>Senna notabilis</i>	+	0.2 m	PI123.20
<i>Sida clementii</i>	+	0.5 m	PI142.05
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.3 m	PI123.04
<i>Solanum diversiflorum</i>	+	0.3 m	PI048.09
<i>Tribulus macrocarpus</i>	+	cr	PI084.11
<i>Triodia epactia</i>	5%	0.3 m	PI138.18
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.3 m	PI083.02

Port Hedland RS Site PI143**Described by** BW **Date** 30/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 664133 mE 7731889 mN
Habitat Sandplain
Soil Orange brown silty sand
Rock Type N/A
Vegetation Low Open Shrubland of *Acacia stellaticeps* over Very Open Hummock Grassland of *Triodia lanigera* and *Triodia epactia*
Veg Condition Excellent
Fire Age Moderate
Notes Aspect: N/A
 Bare Ground: 90%
 Litter Cover: 0% Logs, +% Twigs, +% Lvs
 Disturbance: Cattle

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia stellaticeps</i>	7%	0.5 m	PI043.01	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.3 m	PI049.07	
<i>Bulbostylis barbata</i>	+	0.1 m	PI129.01	
<i>Chrysopogon fallax</i>	+	0.5 m	PI042.09	
<i>Drosera indica</i>	+	0.05 m	PIOPBW01a	
<i>Eriachne aristidea</i>	+	0.3 m	PI136.03	
<i>Eriachne mucronata</i>	+	0.2 m	PI049.01	
<i>Euphorbia alsiniflora</i>	+	0.2 m	PI056.08	
<i>Euphorbia australis</i>	+	0.1 m	PI104.02	
<i>Fimbristylis dichotoma</i>	+	0.2 m	PI049.15	
<i>Fimbristylis simulans</i>	+	0.2 m	PI136.07	
<i>Goodenia microptera</i>	+	0.2 m	PI060.02	
<i>Hakea lorea</i> subsp. <i>lorea</i>	+	0.7 m	PI143.04	
<i>Hybanthus aurantiacus</i>	+	0.2 m	PI043.13	
<i>Indigofera monophylla</i>	+	0.2 m	PI052.03	
<i>Mollugo molluginea</i>	+	0.2 m	PI043.29	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.2 m	PI043.06	
<i>Ptilotus astrolasius</i>	+	0.4 m	PI056.18	
<i>Ptilotus fusiformis</i>	+	0.4 m	PI043.11	
<i>Schizachyrium fragile</i>	+	0.3 m	PI075.02	
<i>Senna notabilis</i>	+	0.2 m	PI043.09	
<i>Tribulopsis angustifolia</i>	+	cr	PI143.01	
<i>Triodia epactia</i>	2%	0.4 m	PI143.02	
<i>Triodia lanigera</i>	7%	0.4 m	PI143.03	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI042.06	

Port Hedland RS Site PI145**Described by** BW **Date** 26/06/2011 **Type** Q 50x50 m**Location** Port Hedland**MGA Zone** 50 669558 mE 7735710 mN**Habitat** Plain**Soil** Orange brown clayey sand**Rock Type** N/A**Vegetation** Scattered Low Trees of *Corymbia candida* subsp. *dipsodes* over Open Shrubland of *Acacia ancistrocarpa* and *Acacia inaequilatera* over Very Open Hummock Grassland of *Triodia epactia* and *Triodia lanigera***Veg Condition** Excellent**Fire Age** Young**Notes** Aspect: N/A
Bare Ground: 90%
Litter Cover: +% Logs, +% Twigs, +% Lvs
Disturbance: Tracks near by**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia ancistrocarpa</i>	1%	0.5 m	PI145.05	
<i>Acacia inaequilatera</i>	1%	0.5-2 m	PI049.06	mostly below 1m
<i>Acacia stellaticeps</i>	+	0.2 m	PI043.01	
<i>Acacia trachycarpa</i>	+	0.7 m	PI107.02	
<i>Aristida contorta</i>	+	0.2 m	PI093.02	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.3 m	PI049.07	
<i>Bonamia alatisemina</i>	+	prostrate	PI145.11	
<i>Bonamia rosea</i>	+	0.4 m	PI030.04	
<i>Calandrinia stagnensis</i>	+	prostrate	PI145.04	
<i>Cleome viscosa</i>	+	0.3 m	PI026.10	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.2 m	PI042.04	
<i>Corchorus tectus</i>	+	0.3 m	PI030.02	
<i>Corymbia candida</i> subsp. <i>dipsodes</i>	1%	5 m	PI146.07	
<i>Dentella asperata</i>	+	prostrate	PI069.11	
<i>Dysphania saxatilis</i>	+	0.2 m	PI069.03	
<i>Eriachne aristidea</i>	+	0.3 m	PI136.03	
<i>Goodenia microptera</i>	+	0.5 m	PI060.02	
<i>Hibiscus leptocladus</i>	+	0.3 m	PI145.08	
<i>Hybanthus aurantiacus</i>	+	0.4 m	PI043.13	
<i>Indigofera monophylla</i>	+	0.4 m	PI052.03	
<i>Isotropis atropurpurea</i>	+	0.5 m	PI145.10	
<i>Mollugo molluginea</i>	+	0.2 m	PI043.29	
<i>Polymeria ambigua</i>	+	prostrate	PI145.07	
<i>Polymeria calycina</i>	+	prostrate	PI145.09	
<i>Ptilotus fusiformis</i>	+	0.4 m	PI043.11	
<i>Senna notabilis</i>	+	0.2 m	PI043.09	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.5 m	PI043.14	
<i>Sporobolus australasicus</i>	+	0.3 m	PI145.03	
<i>Tribulus hirsutus</i>	+	prostrate	PI060.03	
<i>Triodia epactia</i>	4%	0.3 m	PI145.02	
<i>Triodia lanigera</i>	4%	0.3 m	PI145.01	

Yakirra australiensis var. *australiensis* + 0.2 m PI043.08



Port Hedland RS Site PI146**Described by** BW **Date** 21/06/2011 **Type** Q 80x20 m

Location Port Hedland
MGA Zone 50 655011 mE 7737245 mN
Habitat Minor drainage line
Soil Orange brown sand
Rock Type N/A
Vegetation Low Open Woodland of *Eucalyptus victrix* and *Corymbia candida* subsp. *dipsodes* over High Shrubland of *Acacia colei* var. *colei* over Open Hummock Grassland of *Triodia epactia*
Veg Condition Excellent
Fire Age Old
Notes Aspect: N/A
 Bare Ground: 70%
 Litter Cover: +% Logs, 1% Twigs, 4% Lvs
 Disturbance: Tracks near by

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	15%	2.3 m	PI146.01	
<i>Acacia pyrifolia</i>	+	1.8 m	PI107.03	
<i>Acacia stellaticeps</i>	+	0.4 m	PI043.01	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	+	3 m	PI146.06	
<i>Cajanus cinereus</i>	+	1.4 m	PI069.04	
<i>Chrysopogon fallax</i>	+	0.4 m	PI042.09	
<i>Corymbia candida</i> subsp. <i>dipsodes</i>	1%	7-10 m	PI146.07	
<i>Dentella asperata</i>	+	prostrate	PI069.11	
<i>Eucalyptus victrix</i>	6%	7-10 m	PI146.04	
<i>Goodenia lamprosperma</i>	+	0.3 m	PI043.21	
<i>Indigofera monophylla</i>	+	0.5 m	PI146.02	
<i>Pluchea ferdinandi-muelleri</i>	+	0.5 m	PI146.05	
<i>Pluchea tetranthera</i>	+	0.4 m	PI042.03	
<i>Triodia epactia</i>	20%	0.5 m	PI146.03	

Port Hedland RS Site PI147**Described by** HA **Date** 22/06/2011 **Type** Q 50x50 m

Location Port Hedland

MGA Zone 50 655985 mE 7736216 mN

Habitat Sand plain/ slightly raised

Soil Orange brown sand

Rock Type N/A

Vegetation Scattered Low Trees of *Owenia reticulata* over Low Open Shrubland of *Acacia stellaticeps*, *Hybanthus aurantiacus* and *Indigofera monophylla* over Tussock Grassland of *Eragrostis eriopoda*

Veg Condition Excellent

Fire Age Old

Notes Aspect: N/A
Bare Ground: 60%
Litter Cover: +% Logs, 1% Twigs, +% Lvs
Disturbance: Some Kapok

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Abutilon otocarpum</i>	+	0.5 m	PI147.04	
<i>Acacia stellaticeps</i>	5%	0.5 m	PI070.01	
<i>Achyranthes aspera</i>	+	0.15 m	PI147.07	
* <i>Aerva javanica</i>	+	0.3 m	PI147.05	
<i>Amaranthus undulatus</i>	+	0.3 m	PI147.06	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.9 m	PI070.10	
<i>Boerhavia coccinea</i>	+	cr	PI147.11	
<i>Bonamia media</i> var. <i>villosa</i>	+	cr	PI147.14	
<i>Bulbostylis barbata</i>	+	0.1 m	PI070.17	
<i>Chrysopogon fallax</i>	+	1 m	PI070.21	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.5 m	PI070.02	
<i>Crotalaria ramosissima</i>	+	0.1 m	PI147.20	
<i>Cucumis maderaspatanus</i>	+	cr	PI147.17	
<i>Dolichandrone heterophylla</i>	+	1 m	PI073.01	
<i>Eragrostis eriopoda</i>	40%	0.3 m	PI070.13	
<i>Eriachne aristidea</i>	+	0.3 m	PI070.28	
<i>Eriachne mucronata</i>	+	0.4 m	PI147.18	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.1 m	PI147.12	
<i>Gossypium australe</i>	+	0.5 m	PI147.16	
<i>Hybanthus aurantiacus</i>	1%	0.6 m	PI099.02	
<i>Indigofera colutea</i>	+	0.05 m	PI147.09	
<i>Indigofera monophylla</i>	1%	0.5 m	PI072.03	
<i>Ipomoea polymorpha</i>	+	cr	PI147.08	
<i>Owenia reticulata</i>	1%	4 m	PI147.01	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI072.02	
<i>Portulaca pilosa</i>	+	0.1 m	PI147.22	
<i>Ptilotus polystachyus</i>	+	0.6 m	PI147.19	
<i>Senna notabilis</i>	+	0.2 m	PI070.14	

<i>Sida fibulifera</i>	+	0.2 m	PI147.21
<i>Sida rohlenae</i> subsp. <i>rohlenae</i>	+	0.5 m	PI147.03
<i>Solanum ellipticum</i>	+	0.2 m	PI073.12
<i>Solanum lasiophyllum</i>	+	0.3 m	PI070.37
<i>Tinospora smilacina</i>	+	cl	PI147.02
<i>Trianthema pilosa</i>	+	0.2 m	PI072.13
<i>Triodia epactia</i>	+	0.4 m	PI147.15
<i>Waltheria indica</i>	+	0.6 m	PI147.13

Port Hedland RS Site PI148

Described by HA **Date** 29/06/2011 **Type** Q **50x50 m**

Location Port Hedland
MGA Zone 50 674660 mE 7740367 mN
Habitat Sand plain
Soil Orange brown loamy sand
Rock Type N/A
Vegetation Low Shrubland of *Acacia stellaticeps* over Hummock Grassland of *Triodia lanigera* and *Triodia epactia*
Veg Condition Excellent to very good
Fire Age Moderate
Notes Aspect: N/A
 Bare Ground: 50%
 Litter Cover: +% Logs, +% Twigs, +% Lvs
 Disturbance: Some buffel

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	+	2.5 m	PI070.38	
<i>Acacia sphaerostachya</i>	+	1 m	PI148.07	
<i>Acacia stellaticeps</i>	20%	0.6 m	PI070.01	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	+	2 m	PI070.30	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.3 m	PI070.10	
<i>Aristida inaequiglumis</i>	+	0.9 m	PI070.24	
<i>Bulbostylis barbata</i>	+	0.1 m	PI070.17	
* <i>Cenchrus ciliaris</i>	+	0.5 m	PI070.29	
<i>Cleome viscosa</i>	+	0.4 m	PI040.10	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.2 m	PI070.02	
<i>Corymbia candida</i> subsp. <i>dipsodes</i>	+	3.5 m	PI148.01	
<i>Cucumis maderaspatanus</i>	+	cr	PI147.17	
<i>Dolichandrone heterophylla</i>	+	0.4 m	PI148.05	
<i>Dysphania saxatilis</i>	+	0.1 m	PI053.07	
<i>Eragrostis eriopoda</i>	+	0.3 m	PI070.13	
<i>Eriachne mucronata</i>	+	0.3 m	PI148.06	
<i>Euphorbia alsiniflora</i>	+	0.3 m	PI072.10	
<i>Euphorbia australis</i>	+	cr	PI108.12	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.1 m	PI070.07	
<i>Goodenia microptera</i>	+	0.3 m	PI148.08	
<i>Mollugo molluginea</i>	+	0.1 m	PI070.35	
<i>Paraneurachne muelleri</i>	+	0.3 m	PI054.09	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.15 m	PI072.02	
* <i>Portulaca oleracea</i>	+	0.1 m	PI086.11	
<i>Portulaca pilosa</i>	+	0.2 m	PI147.22	
<i>Ptilotus fusiformis</i>	+	0.4 m	PI070.22	
<i>Ptilotus polystachyus</i>	+	0.4 m	PI147.19	
<i>Senna notabilis</i>	+	0.2 m	PI070.14	

<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI070.03
<i>Solanum lasiophyllum</i>	+	0.2 m	PI148.03
<i>Sporobolus australasicus</i>	+	0.2 m	PI037.07
<i>Tinospora smilacina</i>	+	cr	PI087.09
<i>Triodia epactia</i>	15%	0.4 m	PI148.04
<i>Triodia lanigera</i>	20%	0.3 m	PI148.02
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI072.06

Port Hedland RS Site PI149**Described by** EC **Date** 30/06/2011 **Type** Q 50x50 m**Location** Port Hedland**MGA Zone** 50 676242 mE 7742485 mN**Habitat** Plain**Soil** Light orange salmon brown sandy loam**Rock Type** N/A**Vegetation** Scattered Low Trees of *Corymbia candida* subsp. *dipsodes* over High Open Shrubland of *Acacia colei* var. *colei* over Open Hummock Grassland of *Triodia epactia* over Tussock Grassland of *Eulalia aurea* and *Chrysopogon fallax***Veg Condition** Very good**Fire Age** Old**Notes** Aspect: N/A
Bare Ground: 40%
Litter Cover: 0% Logs, +% Twigs, 5% Lvs
Disturbance: Cattle, weeds and tracks near by**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	2%	2-3 m	PI076.14	
<i>Alternanthera nana</i>	+	0.2 m	PI094.07	
<i>Chrysopogon fallax</i>	1%	0.4 m	PI084.10	
<i>Corymbia candida</i> subsp. <i>dipsodes</i>	1%	5 m	PI149.10	Photo; 95 EC
<i>Cyperus difformis</i>	+	0.3 m	PI149.07	
<i>Eragrostis cumingii</i>	+	0.2 m	PI080.06	
<i>Eragrostis eriopoda</i>	+	0.4 m	PI084.04	
<i>Eriachne aristidea</i>	+	0.3 m	PI149.01	
<i>Eulalia fulva</i>	40%	0.5 m	PI149.05	
<i>Euphorbia australis</i>	+	0.1 m	PI084.08	
<i>Fimbristylis dichotoma</i>	+	0.3 m	PI121.06	
<i>Goodenia lamprosperma</i>	+	0.2 m	PI149.11	
<i>Goodenia microptera</i>	+	0.1 m	PI149.06	
<i>Indigofera monophylla</i>	+	0.4 m	PI123.02	
* <i>Indigofera oblongifolia</i>	+	1.5 m	PI149.09	
<i>Ipomoea muelleri</i>	+	cr	PI149.13	
<i>Marsilea mutica</i>	+	0.2 m	PI044.08	
<i>Pluchea rubelliflora</i>	+	0.2 m	PI149.02	
<i>Pluchea tetranthera</i>	+	0.4 m	PI083.11	
<i>Portulaca pilosa</i>	+	0.2 m	PI123.17	
<i>Ptilotus murrayi</i>	+	0.1 m	PI149.03	
* <i>Stylosanthes hamata</i>	+	0.3 m	PI149.12	
<i>Triodia epactia</i>	20%	0.3 m	PI149.08	
<i>Xerochloa laniflora</i>	+	0.3 m	PI149.04	

Port Hedland RS Site PI150**Described by** LD **Date** 23/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 663294 mE 7738814 mN
Habitat Plain
Soil Orange brown sandy loam with gravel
Rock Type N/A
Vegetation Very Open Hummock Grassland of *Triodia epactia* over Very Open Tussock Grassland of *Eriachne mucronata* over Scattered herbs of *Calandrinia pumila*
Veg Condition Good
Fire Age Young
Notes Aspect: N/A
 Bare Ground: 90%
 Litter Cover: 0% Logs, 0% Twigs, 0% Lvs
 Disturbance: Cattle and fire

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia stellaticeps</i>	+	0.2 m	PI065.01	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	+	1-2 m	PI150.07	
<i>Bonamia alatisemina</i>	+	0.2 m	PI027.06	
<i>Bulbostylis barbata</i>	+	0.1 m	PI066.04	
<i>Calandrinia pentavalvis</i>	+	0.1 m	PI066.03	
<i>Calandrinia pumila</i>	1%	0.01 m	PI045.18	
<i>Crotalaria ramosissima</i>	+	0.1 m	PI027.05	
<i>Eriachne mucronata</i>	3%	0.3 m	PI150.02	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.3 m	PI150.04	
<i>Fimbristylis oxystachya</i>	+	0.2 m	PI025.05	
<i>Hybanthus aurantiacus</i>	+	0.2 m	PI043.13	
<i>Leptosema anomalum</i>	+	0.2 m	PI150.03	
<i>Mitrasacme connata</i>	+	0.05 m	PI045.04	
<i>Murdannia graminea</i>	+	0.2 m	PI045.21	Range ext
<i>Pluchea tetranthera</i>	+	0.3 m	PI066.22	
<i>Senna notabilis</i>	+	0.3 m	PI051.12	
<i>Sida</i> sp. B Kimberley Flora (A.A. Mitchell 2745)	+	0.3 m	PI150.06	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.2 m	PI058.05	
<i>Stackhousia intermedia</i>	+	0.1 m	PI066.14	
<i>Streptoglossa decurrens</i>	+	0.2 m	PI150.05	
<i>Trianthes pilosa</i>	+	0.2 m	PI065.03	
<i>Triodia epactia</i>	5%	0.3 m	PI150.01	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI043.08	

Port Hedland RS Site PI152**Described by** BW **Date** 28/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 673594 mE 7725321 mN
Habitat Sand plain
Soil Orange brown silty sand
Rock Type N/A
Vegetation Scattered Low Shrubs of *Tephrosia uniovulata* over Very Open Hummock Grassland of *Triodia lanigera* and *Triodia epactia*
Veg Condition Excellent
Fire Age Young
Notes Aspect: N/A
 Bare Ground: 93%
 Litter Cover: +% Logs, +% Twigs, +% Lvs
 Disturbance: Cattle

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia ancistrocarpa</i>	+	0.8 m	PI062.03	
<i>Acacia colei</i> var. <i>colei</i>	+	1 m	PI043.16	
<i>Acacia inaequilatera</i>	+	0.5-1.5 m	PI049.06	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.4 m	PI049.07	
<i>Aristida inaequiglumis</i>	+	0.2 m	PI152.02	
<i>Bonamia alatisemina</i>	+	prostrate	PI145.11	
<i>Bonamia rosea</i>	+	0.4 m	PI030.04	
<i>Bulbostylis barbata</i>	+	0.1 m	PI129.01	
<i>Calandrinia stagnensis</i>	+	0.2 m	PI145.04	
<i>Cleome viscosa</i>	+	0.4 m	PI101.04	
<i>Corchorus tectus</i>	+	0.4 m	PI030.02	
<i>Corymbia hamersleyana</i>	+	1.8 m	PI113.01	
<i>Dentella asperata</i>	+	prostrate	PI069.11	
<i>Dysphania saxatilis</i>	+	0.2 m	PI069.03	
<i>Eriachne aristidea</i>	+	0.2 m	PI136.03	
<i>Eriachne pulchella</i> subsp. <i>dominii</i>	+	0.2 m	PI140.06	
<i>Goodenia microptera</i>	+	0.4 m	PI060.02	
<i>Goodenia stobbsiana</i>	out	0.7 m	PI152.05	
<i>Heliotropium muticum</i>	+	0.2 m	PI152.01	
<i>Indigofera monophylla</i>	+	0.4 m	PI052.03	
<i>Isotropis atropurpurea</i>	+	0.4 m	PI145.10	
<i>Mollugo molluginea</i>	+	0.2 m	PI043.29	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.2 m	PI043.06	
<i>Polymeria calycina</i>	+	0.4 m	PI140.02	
<i>Ptilotus astrolasius</i>	+	0.4 m	PI056.18	
<i>Ptilotus calostachyus</i>	+	0.6 m	PI140.03	
<i>Sporobolus australasicus</i>	+	0.1 m	PI145.03	
<i>Tephrosia uniovulata</i>	1%	0.4 m	PI100.01	
<i>Triodia epactia</i>	+	0.4 m	PI152.04	
<i>Triodia lanigera</i>	5%	0.4 m	PI152.03	
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.2 m	PI042.06	

Port Hedland RS Site PI153**Described by** BW **Date** 28/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 671509 mE 7734554 mN
Habitat Sand plain
Soil Orange brown clayey sand
Rock Type N/A
Vegetation Low Open Shrubland of *Acacia stellaticeps* over Open Hummock Grassland of *Triodia lanigera* and *Triodia epactia*
Veg Condition Excellent
Fire Age Moderate
Notes Aspect: N/A
 Bare Ground: 82%
 Litter Cover: +% Logs, 1% Twigs, +% Lvs
 Disturbance: Cattle

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia inaequilatera</i>	+	1-2 m	PI049.06	
<i>Acacia stellaticeps</i>	2%	0.6 m	PI043.01	
<i>Bulbostylis barbata</i>	+	0.1 m	PI129.01	
<i>Calandrinia stagnensis</i>	+	prostrate	PI145.04	
<i>Dentella asperata</i>	+	prostrate	PI069.11	
<i>Eragrostis dielsii</i>	+	0.1 m	PI064.05	
<i>Eriachne aristidea</i>	+	0.2 m	PI136.03	
<i>Pluchea rubelliflora</i>	+	0.2 m	PI122.01	
<i>Pluchea tetranthera</i>	+	0.2 m	PI064.02	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI043.06	
<i>Portulaca pilosa</i>	+	0.2 m	PI030.01	
<i>Ptilotus fusiformis</i>	+	0.4 m	PI043.11	
<i>Senna notabilis</i>	+	0.2 m	PI043.09	
<i>Sporobolus australasicus</i>	+	0.2 m	PI145.03	
<i>Triodia epactia</i>	4%	0.4 m	PI153.01	
<i>Triodia lanigera</i>	8%	0.4 m	PI153.02	

Port Hedland RS Site PI154**Described by** LD **Date** 29/06/2011 **Type** Q 50x50 m**Location** Port Hedland**MGA Zone** 50 671594 mE 7733290 mN**Habitat** Plain**Soil** Orange brown clayey sandy loam with scattered pebbles**Rock Type** Quartz**Vegetation** Scattered Low Trees of *Corymbia hamersleyana* over Open Shrubland of *Acacia sphaerostachya*, *Acacia trudgeniana*, *Acacia victoriae* and *Grevillea wickhamii* subsp. *hispidula* over Open Hummock Grassland of *Triodia epactia* and *Triodia lanigera*.**Veg Condition** Excellent**Fire Age** Moderate**Notes** Aspect: N/A
Bare Ground: 65%
Litter Cover: +% Logs, 1% Twigs, 2% Lvs
Disturbance: Cattle**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	+	1 m	PI091.12	
<i>Acacia sphaerostachya</i>	2%	1-1.5 m	PI134.01	
<i>Acacia stellaticeps</i>	+	0.6 m	PI065.01	
<i>Acacia trudgeniana</i>	1%	1-2 m	PI065.31	
<i>Acacia victoriae</i>	1%	1 m	PI154.07	
<i>Amaranthus undulatus</i>	+	0.2 m	PI045.16	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.2 m	PI094.04	
<i>Boerhavia coccinea</i>	+	0.1 m	PI154.06	
<i>Bulbostylis barbata</i>	+	0.1 m	PI090.18	
<i>Cleome viscosa</i>	+	0.2 m	PI112.06	
<i>Corchorus tectus</i>	+	0.2 m	PI091.07	
<i>Corymbia hamersleyana</i>	1%	4 m	PI154.02	
* <i>Cucumis melo</i> subsp. <i>agrestis</i>	+	cr	PI154.04	
<i>Dysphania saxatilis</i>	+	0.1 m	PI090.11	
<i>Eragrostis cumingii</i>	+	0.2 m	PI080.06	
<i>Euphorbia alsiniflora</i>	+	0.2 m	PI117.03	
<i>Euphorbia australis</i>	+	0.3 m	PI139.02	
<i>Evolvulus alsinoides</i> var. <i>decumbens</i>	+	0.2 m	PI094.10	
<i>Gomphrena leptoclada</i> subsp. <i>leptoclada</i>	+	0.1 m	PI154.11	
<i>Grevillea wickhamii</i> subsp. <i>hispidula</i>	1%	1-2 m	PI154.01	
<i>Hybanthus aurantiacus</i>	+	0.2 m	PI043.13	
<i>Indigofera monophylla</i>	+	0.3 m	PI065.13	
<i>Isotropis atropurpurea</i>	+	0.2 m	PI125.05	
<i>Mollugo molluginea</i>	+	0.1 m	PI132.04	
<i>Paspalidium tabulatum</i>	+	0.2 m	PI117.07	
<i>Pluchea rubelliflora</i>	+	0.2 m	PI154.10	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI058.10	
<i>Polymeria calycina</i>	+	0.1 m	PI125.06	

<i>*Portulaca oleracea</i>	+	0.05 m	PI128.04
<i>Ptilotus fusiformis</i>	+	0.3 m	PI065.28
<i>Senna notabilis</i>	+	0.2 m	PI051.12
<i>Sida rohlenae subsp. rohlenae</i>	+	0.2 m	PI154.05
<i>Sida</i> sp. B Kimberley Flora (A.A. Mitchell 2745)	+	0.05 m	PI150.06
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.1 m	PI058.05
<i>Sporobolus australasicus</i>	+	0.1 m	PI066.02
<i>Tephrosia supina</i>	+	0.05 m	PI125.08
<i>Tinospora smilacina</i>	+	cr	PI103.08
<i>Trachymene oleracea</i> subsp. <i>oleracea</i>	+	0.8 m	PI154.09
<i>Triodia epactia</i>	13%	0.4 m	PI154.03
<i>Triodia lanigera</i>	9%	0.4 m	PI154.08
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI043.08

Port Hedland RS Site PI156**Described by** BW **Date** 30/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 659967 mE 7724453 mN
Habitat Low rocky hill
Soil Orange brown loam with rocks and pebbles
Rock Type Ironstone
Vegetation Scattered Tall Shrubs of *Acacia inaequilatera* over
 Open Hummock Grassland of *Triodia epactia*
Veg Condition Excellent
Fire Age Moderate
Notes Aspect:
 Bare Ground: 85%
 Litter Cover: +% Logs, +% Twigs, +% Lvs
 Disturbance: Cattle, weeds and track up hill near quadrat

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Abutilon lepidum</i>	+	0.4 m	PI156.02	
<i>Acacia ancistrocarpa</i>	+	0.5 m	PI062.03	
<i>Acacia colei</i> var. <i>colei</i>	+	0.5 m	PI043.16	
<i>Acacia inaequilatera</i>	1%	2-3 m	PI049.06	
* <i>Aerva javanica</i>	+	0.5 m	PI156.12	
<i>Aristida contorta</i>	+	0.3 m	PI156.04	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.3 m	PI049.07	
<i>Boerhavia coccinea</i>	+	0.2 m	PI067.15	
<i>Bulbostylis barbata</i>	+	0.1 m	PI129.01	
<i>Calandrinia stagnensis</i>	+	0.2 m	PI145.04	
<i>Cleome viscosa</i>	(+)	0.3 m	PI026.10	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.2 m	PI042.04	
* <i>Cucumis melo</i> subsp. <i>agrestis</i>	+	cr	PI026.08	
<i>Eriachne aristidea</i>	+	0.2 m	PI136.03	
<i>Eriachne mucronata</i>	+	0.3 m	PI049.01	
<i>Euphorbia alsiniflora</i>	+	0.3 m	PI056.08	
<i>Euphorbia australis</i>	+	prostrate	PI104.02	
<i>Gomphrena cunninghamii</i>	+	0.1 m	PI156.01	
<i>Gossypium australe</i>	+	0.4 m	PI104.08	
<i>Hybanthus aurantiacus</i>	+	0.3 m	PI043.13	
<i>Mollugo molluginea</i>	+	0.2 m	PI043.29	
<i>Paspalidium clementii</i>	+	0.2 m	PI156.03	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.1 m	PI043.06	
<i>Ptilotus arthrolasius</i>	+	0.3 m	PI156.05	
<i>Ptilotus auriculifolius</i>	+	0.3 m	PI140.08	
<i>Rhynchosia minima</i>	+	0.1 m	PI156.08	
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>	+	0.6 m	PI156.07	
<i>Senna notabilis</i>	+	0.2 m	PI043.09	

<i>Sida clementii</i>	+	0.6 m	PI100.02	
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.3 m	PI043.14	
<i>Solanum lasiophyllum</i>	+	0.2 m	PI067.06	
<i>Tephrosia simplicifolia</i>	+	0.1 m	PI156.11	Range ext
<i>Trachymene oleracea</i> subsp. <i>oleracea</i>	+	0.2 m	PI156.10	
<i>Triodia epactia</i>	12%	0.3 m	PI156.09	
<i>Triumfetta clementii</i>	+	0.1 m	PI156.06	
<i>Triumfetta ramosa</i>	+	0.3 m	PI135.03	

Port Hedland RS Site PI157

Described by BW **Date** 1/07/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 659981 mE 7754003 mN
Habitat Sand dune
Soil Yellow sand
Rock Type Limestone below surface
Vegetation Scattered Low Shrubs of *Tephrosia rosea* var. *glabrior* over Tussock Grassland of **Cenchrus ciliaris*
Veg Condition Degraded
Fire Age Moderate
Notes Aspect: North
 Bare Ground: 60%
 Litter Cover: 0% Logs, +% Twigs, 25% Lvs
 Disturbance: Weeds and tracks



SPECIES LIST:

Name	Cover	Height	Specimen	Notes
<i>Acacia stellaticeps</i>	+	0.4 m	PI043.01	
<i>*Aerva javanica</i>	+	0.6 m	PI103.07	
<i>Cajanus cinereus</i>	+	0.4 m	PI157.04	
<i>*Cenchrus ciliaris</i>	65%	0.4 m	PI052.06	
<i>Crotalaria cunninghamii</i> subsp. <i>sturtii</i>			PI157.03	
<i>Spinifex longifolius</i>	+	0.3 m	PI157.02	
<i>Tephrosia rosea</i> var. <i>glabrior</i>	1%	0.4 m	PI157.01	Photo; 697-701 BW, 12ind
<i>Tricoryne corynothecoides</i>	+	0.3 m	PI157.05	

Port Hedland RS Site PI160**Described by** LD **Date** 30/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 672666 mE 7721758 mN
Habitat Hill Slope
Soil Orange Brown sandy loam with lots of cobbles, pebbles and rocks
Rock Type Quartz and calcrete
Vegetation Scattered Shrubs of *Acacia inaequilatera* over Open Hummock Grassland of *Triodia epactia* and *Triodia lanigera*
Veg Condition Excellent
Fire Age Moderate
Notes Aspect: South-west
 Bare Ground: 70%
 Litter Cover: 0% Logs, +% Twigs, +% Lvs
 Disturbance:

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Acacia ancistrocarpa</i>	+	1 m	PI160.16	
<i>Acacia inaequilatera</i>	1%	1-2 m	PI125.01	
<i>Acacia orthocarpa</i>	+	0.7 m	PI160.02	
<i>Acacia stellaticeps</i>	+	0.2 m	PI065.01	
<i>Aristida contorta</i>	+	0.2 m	PI160.11	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.3 m	PI160.12	
<i>Bonamia alatisemina</i>	+	0.1 m	PI117.11	
<i>Bonamia media</i> var. <i>villosa</i>	+	cr	PI160.07	
<i>Bonamia rosea</i>	+	0.2 m	PI090.02	
<i>Bulbostylis barbata</i>	+	0.05 m	PI090.18	
<i>Cleome viscosa</i>	+	0.3 m	PI065.17	
<i>Corchorus tectus</i>	+	0.2 m	PI091.07	
<i>Digitaria brownii</i>	+	0.2 m	PI160.09	
<i>Eriachne pulchella</i> subsp. <i>dominii</i>	+	0.1 m	PI160.03	
<i>Euphorbia australis</i>	+	0.05 m	PI160.10	
<i>Hakea lorea</i> subsp. <i>lorea</i>	+	0.6 m	PI160.06	
<i>Hibiscus burtonii</i>	+	0.2 m	PI160.17	
<i>Hybanthus aurantiacus</i>	+	0.2 m	PI043.13	
<i>Indigofera monophylla</i>	+	0.2 m	PI065.13	
<i>Mollugo molluginea</i>	+	0.1 m	PI132.04	
<i>Pluchea tetranthera</i>	+	0.2 m	PI066.22	
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.05 m	PI058.10	
<i>Polycarpaea holtzei</i>	+	0.02 m	PI160.05	
<i>Polygala isingii</i>	+	0.05 m	PI160.14	
* <i>Portulaca oleracea</i>	+	0.05 m	PI128.04	
<i>Ptilotus auriculifolius</i>	+	0.5 m	PIOPLD03a	
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>	+	1 m	PI160.15	
<i>Senna notabilis</i>	+	0.4 m	PI051.12	

<i>Sida echinocarpa</i>	+	0.7 m	PI160.13
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.3 m	PI058.05
<i>Solanum diversiflorum</i>	+	0.2 m	PI048.09
<i>Solanum lasiophyllum</i>	+	0.2 m	PI160.18
<i>Sporobolus australasicus</i>	+	0.1 m	PI066.02
<i>Tephrosia supina</i>	+	0.1 m	PI125.08
<i>Triodia epactia</i>	18%	0.3 m	PI160.01
<i>Triodia lanigera</i>	2%	0.2 m	PI160.08
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI043.08

Port Hedland RS Site PI161**Described by** HA **Date** 30/06/2011 **Type** Q 50x50 m**Location** Port Hedland**MGA Zone** 50 665337 mE 7721795 mN**Habitat** Sand plain**Soil** Orange brown loamy sand**Rock Type** N/A**Vegetation** *Acacia colei* var. *colei*, *Acacia tumida* var. *pilbarensis*, *Acacia inaequilatera* and *Acacia ancistrocarpa* over Open Hummock Grassland of *Triodia epactia* and *Triodia lanigera* over Scattered Tussock Grass of *Digitaria brownii***Veg Condition** Excellent**Fire Age** Moderate**Notes** Aspect: N/A

Bare Ground: 50%

Litter Cover: +% Logs, 1% Twigs, 1% Lvs

Disturbance: None

**SPECIES LIST:**

Name	Cover	Height	Specimen	Notes
<i>Abutilon pritzelianum</i> MS	+	1.3 m	PI161.05	
<i>Acacia ancistrocarpa</i>	+	3 m	PI131.04	
<i>Acacia ancistrocarpa</i>	1%	1 m	PI086.05	
<i>Acacia colei</i> var. <i>colei</i>	3%	3.2 m	PI070.38	
<i>Acacia inaequilatera</i>	2%	2.8 m	PI054.05	
<i>Acacia sericophylla</i>	+	2 m	PI099.13	
<i>Acacia stellaticeps</i>	+	0.4 m	PI070.01	
<i>Acacia tumida</i> var. <i>pilbarensis</i>	2%	3 m	PI070.30	
<i>Aristida holathera</i> var. <i>holathera</i>	+	0.4 m	PI070.10	
<i>Aristida inaequiglumis</i>	+	1.2 m	PI070.24	
<i>Boerhavia coccinea</i>	+	CR	PI072.12	
<i>Bonamia alatisemina</i>	+	cr	PI053.02	
<i>Bonamia rosea</i>	+	0.3 m	PI088.02	
<i>Bulbostylis barbata</i>	+	0.1 m	PI070.17	
<i>Cassytha capillaris</i>	+	cr	PI055.03	
<i>Chrysopogon fallax</i>	+	1 m	PI070.21	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.4 m	PI070.02	
<i>Corymbia candida</i> subsp. <i>dipsodes</i>	+	3.8 m	PI088.08	
<i>Crotalaria ramosissima</i>	+	0.2 m	PI089.02	
<i>Cucumis maderaspatanus</i>	+	CR	PI147.17	
<i>Desmodium filiforme</i>	+	cr	PI046.11	
<i>Digitaria brownii</i>	1%	0.3 m	PI161.04	
<i>Dolichandrone heterophylla</i>	+	2 m	PI061.05	
<i>Eriachne mucronata</i>	+	0.3 m	PI102.06	
<i>Euphorbia alsiniflora</i>	+	0.2 m	PI072.10	
<i>Euphorbia australis</i>	+	cr	PI108.12	
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>	+	0.15 m	PI070.07	
<i>Fimbristylis dichotoma</i>	+	0.3 m	PI081.07	

<i>Hibiscus brachychlaenus</i>	+	0.5 m	PI161.03
<i>Hybanthus aurantiacus</i>	+	0.3 m	PI099.02
<i>Indigofera monophylla</i>	+	0.3 m	PI072.03
<i>Paraneurachne muelleri</i>	+	0.3 m	PI054.09
<i>Pimelea ammocharis</i>	+	0.6 m	PI070.23
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>	+	0.15 m	PI072.02
<i>Ptilotus astrolasius</i>	+	0.3 m	PI089.05
<i>Ptilotus calostachyus</i>	+	0.3 m	PI032.04
<i>Ptilotus fusiformis</i>	+	0.3 m	PI070.22
<i>Senna notabilis</i>	+	0.2 m	PI070.14
<i>Sida rohlenae</i> subsp. <i>rohlenae</i>	+	0.3 m	PI105.08
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI070.03
<i>Solanum lasiophyllum</i>	+	0.4 m	PI070.37
<i>Tinospora smilacina</i>	+	cr	PI087.09
<i>Triodia epactia</i>	10%	0.5 m	PI161.01
<i>Triodia lanigera</i>	3%	0.4 m	PI161.02
<i>Yakirra australiensis</i> var. <i>australiensis</i>	+	0.1 m	PI072.06

Port Hedland RS **Site** PI162

Described by BW **Date** 30/06/2011 **Type** Q 50x50 m

Location Port Hedland
MGA Zone 50 670103 mE 7749943 mN
Habitat Mangrove edge
Soil Brown mud
Rock Type Limestone/calcrete out cropping
Vegetation Scattered Shrubs of *Avicennia marina* over Low
 Scattered Shrubs of *Frankenia ambita* and *Tecticornia indica* subsp. *bidens* over Scattered Tussock Grass of
Eragrostis falcata
Veg Condition Excellent
Fire Age Very old
Notes Aspect: N/A
 Bare Ground: 98%
 Litter Cover: 0% Logs, 0% Twigs, 0% Lvs
 Disturbance: Litter



SPECIES LIST:

Name	Cover	Height	Specimen	Notes
<i>Avicennia marina</i>	+	0.5 m	PI015.02	
<i>Eragrostis falcata</i>	+	0.2 m	PI011.03	
<i>Frankenia ambita</i>	+	prostrate	PI162.01	
<i>Muellerolimon salicorniaceum</i>	+	0.2 m	PI011.04	
<i>Tecticornia indica</i> subsp. <i>bidens</i>	+	0.2 m	PI011.01	

Port Hedland RS Site PIHAR01

Described by HA **Date** 28/06/2011 **Type** R

Location Port Hedland
MGA Zone 50 676445 mE 7726767 mN
Habitat Sand plain
Soil Brown loam
Rock Type N/A
Vegetation Open Scrub of *Acacia colei* var. *colei* over Scattered Shrubs of *Acacia inaequilatera* over Tussock Grassland of *Chrysopogon fallax* over Very Open Hummock Grassland of *Triodia epactia*
Veg Condition Very good
Fire Age Old
Notes Aspect: N/A
 Bare Ground: 20%
 Litter Cover: +% Logs, +% Twigs, 4% Lvs
 Disturbance: Cattle grazing



SPECIES LIST:

Name	Cover	Height	Specimen	Notes
<i>Acacia colei</i> var. <i>colei</i>	35%	3.2 m	PI070.38	
<i>Acacia inaequilatera</i>	1%	1.8 m	PI054.05	
<i>Acacia stellaticeps</i>	+	1.5 m	PI070.01	
<i>Bulbostylis barbata</i>	+	0.15 m	PI070.17	
<i>Carissa lanceolata</i>	+	1.5 m	PI086.09	
<i>Chrysopogon fallax</i>	40%	1 m	PI070.21	
<i>Corchorus lasiocarpus</i> subsp. <i>lasiocarpus</i>	+	0.3 m	PI070.02	
<i>Indigofera monophylla</i>	+	0.4 m	PI072.03	
* <i>Portulaca oleracea</i>	+	0.1 m	PI086.11	
<i>Senna notabilis</i>	+	0.2 m	PI070.14	
<i>Sporobolus australasicus</i>	+	0.1 m	PI037.07	
<i>Triodia epactia</i>	5%	0.5 m	PIHAR01	

Port Hedland RS Site PIR151

Described by LD **Date** 28/06/2011 **Type** R

Location Port Hedland

MGA Zone 50 676084 mE 7722840 mN

Habitat Hill slope

Soil

Rock Type Granite (Limestone like)

Vegetation Open Scrub of *Acacia colei* var. *colei* over Scattered Shrubs of *Acacia inaequilatera* over Tussock Grassland of *Chrysopogon fallax* over Very Open Hummock Grassland of *Triodia epactia*

Veg Condition Good

Fire Age Moderate

Notes Aspect: South-West
Disturbance: Tracks and weeds



SPECIES LIST:

Name	Cover	Height	Specimen Notes
<i>Acacia trudgeniana</i>	+		PI065.31
* <i>Aerva javanica</i>	+		PI103.07
<i>Atalaya hemiglauca</i>	+		PIR151.07
* <i>Cenchrus ciliaris</i>	40%		PI103.06
<i>Flueggea virosa</i> subsp. <i>melanthesoides</i>	+		PIR151.02
<i>Operculina aequisejala</i>	+		PIR151.01
<i>Senna artemisioides</i> subsp. <i>oligophylla</i>	+		PIR151.03
<i>Sorghum plumosum</i>	+		PIR151.05
<i>Swainsona formosa</i>	+		PIR151.06
<i>Triodia epactia</i>	+		PIR151.04

Port Hedland RS Site PIRE01

Described by EC **Date** 28/06/2011 **Type** R

Location Port Hedland
MGA Zone 50 676183 mE 7726101 mN
Habitat Drainage line
Soil Light red brown sandy loam
Rock Type N/A
Vegetation Low Open Woodland of *Corymbia hamersleyana* over *Acacia colei* var. *colei*, *Acacia pyrifolia*, *Acacia trachycarpa* and *Acacia ancistrocarpa* over Very Open Hummock Grassland of *Triodia epactia* over Open Tussock Grassland of **Cenchrus ciliaris*, *Chrysopogon fallax* and *Sporobolus australasicus*
Veg Condition Very good
Fire Age Old
Notes Aspect: N/A
 Bare Ground: 30%
 Litter Cover: +% Logs, +% Twigs, +% Lvs
 Disturbance: Cattle and buffel



SPECIES LIST:

Name	Cover	Height	Specimen	Notes
<i>Acacia ancistrocarpa</i>	1%	1-2 m	PI123.13	
<i>Acacia bivenosa</i>	+	1.5 m	PI121.09	
<i>Acacia colei</i> var. <i>colei</i>	2%	1.5 m	PI076.14	
<i>Acacia inaequilatera</i>	+	1 m	PI123.15	
<i>Acacia pyrifolia</i>	2%	1.5 m	PI107.03	
<i>Acacia trachycarpa</i>	1%	1-2 m	PI107.02	
<i>*Cenchrus ciliaris</i>	20%	0.3 m	PI103.06	
<i>Chrysopogon fallax</i>	3%	0.5 m	PI084.10	
<i>Corymbia hamersleyana</i>	4%	2-4 m	PIRE01.01	
<i>Sporobolus australasicus</i>	1%	0.2 m	PI121.01	
<i>Triodia epactia</i>	5%	0.3 m	PI083.09	

APPENDIX G
MATRIX OF FLORA IN EACH SITE –
CURRENT SURVEY

PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT
APPENDIX G
FLORA MATRIX

Table with columns for Species and sites (PI004 to PI120) grouped by vegetation types: Mangroves, Dune C, Dune D, Samphire B, Limestone, Grassland A, Grassland B, MOLA, MDLB, MDLO. The table contains presence (+) and absence (-) data for various plant species across these sites.



PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT
APPENDIX G
FLORA MATRIX

Table with columns: Species, MDE, Sandplain A (P1009-P1025), Sandplain B (P1026-P1033), Sandplain C (P1034-P1053). Rows list various plant species like Abutilon ligatum, Acaecia spirocarpa, etc., with presence/absence data across the sites.



PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT
APPENDIX G
FLORA MATRIX

Table with columns for Species, Sandplain H (P1056-P1108), Sandplain I (P1109-P1136), and Sandplain K (P1137-P1154). Rows list various plant species such as Abutilon bipartitum, Acaia calce, and Adiantum species, with corresponding presence and percentage data across the sites.



PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT
APPENDIX G
FLORA MATRIX

Species	Sandplain B													Sandplain S												
	P1145	P1030	P1024	P1074	P1075	P1076	P1077	P1078	P1082	P1088	P1089	P1090	P1091	P1141	P1149	P1123	P1125	P1139	P1140	P1142	PIR151	P1152	P1160	PIR101	PIR103	
<i>Solanum diversifolium</i>				+																						
<i>Solanum ellipticum</i>			+	+																						
<i>Solanum lasiochylum</i>						+				+	+												+			
<i>Sorghum plumetum</i>																							+			
<i>Sorghum</i> sp.																										
<i>Spinifex longifolius</i>																										
<i>Sporobolus eschscholoides</i>																										
<i>Sporobolus australasicus</i>	+			+				+									+	+	+				+	+	1%	+
<i>Sporobolus virginicus</i>																										
<i>Stachytarix alternata</i>																										
<i>Stachytarix muricata</i>																										
<i>Stemodia stricta</i>																										
<i>Stemodia lathraea</i>																										
<i>Stemodia viscosa</i>																										
<i>Stemodia decurrens</i>																										
<i>Stemodia squamea</i>																										
<i>Styidium diesthorum</i>																										
* <i>Stylidium homale</i>																										
<i>Swainsona formosa</i>																										
<i>Swainsona binata</i>																										
<i>Swainsona pterostylis</i>																										
<i>Swainsona lateralis</i> var. <i>lateralis</i>																										
<i>Tectocoma parvifolia</i>																										
<i>Tectocoma habrocomoides</i> subsp. <i>tenax</i>																										
<i>Tectocoma media</i> subsp. <i>hides</i>																										
<i>Tectocoma</i> sp. Dennis Crossing (C.A. Shepherd & J. English KS 532)																										
<i>Tephrosia leptocoma</i>																										
<i>Tephrosia rosea</i>																										
<i>Tephrosia rosea</i> var. <i>oleifolia</i>																										
<i>Tephrosia rosea</i> var. <i>glaberrima</i>																										
<i>Tephrosia rosea</i> var. <i>rosea</i>																										
<i>Tephrosia rosea</i> var. <i>umbellata</i>																										
<i>Tephrosia simplicifolia</i>																										
<i>Tephrosia</i> sp. B Kimberley Flora (C.A. Gardner 7310)																										
<i>Tephrosia supina</i>																										
<i>Tephrosia umbellata</i>																										
<i>Threlkeldia diffusa</i>																										
<i>Trinagania umbellata</i>																										
<i>Trinagania ciliolata</i> subsp. <i>oleifolia</i>																										
<i>Trinagania glasshooperi</i>																										
<i>Trinagania glabra</i>																										
<i>Trinagania frutescens</i>																										
<i>Tribulus angustifolius</i>																										
<i>Tribulus tinctorius</i>																										
<i>Tribulus microcarpus</i>																										
<i>Tribulus occidentalis</i>																										
<i>Trichodesma zeyherianum</i> var. <i>zeyherianum</i>																										
<i>Tricornis cornufoedus</i>																										
<i>Trifolium gracile</i>	4%	2%	55%	20%		5%	30%	60%	+	20%	10%		4%	40%	20%	10%	8%	5%	5%	5%	+	+	18%	5%	5%	
<i>Trifolium tangierae</i>	4%		2%	28%	20%	15%	30%	60%		20%							6%	3%	5%	5%			5%	2%		
<i>Trifolium scaberrimum</i>																										
<i>Trifolium secundum</i>																										
<i>Trumfetteria stricta</i>																										
<i>Trumfetteria ciliolata</i>																										
<i>Trumfetteria rosea</i>																										
<i>Urochloa holosericea</i> subsp. <i>velutina</i>																										
* <i>Urochloa hagensis</i>																										
<i>Vigna lanceolata</i> var. <i>filiiformis</i>																										
<i>Vigna lanceolata</i> var. <i>lanceolata</i>																										
<i>Wahlenbergia tumidiflora</i>																										
<i>Wolffera hirta</i>																										
<i>Wolffera caudata</i>																										
<i>Xerochloa laniflora</i>																										
<i>Xerochloa australiensis</i> var. <i>australensis</i>	+	+	+	+	+	+		+	+	+	+	+	+	+	+		+	+	+	+	+		+	+		
<i>Zornia muelleriana</i>																										

APPENDIX H

FLORA INVENTORY – ALL SURVEYS

PORT HEDLAND FLORA AND VEGETATION ASSESSMENT

APPENDIX H

FLORA INVENTORY FROM ALL SURVEYS

Family	Species Name	Conservation Status	Current Survey	Biota 2005	Biota 2006a	Biota 2006b	ENV 2006a	ENV 2006b	ENV 2006c	ENV 2006d	ENV 2006e	ENV 2006f	ENV 2006g	ENV 2006h	ENV 2006i	ENV 2006j	ENV 2006k	ENV 2006l	ENV 2006m	ENV 2006n	ENV 2006o	Mala 2010	Shepherd 2009	Woodman 2011
Acanthaceae	<i>Avicennia marina</i>		v		v		v	v																
Aizoaceae	<i>Sesuvium portulacastrum</i>		v				v	v																
Aizoaceae	<i>Trianthema glossostigma</i>		v				v																	
Aizoaceae	<i>Trianthema oxycalypta</i> var. <i>oxycalypta</i>						v																	
Aizoaceae	<i>Trianthema pilosa</i>		v	v			v																	
Aizoaceae	<i>Trianthema triquetra</i>		v				v																	
Aizoaceae	<i>Trianthema turgidifolia</i>			v	v	v	v	v	v															
Amaranthaceae	<i>Achyranthes aspera</i>		v				v	v																
Amaranthaceae	<i>*Aerva javanica</i>		v	v	v	v	v	v	v	v		v	v	v	v	v	v	v	v	v	v	v	v	v
Amaranthaceae	<i>Alternanthera angustifolia</i>		v				v	v	v															
Amaranthaceae	<i>Alternanthera nana</i>		v				v	v	v															
Amaranthaceae	<i>Amaranthus clementii</i>																							
Amaranthaceae	<i>Amaranthus mitchellii</i>																							
Amaranthaceae	<i>Amaranthus</i> sp. indet.						v																	
Amaranthaceae	<i>Amaranthus undulatus</i>		v	v			v	v																
Amaranthaceae	<i>Gomphrena affinis</i> subsp. <i>pitborensis</i>																							
Amaranthaceae	<i>Gomphrena canescens</i>																							
Amaranthaceae	<i>Gomphrena canescens</i> subsp. <i>canescens</i>						v	v	v															
Amaranthaceae	<i>Gomphrena cunninghamii</i>																							
Amaranthaceae	<i>Gomphrena leptoclada</i> subsp. <i>leptoclada</i>																							
Amaranthaceae	<i>Gomphrena leptophylla</i>		P3																					
Amaranthaceae	<i>Gomphrena pusilla</i>		P2																					
Amaranthaceae	<i>Gomphrena sordida</i>																							
Amaranthaceae	<i>Gomphrena sp. indet.</i>																							
Amaranthaceae	<i>Gomphrena tenella</i>																							
Amaranthaceae	<i>Hemichoo glandra</i>						v	v	v															
Amaranthaceae	<i>Ptilotus aevoides</i>																							
Amaranthaceae	<i>Ptilotus ortholobus</i>		v	v																				
Amaranthaceae	<i>Ptilotus astrolobus</i>		v	v																				
Amaranthaceae	<i>Ptilotus auriculifolius</i>		v	v																				
Amaranthaceae	<i>Ptilotus axillaris</i>		v	v																				
Amaranthaceae	<i>Ptilotus calostachyus</i>		v	v																				
Amaranthaceae	<i>Ptilotus exaltatus</i>		v	v																				
Amaranthaceae	<i>Ptilotus exaltatus</i> var. <i>exaltatus</i>																							
Amaranthaceae	<i>Ptilotus fusiformis</i>		v	v																				
Amaranthaceae	<i>Ptilotus gaudichaudii</i> var. <i>gaudichaudii</i>																							
Amaranthaceae	<i>Ptilotus gomphrenoides</i>																							
Amaranthaceae	<i>Ptilotus incanus</i>																							
Amaranthaceae	<i>Ptilotus murrayi</i>		v																					
Amaranthaceae	<i>Ptilotus petiolatus</i>																							
Amaranthaceae	<i>Ptilotus polystachyus</i>		v	v																				
Apocynaceae	<i>Carissa lanceolata</i>		v	v																				
Apocynaceae	<i>Cynanchum floribundum</i>		v	v																				
Apocynaceae	<i>Cynanchum</i> sp.																							
Apocynaceae	<i>Gymnanthera cunninghamii</i>		P3																					
Apocynaceae	<i>Sarcostemma viminale</i> subsp. <i>australe</i>		v																					
Araliaceae	<i>Trachymene oleracea</i> subsp. <i>oleracea</i>		v	v																				
Arecaceae	<i>*Washingtonia filifera</i>																							
Asparagaceae	<i>*Yucca aloifolia</i>																							
Asphodelaceae	<i>*Aloe vera</i>																							
Asteraceae	<i>Blumea tenella</i>		v																					
Asteraceae	<i>Centipeda minima</i> subsp. <i>macrocephala</i>																							
Asteraceae	<i>*Flaveria trinervia</i>		v																					
Asteraceae	<i>Peripleura arida</i>																							
Asteraceae	<i>Pluchea dentata</i>																							
Asteraceae	<i>Pluchea Ferdinand-muelleri</i>																							
Asteraceae	<i>Pluchea rubelliflora</i>		v	v																				
Asteraceae	<i>Pluchea sp. B Kimberley Flora (K.F. Kenneally 9526A)</i>																							
Asteraceae	<i>Pluchea tetraanthra</i>		v	v	v	v	v	v	v	v		v	v	v	v	v	v	v	v	v	v	v	v	v
Asteraceae	<i>Pterocaulon ? serrulatum</i>		v																					
Asteraceae	<i>Pterocaulon serrulatum</i>		v																					
Asteraceae	<i>Pterocaulon sp. A Kimberley Flora (B.J. Carter 599)</i>		P3																					
Asteraceae	<i>Pterocaulon sp. indet.</i>																							
Asteraceae	<i>Pterocaulon sphacelatum</i>		v	v																				
Asteraceae	<i>Pterocaulon sphaeranthoides</i>		v	v	v	v	v	v	v	v		v	v											



PORT HEDLAND FLORA AND VEGETATION ASSESSMENT

APPENDIX H

FLORA INVENTORY FROM ALL SURVEYS

Family	Species Name	Conservation Status	Current Survey	Biota 2005	Biota 2005a	Biota 2005b	ENV 2005a	ENV 2005b	ENV 2005c	ENV 2005d	ENV 2005e	ENV 2005f	ENV 2005g	ENV 2005h	ENV 2005i	ENV 2005j	ENV 2005k	ENV 2005l	ENV 2005m	ENV 2005n	ENV 2005o	Mela 2010	Shepherd 2009	Woodman 2011	
Asteraceae	<i>Streptoglossa bubaki</i>		✓	✓			✓																	✓	
Asteraceae	<i>Streptoglossa decurrens</i>		✓	✓			✓		✓																✓
Asteraceae	<i>Streptoglossa odora</i>						✓											✓	✓						
Bigoniaceae	<i>Dalichantrone heterophylla</i>		✓	✓			✓		✓								✓	✓	✓				✓		
Boraginaceae	<i>Ehretia saligna</i> var. <i>saligna</i>		✓				✓			✓															✓
Boraginaceae	<i>Heliotropium chrysocarpum</i>						✓																		
Boraginaceae	<i>Heliotropium conocarum</i>			✓																					
Boraginaceae	<i>Heliotropium crispatum</i>		✓	✓																					✓
Boraginaceae	<i>Heliotropium cunninghamii</i>		✓	✓					✓																
Boraginaceae	<i>Heliotropium fallatum</i>																						✓		
Boraginaceae	<i>Heliotropium heteranthum</i>			✓																					✓
Boraginaceae	<i>Heliotropium inexplatum</i>			✓																					
Boraginaceae	<i>Heliotropium muticum</i>	P1	✓				✓						✓												✓
Boraginaceae	<i>Heliotropium ovalifolium</i>		✓														✓								
Boraginaceae	<i>Heliotropium pachyphyllum</i>			✓																					✓
Boraginaceae	<i>Heliotropium</i> sp. indet.						✓																		
Boraginaceae	<i>Heliotropium tenuifolium</i>		✓	✓																					✓
Boraginaceae	<i>Trichodesma zeylanicum</i> var. <i>grandiflorum</i>						✓																		
Boraginaceae	<i>Trichodesma zeylanicum</i> var. <i>zeylanicum</i>		✓	✓																					
Byblidaceae	<i>Byblis filifolia</i>					✓																			
Byblidaceae	<i>Byblis liniflora</i>						✓											✓							
Cactaceae	* <i>Opuntia stricta</i>																					✓			✓
Campanulaceae	<i>Wahlenbergia tumidiflora</i>		✓	✓			✓																✓		
Caryophyllaceae	<i>Polycarpon corymbosum</i> var. <i>corymbosum</i>		✓	✓			✓																		✓
Caryophyllaceae	<i>Polycarpon holtzii</i>		✓																						
Caryophyllaceae	<i>Polycarpon longiflora</i>		✓					✓																	
Caryophyllaceae	* <i>Vaccaria hispanica</i>		✓																						
Casuarinaceae	<i>Casuarina obesa</i>																					✓			
Celastraceae	<i>Stackhousia intermedia</i>		✓				✓																		✓
Celastraceae	<i>Stackhousia muricata</i>		✓																						
Centrolepidaceae	<i>Centrolepis banksii</i>																								✓
Chenopodiaceae	<i>Atriplex codonocarpa</i>		✓	✓																					
Chenopodiaceae	<i>Atriplex</i> sp. indet.																								✓
Chenopodiaceae	<i>Dysphania kalpuri</i>		✓							✓													✓		
Chenopodiaceae	<i>Dysphania platanifolia</i>			✓			✓																		✓
Chenopodiaceae	<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>			✓			✓																		✓
Chenopodiaceae	<i>Dysphania saxatilis</i>		✓																						
Chenopodiaceae	<i>Dysphania</i> sp. indet.																								✓
Chenopodiaceae	<i>Dysphania sphaerosperma</i>																								
Chenopodiaceae	<i>Enchlytaea tomentosa</i> var. <i>tomentosa</i>			✓			✓	✓		✓			✓												✓
Chenopodiaceae	<i>Maireana</i> sp. indet.																								
Chenopodiaceae	<i>Maireana tomentosa</i>		✓																						
Chenopodiaceae	<i>Neobassia astrocarpa</i>		✓	✓	✓	✓	✓	✓	✓																✓
Chenopodiaceae	<i>Rhagodia eremaea</i>		✓	✓			✓			✓															✓
Chenopodiaceae	<i>Salsola australis</i>																								
Chenopodiaceae	<i>Salsola tragus</i> subsp. <i>grandiflora</i>		✓	✓			✓		✓				✓	✓							✓	✓	✓		✓
Chenopodiaceae	<i>Scleroaena densiflora</i>																								
Chenopodiaceae	<i>Scleroaena hostilis</i>																								
Chenopodiaceae	<i>Scleroaena</i> sp. indet.																								
Chenopodiaceae	<i>Suaeda arbusculoides</i>						✓	✓	✓																✓
Chenopodiaceae	<i>Tecticornia auriculata</i>		✓																						✓
Chenopodiaceae	<i>Tecticornia halocnemoides</i>																								✓
Chenopodiaceae	<i>Tecticornia halocnemoides</i> subsp. <i>catenulata</i>																								
Chenopodiaceae	<i>Tecticornia halocnemoides</i> subsp. <i>tenuis</i>		✓	✓	✓	✓			✓	✓															✓
Chenopodiaceae	<i>Tecticornia indica</i> subsp. <i>bidens</i>		✓																						✓
Chenopodiaceae	<i>Tecticornia indica</i> subsp. <i>leioleptophylla</i>			✓	✓	✓	✓	✓	✓	✓															✓
Chenopodiaceae	<i>Tecticornia pergranulata</i>																								
Chenopodiaceae	<i>Tecticornia pergranulata</i> subsp. <i>elongata</i>			✓																					✓
Chenopodiaceae	<i>Tecticornia pruinosa</i>																								
Chenopodiaceae	<i>Tecticornia pterygosperra</i> subsp. <i>denticulata</i>																								
Chenopodiaceae	<i>Tecticornia</i> sp. Denys Crossing (R.A. Shepherd & J. English)		✓																						
Chenopodiaceae	<i>Tecticornia</i> sp. indet.																					✓	✓	✓	✓
Chenopodiaceae	<i>Threlkeldia diffusa</i>		✓																						
Cleomeaceae	<i>Cleome unclifera</i> subsp. <i>unclifera</i>																								✓
Cleomeaceae	<i>Cleome viscosa</i>		✓	✓				✓		✓															✓



PORT HEDLAND FLORA AND VEGETATION ASSESSMENT

APPENDIX H

FLORA INVENTORY FROM ALL SURVEYS

Family	Species Name	Conservation Status	Current Survey	Biota 2005	Biota 2006a	Biota 2006b	ENV 2006a	ENV 2006b	ENV 2006c	ENV 2006d	ENV 2006e	ENV 2006f	ENV 2006g	ENV 2006h	ENV 2006i	ENV 2006j	ENV 2006k	ENV 2006l	ENV 2006m	ENV 2006n	ENV 2006o	Mala 2010	Shepherd 2009	Woodman 2011
Malvaceae	<i>Triumfetta choetocarpa</i>		✓	✓	✓	✓	✓	✓															✓	
Malvaceae	<i>Triumfetta clementii</i>		✓																					
Malvaceae	<i>Triumfetta ramosa</i>		✓	✓																			✓	
Malvaceae	<i>Waltheria indica</i>		✓	✓	✓		✓	✓								✓							✓	✓
Marsileaceae	<i>Marsilea drummondii</i>																							
Marsileaceae	<i>Marsilea hirsuta</i>		✓				✓																✓	
Marsileaceae	<i>Marsilea mutica</i>		✓																					
Melastomaceae	<i>Owenia reticulata</i>		✓				✓												✓					
Menispermaceae	<i>Tinospora smilacina</i>		✓	✓			✓	✓								✓	✓							
Molluginaceae	<i>Glinus lotoides</i>						✓																	
Molluginaceae	<i>Mollugo cervina</i>															✓								
Molluginaceae	<i>Mollugo molluginea</i>		✓	✓	✓	✓	✓	✓				✓	✓	✓	✓							✓		✓
Moraceae	<i>Ficus brachypoda</i>						✓																	
Moraceae	<i>Ficus aculeata</i>			✓																				
Myrtaceae	<i>Corymbia candida</i> subsp. <i>dipsodes</i>		✓						✓															✓
Myrtaceae	<i>Corymbia flavescens</i>						✓	✓																
Myrtaceae	<i>Corymbia hamersleyana</i>		✓	✓			✓	✓	✓														✓	
Myrtaceae	<i>Corymbia</i> sp. indet.						✓																	
Myrtaceae	<i>Corymbia zygophylla</i>		✓				✓																✓	
Myrtaceae	<i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i>		✓		✓			✓							✓					✓				
Myrtaceae	<i>Eucalyptus victrix</i>		✓	✓			✓																	
Myrtaceae	<i>Eucalyptus verothermica</i>		✓				✓																	
Myrtaceae	<i>Melaleuca argentea</i>		✓	✓			✓																	
Myrtaceae	<i>Melaleuca glomerata</i>		✓	✓			✓																	
Myrtaceae	<i>Melaleuca lasiantha</i>		✓				✓		✓															
Myrtaceae	<i>Melaleuca linophylla</i>		✓													✓								
Nyctaginaceae	<i>Boerhavia coccinea</i>		✓	✓		✓	✓															✓		✓
Nyctaginaceae	<i>Boerhavia gardneri</i>				✓																			✓
Nyctaginaceae	<i>Boerhavia reptans</i>					✓										✓								✓
Nyctaginaceae	<i>Boerhavia</i> sp. indet.						✓																	✓
Groenlandaceae	<i>Stringa squamigera</i>		✓				✓																	
Phrymaceae	<i>Mimulus gracilis</i>		✓					✓																
Phrymaceae	<i>Mimulus uvedaliae</i> var. <i>uvedaliae</i>		✓																					
Phrymaceae	<i>Peplidium ? muelleri</i>		✓																					
Phrymaceae	<i>Peplidium</i> sp. indet.																							✓
Phyllanthaceae	<i>Flueggea virosa</i> subsp. <i>melanthesoides</i>		✓																					
Phyllanthaceae	<i>Notoleptopus decosine</i>			✓																				
Phyllanthaceae	<i>Notoleptopus decosine</i> var. <i>orbicularis</i>							✓																
Phyllanthaceae	<i>Phyllanthus erwinii</i>		✓																					
Phyllanthaceae	<i>Phyllanthus exilis</i>						✓																	
Phyllanthaceae	<i>Phyllanthus moderaspotensis</i>		✓	✓			✓		✓															✓
Plantaginaceae	<i>Stemodia grossa</i>		✓	✓	✓	✓	✓									✓								✓
Plantaginaceae	<i>Stemodia latraia</i>		✓				✓																	✓
Plantaginaceae	<i>Stemodia viscosa</i>		✓																					
Plumbaginaceae	<i>Muellerlimonia salicorniaceum</i>		✓			✓	✓	✓	✓															✓
Poaceae	<i>Aristida contorta</i>		✓				✓		✓							✓	✓							✓
Poaceae	<i>Aristida halathera</i> var. <i>halathera</i>		✓	✓		✓	✓	✓	✓							✓	✓			✓	✓	✓	✓	✓
Poaceae	<i>Aristida halathera</i> var. <i>latifolia</i>						✓									✓								
Poaceae	<i>Aristida hygrometrica</i>															✓								✓
Poaceae	<i>Aristida inaequalum</i>		✓				✓																	✓
Poaceae	<i>Aristida ingrata</i>						✓		✓															
Poaceae	<i>Aristida</i> sp. indet.						✓	✓																
Poaceae	* <i>Cenchrus ciliaris</i>		✓	✓	✓	✓	✓	✓	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Poaceae	* <i>Cenchrus setiger</i>			✓	✓	✓																		✓
Poaceae	* <i>Chloris barbata</i>			✓																				✓
Poaceae	<i>Chloris pectinata</i>		✓																					
Poaceae	<i>Chloris pumilio</i>			✓			✓																	✓
Poaceae	* <i>Chloris virgata</i>				✓	✓	✓	✓	✓															✓
Poaceae	<i>Chrysopogon fallax</i>		✓	✓			✓	✓								✓	✓	✓	✓	✓			✓	✓
Poaceae	* <i>Cynodon doctylon</i>				✓		✓																	✓
Poaceae	<i>Cymbopogon ambiguus</i>								✓															✓



PORT HEDLAND FLORA AND VEGETATION ASSESSMENT

APPENDIX H

FLORA INVENTORY FROM ALL SURVEYS

Family	Species Name	Conservation Status	Current Survey	Biota 2006	Biota 2006a	Biota 2006b	ENV 2006a	ENV 2006b	ENV 2006c	ENV 2006d	ENV 2006e	ENV 2006f	ENV 2006g	ENV 2006h	ENV 2006i	ENV 2006j	ENV 2006k	ENV 2006l	ENV 2006m	ENV 2006n	ENV 2006o	ENV 2006p	ENV 2006q	ENV 2006r	ENV 2006s	ENV 2006t	ENV 2006u	ENV 2006v	ENV 2006w	ENV 2006x	ENV 2006y	ENV 2006z	Mala 2010	Shepherd 2009	Woodman 2011		
Thymelaeaceae	<i>Pimelea amnochoris</i>		√		√	√	√	√	√	√																											
Violaceae	<i>Hybanthus aurantiacus</i>		√	√	√	√	√	√	√	√																											
Zygophyllaceae	<i>Tribulopsis angustifolia</i>		√	√			√																														
Zygophyllaceae	<i>Tribulus hirsutus</i>		√	√																																	
Zygophyllaceae	<i>Tribulus hystrix</i>			√																																	
Zygophyllaceae	<i>Tribulus macrocarpus</i>		√																																		
Zygophyllaceae	<i>Tribulus occidentalis</i>		√				√	√	√																												
Zygophyllaceae	<i>Tribulus sp. indet.</i>		√					√																													



APPENDIX I
FLORA INVENTORY – NATURE MAP
DATABASE SEARCH

PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT

APPENDIX I

FLORA INVENTORY FROM NATUREMAP DATABASE SEARCH

Species
<i>Abutilon dioicum</i>
<i>Abutilon lepidum</i>
<i>Abutilon macrum</i>
<i>Abutilon otocarpum</i>
<i>Abutilon pritzelianum</i> (Priority 1)
<i>Acacia acradenia</i>
<i>Acacia ancistrocarpa</i>
<i>Acacia arida</i>
<i>Acacia bivenosa</i>
<i>Acacia bivenosa</i> x <i>sclerosperma</i> subsp. <i>sclerosperma</i>
<i>Acacia colei</i> var. <i>colei</i>
<i>Acacia coriacea</i> subsp. <i>pendens</i>
<i>Acacia dictyophleba</i>
<i>Acacia inaequilatera</i>
<i>Acacia maitlandii</i>
<i>Acacia melleodora</i>
<i>Acacia orthocarpa</i>
<i>Acacia proxima</i>
<i>Acacia pyrifolia</i> var. <i>morrisonii</i>
<i>Acacia pyrifolia</i> var. <i>pyrifolia</i>
<i>Acacia robeorum</i>
<i>Acacia sabulosa</i>
<i>Acacia sclerosperma</i> subsp. <i>sclerosperma</i>
<i>Acacia sericophylla</i>
<i>Acacia sphaerostachya</i>
<i>Acacia stellaticeps</i>
<i>Acacia synchronicia</i>
<i>Acacia trachycarpa</i>
<i>Acacia tumida</i> var. <i>pilbarensis</i>
<i>Achyranthes aspera</i>
<i>Actinobole uliginosum</i>
<i>Adriana tomentosa</i>
<i>Adriana tomentosa</i> var. <i>tomentosa</i>
<i>Aegiceras</i>
* <i>Aerva javanica</i>
<i>Albizia lebbek</i>
<i>Alysicarpus muelleri</i>

Species
<i>Amaranthus pallidiflorus</i>
<i>Amaranthus</i> sp.
<i>Amyema preissii</i>
<i>Andropogon gayanus</i>
* <i>Argemone ochroleuca</i> subsp. <i>ochroleuca</i>
<i>Aristida holathera</i>
<i>Aristida holathera</i> var. <i>holathera</i>
<i>Aristida hygrometrica</i>
<i>Aristida inaequiglumis</i>
<i>Asparagopsis taxiformis</i>
<i>Atalaya hemiglauca</i>
<i>Atriplex semilunaris</i>
<i>Avicennia marina</i>
<i>Avicennia marina</i> subsp. <i>marina</i>
<i>Boerhavia coccinea</i>
<i>Bonamia alatisemina</i>
<i>Bonamia erecta</i>
<i>Bonamia linearis</i>
<i>Bonamia media</i>
<i>Bonamia rosea</i>
<i>Bonamia</i> sp.
<i>Bothriochloa ewartiana</i>
<i>Bruguiera exaristata</i>
<i>Bulbostylis barbata</i>
<i>Cajanus acutifolius</i>
<i>Cajanus cinereus</i>
<i>Cajanus marmoratus</i>
<i>Cajanus pubescens</i>
<i>Calandrinia quadrivalvis</i>
<i>Calandrinia</i> sp. Pinga (T.R. Lally TRL 722)
<i>Calandrinia stagnensis</i>
<i>Calotis hispidula</i>
<i>Canavalia rosea</i>
<i>Capparis spinosa</i> var. <i>nummularia</i>
<i>Carissa lanceolata</i>
<i>Cassytha capillaris</i>
<i>Cassytha filiformis</i>
<i>Caulerpa brachypus</i>
<i>Caulerpa lentillifera</i>
<i>Caulerpa peltata</i>
<i>Caulerpa racemosa</i> var. <i>lamourouxii</i>
<i>Caulerpa sertularioides</i>
* <i>Cenchrus ciliaris</i>
<i>Ceriops tagal</i>
<i>Chamaecrista symonii</i>

Species
<i>*Chloris barbata</i>
<i>*Chloris virgata</i>
<i>Chrysocephalum apiculatum</i>
<i>Chrysopogon fallax</i>
<i>Cleome uncifera</i>
<i>Cleome uncifera</i> subsp. <i>uncifera</i>
<i>Cleome viscosa</i>
<i>*Coccinia grandis</i>
<i>Codonocarpus cotinifolius</i>
<i>Commelina ensifolia</i>
<i>Convolvulus</i> sp.
<i>Corchorus carnarvonensis</i>
<i>Corchorus elachocarpus</i>
<i>Corchorus incanus</i>
<i>Corchorus incanus</i> subsp. <i>incanus</i>
<i>Corchorus walcottii</i>
<i>Corymbia aspera</i>
<i>Corymbia candida</i>
<i>Corymbia candida</i> / <i>flavescens</i>
<i>Corymbia candida</i> subsp. <i>lautifolia</i>
<i>Corymbia flavescens</i>
<i>Corymbia hamersleyana</i>
<i>Corymbia opaca</i>
<i>Corymbia zygophylla</i>
<i>Corynotheca micrantha</i>
<i>Corynotheca pungens</i>
<i>Corynotheca</i> sp.
<i>Crotalaria cunninghamii</i>
<i>Crotalaria cunninghamii</i> subsp. <i>sturtii</i>
<i>Crotalaria dissitiflora</i> subsp. <i>benthamiana</i>
<i>Crotalaria medicaginea</i> var. <i>neglecta</i>
<i>Crotalaria ramosissima</i>
<i>Cucumis maderaspatanus</i>
<i>Cullen lachnostachys</i>
<i>Cullen leucanthum</i>
<i>Cullen leucochaites</i>
<i>Cullen martinii</i>
<i>Cullen stipulaceum</i>
<i>Cymbopogon bombycinus</i>
<i>Cyperus blakeanus</i>
<i>Cyperus bulbosus</i>
<i>Cyperus</i> sp.
<i>Cyperus squarrosus</i>
<i>Dactyloctenium radulans</i>
<i>Davenportia davenportii</i>

Species
<i>Dentella asperata</i>
<i>Desmodium filiforme</i>
* <i>Desmodium scorpiurus</i>
<i>Digitaria ciliaris</i>
<i>Digitaria</i> sp.
<i>Dissocarpus paradoxus</i>
<i>Dodonaea coriacea</i>
<i>Dolichandrone heterophylla</i>
<i>Dysphania plantaginella</i>
<i>Dysphania rhadinostachya</i> subsp. <i>rhadinostachya</i>
<i>Enchylaena tomentosa</i> var. <i>tomentosa</i>
<i>Enneapogon lindleyanus</i>
<i>Enneapogon polyphyllus</i>
<i>Enneapogon purpurascens</i>
<i>Enteropogon ramosus</i>
<i>Eragrostis cumingii</i>
<i>Eragrostis dielsii</i>
<i>Eragrostis eriopoda</i>
<i>Eragrostis falcata</i>
<i>Eragrostis</i> sp.
<i>Eragrostis speciosa</i>
<i>Eremophila cuneifolia</i>
<i>Eriachne aristidea</i>
<i>Eriachne ciliata</i>
<i>Eriachne gardneri</i>
<i>Eriachne glauca</i>
<i>Eriachne helmsii</i>
<i>Eriachne mucronata</i>
<i>Eriachne obtusa</i>
<i>Eriachne pulchella</i>
<i>Eriachne</i> sp.
<i>Eucalyptus camaldulensis</i> subsp. <i>refulgens</i>
<i>Eucalyptus victrix</i>
<i>Eulalia aurea</i>
<i>Euphorbia australis</i>
<i>Euphorbia australis</i> var. <i>subtomentosa</i>
<i>Euphorbia biconvexa</i>
<i>Euphorbia coghlanii</i>
<i>Euphorbia mitchelliana</i>
<i>Euphorbia myrtoides</i>
<i>Euphorbia tannensis</i> subsp. <i>eremophila</i>
* <i>Euphorbia tirucalli</i>
<i>Evolvulus alsinoides</i> var. <i>villosicalyx</i>
<i>Ficus aculeata</i> var. <i>indecora</i>
<i>Ficus brachypoda</i>

Species
<i>Fimbristylis neilsonii</i>
* <i>Flaveria trinervia</i>
<i>Frankenia ambita</i>
<i>Frankenia</i> sp.
<i>Glinus oppositifolius</i>
<i>Glycine</i> sp.
<i>Gomphrena canescens</i> subsp. <i>canescens</i>
* <i>Gomphrena celosioides</i>
<i>Gomphrena cucullata</i> (Priority 2)
<i>Gomphrena cunninghamii</i>
<i>Gomphrena leptoclada</i>
<i>Gomphrena pusilla</i> (Priority 2)
<i>Goodenia armitiana</i>
<i>Goodenia forrestii</i>
<i>Goodenia lamprosperma</i>
<i>Goodenia microptera</i>
<i>Goodenia nuda</i> (Priority 4)
<i>Goodenia scaevolina</i>
<i>Goodenia sepalosa</i> var. <i>sepalosa</i>
<i>Goodenia stobbsiana</i>
<i>Gossypium australe</i>
<i>Gossypium hirsutum</i>
<i>Grevillea pyramidalis</i>
<i>Gymnanthera cunninghamii</i> (Priority 3)
<i>Haloragis gosseii</i>
<i>Helichrysum luteoalbum</i>
<i>Heliotropium crispatum</i>
<i>Heliotropium cunninghamii</i>
<i>Heliotropium foliatum</i>
<i>Heliotropium inexplicitum</i>
<i>Heliotropium muticum</i> (Priority 1)
<i>Heliotropium pachyphyllum</i>
<i>Heliotropium transforme</i>
<i>Hemichroa diandra</i>
<i>Hibiscus austrinus</i> var. <i>austrinus</i>
<i>Hibiscus brachychlaenus</i>
<i>Hibiscus goldsworthii</i>
<i>Hibiscus leptocladus</i>
<i>Hibiscus sturtii</i> var. <i>campylochlamys</i>
<i>Hybanthus aurantiacus</i>
<i>Indigastrum parviflorum</i>
<i>Indigofera colutea</i>
<i>Indigofera hirsuta</i>
<i>Indigofera hochstetteri</i>
<i>Indigofera linifolia</i>

Species
<i>Indigofera linnaei</i>
<i>Indigofera monophylla</i>
* <i>Indigofera oblongifolia</i>
* <i>Indigofera sessiliflora</i>
<i>Indigofera trita</i>
<i>Ipomoea muelleri</i>
<i>Ipomoea pes-caprae</i> subsp. <i>brasiliensis</i>
<i>Ipomoea polymorpha</i>
<i>Iseilema membranaceum</i>
<i>Isotropis atropurpurea</i>
* <i>Jatropha gossypifolia</i>
<i>Keraudrenia nephrosperma</i>
<i>Keraudrenia velutina</i> subsp. <i>elliptica</i>
<i>Lamarckia aurea</i>
<i>Leptosema anomalum</i>
<i>Leucaena leucocephala</i>
<i>Melaleuca argentea</i>
<i>Melaleuca lasiandra</i>
<i>Melhania oblongifolia</i>
<i>Mollugo molluginea</i>
<i>Muellerolimon salicorniaceum</i>
<i>Myoporum montanum</i>
<i>Neobassia astrocarpa</i>
<i>Neptunia dimorphantha</i>
<i>Nicotiana benthamiana</i>
<i>Nicotiana occidentalis</i> subsp. <i>occidentalis</i>
<i>Operculina aequisejala</i>
<i>Osbornia octodonta</i>
<i>Owenia reticulata</i>
<i>Panicum decompositum</i>
<i>Parkinsonia aculeata</i>
<i>Paspalidium basicladum</i>
<i>Paspalidium clementii</i>
* <i>Paspalum fasciculatum</i>
* <i>Pennisetum setaceum</i>
<i>Perotis rara</i>
<i>Petalostylis labicheoides</i>
<i>Phyllanthus maderaspatensis</i>
<i>Pimelea ammocharis</i>
<i>Pittosporum angustifolium</i>
<i>Pluchea ferdinandi-muelleri</i>
<i>Pluchea rubelliflora</i>
<i>Pluchea tetranthera</i>
<i>Polycarpaea corymbosa</i>
<i>Polycarpaea corymbosa</i> var. <i>corymbosa</i>

Species
<i>Polycarpaea involucrata</i>
<i>Polycarpaea longiflora</i>
<i>Polycarpaea</i> sp.
<i>Polymeria ambigua</i>
<i>Polymeria distigma</i> (Priority 3)
<i>Polymeria lanata</i>
<i>Portulaca australis</i>
* <i>Portulaca oleracea</i>
<i>Portulaca pilosa</i>
<i>Portulaca pilosa</i> subsp. <i>decipiens</i>
<i>Pterocaulon sphacelatum</i>
<i>Ptilotus appendiculatus</i> var. <i>minor</i> (Priority 1)
<i>Ptilotus arthrolasius</i>
<i>Ptilotus astrolasius</i>
<i>Ptilotus axillaris</i>
<i>Ptilotus calostachyus</i>
<i>Ptilotus clementii</i>
<i>Ptilotus divaricatus</i> var. <i>divaricatus</i>
<i>Ptilotus exaltatus</i>
<i>Ptilotus fusiformis</i>
<i>Ptilotus incanus</i>
<i>Ptilotus villosiflorus</i>
* <i>Pupalia lappacea</i>
<i>Rhagodia eremaea</i>
<i>Rhizophora stylosa</i>
<i>Rhynchosia minima</i>
<i>Riccia crystallina</i>
* <i>Ricinus communis</i>
<i>Salsola tragus</i> subsp. <i>grandiflora</i>
<i>Scaevola amblyanthera</i> var. <i>centralis</i>
<i>Scaevola browniana</i>
<i>Scaevola crassifolia</i>
<i>Scaevola amblyanthera</i>
<i>Scaevola parvifolia</i> subsp. <i>parvifolia</i>
<i>Scaevola parvifolia</i> subsp. <i>pilbarae</i>
<i>Sclerolaena bicornis</i> var. <i>bicornis</i>
<i>Sclerolaena glabra</i>
<i>Sclerolaena hostilis</i>
<i>Sclerolaena</i> sp.
<i>Senna bicapsularis</i>
<i>Senna glutinosa</i> subsp. <i>glutinosa</i>
<i>Senna glutinosa</i> subsp. <i>pruinosa</i>
<i>Senna glutinosa</i> subsp. <i>x luerssenii</i>
<i>Senna notabilis</i>
* <i>Senna occidentalis</i>

Species
<i>Senna stricta</i>
<i>Senna venusta</i>
<i>Sesbania cannabina</i>
<i>Sesbania formosa</i>
<i>Sesuvium portulacastrum</i>
<i>Setaria dielsii</i>
* <i>Setaria sphacelata</i>
<i>Sida arenicola</i>
<i>Sida clementii</i>
<i>Sida echinocarpa</i>
<i>Sida rohlenae</i> subsp. <i>rohlenae</i>
<i>Sida</i> sp. B Kimberley Flora (A.A. Mitchell 2745)
<i>Sida</i> sp. Pilbara (A.A. Mitchell PRP 1543)
<i>Solanum diversiflorum</i>
<i>Solanum lucani</i>
<i>Solanum phlomoides</i>
<i>Sorghum plumosum</i>
<i>Sorghum stipoides</i>
<i>Spinifex longifolius</i>
<i>Sporobolus actinocladus</i>
<i>Stemodia viscosa</i>
<i>Streptoglossa adscendens</i>
<i>Streptoglossa decurrens</i>
<i>Streptoglossa liatroides</i>
<i>Streptoglossa macrocephala</i>
<i>Streptoglossa odora</i>
<i>Streptoglossa</i> sp.
<i>Stylidium adenophorum</i>
* <i>Stylosanthes guianensis</i>
<i>Suaeda arbusculoides</i>
<i>Swainsona decurrens</i>
<i>Swainsona pterostylis</i>
<i>Synaptantha tillaeacea</i> var. <i>tillaeacea</i>
<i>Tecticornia auriculata</i>
<i>Tecticornia halocnemoides</i>
<i>Tecticornia halocnemoides</i> subsp. <i>tenuis</i>
<i>Tecticornia indica</i>
<i>Tecticornia indica</i> subsp. <i>bidens</i>
<i>Tecticornia indica</i> subsp. <i>leiostachya</i>
<i>Tecticornia pterygosperma</i> subsp. <i>denticulata</i>
<i>Tephrosia clementii</i>
<i>Tephrosia rosea</i>
<i>Tephrosia rosea</i> var. <i>clementii</i>
<i>Tephrosia rosea</i> var. <i>glabrior</i>
<i>Tephrosia rosea</i> var. <i>rosea</i>

Species
<i>Tephrosia rosea</i> var. <i>venulosa</i> (Priority 1)
<i>Tephrosia</i> sp. B Kimberley Flora (C.A. Gardner 7300)
<i>Tephrosia</i> sp. Bungaroo Creek (M.E. Trudgen 11601)
<i>Themeda avenacea</i>
<i>Threlkeldia diffusa</i>
<i>Tinospora smilacina</i>
<i>Trianthema cussackiana</i>
<i>Trianthema pilosa</i>
* <i>Trianthema portulacastrum</i>
<i>Trianthema</i> sp.
<i>Trianthema triquetra</i>
<i>Trianthema turgidifolia</i>
<i>Tribulopsis angustifolia</i>
<i>Tribulus macrocarpus</i>
<i>Tribulus occidentalis</i>
<i>Trichodesma zeylanicum</i>
<i>Trichosanthes cucumerina</i> var. <i>cucumerina</i>
<i>Trigonella suavissima</i>
<i>Triodia basedowii</i>
<i>Triodia epactia</i>
<i>Triodia lanigera</i>
<i>Triodia longiceps</i>
<i>Triodia plurinervata</i>
<i>Triodia pungens</i>
<i>Triodia schinzii</i>
<i>Triodia secunda</i>
<i>Triraphis mollis</i>
<i>Triumfetta chaetocarpa</i>
<i>Triumfetta propinqua</i>
<i>Triumfetta ramosa</i>
<i>Triumfetta</i> sp.
<i>Udotea argentea</i>
<i>Velleia panduriformis</i>
<i>Vigna lanceolata</i>
<i>Vigna lanceolata</i> var. <i>lanceolata</i>
<i>Wahlenbergia tumidifructa</i>
<i>Waltheria indica</i>
<i>Whiteochloa cymbiformis</i>
<i>Xerochloa imberbis</i>
<i>Yakirra australiensis</i>
<i>Yakirra majuscula</i>
<i>Zornia muelleriana</i>

Department of Environment and Conservation [DEC] (2011a). NatureMap: Mapping Western Australia's Biodiversity. Department of Environment and Conservation and Western Australian Museum. Available from: <<http://naturemap.dec.wa.gov.au/>> [August 2011].

APPENDIX L
LOCATION OF INTRODUCED FLORA –
ALL SURVEYS

PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT

APPENDIX L

LOCATION OF INTRODUCED SPECIES – ALL SURVEYS

Species	Survey	# Easting	# Northing
<i>*Aerva javanica</i>	Current Survey (ENV 2011)	659705	7754027
		672084	7752590
		673706	7751702
		676635	7746825
		668315	7749630
		667432	7747570
		654401	7747340
		652988	7749119
		673038	7739789
		657079	7730724
		657477	7728418
		657268	7727390
		676737	7730289
		677694	7726952
655985	7736216		



Species	Survey	# Easting	# Northing
		659967	7724453
		659981	7754003
		676084	7722840
		661849	7743583
		661817	7743554
		655267	7738546
		656686	7728702
		656855	7728811
		669966	7737464
	<i>A Flora and Fauna Assessment of RGP5 Spoil Areas A and H, Port Hedland Harbour (Biota 2008a)</i>	661179	7749709
		661280	7749430
		661160	7749180
		660660	7748850
		661390	7749930
		661300	7749190
		666608	7747398
		665309	7748359
		665426	7747552
		665655	7747473
	<i>A Biodiversity Assessment of the Utah Point Berth Development Port Hedland. (Biota 2008b)</i>	663195	7752899
		662698	7752804
		662301	7752160



Species	Survey	# Easting	# Northing
		665457	7745475
		661751	7747994
		662264	7747391
		662446	7747381
		662415	7747202
		663661	7746502
		663555	7746590
		662747	7752935
		662938	7752961
		662632	7752774
		661826	7750538
		662047	7749210
		661796	7747918
		662317	7747519
		662241	7747541
		662239	7747736
		665356	7745543
		665312	7745556
		665215	7745614
	<i>Outer Harbour Development Flora and Vegetation Assessment (ENV 2009a)</i>	663418	7755032
		666330	7728728
		662801	7733770



Species	Survey	# Easting	# Northing
		661789	7733861
		658170	7735278
		657107	7737932
		671490	7729034
		661141	7734861
		663030	7735725
		657372	7741108
		662575	7754784
		661647	7747757
		662180	7747426
		660985	7745201
		660114	7749275
		661353	7744278
		661356	7737536
		673212	7720764
		673310	7720297
		666221	7729875
		666334	7731020
		662281	7754469
		662134	7754698
		661938	7754476
		662034	7754289



Species	Survey	# Easting	# Northing
		661708	7754401
		661343	7754341
		660982	7754227
		662029	7750390
		661153	7745186
		658122	7743956
		662404	7744427
		673066	7723588
		673119	7722137
	<i>Port Hedland Nelson Point Dredging Approvals Flora and Vegetation Assessment of DMMA H (ENV 2009b)</i>	665336	7747650
	<i>Goldsworthy Rail Duplication Flora and Vegetation Assessment (ENV 2009c)</i>	669797	7737903
		670162	7739936
		670476	7741101
		670752	7742100
		671028	7743096
		663681	7746492
		664536	7745995
		665528	7745418
		666342	7744952
		667355	7744625
		668417	7744459
		672222	7745579



Species	Survey	# Easting	# Northing
		670384	7740543
		670068	7739413
		669849	7738329
		669919	7737402
		670463	7735374
		670620	7734780
	<i>Boodarie Depot Flora and Vegetation Assessment (ENV 2009f)</i>	663483	7746511
		664355	7745911
		663840	7746310
		663944	7746252
	<i>Port Hedland Transmission Lines Flora & Fauna Assessment (ENV 2009g)</i>	662250	7740360
		654935	7730087
		654956	7730025
		653725	7729675
		653775	7729775
	<i>Wallwork Road Bridge Flora and Vegetation Assessment (ENV 2010a)</i>	667070	7745200
		667070	7744862
		667240	7744698
		667039	7744504
		665997	7744281
	<i>Goldsworthy Rail Development Supplemental Flora and Vegetation Assessment (ENV 2010b);</i>	671077	7743285
		671086	7743142



Species	Survey	# Easting	# Northing
		671486	7744160
		671464	7744180
	<i>Finucane Island to Wedgefield Flora and Vegetation Assessment (ENV 2010c)</i>	665174	7745886
		662160	7747364
		665135	7746170
	<i>Tug Harbour (Wedgefield) Flora and Vegetation Survey and Fauna Assessment (ENV 2010e)</i>	665174	7746329
		665218	7746826
		665331	7746221
		665227	7745961
		665463	7745803
		665269	7745722
		665209	7745841
		665333	7746865
		665167	7746895
		665260	7746718
	<i>Hunt Point Beach Flora, Vegetation and Fauna Assessment (ENV 2010f)</i>	664111	7754660
	<i>Level One Flora and Vegetation Assessment of Mooka Siding (Maia 2010)</i>	673378	7722541
		672030	7728806
		672910	7722441
		672902	7722455
		672914	7722482



Species	Survey	# Easting	# Northing
		672916	7722518
		673036	7723580
		672461	7727872
		672169	7728608
		672110	7728654
		672105	7728725
		671992	7728776
		671981	7728778
		671776	7729434
		671754	7729525
		673287	7719838
		673319	7719805
		673488	7720467
		672060	7728782
		673252	7720543
		672417	7727997
		673211	7723316
		673071	7723009
		673080	7722620
	<i>North West Iron Ore Alliance Port Project Flora, Vegetation and Mangal Studies (Woodman 2011)</i>	658924	7749547
		657882	7748155
		657882	7748155



Species	Survey	# Easting	# Northing
		657960	7748055
		658925	7749035
		657922	7747933
		659317	7749844
		660290	7750596
		659593	7749868
		661992	7750456
		659052	7749665
		659379	7749871
		659386	7749844
*Aloe vera	<i>Hunt Point Beach Flora, Vegetation and Fauna Assessment (ENV 2010f)</i>	663916	7754960
*Cenchrus ciliaris	<i>Current Survey (ENV 2011)</i>	659705	7754027
		672084	7752590
		672947	7751641
		673706	7751702
		676635	7746825
		675050	7745076
		667432	7747570
		673789	7742632
		672001	7741592
		673314	7741068



Species	Survey	# Easting	# Northing
		654401	7747340
		652988	7749119
		652933	7746615
		660761	7738308
		664541	7741390
		653602	7733204
		653434	7740914
		671261	7738932
		671339	7740276
		673038	7739789
		674005	7738233
		670478	7737780
		670786	7736757
		675071	7733966
		668658	7737209
		667572	7740406
		667204	7739920
		657079	7730724
		676737	7730289
		677694	7726952



Species	Survey	# Easting	# Northing
		675890	7725408
		677239	7723082
		674494	7726093
		672266	7721638
		672769	7738157
		674660	7740367
		659981	7754003
		676084	7722840
		676183	7726101
		654915	7745944
		656855	7728811
	<i>A Flora and Fauna Assessment of RGP5 Spoil Areas A and H, Port Hedland Harbour (Biota 2008a)</i>	661179	7749709
		661153	7749651
		661153	7749651
		661164	7749481
		660837	7748943
		661390	7749930
		661350	7749720
		661280	7749430
		661160	7749180
		661300	7749190



Species	Survey	# Easting	# Northing
		661070	7749550
		661100	7748840
		666622	7747325
		666629	7747356
		666608	7747398
		666588	7748089
		665987	7748354
		665309	7748359
		665426	7747552
		665655	7747473
		665706	7747481
	<i>A Biodiversity Assessment of the Utah Point Berth Development Port Hedland. (Biota 2008b)</i>	663282	7752821
		663266	7752861
		662669	7752848
		662377	7752310
		662206	7751870
		662139	7751667
		666064	7745285
		665983	7745264
		665867	7745256
		665457	7745475
		661516	7748651



Species	Survey	# Easting	# Northing
		661425	7748953
		661331	7748518
		661751	7747994
		661332	7743579
		662132	7747374
		662753	7747095
		662729	7747046
		662683	7747049
		662451	7747178
		662415	7747202
		664226	7746193
		663661	7746502
		663555	7746590
		662747	7752935
		662648	7752791
		661999	7747434
	<i>Port Hedland Nelson Point Dredging Approvals - Flora and Vegetation Assessment of an area Located within DMMA A (ENV 2008a)</i>	661152	7748630
	<i>Outer Harbour Development Flora and Vegetation Assessment (ENV 2009a)</i>	663418	7755032
		662575	7754784
		662281	7754469
		662134	7754698



Species	Survey	# Easting	# Northing
		667577	7726629
		666136	7727503
		670908	7733945
		656332	7738288
		656538	7739181
		657107	7737932
		657725	7743512
		657246	7744050
		667095	7727671
		661938	7754476
		662034	7754289
		661708	7754401
		661343	7754341
		660982	7754227
		662029	7750390
		661799	7749075
		661647	7747757
		662180	7747426
		661263	7747964
		661241	7747637
		661165	7746813
		661153	7745186



Species	Survey	# Easting	# Northing
		660985	7745201
		658457	7746944
		659223	7747402
		660114	7749275
		660208	7748258
		657523	7746011
		657812	7745895
		654690	7746973
		657789	7744872
		658142	7744694
		655024	7745385
		655905	7745214
		656268	7744988
		660274	7744344
		659073	7742818
		659869	7742962
		662599	7744230
		661712	7744111
		661353	7744278
		661964	7743361
		660297	7741225
		661982	7740274



Species	Survey	# Easting	# Northing
		662454	7738913
		660628	7739058
		657792	7746657
		658122	7743956
		660703	7743000
		659462	7744955
		655017	7745785
		661459	7738394
		661356	7737536
		673066	7723588
		673119	7722137
		673212	7720764
		673310	7720297
		666516	7733813
		666334	7731020
	<i>Port Hedland Nelson Point Dredging Approvals Flora and Vegetation Assessment of DMMA H (ENV 2009b)</i>	665336	7747650
		666443	7747713
		665520	7748001
	<i>Goldsworthy Rail Duplication Flora and Vegetation Assessment (ENV 2009c)</i>	670294	7735855
		669797	7737903
		669893	7738944
		670162	7739936



Species	Survey	# Easting	# Northing
		670476	7741101
		670752	7742100
		671028	7743096
		670881	7744020
		668785	7744375
		667770	7744529
		666693	7744720
		665795	7745205
		662279	7747275
		663681	7746492
		664536	7745995
		665528	7745418
		666342	7744952
		667355	7744625
		668417	7744459
		669407	7744304
		670437	7744148
		671436	7744199
		671912	7745010
		671908	7746484
		672222	7745579
		671259	7743712



Species	Survey	# Easting	# Northing
		670384	7740543
		670068	7739413
		669849	7738329
		669919	7737402
		670184	7736382
		670463	7735374
		670620	7734780
		670753	7734299
	<i>Boodarie Depot Flora and Vegetation Assessment (ENV 2009f)</i>	664254	7744775
		663483	7746511
		664189	7746093
		664355	7745911
		665189	7745497
	<i>Port Hedland Transmission Lines Flora & Fauna Assessment (ENV 2009g)</i>	662250	7740360
		654935	7730087
		654956	7730025
		653725	7729675
		653775	7729775
	<i>Wallwork Road Bridge Flora and Vegetation Assessment (ENV 2010a)</i>	667252	7744954
		667240	7744698
		667232	7744408
		666991	7744849



Species	Survey	# Easting	# Northing
	<i>Goldsworthy Rail Development Supplemental Flora and Vegetation Assessment (ENV 2010b);</i>	671233	7743831
		671598	7744330
		671486	7744160
		671376	7743934
		671464	7744180
	<i>Finucane Island to Wedgefield Flora and Vegetation Assessment (ENV 2010c)</i>	665606	7746046
		665174	7745886
		664584	7746196
		664837	7745981
		661756	7750268
		661367	7748763
		661796	7747588
		662160	7747364
		662769	7747048
	665135	7746170	
	<i>Great Northern Highway Road Bridge Flora and Vegetation Assessment (ENV 2010d)</i>	666165	7745227
		665654	7744969
		665886	7745268
		666172	7745539
		665484	7745260
		665253	7745119
	665236	7745190	



Species	Survey	# Easting	# Northing
	<i>Tug Harbour (Wedgefield) Flora and Vegetation Survey and Fauna Assessment (ENV 2010e)</i>	665174	7746329
		665218	7746826
		665307	7747278
		665227	7745961
		665331	7746221
		665363	7745859
		665463	7745803
		665269	7745722
		665209	7745841
		665320	7747216
		665134	7747034
		665167	7746895
		<i>Level One Flora and Vegetation Assessment of Mooka Siding (Maia 2010)</i>	673111
	673189		7720339
	673327		7720332
	673492		7720270
	673584		7720185
	673717		7720159
	673805		7720092
	673759	7720056	
673749	7720034		
673542	7719787		



Species	Survey	# Easting	# Northing
		673500	7719752
		673472	7719788
		673466	7720058
		672798	7723157
		672806	7723057
		672910	7722441
		672902	7722455
		672914	7722482
		672971	7723007
		672461	7727872
		672252	7728395
		672110	7728654
		672105	7728725
		671981	7728778
		671920	7729133
		671776	7729434
		671761	7729503
		673319	7719805
		673212	7723321
		673378	7722541
		673341	7722837
		673227	7720307



Species	Survey	# Easting	# Northing
		673143	7720319
		672869	7720161
		672884	7720409
		673476	7720365
		673210	7720265
		673287	7720131
		673303	7720036
		673287	7719838
		673319	7719805
		673121	7725658
		672030	7728806
		673251	7727414
		673488	7720467
		672621	7729778
		671662	7729894
		672987	7728304
		673543	7720155
		673646	7721450
		673543	7720155
		673144	7721470
		673182	7721119
		673182	7721078



Species	Survey	# Easting	# Northing
		673184	7721036
		672654	7725991
		672413	7728011
		672417	7727997
		672462	7727868
		671797	7729842
		672623	7729778
		673252	7723378
		673211	7723316
		673229	7723326
		673943	7721983
		673410	7720384
		673118	7723016
		673073	7722987
		673059	7722891
		673086	7722823
		673088	7722776
		673062	7722655
		673080	7722620
		673098	7722105
		673384	7722031
		673398	7721847



Species	Survey	# Easting	# Northing
		673458	7721521
		673458	7721521
		673469	7720817
		673470	7720608
		673428	7720424
		673226	7720824
		673237	7720699
		673257	7720589
		673252	7720543
		673271	7720501
		673281	7720482
		673284	7720469
		673289	7720435
		673291	7720426
		673286	7720395
		673286	7720362
		673296	7720343
	<i>North West Iron Ore Alliance Port Project Flora, Vegetation and Mangal Studies (Woodman 2011)</i>	657103	7743132
		657882	7748155
		657951	7748032
		657983	7748101
		658861	7748982



Species	Survey	# Easting	# Northing
		657882	7748155
		655982	7742775
		658924	7749547
		661992	7750456
		660241	7749912
		660166	7749873
		659379	7749871
		659593	7749868
		659317	7749844
		658735	7748897
		659052	7749665
		658122	7748414
		659431	7749532
		659795	7749510
		659050	7749133
		660290	7750596
		658274	7748914
		657101	7742713
		658557	7748604
		658048	7748520
		658327	7748424
		659132	7749715



Species	Survey	# Easting	# Northing
*Cenchrus setiger	<i>A Flora and Fauna Assessment of RGP5 Spoil Areas A and H, Port Hedland Harbour (Biota 2008a)</i>	665706	7747481
	<i>A Biodiversity Assessment of the Utah Point Berth Development Port Hedland. (Biota 2008b)</i>	666669	7745699
		666163	7745350
		666100	745485
		662377	7752310
		662104	7751606
		662001	7751216
		666074	7745460
		665983	7745264
		665867	7745256
		665457	7745475
		661425	7748953
		661371	7748703
	661331	7748518	
	661751	7747994	
	663758	7746452	
	<i>Level One Flora and Vegetation Assessment of Mooka Siding (Maia 2010)</i>	673013	7724213
		673646	7721450
<i>North West Iron Ore Alliance Port Project Flora, Vegetation and Mangal Studies (Woodman 2011)</i>	655982	7742775	
*Chloris barbata	<i>Hunt Point Beach Flora, Vegetation and Fauna Assessment (ENV 2010f)</i>	663574	7754801



Species	Survey	# Easting	# Northing
* <i>Chloris virgata</i>	<i>A Flora and Fauna Assessment of RGP5 Spoil Areas A and H, Port Hedland Harbour (Biota 2008a)</i>	666588	7748089
	<i>A Biodiversity Assessment of the Utah Point Berth Development Port Hedland. (Biota 2008b)</i>	663195	7752899
		662016	7751276
		661349	7748707
		661331	7748518
		661332	7743579
		661365	7748779
		661414	7748941
		662582	7747103
	661999	7747434	
	<i>Port Hedland Nelson Point Dredging Approvals - Flora and Vegetation Assessment of an area Located within DMMA A (ENV 2008a)</i>	661152	7748630
	<i>Outer Harbour Development Flora and Vegetation Assessment (ENV 2009a)</i>	658128	7746364
	<i>Goldsworthy Rail Duplication Flora and Vegetation Assessment (ENV 2009c)</i>	670162	7739936
		670476	7741101
		663681	7746492
671755	7744640		
<i>Finucane Island to Wedgefield Flora and Vegetation Assessment (ENV 2010c)</i>	662160	7747364	
* <i>Citrullus colocynthis</i>	<i>Current Survey (ENV 2011)</i>	654709	7730209



Species	Survey	# Easting	# Northing
	<i>Outer Harbour Development Flora and Vegetation Assessment (ENV 2009a)</i>	673310	7720297
	<i>Goldsworthy Rail Duplication Flora and Vegetation Assessment (ENV 2009c)</i>	669797	7737903
		669893	7738944
		670162	7739936
		670476	7741101
		668417	7744459
		670384	7740543
		669849	7738329
		670184	7736382
		670620	7734780
	<i>Port Hedland Transmission Lines Flora & Fauna Assessment (ENV 2009g)</i>	653775	7729690
	<i>Goldsworthy Rail Development Supplemental Flora and Vegetation Assessment (ENV 2010b);</i>	671111	7743152
		671117	7743112
		671054	7743792
	<i>Level One Flora and Vegetation Assessment of Mooka Siding (Maia 2010)</i>	673266	7720336
		673366	7720305
		673542	7719787
		673319	7719805
		672143	7729967
		673488	7720467
		673227	7720307



Species	Survey	# Easting	# Northing
		673143	7720319
		673203	7722827
		673287	7719838
		673378	7722541
		673384	7722031
		673398	7721847
		674221	7720635
		673091	7723011
		673325	7720313
* <i>Cucumis melo</i> subsp. <i>agrestis</i>	Current Survey (ENV 2011)	662355	7743634
		665697	7743618
		663201	7733037
		671261	7738932
		670478	7737780
		670786	7736757
		667361	7731262
		665706	7723373
		661197	7721932
		665388	7721440
		671594	7733290
		659967	7724453
	Outer Harbour Development Flora and Vegetation Assessment	673310	7720297

Species	Survey	# Easting	# Northing
	(ENV 2009a)	670908	7733945
		670540	7734720
		668915	7726269
		658565	7734682
		656332	7738288
		670199	7734095
		657593	7739391
<i>*Cynodon dactylon</i>	<i>A Flora and Fauna Assessment of RGP5 Spoil Areas A and H, Port Hedland Harbour (Biota 2008a)</i>	666436	7747330
<i>*Digitaria ciliaris</i>	<i>Outer Harbour Development Flora and Vegetation Assessment (ENV 2009a)</i>	655017	7745785
		664057	7734589
<i>*Echinochloa colona</i>	<i>Level One Flora and Vegetation Assessment of Mooka Siding (Maia 2010)</i>	673060	7722857
<i>*Eragrostis curvula</i>	<i>Current Survey (ENV 2011)</i>	677694	7726952
<i>*Flaveria trinervia</i>	<i>Current Survey (ENV 2011)</i>	676737	7730289
		677694	7726952
<i>*Indigofera oblongifolia</i>	<i>Current Survey (ENV 2011)</i>	676242	7742485
<i>*Indigofera sessiliflora</i>	<i>Hunt Point Beach Flora, Vegetation and Fauna Assessment (ENV 2010f)</i>	664111	7754660
<i>*Malvastrum americanum</i>	<i>Level One Flora and Vegetation Assessment of Mooka Siding (Maia 2010)</i>	673306	7720319
		673189	7720136
		673252	7720543

Species	Survey	# Easting	# Northing
* <i>Merremia dissecta</i>	<i>A Flora and Fauna Assessment of RGP5 Spoil Areas A and H, Port Hedland Harbour (Biota 2008a)</i>	666608	7747398
	<i>Outer Harbour Development Flora and Vegetation Assessment (ENV 2009a)</i>	663418	7755032
* <i>Opuntia stricta</i>	<i>Hunt Point Beach Flora, Vegetation and Fauna Assessment (ENV 2010f)</i>	663916	7754960
* <i>Physalis angulata</i>	<i>Current Survey (ENV 2011)</i>	677694	7726952
* <i>Portulaca oleracea</i>	<i>Current Survey (ENV 2011)</i>	673789	7742632
		672001	7741592
		674392	7741369
		654401	7747340
		652988	7749119
		660672	7741644
		661418	7742589
		658728	7738738
		663299	7737645
		660453	7722568
		660742	7734177

Species	Survey	# Easting	# Northing
		655392	7734336
		653434	7740914
		671261	7738932
		674005	7738233
		670786	7736757
		668275	7734444
		672866	7732720
		675071	7733966
		669395	7737084
		668658	7737209
		667572	7740406
		667204	7739920
		667405	7738520
		666523	7736662
		666908	7734910



Species	Survey	# Easting	# Northing
		668019	7735504
		668639	7733083
		669678	7732575
		662286	7727640
		669656	7728731
		671022	7729465
		675787	7727948
		673739	7724279
		674039	7722945
		672219	7725250
		670229	7726930
		668756	7726818
		665717	7726029
		661890	7724103
		674619	7721485



Species	Survey	# Easting	# Northing
		672209	7724203
		674660	7740367
		671594	7733290
		672666	7721758
		676445	7726767
	<i>A Flora and Fauna Assessment of RGP5 Spoil Areas A and H, Port Hedland Harbour (Biota 2008a)</i>	666493	7747356
	<i>Outer Harbour Development Flora and Vegetation Assessment (ENV 2009a)</i>	654690	7746973
		659073	7742818
		673310	7720297
		669393	7725988
		668915	7726269
		670970	7727612
	<i>Goldsworthy Rail Duplication Flora and Vegetation Assessment (ENV 2009c)</i>	670881	7744020
		668785	7744375
		668417	7744459
		670384	7740543
		670068	7739413
	<i>Tug Harbour (Wedgefield) Flora and Vegetation Survey and Fauna Assessment (ENV 2010e)</i>	665331	7746221
	<i>Hunt Point Beach Flora, Vegetation and Fauna Assessment (ENV</i>	663441	7754997



Species	Survey	# Easting	# Northing
	2010f)	663641	7754269
		664025	7754517
		664066	7754801
	<i>Level One Flora and Vegetation Assessment of Mooka Siding (Maia 2010)</i>	672776	7723566
		672831	7722725
		672856	7722048
		673212	7723321
		673686	7723727
		673847	7722895
		673656	7722745
		673365	7722718
		674265	7720614
		673548	7720412
		673378	7722541
		672761	7728509
		673292	7726437
		673210	7720885
		673281	7720482
		673289	7720435
		672623	7726779
672203	7727527		
671793	7729842		



Species	Survey	# Easting	# Northing		
		671808	7729826		
		673259	7724430		
		673562	7722321		
		674152	7722065		
		673742	7721583		
		674120	7720576		
		673068	7722676		
		673384	7722031		
		673398	7721847		
		673472	7720681		
		672584	7726990		
		672663	7726023		
		673400	7722483		
		672621	7729778		
			<i>North West Iron Ore Alliance Port Project Flora, Vegetation and Mangal Studies (Woodman 2011)</i>	658581	7748787
				660682	7749870
656149	7743591				
* <i>Setaria verticillata</i>	<i>Outer Harbour Development Flora and Vegetation Assessment (ENV 2009a)</i>	673066	7723588		
		673119	7722137		
* <i>Stylosanthes hamata</i>	<i>Current Survey (ENV 2011)</i>	676242	7742485		
	<i>A Flora and Fauna Assessment of RGP5 Spoil Areas A and H, Port Hedland Harbour (Biota 2008a)</i>	666493	7747356		
	<i>A Biodiversity Assessment of the Utah Point Berth Development</i>	666100	7745485		



Species	Survey	# Easting	# Northing
	<i>Port Hedland.</i> (Biota 2008b)	666191	7745527
		665819	7745442
	<i>Outer Harbour Development Flora and Vegetation Assessment</i> (ENV 2009a)	660982	7754227
	<i>Goldsworthy Rail Duplication Flora and Vegetation Assessment</i> (ENV 2009c)	664536	7745995
		669849	7738329
	<i>Port Hedland Transmission Lines Flora & Fauna Assessment</i> (ENV 2009g)	662250	7740360
	<i>Finucane Island to Wedgefield Flora and Vegetation Assessment</i> (ENV 2010c)	662160	7747364
	<i>Great Northern Highway Road Bridge Flora and Vegetation Assessment</i> (ENV 2010d)	666172	7745539
<i>Level One Flora and Vegetation Assessment of Mooka Siding</i> (Maia 2010)	671893	7729246	
* <i>Tamarix aphylla</i>	<i>Goldsworthy Rail Duplication Flora and Vegetation Assessment</i> (ENV 2009c)	671755	7744640
* <i>Vaccaria hispanica</i>	<i>Current Survey</i> (ENV 2011)	676635	7746825
* <i>Vachellia farnesiana</i>	<i>Current Survey</i> (ENV 2011)	675596	7742420
* <i>Vitex trifolia</i> var. <i>subtrisepta</i>	<i>Finucane Island to Wedgefield Flora and Vegetation Assessment</i> (ENV 2010c)	665174	7745886
* <i>Washingtonia filifera</i>	<i>A Flora and Fauna Assessment of RGP5 Spoil Areas A and H, Port Hedland Harbour</i> (Biota 2008a)	666436	7747330
* <i>Yucca aloifolia</i>	<i>Hunt Point Beach Flora, Vegetation and Fauna Assessment</i> (ENV 2010f)	663916	7754960

World Geodetic System 1984 (WGS84), Zone 50K