



PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT









PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT

Prepared for

BHP Billiton Iron Ore Pty Ltd

Prepared by

ENV Australia Pty Ltd
Level 1, 503 Murray Street
PERTH WA 6000
Phone: (08) 9214 6100
Fax: (08) 9226 4109
Email: env@env.net.au

Job Number:	*J100489*	*J100489*	*J100489*	*J100489*
Report Number:	*11/125*	*Rev B*	*Rev C*	*Final*
Prepared by:	*Bridget Watkins*	*Emma Carroll*		
Status:	*Draft*	*Draft*	*Draft*	*Final*
QA Review:			*Bridget Watkins*	*Chris Knuckey*
Technical Review:	*Julia Mattner*		*Emma Carroll*	
Content Review:	*Denise True*	*Denise True*	*Denise True*	*Denise True*
Date:	*4/10/11*	*7/10/11*	*11/11/11*	*09/12/2011*

TABLE OF CONTENTS

EXECUTIVE SUMMARY III

1 INTRODUCTION 1

1.1 THE PROJECT 1

1.1.1 Objectives 1

1.1.2 Location 1

1.2 ENVIRONMENTAL ATTRIBUTES 1

1.2.1 Climate 1

1.2.2 Interim Biogeographic Regionalisation for Australia 2

1.2.3 Land Systems 3

1.2.4 Geology 5

1.2.5 Soils 5

1.2.6 Vegetation Mapping 6

1.3 PREVIOUS BIOLOGICAL STUDIES 7

2 METHODS 9

2.1 BACKGROUND TO THE PROTECTION OF FLORA AND VEGETATION 9

2.2 LITERATURE REVIEW 11

2.2.1 Literature Review 11

2.2.2 Database Searches 13

2.3 SURVEY METHODS 14

2.3.1 Field Survey 14

2.3.2 Taxonomic Identification 15

2.3.3 Vegetation Association Definition and Mapping 15

2.3.4 Vegetation Condition 16

3 RESULTS AND DISCUSSION 17

3.1 LITERATURE REVIEW 17

3.1.1 Literature Review 17

3.2 LIMITATIONS AND VARIABLES INFLUENCING THE 2011 SURVEY 22

3.3 DATABASE REVIEW 23

3.3.1 Potentially Occurring Flora of Conservation Significance 23

3.3.2 Potentially Occurring Ecological Communities of Conservation Significance 27

3.4 FLORA 27

3.4.1 Flora of the Current Survey 27

3.4.2 Flora of the Previous Surveys 28

3.4.3 Flora of the Combined Survey Dataset 28

3.4.4 Conservation Significant Flora Recorded in the Study Area 29

3.4.5 Species of Interest 38

3.4.6 Introduced Flora 41

3.5 VEGETATION 47

3.5.1 Vegetation Associations 47

3.5.2 Vegetation Condition 94

3.5.3 Threatened and Priority Ecological Communities 95

3.5.4 Vegetation of Conservation Significance 95

3.5.5 Vegetation of Interest 95

3.5.6 Groundwater-Dependant Ecosystems 96

3.5.7 Regional Representation of Vegetation Types 96

4 SUMMARY 99

5 REFERENCES 100

FIGURES

FIGURE 1	REGIONAL LOCATION
FIGURE 2	AVERAGE LONG-TERM (1942 -2011) AND ACTUAL MONTHLY RAINFALL (JUNE 2010 – MAY 2011) AND AVERAGE MAXIMUM AND MINIMUM TEMPERATURES AT PORT HEDLAND AIRPORT (BOM 2011).
FIGURE 3	CURRENT AND PREVIOUS FLORA SURVEY QUADRAT AND RELEVÉ LOCATIONS
FIGURE 4	LOCATION OF PRIORITY FLORA
FIGURE 5	LOCATION OF SPECIES OF INTEREST
FIGURE 6	LOCATION OF INTRODUCED SPECIES
FIGURE 7	VEGETATION MAPPING
FIGURE 8	VEGETATION MAPPING - LINEWORK
FIGURE 9	VEGETATION CONDITION MAPPING
FIGURE 10	VEGETATION CONDITION - LINEWORK

PLATES

PLATE 1	*ABUTILON PRITZELIANUM* MS (PRIORITY 1)
PLATE 2	*HELIOTROPIUM MUTICUM* (PRIORITY 1)
PLATE 3	*TEPHROSIA ROSEA* VAR. *VENULOSA* MS (PRIORITY 1)
PLATE 4	*GOMPHRENA PUSILLA* (PRIORITY 2)
PLATE 5	*ERAGROSTIS CRATERIFORMIS* (PRIORITY 3)
PLATE 6	*GYMNANTHERA CUNNINGHAMII* (PRIORITY 3)
PLATE 7	*PTEROCAULON* SP. A KIMBERLEY FLORA (B.J. CARTER 599) (PRIORITY 3)
PLATE 8	*BULBOSTYLIS BURBIDGEAE* (PRIORITY 4)
PLATE 9	*GOODENIA NUDA* (PRIORITY 4)
PLATE 10	**AERVA JAVANICA*
PLATE 11	**CENCHRUS CILIARIS*
PLATE 12	**CENCHRUS SETIGER*
PLATE 13	**CHLORIS BARBATA*
PLATE 14	**CITRULLUS COLOCYNTHIS*
PLATE 15	**CUCUMIS MELO* SUBSP. *AGRESTIS*
PLATE 16	**CYNODON DACTYLON*

PLATE 17 **ECHINOCHLOA COLONA*

PLATE 18 **ERAGROSTIS CURVULA*

PLATE 19 **INDIGOFERA OBLONGIFOLIA*

PLATE 20 **MALVASTRUM AMERICANUM*

PLATE 21 **MERREMIA DISSECTA*

PLATE 22 **OPUNTIA STRICTA*

PLATE 23 **PHYSALIS ANGULATA*

PLATE 24 **PORTULACA OLERACEA*

PLATE 25 **STYLOSANTHES HAMATA*

PLATE 26 **VACCARIA HISPANICA*

PLATE 27 **VACHELLIA FARNESIANA*

PLATE 28 **WASHINGTONIA FILIFERA*

PLATE 29 **YUCCA ALOIFOLIA*

TABLES

TABLE 1 LAND SYSTEMS OF THE STUDY AREA

TABLE 2 GEOLOGICAL UNITS OF THE STUDY AREA

TABLE 3 BROAD VEGETATION MAPPING OF THE STUDY AREA

TABLE 4 SUMMARY OF MAIN FINDINGS FROM PREVIOUS SURVEYS OF THE PORT HEDLAND AREA

TABLE 5 LIMITATIONS AND VARIABLES ASSOCIATED WITH THE CURRENT FLORA AND VEGETATION SURVEY

TABLE 6 THE LIKELIHOOD OF PRIORITY FLORA OCCURRING IN THE STUDY AREA BASED ON PREVIOUS SURVEYS AND DEC DATABASE SEARCHES

TABLE 7 NUMBER OF INDIVIDUALS OF PRIORITY FLORA RECORDED DURING PREVIOUS AND CURRENT SURVEYS OF THE PORT HEDLAND AREA

TABLE 8 INTRODUCED FLORA RECORDED IN PREVIOUS AND CURRENT SURVEYS OF THE PORT HEDLAND AREA

TABLE 9 VEGETATION ASSOCIATIONS MAPPED IN THE STUDY AREA, (INCLUDING AREA (KM^2) ROUNDED TO TWO DECIMAL PLACES)

TABLE 10 REGIONAL REPRESENTATION OF VEGETATION IN THE SURVEY AREA

TABLE 11 EXTENT OF BEARD AND SHEPHERD VEGETATION UNITS AT THE BIOREGIONAL, SUBREGIONAL AND LOCAL SCALE

APPENDICES

APPENDIX A	DEFINITION OF DECLARED RARE / PRIORITY / THREATENED FLORA AND SIGNIFICANT FLORA POTENTIALLY OCCURRING IN THE SURVEY AREA
APPENDIX B	DEFINITION OF THREATENED AND PRIORITY ECOLOGICAL COMMUNITIES
APPENDIX C	ENVIRONMENTAL WEEDS AND DECLARED PLANT CATEGORIES
APPENDIX D	BUSH FOREVER VEGETATION CONDITION SCALE
APPENDIX E	CHAIN OF CUSTODY AND RARE FLORA REPORT FORMS
APPENDIX F	FLORA QUADRAT AND RELEVÉ DATA SHEETS
APPENDIX G	MATRIX OF FLORA IN EACH SITE – CURRENT SURVEY
APPENDIX H	FLORA INVENTORY – ALL SURVEYS
APPENDIX I	FLORA INVENTORY – NATURE MAP DATABASE SEARCH
APPENDIX J	LOCATION OF CONSERVATION SIGNIFICANT FLORA – ALL SURVEYS
APPENDIX K	LOCATION OF SPECIES OF INTEREST – CURRENT SURVEY
APPENDIX L	LOCATION OF INTRODUCED FLORA – ALL SURVEYS

PERMITS

This flora survey was undertaken under the following licences issued by the Department of Environment and Conservation: SL008928 issued to Emma Carroll, SL009367 issued to Kellie McMaster, SL009370 issued to Bridget Watkins, SL009373 issued to Hayden Ajduk, SL009400 issued to Lucy Dadour and SL009422 issued to Catherine Webb.

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.

Reliance on Data

In preparing the report, ENV has relied on data, surveys, analyses, designs, plans and other information provided by the Client and other individuals and organisations, most of which are referred to in the report ('the data'). Except as otherwise stated in the report, ENV has not verified the accuracy or completeness of the data. To the extent that the statements, opinions, facts, information, conclusions and/or recommendations in the report ('conclusions') are based in whole or in part on the data, those conclusions are contingent upon the accuracy and completeness of the data. ENV will not be liable in relation to incorrect conclusions should any data, information or condition be incorrect or have been concealed, withheld, unavailable, misrepresented or otherwise not fully disclosed to ENV.

Environmental Conclusions

In accordance with the scope of services, ENV has relied on the data and has conducted environmental field monitoring and/or testing in the preparation of the report. The nature and extent of monitoring and/or testing conducted is described in the report.

In the limitations imposed by the scope of services, the monitoring, testing, sampling and preparation of this report have been undertaken and performed in a professional manner, in accordance with generally accepted practices and using a degree of skill and care ordinarily exercised by reputable environmental consultants under similar circumstances. No other warranty, express or implied, is made.

Report for Benefit of Client

The report has been prepared for the benefit of the Client and for no other party. ENV assumes no responsibility and will not be liable to any other person or organisation for or in relation to any matter dealt with or conclusions expressed in the report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in the report (including, without limitation, matters arising from any negligent act or omission of ENV or for any loss or damage suffered by any other party relying on the matters dealt with or conclusions expressed in the report). Other parties should not rely upon the report or the accuracy or completeness of any conclusions, and should make their own enquiries and obtain independent advice in relation to such matters.

Other Limitations

ENV will not be liable to update or revise the report to take into account any events or circumstances occurring or facts becoming apparent after the date of the report.

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 808.7km^2 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 (km^2) [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.

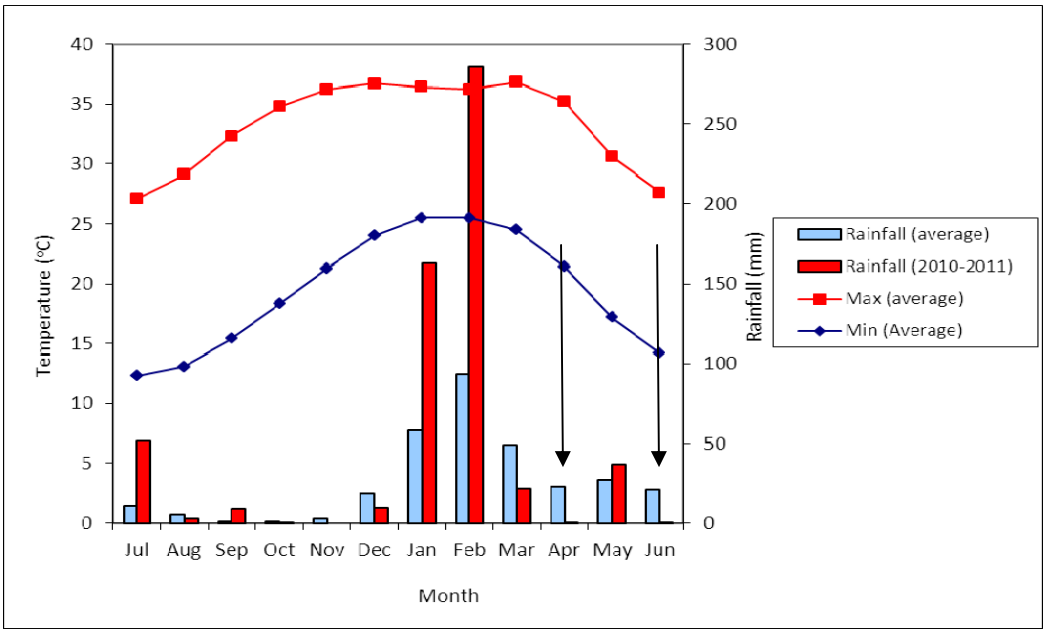


Figure 2: Average long-term (1942 -2011) and actual Monthly Rainfall (July 2010 – June 2011) and average Maximum and Minimum Temperatures at Port Hedland Airport (BoM 2011). Arrows indicate survey times.

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 [DSEWPaC] 2011a).

The northern section of the study area is located in the Roebourne subregion (PIL4) (574.92 km^2), while the southern section is located in the Chichester subregion (PIL1) (140.53 km^2) 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

		Area of Land System in Pilbara Bioregion		Area of Land System in the Study area		
Land System	**Description**	**Area (km²)**	**% of Pilbara Region**	**Area (km²)**	**% 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 (km²) of study area	% of study area
Hummock grasslands, dwarf-shrub steppe; *Acacia translucens* 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 Vegetation Description	Beard / Shepherd Unit Code	Area (km²) of study area	% of study area
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 (*Eucalyptus camaldulensis*)	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 20^0 26’ 51.43 ’’S and 118^0 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 km^2 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		**Aerva javanica*, **Cenchrus ciliaris*, **Cynodon dactylon*, **Stylosanthes hamata*, **Washingtonia filifera*, **Chloris virgata*, **Merremia dissecta* ,**Cenchrus setiger* , **Portulaca oleracea*
A Biodiversity Assessment of the Utah Point Berth Development Port Hedland (Biota 2008b)	April 2007	-	Very Good	Single Season Level 1	-	-	-	108	*Bulbostylis burbidgeae* (Priority 4)	*Glycine tomentella*	**Cenchrus ciliaris*, **Cenchrus setiger*, **Aerva javanica*, **Stylosanthes hamata*, **Chloris virgata*, **Flaveria trinervia*
Port Hedland Nelson Point DMMA A Area Flora and Vegetation Assessment (ENV 2008a)	October 2008	-	Poor	Single Season Level 1	3	1	-	29	*Tephrosia rosea* var. *venulosa* (Priority 1).	-	**Cenchrus ciliaris* and **Chloris virgata*
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	*Heliotropium muticum* (Priority 1), *Tephrosia rosea* var. *venulosa* (Priority 1), *Gymnanthera cunninghamii* (Priority 3), *Pterocaulon* sp. A Kimberley Flora (B.J. Carter 599) (Priority 3) and *Goodenia nuda* (Priority 4).	*Eriachne sulcata*	**Aerva javanica*, **Cenchrus ciliaris*, **Chloris virgata*, **Citrullus colocynthis*, **Cucumis melo* subsp. *agrestis*, **Digitaria ciliaris*, **Merremia dissecta*, **Setaria verticillata*, **Stylosanthes hamata* and **Portulaca oleracea.*
Port Hedland Nelson Point DMMA H Area Flora and Vegetation Assessment (ENV 2009b)	October 2008	-	Poor	Single Season Level 2	176	6	3	50	*Tephrosia rosea* var. *venulosa* (Priority 1),		**Cenchrus ciliaris* and **Aerva javanica*
Goldsworthy Rail Duplication Flora and Vegetation Assessment (ENV 2009c)	October 2008	-	Poor	Single Season Level 1	-	37	5	140	*Tephrosia rosea* var. *venulosa* (Priority 1)		**Tamarix aphylla*, **Aerva javanica*, **Cenchrus ciliaris*, **Stylosanthes hamata*, **Chloris virgata*, **Citrullus colocynthis*, **Portulaca oleracea*
Port Hedland Nelson Point Dredging Approvals Targeted Species Assessment of DMMA H (ENV 2009d)	March 2009	-	Very Good	Targeted Flora Survey	266	-	-	2	*Tephrosia rosea* var. *venulosa* (Priority 1) and *Pterocaulon* 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	*Heliotropium muticum* (Priority 1), *Tephrosia rosea* var. *venulosa* (Priority 1), *Pterocaulon* sp. A Kimberley Flora (B.J. Carter 599) (Priority 3) and *Goodenia nuda* (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	*Abutilon pritzelianum* (Priority 1)		**Aerva javanica,* **Cenchrus ciliaris,* **Stylosanthes hamata,* **Citrullus colocynthis*
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		**Aerva javanica,* **Cenchrus ciliaris*
Goldsworthy Rail Development Supplemental Flora and Vegetation Assessment (ENV 2010b)	January 2010	-	Very Poor	Single Season Level 1	117.8	11	6	83	*Pterocaulon* sp. A Kimberley Flora (B.J. Carter 599) (Priority 3)	*Tephrosia rosea* var. *rosea/venulosa* *Tephrosia rosea var. aff. rosea*	**Aerva javanica,* **Cenchrus ciliaris,* **Citrullus colocynthis*
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	*Tephrosia rosea* var. *venulosa* (Priority 1)		**Aerva javanica,* **Cenchrus ciliaris,* **Chloris virgata,* **Stylosanthes hamata,* **Vitex trifolia* var. *subtrisecta*
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	*Tephrosia rosea* var. *venulosa* (Priority 1)		**Cenchrus ciliaris,* **Stylosanthes hamata,* **Vitex trifolia* var. *subtrisecta*
Tug Harbour (Wedgefield) Flora and Vegetation Survey and Fauna Assessment (ENV 2010e)	August 2010	-	Poor	Single Season Level 1	85	6	2	51	*Tephrosia rosea* var. *venulosa* (Priority 1)		**Cenchrus ciliaris,* **Aerva javanica,* **Portulaca oleracea*
Hunt Point Beach Flora, Vegetation and Fauna Assessment (ENV 2010f)	August 2010	-	Poor	Single Season Level 1	67	2	3	37	*Tephrosia rosea* var. *venulosa* (Priority 1)		**Cenchrus ciliaris,* **Aerva javanica,* **Chloris barbata,* **Yucca aloifolia,* **Indigofera sessiliflora, *Opuntia stricta, *Aloe vera,* **Portulaca oleracea*
Level One Flora and Vegetation Assessment of Mooka Siding (Maia 2010)	August 2010	-	Poor	Single Season Level 1	1677	22	-	170	*Heliotropium muticum* (Priority 1)		**Aerva javanica,* **Cenchrus ciliaris,* **Cenchrus setiger,* **Malvastrum americanum,* **Echinochloa colona,* **Stylosanthes hamata,* **Citrullus colocynthis,* **Portulaca oleracea*
Targeted Regional Tephrosia rosea var. venulosa Survey (ENV 2011)	January to February 2010	-	Very Poor	Targeted Flora Survey		-	-	-	*Tephrosia rosea* var. *venulosa* (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	*Eragrostis crateriformis* (Priority 3), *Gomphrena leptophylla* (Priority 3), *Gomphrena pusilla* (Priority 2), *Goodenia nuda* (Priority 4), *Gymnanthera cunninghamii* (Priority 3), *Tephrosia rosea* var. *venulosa* (Priority 1)	*Murdannia graminea*	**Aerva javanica,* **Cenchrus ciliaris*

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. • 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.e.* 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	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). 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.

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]
Abutilon pritzelianum	P1	Perennial	Red sand dunes	Yes	17	In study area	DEC Database Search	Recorded (ENV 2009g)
Acacia glaucocaesia	P3	Perennial	Red loam, sandy loam and clay on floodplains	Yes	30	34.5 km	DEC Database Search	Possible
Acacia levata	P3	Perennial	Sand or sandy loam over granite on hillslopes	Yes	15	116 km	DEC Database Search	Unlikely
Acacia sp. Marble Bar (J.G. & M.H. Simmons 3499)	P1	Perennial	Information unavailable	Unknown	1	157 km	DEC Database Search	Unlikely
Atriplex eremitis	P1	Perennial	Semi saline plain in saline patch	Yes	1	41 km	DEC Database Search	Possible
Bulbostylis burbidgeae	P4	Annual	Granitic soils, granite outcrops, cliff bases	Yes	9	In study area	Previous survey	Recorded (Biota 2008b)
Eragrostis crateriformis	P3	Annual	Clayey loam, creek banks, depressions	Yes	8	54 km	Previous survey	Recorded (Woodman 2011)
Euphorbia clementii	P2	Perennial	Gravelly hillsides and stony grounds	Yes	5	50 km	DEC Database Search	Possible
Gomphrena cucullata	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]
Gomphrena leptophylla	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)
Gomphrena pusilla	P2	Perennial	Fine beach sand behind foredunes, on limestone	Yes	5	In study area	DEC Database Search	Recorded (Woodman 2011)
Goodenia nuda	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)
Gymnanthera cunninghamii	P3	Perennial	Sandy soils	Yes	14	In study area	DEC Database Search	Recorded (ENV 2009a and Woodman 2011)
Heliotropium muticum	P1	Perennial	Loam, sandy loam on plains and floodplains	Yes	7	In study area	DEC Database Search	Recorded (ENV 2009a, 2009e and Maia 2010)
Nicotiana umbratica	P3	Annual / Perennial	Shallow soils and rocky outcrops	Yes	10	92 km	DEC Database Search	Unlikely
Phyllanthus aridus	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]
Pityrodia 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
Polymeria distigma	P3	Perennial	Sandy soils	Yes	14	4.1 km	DEC Database Search	Likely
Pterocaulon 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)
Ptilotus appendiculatus var. *minor*	P1	Perennial	Information unavailable	yes	1	In study area	DEC Database Search	Recorded (DEC database search)
Tephrosia rosea var. *venulosa*	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
Abutilon pritzelianum	P1	31											50										50
Heliotropium muticum	P1	1290						7			11									15			27
Tephrosia rosea var. ? *venulosa*[1]	P1																					235	235
Tephrosia rosea var. aff. *venulosa*	P1														95	30							125
Tephrosia rosea var. *rosea/venulosa*	P1													93					197				290
Tephrosia rosea var. *venulosa*	P1						10	17	2	352	1431	480			168		232	1595	310				4597
Gomphrena pusilla	P2	1																				1030	1030
Eragrostis crateriformis	P3																					2	2
Gomphrena leptophylla	P3																					1	1
Gymnanthera cunninghamii	P3		1					5														2	7
Phyllanthus aridus	P3																			3			3
Pterocaulon sp. A Kimberley Flora (B.J. Carter 599)	P3							2		2				2									6
Tephrosia aff. *bidwillii*	P3			1	1	1																	3
Bulbostylis burbidgeae	P4					40																	40
Goodenia nuda	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)

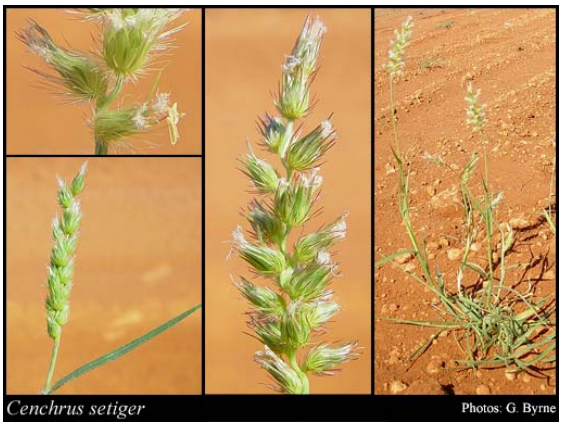


Plate 12: **Cenchrus setiger* (WAH 2011)



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)



Plate 29: **Yucca aloifolia* (ENV)

Table 8: Introduced Flora Recorded in Previous and Curent 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
**Aerva javanica*	High	√	√	√	√		√	√	√	√	√	√	√	√		√	√	√	√
**Aloe vera*	N/A																√		
**Cenchrus ciliaris*	High	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√	√
**Cenchrus setiger*	High		√	√	√													√	√
**Chloris barbata*	Low		√														√		
**Chloris virgata*	Low			√	√	√	√		√	√				√					
**Citrullus colocynthis*	Low	√					√		√		√		√					√	
**Cucumis melo* subsp. *agrestis*	TBA	√					√												
**Cynodon dactylon*	Moderate			√															
**Digitaria ciliaris*	Low						√												
**Echinochloa colona*	Mild																	√	
**Eragrostis curvula*	High	√																	
**Flaveria trinervia*	N/A	√			√		√												
**Indigofera oblongifolia*	Moderate	√	√																
**Indigofera sessiliflora*	TBA		√														√		
**Malvastrum americanum*	Moderate		√															√	
**Merremia dissecta*	Low			√			√												
**Opuntia stricta*	TBA																√		
**Physalis angulata*	Moderate	√																	
**Portulaca oleracea*	N/A	√	√	√			√		√		√					√	√	√	√
**Setaria verticillata*	Low						√												
**Stylosanthes hamata*	Mild	√		√	√		√		√	√	√			√	√			√	
**Tamarix aphylla*	Moderate								√										
**Vaccaria hispanica*	Low	√																	
**Vachellia farnesiana*	High	√																	
**Vitex trifolia* var. *subtrisecta*	N/A													√	√				
**Washingtonia filifera*	Mild			√															
**Yucca aloifolia*	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 (km^2) rounded to two decimal places).

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

Broad Formation	Mapping Label	Vegetation description	Soil Type	Area in Study Area (km^2)
Dunes B	DB	An *Atalaya hemiglauca*, *Santalum lanceolatum* and *Acacia bivenosa* shrubland over a **Cenchrus ciliaris* tussock grassland.	Light orange sand	0.02
Dunes C	DC	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.	Orange beach sand	0.38
Dune D	DD	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.	Light brown sand	0.44
Samphire A	SMA	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.	Brown clay, mud	0.38
Samphire B	SMB	Scattered *Avicennia marina* shrubs over a low open *Tecticornia halocnemoides* subsp. *tenuis*, *Tecticornia halocnemoides* and *Trianthema turgidifolia* shrubland.	Light red brown clay mud	25.98
Limestone Hill	LSH	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.	Skeletal light orange brown loam	0.62
Grassland A	GA	*Triodia secunda* and *Triodia epactia* hummock grassland.	Light brown sandy loam	11.63
Grassland B	GB	*Triodia epactia* hummock grassland.	Light orange brown sand	3.01
Low Hill	LH	An *Acacia tumida* var. *pilbarensis* shrubland over a low *Acacia stellaticeps* shrubland over a *Triodia epactia* hummock grassland.	Light orange brown sandy loam	11.43
Major Drainage Line A	MDLA	Scattered low *Eucalyptus victrix* trees over a high open *Melaleuca argentea*, *Acacia ampliceps* and *Acacia trachycarpa* shrubland over scattered *Adriana tomentosa* var. *tomentosa* and *Pluchea ferdinandi-muelleri* shrubs over open *Triodia epactia* 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 *Eucalyptus victrix* woodland over an *Acacia tumida* var. *pilbarensis* and *Acacia colei* var. *colei* shrubland over very open *Triodia epactia* hummock grassland.	Red brown sandy loam	2.37
Major Drainage Line C	MDLC	Low open *Corymbia candida* subsp. *lautifola* woodland over high open *Acacia colei* var. *colei*, *Acacia trachycarpa* and *Acacia tumida* var. *pilbarensis* shrubland over *Triodia epactia* open tussock grassland.	Red brown sandy clay	0.69
Major Drainage Line D	MDLD	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.	Orange brown coarse sand	2.40
Major Drainage Line E	MDLE	Open *Eucalyptus camaldulensis* subsp. *refulgens* woodland over *Acacia tumida* var. *pilbarensis* and *Cajanus cinereus* shrubland over very open *Triodia epactia* hummock grassland.	Orange brown silty sand	0.50
Rock Outcrop	RO	Scattered *Acacia col*ei var. *colei* and *Acacia inaequilatera* shrubs over scattered herbs over scattered *Triodia* spp. hummock grasses.	Skeletal orange brown sand	0.48
Billabong	B	Scattered low *Eucalyptus victrix* trees over scattered mixed grasses.	Red brown sandy loam	0.03
Rockpile	R	Scattered low *Ficus brachypoda*, *Clerodendrum tomentosum* var. *lanceolatum* and *Carissa lanceolata* trees over scattered herbs.	Skeletal soil	0.02
Drainage A	DA	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.	Red orange loamy sand	0.38
Drainage B	DB	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.	Red orange loamy sand	0.02
Sandplain A	SA	Low *Acacia stellaticeps* shrublands over *Triodia epactia* and *Triodia secunda* hummock grasslands/ *Triodia epactia* and *Triodia secunda* 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 *Acacia colei* var. *colei* shrublands 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.	Light orange brown sand	54.69
Sandplain C	SC	Low open *Corymbia flavescens* woodland over open *Acacia colei* var. *colei* shrubland over low *Acacia stellaticeps* shrubland over *Triodia epactia* hummock grassland/ low *Acacia stellaticeps* shrublands over *Triodia epactia* and *Triodia secunda* hummock grasslands/ *Triodia epactia* and *Triodia secunda* hummock grasslands mosaic.	Red brown loam	16.98
Sandplain D	SD	Low *Eucalyptus victrix* woodland over *Acacia colei* var. *colei* shrubland over low open *Acacia stellaticeps* and *Pluchea tetranthera* shrubland over *Triodia epactia* hummock grassland.	Orange sand	0.07
Sandplain E	SE	Low open *Corymbia flavescens* and *Eucalyptus victrix* woodland over *Acacia colei* var. *colei* and *Acacia sericophylla* shrubland over low open *Acacia stellaticeps* shrubland over *Triodia epactia* hummock grassland.	Red brown sandy loam	0.36
Sandplain F	SF	Open *Acacia tumida* var. *pilbarensis* and *Acacia colei* var. *colei* shrubland over open *Triodia epactia* hummock grassland.	Red brown sandy loam	0.05
Sandplain G	SG	Low open *Corymbia flavescens* woodland over *Acacia colei* var. *colei*, *Carissa lanceolata* and *Acacia sericophylla* shrubland over *Triodia epactia* hummock grassland over very open **Cenchrus ciliaris*, *Chrysopogon fallax* and *Eriachne obtusa* tussock grassland.	Red brown sandy loam	0.02
Sandplain H	SH	*Acacia tumida* var. *pilbarensis* and *Acacia colei* var. *colei* shrubland over a low *Acacia stellaticeps* shrubland over *Triodia epactia* hummock grassland/ low *Acacia stellaticeps* shrubland over *Triodia epactia* hummock grassland mosaic.	Red brown sandy loam	59.58
Sandplain I	SI	*Acacia tumida* var. *pilbarensis* shrubland over low *Acacia stellaticeps* shrubland over *Triodia epactia* hummock grassland/ low *Acacia stellaticeps* shrubland over *Triodia epactia* hummock grassland/ *Triodia epactia* 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 *Corymbia flavescens* trees over open *Acacia tumida* var. *pilbarensis* shrubland over low open *Acacia stellaticeps* shrubland over *Triodia epactia* and *Triodia secunda* hummock grassland/*Triodia secunda* and *Triodia epactia* hummock grassland mosaic.	Light orange brown sand	2.78
Sandplain K	SK	Scattered low *Owenia reticulata* trees over *Acacia tumida* var. *pilbarensis* and *Acacia colei* var. *colei* shrubland over low *Acacia stellaticeps* shrubland over *Triodia epactia* hummock grassland/low *Acacia stellaticeps* shrubland over *Triodia epactia* hummock grassland mosaic.	Light orange brown sand	35.64
Sandplain L	SL	Low open *Corymbia zygophylla* woodland over open *Acacia colei* var. *colei*, *Acacia inaequilatera* and *Acacia ancistrocarpa* shrubland over 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.	Red brown sandy loam	0.33
Sandplain M	SM	Open *Acacia ancistrocarpa*, *Acacia tumida* var. *pilbarensis* and *Acacia inaequilatera* shrubland over a *Triodia lanigera* hummock grassland.	Light orange brown sand	0.52
Sandplain N	SN	Low open *Corymbia zygophylla* woodland over 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.	Light orange brown sand	75.14
Sandplain O	SO	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.	Light orange brown sand	36.13
Sandplain P	SP	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 *Triodia epactia* hummock grassland.	Red brown clayey loam	4.16
Sandplain Q	SQ	Scattered low *Corymbia flavescens* trees over open *Acacia ancistrocarpa* and *Acacia bivenosa* shrubland over scattered low *Acacia stellaticeps* shrubs over a *Triodia epactia* and *Triodia lanigera* 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 *Corymbia candida* subsp. *lautifolia* and *Corymbia hamersleyana* over *Acacia colei* var. *colei* and *Acacia tumida* var. *pilbarensis* open shrubland over *Triodia epactia* and *Triodia lanigera* hummock grassland.	Light orange brown sandy loam	37.85
Sandplain S	SS	Scattered *Acacia inaequilatera* shrubs over *Triodia epactia* and *Triodia lanigera* 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 km^2 **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 *Rhizophora stylosa* and *Avicennia marina* 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 km^2 **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 *Acacia bivenosa* shrubs between 2 -3 m
Low Shrub Layer	Low open *Crotalaria cunninghamii* shrubland to 1.5 m
Understorey	
Tussock Grasses	**Cenchrus ciliaris* tussock grassland under 0.5 m
Herbs	Scattered **Aerva javanica* 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 km^2 **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 *Atalaya hemiglauca*, *Santalum lanceolatum* and *Acacia bivenosa* shrubland between 1 – 3 m
Understorey	
Tussock Grasses	**Cenchrus ciliaris* 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 km^2 **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 *Acacia stellaticeps*, *Acacia bivenosa* and *Acacia ampliceps* shrubland between 0.3 - 1 m
Understorey	
Tussock Grasses	*Spinifex longifolius* and **Cenchrus ciliaris* tussock grassland under 0.5 m
Herbs	Scattered *Gomphrena canescens* 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 km^2 **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	*Scaevola amblyanthera* var. *centralis* and *Acacia stellaticeps* low shrubs under 1 m
Understorey	
Hummock Grasses	*Triodia epactia* very open hummock grassland to 0.4 m
Tussock Grasses	**Cenchrus ciliaris* open tussock grassland under 0.3 m
Herbs	*Bonamia alatisemina* and **Aerva javanica* 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 km^2 **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	*Avicennia marina* shrubs under 2 m
Low Shrub Layer	*Tecticornia halocnemoides*, *Threlkeldia diffusa* and *Tecticornia pterygosperma* subsp. *denticulata* shrubland to 0.5 m
Understorey	
Tussock Grasses	Very open *Eragrostis falcata* 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 km^2 **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 turdigifolia* is the main diagnostic of this association.

Stratum	Key Characteristics
Midstorey	
Middle Shrub Layer	*Avicennia marina* shrubs under 2 m
Low Shrub Layer	Low open *Tecticornia halocnemoides* subsp. *tenuis*, *Tecticornia halocnemoides* and *Trianthema turgidifolia* 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 km^2 **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 *Acacia bivenosa* and *Hakea lorea* subsp. *lorea* shrubland between 2-3 m
Low Shrub Layer	Scattered low *Rhagodia eremaea* and *Scaevola spinescens* shrubs to 0.5 m
Understorey	
Tussock Grasses	Scattered *Eriachne obtusa* 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 km^2 **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	*Triodia secunda* and *Triodia epactia* hummock grassland under 0.5 m
Tussock Grasses	Open *Sporobolus virginicus* and **Cenchrus ciliaris* 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 km^2 **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	*Triodia epactia* 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 km^2 **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	*Acacia tumida* var. *pilbarensis* between 1-1.5 m
Low Shrub Layer	Low *Acacia stellaticeps* shrubland to 0.5 m
Understorey	
Hummock Grasses	*Triodia epactia* 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 km^2 **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 *Eucalyptus victrix* trees to a height of 6 m
Midstorey	
Upper Shrub Layer	High open *Melaleuca argentea*, *Acacia ampliceps* and *Acacia trachycarpa* shrubland between 2 – 5 m
Low Shrub Layer	Scattered *Adriana urticoides* var. *urticoides* and *Pluchea ferdinandi-muelleri* shrubs under 1 m
Understorey	
Hummock Grasses	Open *Triodia epactia* 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 *Eucalyptus victrix* trees to a height of 6 m
Midstorey	
Middle Shrub Layer	*Acacia tumida* var. *pilbarensis* and *Acacia colei* var. *colei* shrubland to a height of 1.5 m
Low Shrub Layer	Scattered *Pluchea tetranthera* and *Indigofera monophylla* low shrubs under 1 m
Understorey	
Hummock Grasses	Very open *Triodia epactia* hummock grassland under 0.5 m
Tussock Grasses	Scattered *Eragrostis speciosa* and *Eriachne benthamii* 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 km^2 **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 and1% 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 *Corymbia candida* subsp. *lautifolia* woodland between 8-10 m
Midstorey	
Upper Shrub Layer	High open *Acacia colei* var. *colei*, *Acacia trachycarpa* and *Acacia tumida* var. *pilbarensis* shrubland to a height of 5 m
Understorey	
Hummock Grasses	*Triodia epactia* 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 km^2 **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 *Eucalyptus camaldulensis* subsp. *refulgens*, *Melaleuca lasiandra* and *Melaleuca argentea* woodland between 3-4 m
Midstorey	
Middle Shrub Layer	Scattered *Acacia trachycarpa* shrubs to a height of 1 m
Understorey	
Hummock Grasses	*Triodia epactia* hummock grassland under 0.4 m
Tussock Grasses	Open **Cenchrus ciliaris* and *Chloris pectinata* 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 km^2 **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 *Eucalyptus camaldulensis* subsp. *refulgens* woodland, between 10-20 m
Midstorey	
Middle Shrub Layer	*Acacia tumida* var. *pilbarensis* and *Cajanus cinereus* shrubland to a height of 1.7 m
Understorey	
Hummock Grasses	Very Open *Triodia epactia* 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 km^2 **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 *Acacia colei* var. *colei* and *Acacia inaequilatera* shrubs to a height of 2 m
Understorey	
Hummock Grasses	Scattered *Triodia* 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 km^2 **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 *Eucalyptus victrix* trees to a height of 6 m
Midstorey	
Middle Shrub Layer	Open *Acacia colei* var. *colei* and *Acacia ancistrocarpa* open shrubland to a height of 2 m
Understorey	
Hummock Grasses	*Triodia epactia* hummock grassland under 0.5 m
Tussock Grasses	Open *Paraneurachne muelleri* and *Eriachne benthamii* 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 km^2 **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 *Ficus brachypoda*, *Clerodendrum tomentosum* var. *lanceolatum* and *Carissa lanceolata* 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 km^2 **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 *Eucalyptus victrix* woodland to a height of 10 m
Midstorey	
Upper Shrub Layer	High open *Acacia ampliceps* and *Acacia trachycarpa* shrubland between 1-3 m
Lower Shrub Layer	Low open *Acacia stellaticeps*, *Pluchea ferdinandi-muelleri* and *Corchorus incanus* subsp. *incanus* shrubland to a height of 1 m
Understorey	
Hummock Grasses	*Triodia epactia* hummock grassland under 0.5 m
Tussock Grasses	*Aristida holathera* var. *latifolia*, *Eriachne obtusa* and **Cenchrus ciliaris* 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 km^2 **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 *Eucalyptus victrix* woodland to a height of 6 m
Midstorey	
Upper Shrub Layer	High open *Acacia ampliceps* shrubland to 3 m
Lower Shrub Layer	Low open *Acacia stellaticeps* and *Pluchea ferdinandi-muelleri* shrubland to a height of 0.5 m
Understorey	
Hummock Grasses	Closed *Triodia epactia* and *Triodia secunda* hummock grassland under 0.5 m
Tussock Grasses	Open *Eriachne obtusa*, *Aristida holathera* var. *latifolia* and **Cenchrus ciliaris* 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 km^2 **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 *Acacia stellaticeps* shrubland to a height of 0.6 m
Understorey	
Hummock Grasses	*Triodia epactia* and *Triodia secunda* 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 km^2 **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 *Acacia colei* var. *colei* shrubland to a height of 2 m
Lower Shrub Layer	Low *Acacia stellaticeps* shrubland to a height of 0.6 m
Understorey	
Hummock Grasses	*Triodia epactia* and *Triodia secunda* 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 km^2 **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 *Corymbia flavescens* woodland to a height of 5 m
Midstorey	
Middle Shrub Layer	Open *Acacia colei* var. *colei* shrubland to a height of 3 m
Low Shrub Layer	Low *Acacia stellaticeps* shrubland under 1 m
Understorey	
Hummock Grasses	Very open *Triodia epactia* hummock grassland under 0.5 m
Tussock Grasses	Scattered *Eragrostis speciosa* and *Eriachne benthamii* tussock grasses under 1 m

Vegetation Condition

Condition Rating: Excellent

Disturbances: Nearby tracks

Average Fire Age: Old

Broad Formation: Sandplain D
Vegetation Association:
Alow *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 km^2 **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 *Eucalyptus victrix* woodland to a height of 3 m
Midstorey	
Middle Shrub Layer	*Acacia colei* var. *colei* shrubland to a height of 2 m
Low Shrub Layer	Low open *Acacia stellaticeps* and *Pluchea tetranthera* shrubland under 0.6 m
Understorey	
Hummock Grasses	*Triodia epactia* and *Triodia schinzii* hummock grassland under 0.5 m
Tussock Grasses	*Eragrostis obtusa* and *Chrysopogon fallax* 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 km^2 **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 *Corymbia flavescens* and *Eucalyptus victrix* woodland to a height of 3 m
Midstorey	
Middle Shrub Layer	*Acacia colei* var. *colei* and *Acacia sericophylla* shrubland to a height of 3 m
Low Shrub Layer	Low open *Acacia stellaticeps* shrubland under 0.75 m
Understorey	
Hummock Grasses	*Triodia epactia* hummock grassland under 0.5 m
Tussock Grasses	*Eragrostis benthamii* tussock grassland under 0.5 m

Vegetation Condition

Condition Rating: Excellent

Disturbances: Rubbish

Average Fire Age: Old

Broad Formation: Sandplain F

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

No photo available

Area: 0.05 km^2 **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 *Acacia tumida* var. *pilbarensis* and *Acacia colei* var. *colei* shrubland to a height of 2 m
Understorey	
Hummock Grasses	*Triodia epactia* 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 km^2 **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 *Corymbia flavescens* woodland between 2-6 m
Midstorey	
Middle Shrub Layer	*Acacia colei* var. *colei*, *Carissa lanceolata* and *Acacia sericophylla* shrubland to a height of 5 m
Understorey	
Hummock Grasses	*Triodia epactia* hummock grassland under 0.6 m
Tussock Grasses	Very open **Cenchrus ciliaris*, *Chrysopogon fallax* and *Eriachne obtusa* 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 km^2 **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	*Acacia tumida* var. *pilbarensis* and *Acacia colei* var. *colei* shrubland to a height of 3 m
Lower Shrub Layer	Low *Acacia stellaticeps* shrubland between 0.5-1 m
Understorey	
Hummock Grasses	*Triodia epactia* 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 km^2 **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	*Acacia tumida* var. *pilbarensis* shrubland to a height of 1.5 m
Lower Shrub Layer	Low *Acacia stellaticeps* shrubland between 0.5 m
Understorey	
Hummock Grasses	*Triodia epactia* and *Triodia lanigera* 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 km^2 **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 *Corymbia flavescens* trees to a height of 2 m
Midstorey	
Middle Shrub Layer	Open *Acacia tumida* var. *pilbarensis* shrubland to a height of 1.5 m
Lower Shrub Layer	Low open *Acacia stellaticeps* shrubland to a height of 0.5 m
Understorey	
Hummock Grasses	*Triodia epactia* and *Triodia secunda* 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 km^2 **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 *Owenia reticulata* trees to a height of 2 m
Midstorey	
Middle Shrub Layer	*Acacia tumida* var. *pilbarensis* and *Acacia colei* var. *colei* shrubland to a height of 2.5 m
Lower Shrub Layer	Low open *Acacia stellaticeps* shrubland to a height of 0.7 m
Understorey	
Hummock Grasses	*Triodia epactia* 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 km^2 **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 *Corymbia zygophylla* woodland to a height of 4 m
Midstorey	
Middle Shrub Layer	Open *Acacia colei* var. *colei*, *Acacia inaequilatera* and *Acacia ancistrocarpa* shrubland to a height of 2.5 m
Lower Shrub Layer	Low open *Acacia stellaticeps* shrubland to a height of 0.7 m
Understorey	
Hummock Grasses	*Triodia epactia* 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 km^2 **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 *Acacia ancistrocarpa*, *Acacia tumida* var. *pilbarensis* and *Acacia inaequilatera* shrubland to a height of 2 m
Understorey	
Hummock Grasses	*Triodia lanigera* and *Triodia epactia* 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 km^2 **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 *Corymbia zygophylla* woodland to a height of 4 m
Midstorey	
Middle Shrub Layer	Open *Acacia ancistrocarpa*, *Acacia inaequilatera*, *Acacia tumida* var. *pilbarensis* and *Acacia sericophylla* shrubland to a height of 3 m
Lower Shrub Layer	*Acacia stellaticeps* low open shrubland to a height of 1 m
Understorey	
Hummock Grasses	*Triodia epactia* and *Triodia lanigera* 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 km^2 **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 *Eucalyptus victrix* and *Corymbia hamersleyana* trees to a height of 6 m
Midstorey	
Middle Shrub Layer	Open *Acacia ancistrocarpa*, *Acacia tumida* var. *pilbarensis*, *Acacia inaequilatera* and *Acacia trudgeniana* shrubland between 1-2 m
Lower Shrub Layer	Low open *Acacia stellaticeps* shrubland to a height of 0.4 m
Understorey	
Hummock Grasses	*Triodia epactia* and *Triodia lanigera* 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 km^2 **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 *Eucalyptus victrix*, *Corymbia hamersleyana* and *Corymbia flavescens* woodland to a height of 7 m
Midstorey	
Middle Shrub Layer	Open *Acacia colei* var. *colei* shrubland between 1-3 m
Lower Shrub Layer	Low open *Acacia stellaticeps* and *Pluchea tetranthera* shrubland to a height of 0.5 m
Understorey	
Hummock Grasses	*Triodia epactia* 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 *Corymbia flavescens* trees to a height of 4 m
Midstorey	
Middle Shrub Layer	Open *Acacia ancistrocarpa* and *Acacia bivenosa* shrubland to a height of 1.5 m
Lower Shrub Layer	Scattered low *Acacia stellaticeps* shrubs to a height of 0.8 m
Understorey	
Hummock Grasses	*Triodia epactia* and *Triodia lanigera* 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 km^2 **Quadrats Sampled** PI030, PI034, PI074, PI075, PI076, PI077, PIO78, 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 *Corymbia candida* subsp. *lautifolia* and *Corymbia hamersleyana* woodland between 2-5 m
Midstorey	
Middle Shrub Layer	*Acacia colei* var. *colei* and *Acacia tumida* var. *pilbarensis* open shrubland to a height of 3 m
Understorey	
Hummock Grasses	*Triodia epactia* and *Triodia lanigera* 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 Landform: This vegetation association occurs on sandplains in the east of the study area

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 *Acacia inaequilatera* shrubs to a height of 2 m
Understorey	
Hummock Grasses	*Triodia epactia* and *Triodia lanigera* 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 (Samphire 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 km^2 and the Rock Outcrops covers 0.48 km^2. 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.

5 REFERENCES

Aplin (1979). *Part-3 – The Vegetation of Western Australia* in the Western Australian Year Book No 17 – 1979 – Australian Bureau of Statistics, Western Australian Office.

Australian National Herbarium (2011). *Australian Plant Image Index*. Australian National Botanic Gardens. [September 2011] Online: http://www.anbg.gov.au/photo/

Beard JS (1975). *Vegetation Survey of Western Australia: Sheet 5 Pilbara*, University of Western Australia Press, Perth, Western Australia.

BHP Billiton Iron Ore [BHPBIO] (2010). *Guidance for Vegetation and Flora Surveys in the Pilbara Region*. BHP Billiton. BHP Billiton Iron Ore, Perth, Western Australia.

Biota Environmental Sciences (2004). *Vegetation and Flora Survey of the Proposed FMG Stage A Rail Corridor*, Report for Fortescue Metals Groups

Biota Environmental Sciences (2006). Port Hedland Solar Saltfield Expansion Botanical Survey. Unpublished report prepared for Dampier Salt Limited.

Biota Environmental Sciences (2008a). A Flora and Fauna Assessment of RGP5 Spoil Areas A and H, Port Hedland Harbour. Unpublished report prepared for Sinclair Knight Merz Pty Ltd.

Biota Environmental Sciences (2008b). A Biodiversity Assessment of the Utah Point Berth Development Port Hedland. Unpublished report prepared for Sinclair Knight Merz Pty Ltd.

Biota Environmental Sciences (2008c). *A Flora and Fauna Assessment of RGP5 DMMA A, Port Hedland Harbour.* Unpublished report prepared for Sinclair Knight Merz Pty Ltd.

Biota Environmental Sciences (2009). *Port Hedland Nelson Point Dredging Approvals Flora and Fauna Review of DMMA H.* Unpublished report prepared for Sinclair Knight Merz Pty Ltd.

Burbidge, NT (1959). *Notes on Plants and Plant Habitats Observed in the Abydos-Woodstock Area, Pilbara District, Western Australia.* CSIRO Div. Plant Ind. Tech. Paper 12.

Bureau of Meteorology [BoM] (2011). *Daily Weather Observations*. Commonwealth of Australia. Available from: <www.bom.gov.au/climate> [August 2011].

Commonwealth of Australia (2011). *Weeds of National Significance*. Commonwealth of Australia. Available from: < http://www.weeds.gov.au/weeds/lists/wons.html> [October 2011].

Department of Agriculture and Food Western Australia [DAFWA] (2007). *Comprehensive Adequate and Representative Reserve Analysis*. Department of Agriculture and Food, Western Australia.

Department of Agriculture and Food, Western Australia [DAFWA] (2011). *Agriculture and Related Resources Protection Act 1976*: Declared Plants, January 2011. Online: <http://www.agric.wa.gov.au/objtwr/imported_assets/content/pw/weed/decp/dec_plants_list.pdf> [August 2011]

Department of Conservation and Land Management [CALM] (1999). *Environmental Weed Strategy for Western Australia*. Department of Conservation and Land Management, Perth, Western Australia.

Department of Environment and Conservation [DEC] (2011a). *Pilbara Biological Survey Database. Department of Environment and Conservation.* Online: http://science.calm.wa.gov.au/projects/pilbaradb/

Department of Environment and Conservation [DEC] (2011b). *NatureMap: Mapping Western Australia's Biodiversity*. Department of Environment and Conservation and Western Australian Museum. Available from: <http://naturemap.dec.wa.gov.au/> [March 2011].

Department of Environment and Conservation [DEC] (2011c). *Priority Flora Database Search*. Department of Environment and Conservation, Perth, Western Australia.

Department of Environment and Conservation [DEC] (2011d). *Priority and Threatened Ecological Community Database Search*. Department of Environment and Conservation, Perth, Western Australia

Department of Natural Resources and Environment (2002). *Biodiversity Action Planning. Action planning for native biodiversity at multiple scales; catchment bioregional; landscape, local.* Department of Natural Resources and Environment, Victoria.

Department of Sustainability, Environment, Water, Population and Communities [DSEWPaC] (2011a). *Maps: Australia's Bioregions (IBRA)* Available from: <www.environment.gov.au/parks/nrs/science/bioregion-framework/ibra/index.html> [August 2011].

Department of Sustainability, Environment, Water, Population and Communities [DSEWPaC] (2011b). *EPBC Act Protected Matters Search Tool.* Available from: <www.environment.gov.au/erin/ert/epbc/index.html> [February 2011].

Dillon, SJ (2010). *Taxonomic Identification of the ENV Australia collections of Tephrosia rosea from the Port Hedland area.* Unpublished report for ENV.Australia and BHP Billiton Pty Ltd.

ENV.Australia (2008a). *Port Hedland Nelson Point DMMA A Area Flora and Vegetation Assessment.* Unpublished report prepared for Sinclair Knight Merz Pty Ltd.

ENV.Australia (2008b). *Project Quantum Flora and Vegetation Assessment*. Unpublished report prepared for Sinclair Knight Merz Pty Ltd.

ENV.Australia (2009a). *Outer Harbour Development Flora and Vegetation Assessment*. Unpublished report prepared for Sinclair Knight Merz Pty Ltd.

ENV.Australia (2009b). *Port Hedland Nelson Point DMMA H Area Flora and Vegetation Assessment.* Unpublished report prepared for Sinclair Knight Merz Pty Ltd.

ENV.Australia (2009c). *Goldsworthy Rail Duplication Flora and Vegetation Assessment*. Unpublished report prepared for Sinclair Knight Merz Pty Ltd.

ENV.Australia (2009d). *Port Hedland Nelson Point Dredging Approvals Targeted Species Assessment of DMMA H.* Unpublished report prepared for Sinclair Knight Merz Pty Ltd.

ENV.Australia (2009e). *Port Hedland Area Targeted Flora Survey.* Unpublished report prepared for Sinclair Knight Merz Pty Ltd.

ENV.Australia (2009f). *Boodarie Depot Flora and Vegetation Assessment*. Unpublished report prepared for Calibre Engenium Joint Venture.

ENV.Australia (2009g). *Port Hedland Transmission Lines Flora and Fauna Assessment*. Unpublished report prepared for WorleyParsons.

ENV.Australia (2009h). *Finucane Island Causeway Flora and Vegetation Assessment*. Unpublished report prepared for Calibre Engenium Joint Venture.

ENV.Australia (2009i). *Finucane Island Rail Project*. Unpublished report prepared for Calibre Engenium Joint Venture.

ENV.Australia (2010a). *Wallwork Road Bridge Flora and Vegetation Assessment*. Unpublished report prepared for Fluor and SKM Iron Ore Joint Venture (FAST JV).

ENV.Australia (2010b). *Goldsworthy Rail Development Supplemental Flora and Vegetation Assessment*. Unpublished report prepared for Fluor and SKM Iron Ore Joint Venture (FAST JV).

ENV.Australia (2010c). *Finucane Island to Wedgefield Flora and Vegetation Assessment*. Unpublished report prepared for Fluor and SKM Iron Ore Joint Venture (FAST JV).

ENV.Australia (2010d). *Great Northern Highway Road Bridge Flora and Vegetation Assessment.* Unpublished report prepared for Fluor and SKM Iron Ore Joint Venture (FAST JV).

ENV.Australia (2010e). *Tug Harbour (Wedgefield) Flora and Vegetation Survey and Fauna Assessment.* Unpublished report prepared for Fluor and SKM Iron Ore Joint Venture (FAST JV).

ENV.Australia (2010f). *Hunt Point Beach Flora, Vegetation and Fauna Assessment*. Unpublished report prepared for Fluor and SKM Iron Ore Joint Venture (FAST JV).

ENV.Australia (2010g). *Boodarie Drive Intersection Vegetation Clearing Permit*. Unpublished report prepared for WorleyParsons.

ENV.Australia (2010h). *Native Vegetation Clearing Permit Number 3463/1 Amendment - Flora, Vegetation and Fauna Summary Letter*. Unpublished report prepared for Fluor and SKM Iron Ore Joint Venture (FAST JV).

ENV.Australia (2011). *Targeted Regional Tephrosia rosea* var*. venulosa Survey*. Unpublished report prepared for Calibre Engenium Joint Venture.

Environmental Protection Authority [EPA] (2001). Guidance for the Protection of Tropical Arid Zone Mangroves along the Pilbara Coast. Guidance Statement No. 1. EPA, Perth, Western Australia.

Environmental Protection Authority [EPA] (2000). *Environmental Protection of Native Vegetation in Western Australia: Clearing of Native Vegetation with Particular Reference to Agricultural Areas. Position Statement No. 2.* EPA, Perth, Western Australia.

Environmental Protection Authority [EPA] (2002). *Terrestrial Biological Surveys as an Element of Biodiversity Protection. Position Statement No. 3.* EPA, Perth, Western Australia.

Environmental Protection Authority [EPA] (2004). *Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia, No. 51.* EPA, Perth, Western Australia.

Geological Survey of Western Australia (1990). Port Hedland*, Western Australia 1:250 000 Geological Series.* Geological Survey of Western Australia, Perth, Western Australia.

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

Halpern Glick Maunsell Pty Ltd (1999). *Marillana Creek Tree Stress Monitoring Summer 1998-1999.* Unpublished report prepared for BHP Billiton Iron Ore.

Hope Downs Management Services Pty Ltd (2002). *Hope Downs Iron Ore Project Rail and Port Public Environmental Review.*

Kendrick, P and McKenzie, N (2001). Pilbara 1 (PIL3 – Chichester subregion). *In: A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002*. Department of Conservation and Land Management, Western Australia.

Kendrick, P and Stanley, F (2001). Pilbara 4 (PIL4 – Roebourne synopsis). In: *A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002*. Department of Conservation and Land Management, Western Australia.

Maia Environmental Consultancy (2010). *Level One Flora and Vegetation Assessment of Mooka Siding.* Unpublished report prepared for Fluor and SKM Iron Ore Joint Venture (FAST JV).

Mattiske Consulting (1994). *Hedland HBI Project – Boodarie Site Flora, Vegetation and Vertebrate Fauna.* Report prepared for BHP Minerals.

Shepherd, DP, Beeston, GR and Hopkins, AJM (2001). *Native Vegetation in Western Australia: Extent, Type and Status. Resource Management Technical Report 249*, Department of Agriculture, Government of Western Australia.

Shepherd, K (2009). *Targeted survey of Tecticornia (Chenopodiaceae) in the Nelson Point to Bing Siding Rail Duplication Study area, Port Hedland.* Unpublished report prepared for BHP Billiton Iron Ore.

Specht RL (1970). *Vegetation. In the Australian Environment: 4th Edition* (ed. G.W. Leeper). CSIRO, Melbourne University Press, Melbourne.

Thackway, R and Cresswell, ID (1995). *An Interim Biogeographic Regionalisation for Australia: A framework for setting priorities in the National Reserves System Cooperative Program, Version 4.0*. Australian Nature Conservation Agency, Canberra.

Tille, P (2006). Soil-Landscape Zones of the WA Rangelands and Interior. Resource Management Technical Report 313. Department of Agriculture and Food. Western Australia.

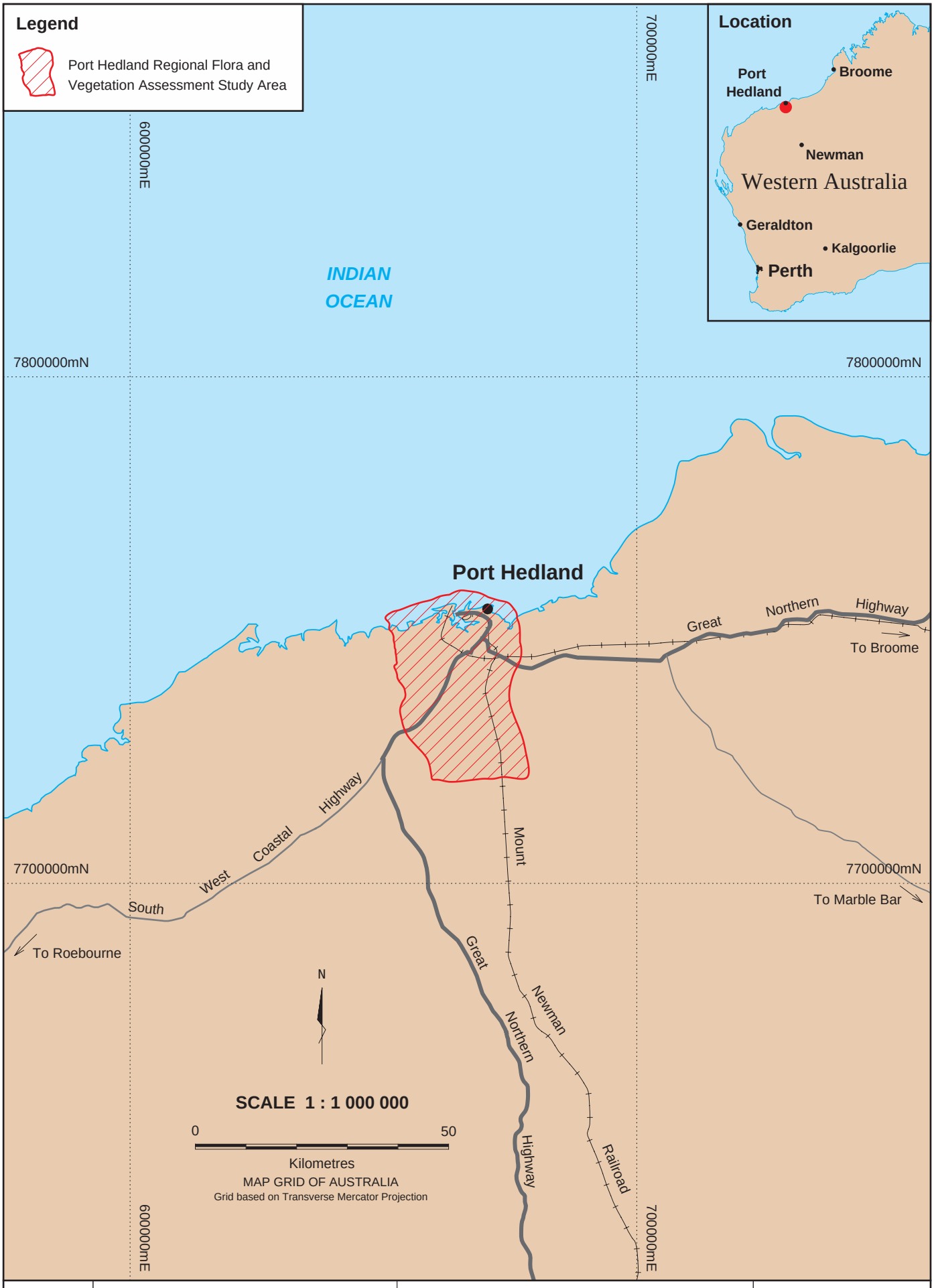
Trudgen ME (2002). *A Flora, Vegetation and Floristic Survey of the Burrup Peninsula, Some Adjoining Areas and Part of the Dampier Archipelago, with Comparisons to the Floristics of Areas on the Adjoining Mainland.* Unpublished Report prepared by M.E. Trudgen and Associates for The Department of Mineral & Petroleum Resources, Perth W.A.

van Vreeswyk, AME, Payne, AL, Leighton, KA, and Hennig, P (2004). *An Inventory and Condition Survey of the Pilbara Region of Western Australia.* Technical Bulletin 92. Department of Agriculture, Government of Western Australia.

Western Australian Herbarium [WAH] (2011). *Florabase - Information on the Western Australian Flora*. Department of Environment and Conservation, Perth. Online: *http://florabase.calm.wa.gov.au/*. [March – September 2011].

Woodman Environmental Consulting (2011). *North West Iron Ore Alliance Port Project Flora, Vegetation and Mangal Studies.* Unpublished report prepared for Coffey Environments.

FIGURES



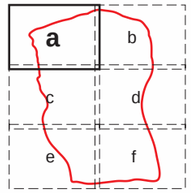
env Australia	Client: BHP BILLITON IRON ORE	REGIONAL LOCATION	Date: 8 December 2011
	Project: PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT		Scale: 1:1 Million
			Author: E.C. / S.C.
			Figure No. 1
		J100489 A4	Plan No. PH-001

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)
NWI44	North West Iron Ore Alliance Port Project Flora, Vegetation and Mangal Studies (Woodman 2011)

Location



N

SCALE 1 : 50 000

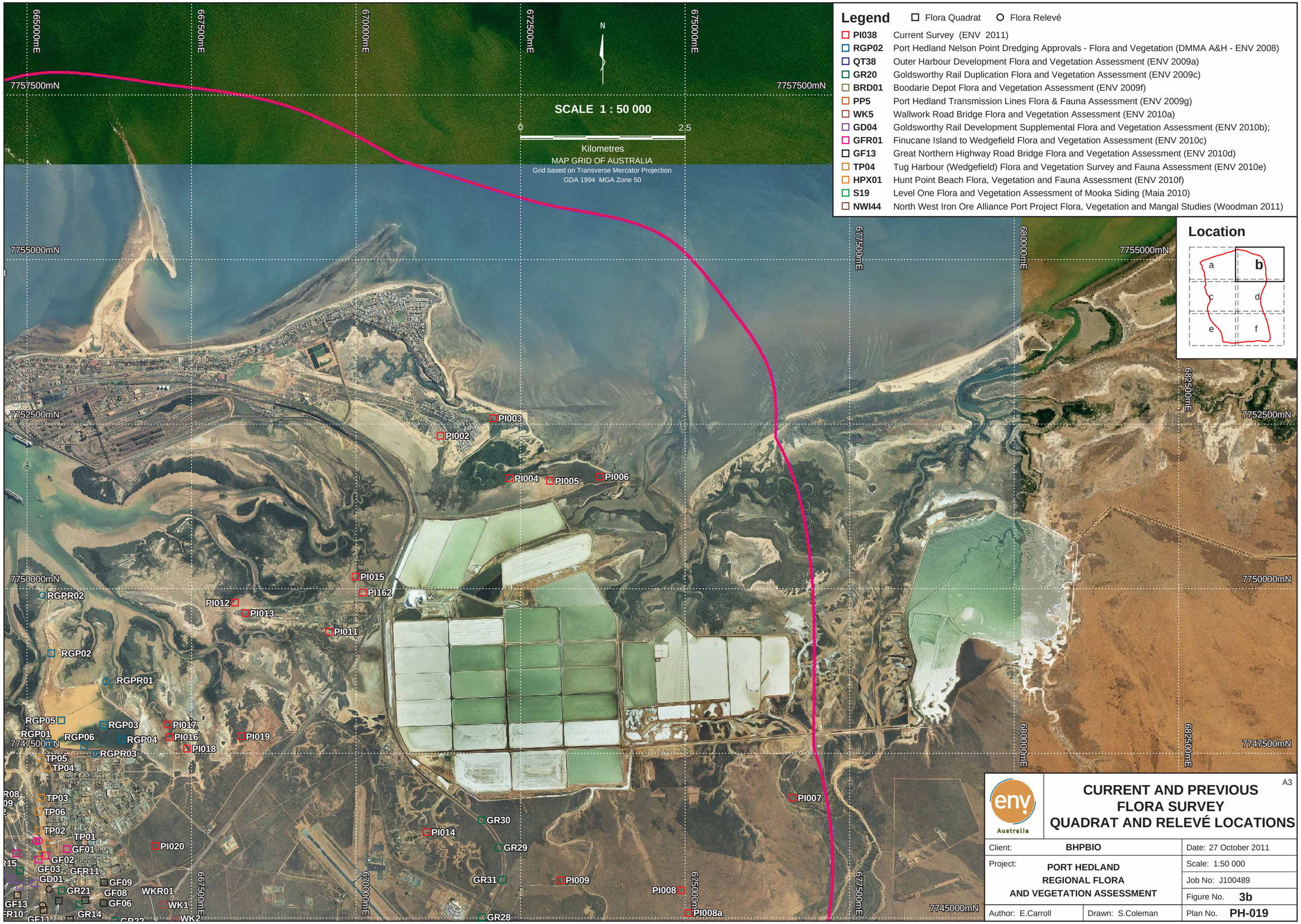
0 2.5 Kilometres

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

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: E.Carroll	Drawn: S.Coleman	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)
NWI44	North West Iron Ore Alliance Port Project Flora, Vegetation and Mangal Studies (Woodman 2011)

Location

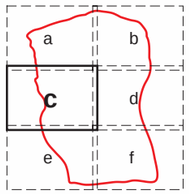
CURRENT AND PREVIOUS FLORA SURVEY QUADRAT AND RELEVÉ LOCATIONS

A3

env Australia

Client: BHPBIO		Date: 27 October 2011
Project: PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT		Scale: 1:50 000
		Job No: J100489
		Figure No. **3b**
Author: E.Carroll	Drawn: S.Coleman	Plan No. **PH-019**

Location



N

SCALE 1 : 50 000

0 — 2.5

Kilometres

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

Legend

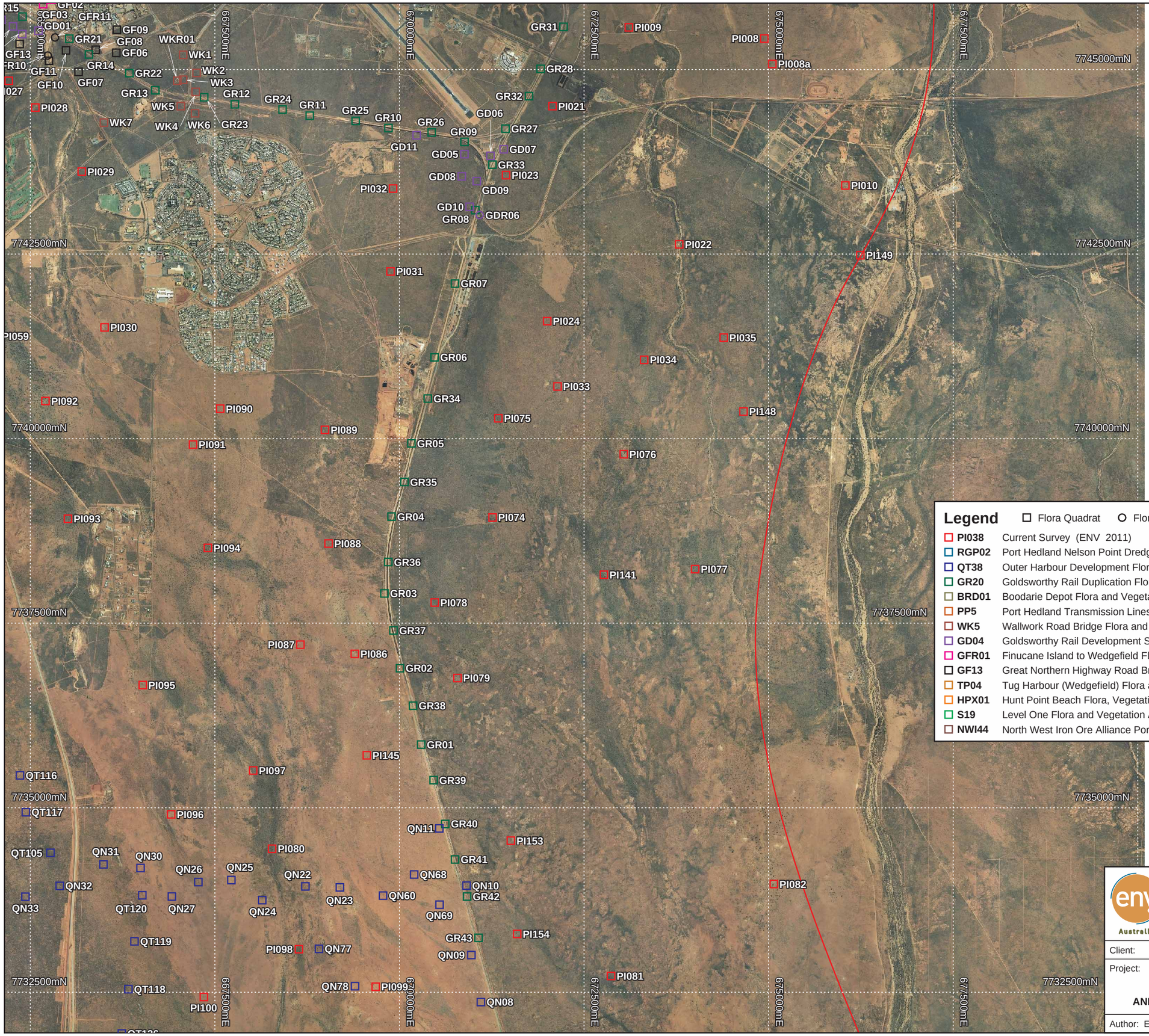
Flora Quadrat Flora Relevé

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)
NWI44	North West Iron Ore Alliance Port Project Flora, Vegetation and Mangal Studies (Woodman 2011)

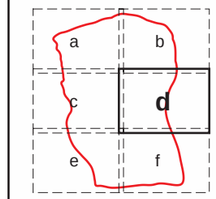
A3

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: J100489
		Figure No. **3c**
Author: E.Carroll	Drawn: S.Coleman	Plan No. **PH-020**



Location



N

SCALE 1 : 50 000

0 — 2.5

Kilometres

MAP GRID OF AUSTRALIA

Grid based on Transverse Mercator Projection

GDA 1994 MGA Zone 50

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)
NWI44	North West Iron Ore Alliance Port Project Flora, Vegetation and Mangal Studies (Woodman 2011)

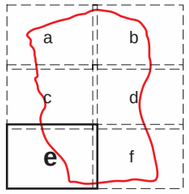
env Australia

A3

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: J100489
		Figure No. **3d**
Author: E.Carroll	Drawn: S.Coleman	Plan No. **PH-021**

Location



Legend

Flora Quadrat Flora Relevé

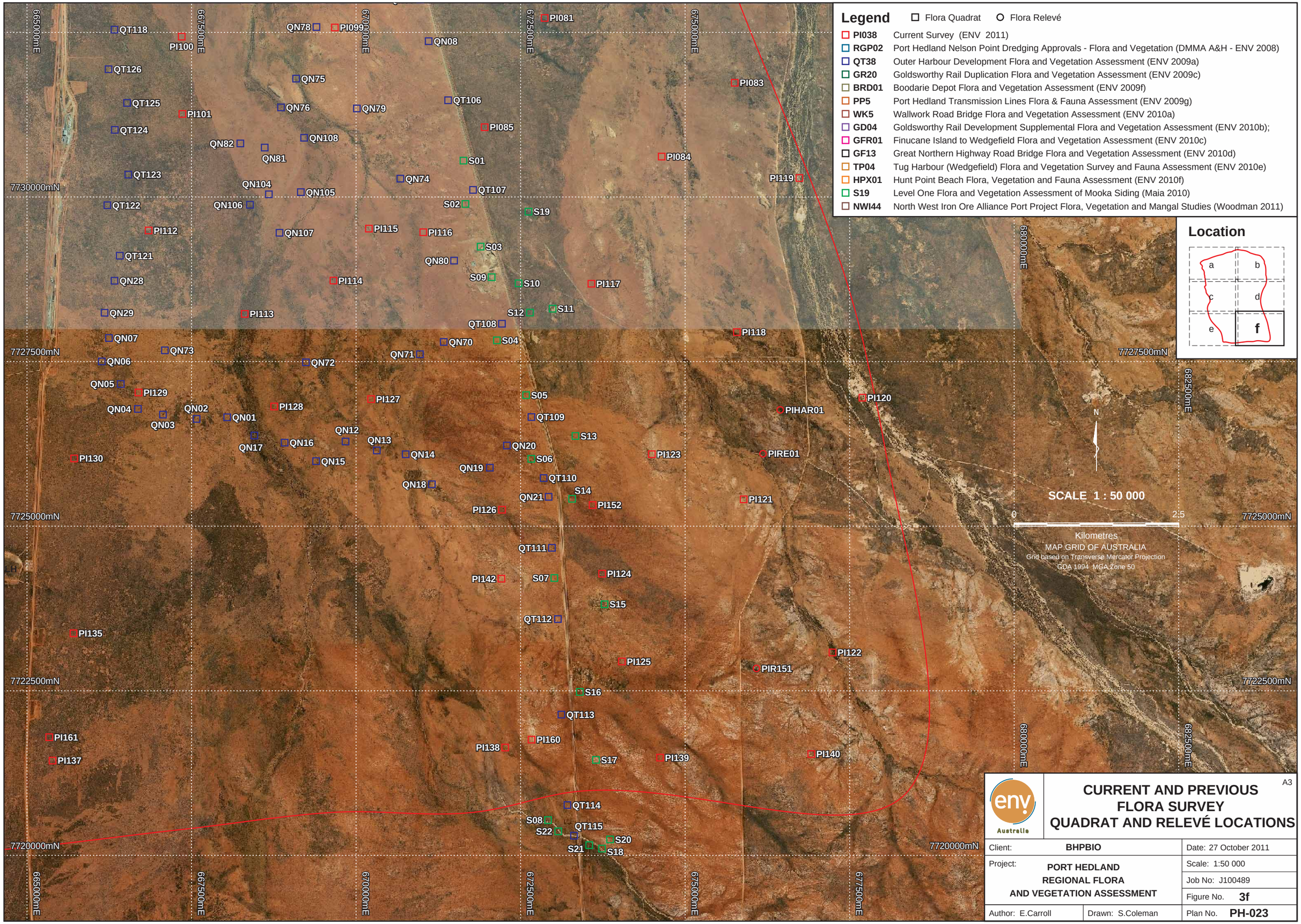
PI038	Current Survey (ENV 2011)
RGP02	Port Hedland Nelson Point Dredging Approvals - Flora and Vegetation (DMMA A&H - ENV 2008)
QT38	Outer Harbour Development Flora and Vegetation Assessment (ENV 2009a)
GR20	Goldsworthy Rail Duplication Flora and Vegetation Assessment (ENV 2009c)
BRD01	Boodarie Depot 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)
NWI44	North West Iron Ore Alliance Port Project Flora, Vegetation and Mangal Studies (Woodman 2011)

env Australia

A3

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: J100489
		Figure No. **3e**
Author: E.Carroll	Drawn: S.Coleman	Plan No. **PH-022**

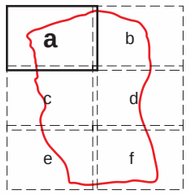


env Australia		A3
CURRENT AND PREVIOUS FLORA SURVEY QUADRAT AND RELEVÉ LOCATIONS		
Client: **BHPBIO**		Date: 27 October 2011
Project: **PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT**		Scale: 1:50 000
		Job No: J100489
		Figure No. **3f**
Author: E.Carroll	Drawn: S.Coleman	Plan No. **PH-023**

Legend

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

Location



652500mE 655000mE 657500mE 660000mE 662500mE 665000mE

7757500mN

7755000mN

7752500mN

7750000mN

7747500mN

7745000mN

647500mE 650000mE

N

SCALE 1 : 50 000

0 2.5

Kilometres

MAP GRID OF AUSTRALIA

Grid based on Transverse Mercator Projection

GDA 1994 MGA Zone 50

Tephrosia rosea var*venulosa* (P1)

Tephrosia rosea var*venulosa* (P1)

Tephrosia rosea var*venulosa* (P1)

Tephrosia rosea var*venulosa* (P1)

Gymnanthera cunninghamii (P3)

Gymnanthera cunninghamii (P3)

Gomphrena pusilla (P2)

Goodenia nuda (P4)

Gomphrena pusilla (P2)

Tephrosia rosea ? var.*venulosa* (P1)

Pterocaulon sp. A Kimberley Flora (B.J. Carter 599) (P3)

Eragrostis crateriformis (P3)

Pterocaulon sp. A Kimberley Flora (B.J. Carter 599) (P3)

Goodenia nuda (P4)

Tephrosia rosea var*venulosa* (P1)

Bulbostylis burbidgeae (P4)

Tephrosia rosea var*venulosa* (P1)

Goodenia nuda (P4)

Gomphrena leptophylla (P3)

Goodenia nuda (P4)

Bulbostylis burbidgeae (P4)

Tephrosia rosea var*venulosa* (P1)

Tephrosia rosea ? var.*venulosa* (P1)

Tephrosia rosea var.*rosea / venulosa*

Tephrosia rosea var. aff*venulosa*

Tephrosia rosea var. aff*venulosa*

Tephrosia rosea var*venulosa* (P1)

Eragrostis crateriformis (P3)

Tephrosia rosea var. aff*venulosa*

Goodenia nuda (P4)

Goodenia nuda (P4)

Tephrosia rosea var*venulosa* (P1)

env Australia

A3

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
		Figure No. **4a**
Author: E.Carroll	Drawn: S.Coleman	Plan No. **PH-024**

665000mE
667500mE
670000mE
672500mE
675000mE
677500mE
680000mE
682500mE

7757500mN
7755000mN
7752500mN
7750000mN
7747500mN
7745000mN

N

SCALE 1 : 50 000

0 2.5

Kilometres

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

Legend

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

Location

a | b
c | d
e | f

599) (P3)
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*
Tephrosia rosea var*venulosa* (P1)
Tephrosia rosea var.*rosea / venulosa*
Tephrosia rosea var*venulosa* (P1)
Tephrosia rosea var.*rosea / venulosa*

A3

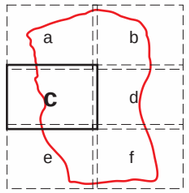
LOCATION OF PRIORITY FLORA

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

Legend

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

Location





N

SCALE 1 : 50 000

0 — 2.5

Kilometres

MAP GRID OF AUSTRALIA

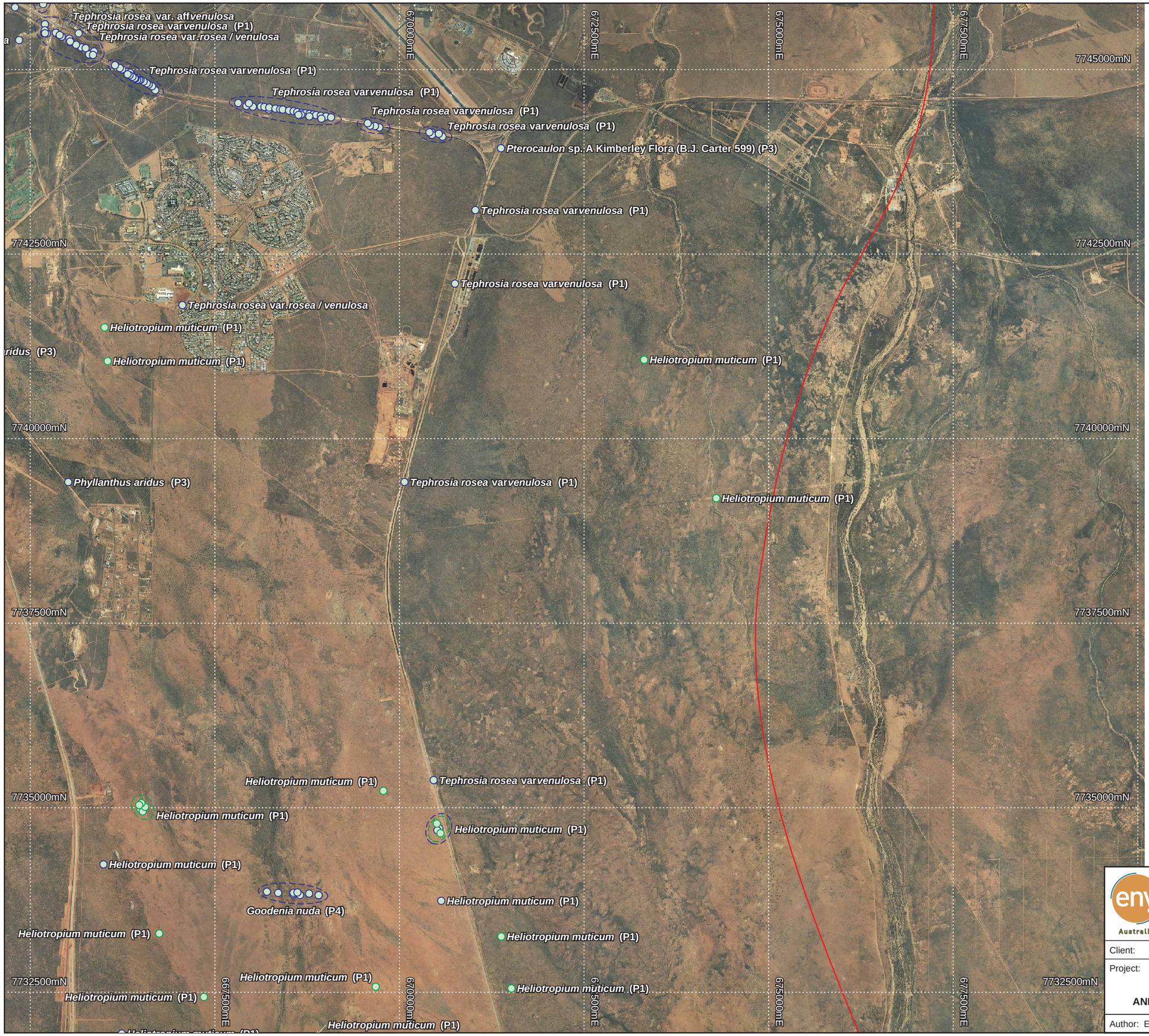
Grid based on Transverse Mercator Projection

GDA 1994 MGA Zone 50

A3

LOCATION OF PRIORITY FLORA

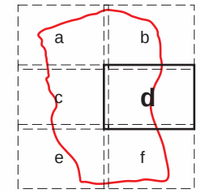
Client:	**BHPBIO**	Date: 27 October 2011
Project:	**PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT**	Scale: 1:50 000
		Job No: J100489
		Figure No. **4c**
Author: E.Carroll	Drawn: S.Coleman	Plan No. **PH-026**



Legend

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

Location



N

SCALE 1 : 50 000

0 2.5

Kilometres

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

A3

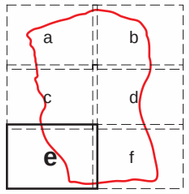
LOCATION OF PRIORITY FLORA

Client: BHPBIO		Date: 27 October 2011
Project: PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT		Scale: 1:50 000
		Job No: J100489
		Figure No. 4d
Author: E.Carroll	Drawn: S.Coleman	Plan No. PH-027

Legend

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

Location



Abutilon pritzelianum (P1)

Abutilon pritzelianum (P1)

Abutilon pritzelianum (P1)

Abutilon pritzelianum (P1)

Abutilon pritzelianum (P1)

Abutilon

Abu

Ab

Heliot

7732500mN

7730000mN

7727500mN

7725000mN

7722500mN

7720000mN

652500mE

655000mE

657500mE

660000mE

662500mE

665000mE

647500mE

650000mE

N

SCALE 1 : 50 000

0 2.5

Kilometres

MAP GRID OF AUSTRALIA

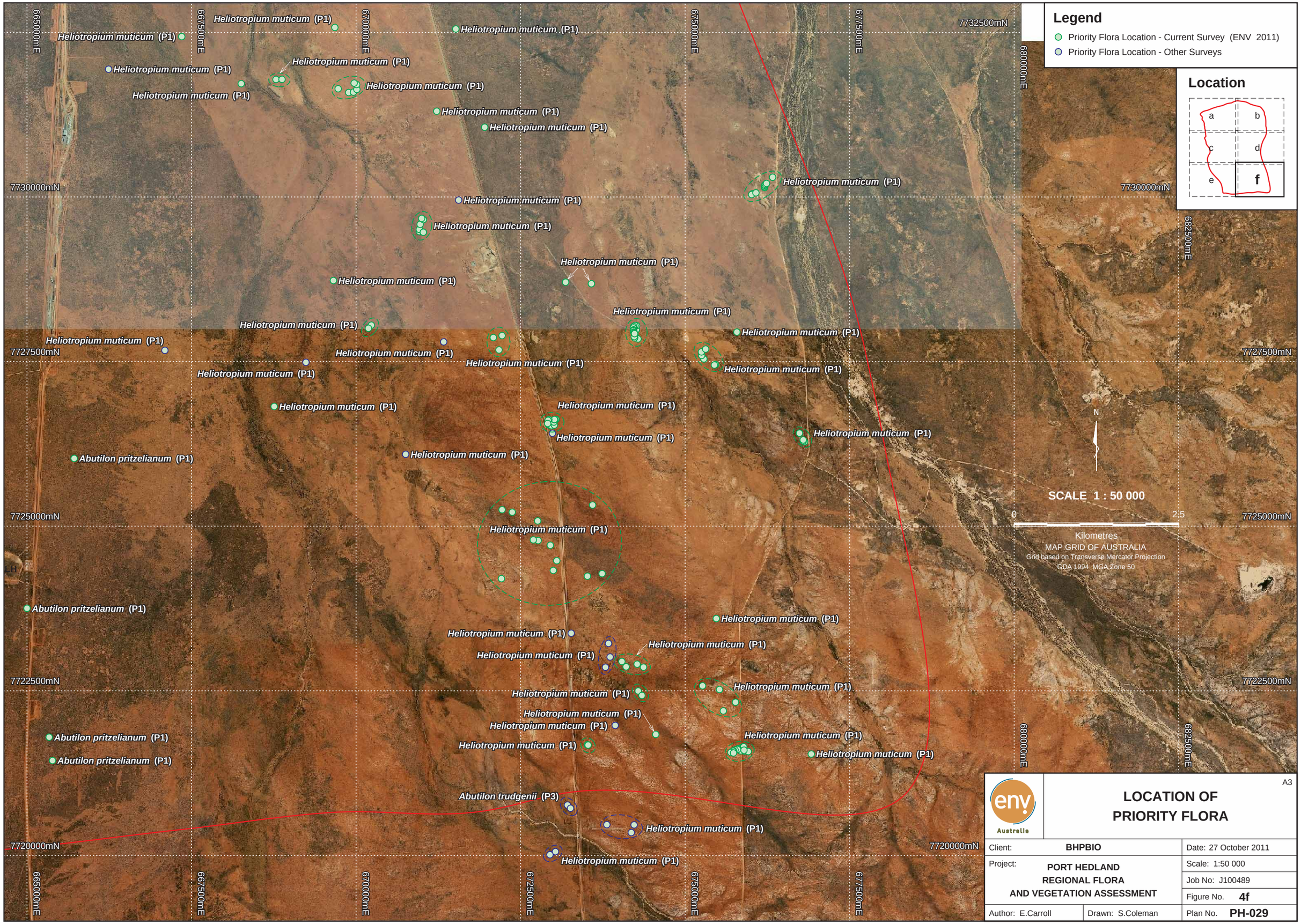
Grid based on Transverse Mercator Projection

GDA 1994 MGA Zone 50

A3

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
		Figure No. 4e
Author: E.Carroll	Drawn: S.Coleman	Plan No. PH-028



A3

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
		Figure No. 4f
Author: E.Carroll	Drawn: S.Coleman	Plan No. PH-029

LOCATION OF SPECIES OF INTEREST

A3

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

Legend

- Species of Interest

660000mE 665000mE 670000mE 675000mE

650000mE

7755000mN

7750000mN

7745000mN

7740000mN

N

SCALE 1 : 75 000

0 5

Kilometres

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

Murdannia graminea

Bergia pedicellaris
Mimulus uvedaliae var.*uvedaliae*
Murdannia graminea

Drosera burmanni
Murdannia graminea

Mimulus uvedaliae var.*uvedaliae*
Murdannia graminea

Murdannia graminea
Vigna lanceolata var.*filiformis*

Tephrosia simplicifolia

Murdannia graminea

Drosera burmanni
Murdannia graminea
Vigna lanceolata var.*filiformis*

Tephrosia simplicifolia

Bergia pedicellaris

Tephrosia simplicifolia

Murdannia graminea

Location

a

b

7740000mN
7735000mN
7730000mN
7725000mN
7720000mN
655000mE
660000mE
665000mE
670000mE
675000mE
680000mE

Murdannia graminea

Tephrosia simplicifolia

Tephrosia simplicifolia

Tephrosia simplicifolia

Tephrosia simplicifolia

Tephrosia simplicifolia

Bergia pedicellaris

N

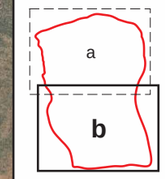
SCALE 1 : 75 000

0 5

Kilometres

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

Location



Legend

Species of Interest

env Australia

LOCATION OF SPECIES OF INTEREST

A3

Client: **BHPBIO**		Date: 29 September 2011
Project: **PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT**		Scale: 1:75 000
		Job Number: J100489
		Figure No. **5b**
Author: E.Carroll	Drawn: S.Coleman	Plan No. **PH-017**

Legend

Introduced Flora

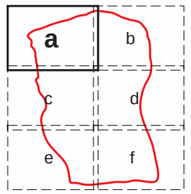
Aerva javanica - Population Boundary

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*

Location



N

SCALE 1 : 50 000

0 2.5

Kilometres

MAP GRID OF AUSTRALIA

Grid based on Transverse Mercator Projection

GDA 1994 MGA Zone 50

652500mE 655000mE 657500mE 660000mE 662500mE 665000mE

7757500mN

7755000mN

7752500mN

7750000mN

7747500mN

7745000mN

647500mE 650000mE

*C.ci = 25%

*A.j = 4%

*C.ci = 2%

*A.j = 1%

*C.ci = 10%

*C.ci = 10%

*A.j = 4%

*C.ci = 20%

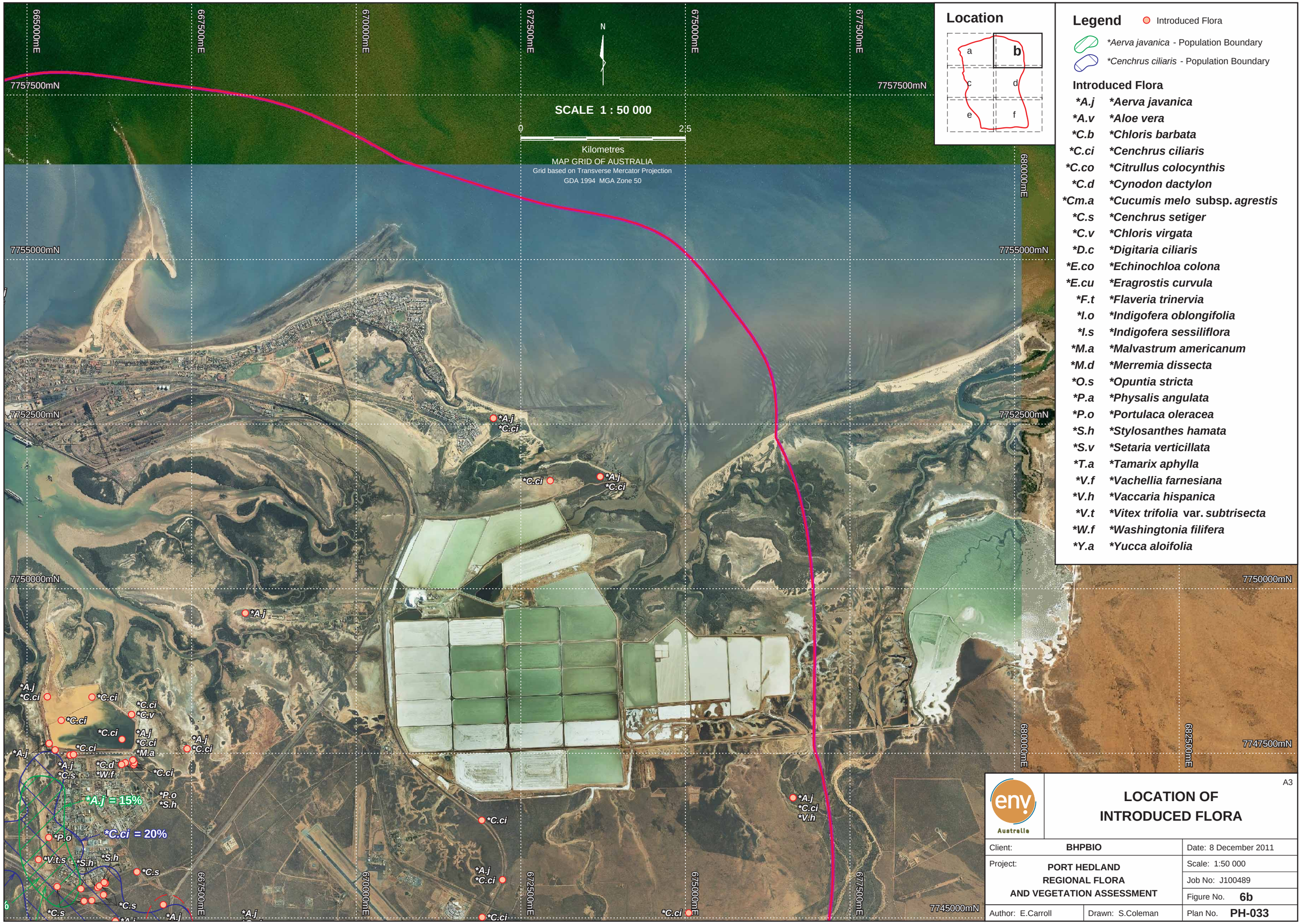
*A.j = 15%

A3

LOCATION OF INTRODUCED FLORA

env Australia

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: E.Carroll	Drawn: S.Coleman	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	*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*

A3

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. 6b
Author: E.Carroll	Drawn: S.Coleman	Plan No. PH-033

Legend

Introduced Flora

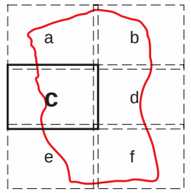
Aerva javanica - Population Boundary

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*

Location



N

SCALE 1 : 50 000

0 2.5

Kilometres

MAP GRID OF AUSTRALIA

Grid based on Transverse Mercator Projection

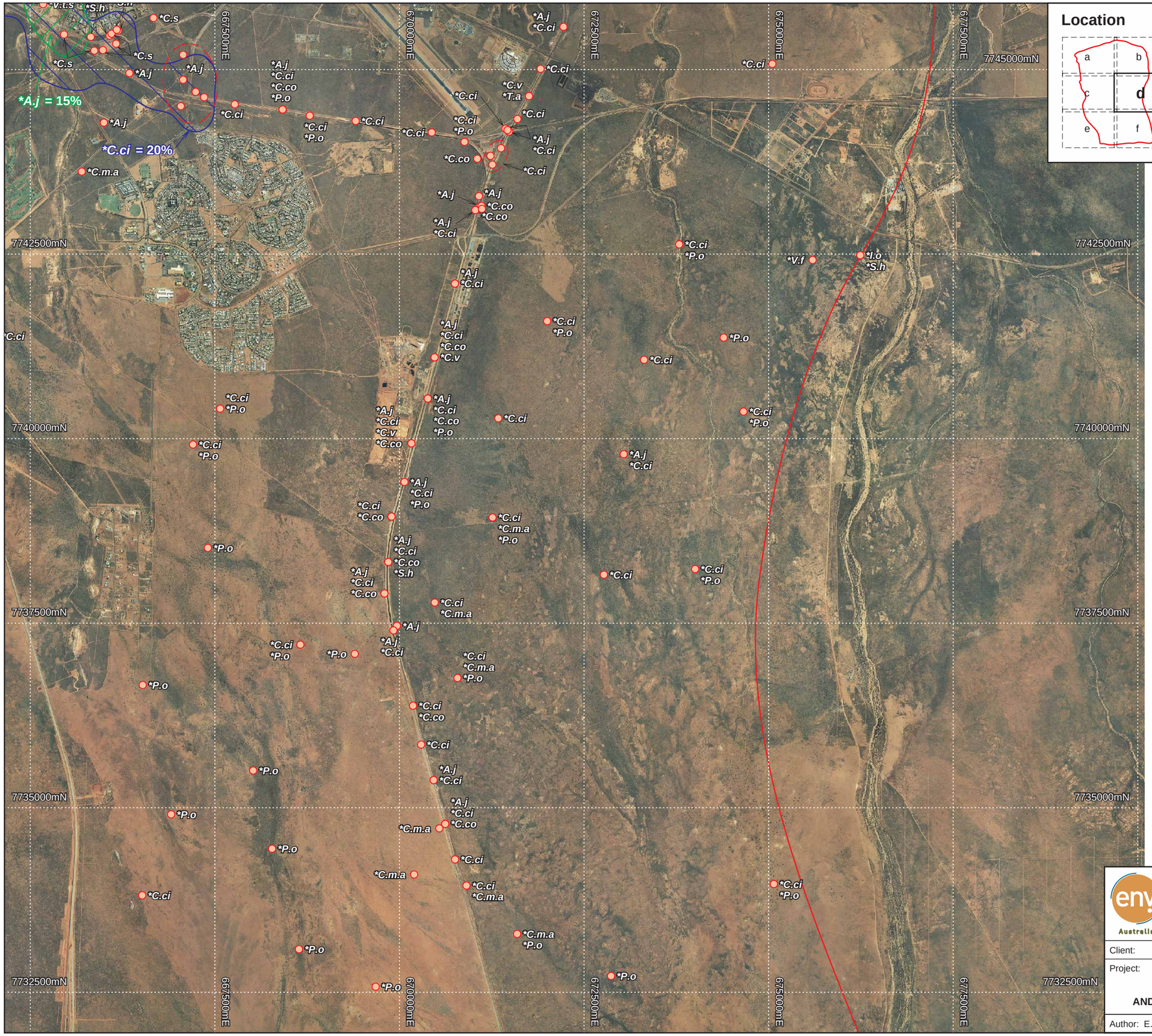
GDA 1994 MGA Zone 50



A3

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. **6c**
Author: E.Carroll	Drawn: S.Coleman	Plan No. **PH-034**



Location

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*

N

SCALE 1 : 50 000

0 2.5

Kilometres

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

A3

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. 6d
Author: E.Carroll	Drawn: S.Coleman	Plan No. PH-035

Legend

Introduced Flora

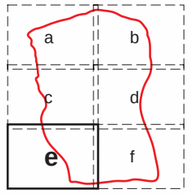
Aerva javanica - Population Boundary

Cenchrus ciliaris - Population Boundary

Introduced Flora

*A.j	*Aerva javanica*
*A.v	*Aloe vera*
*C.b	*Chloris barbata*
*C.ci	*Cenchrus ciliaris*
*C.co	*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*

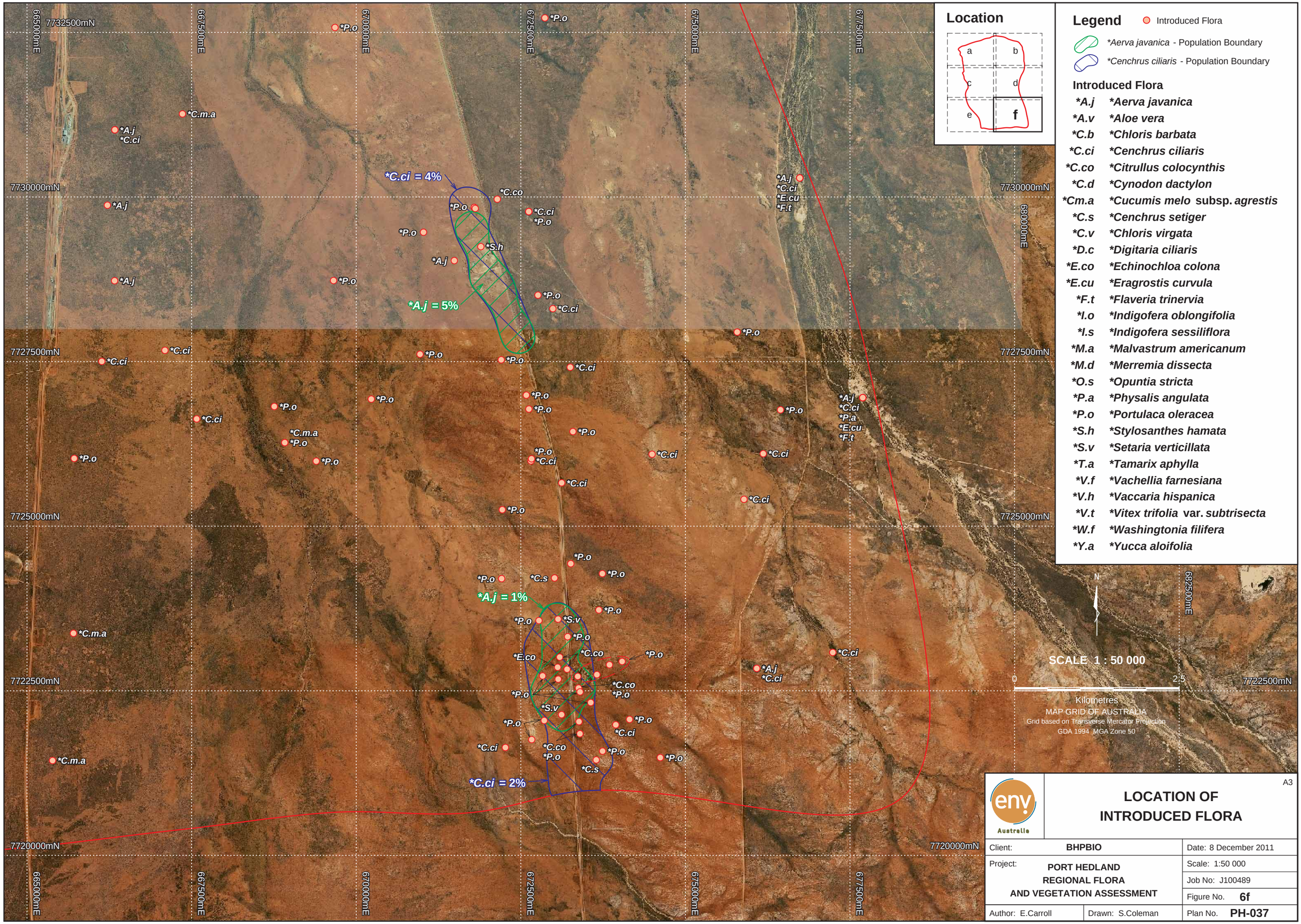
Location



A3

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. **6e**
Author: E.Carroll	Drawn: S.Coleman	Plan No. **PH-036**



A3

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. 6f
Author: E.Carroll	Drawn: S.Coleman	Plan No. PH-037

0 2 4

Kilometres

Transfer Station

Infrastructure Corridor

Stockyards

Car Dumpers

Boodarie Rail Loop

Goldsworthy Rail Loop

Not Surveyed

Legend

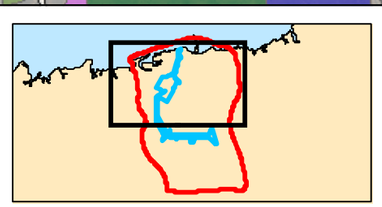
	Not Surveyed
B	Billabong
DA	Dunes A
DB	Dunes B
DC	Dunes C
DD	Dunes D
DI	Disturbed Infrastructure
DRA	Drainage A
DRB	Drainage B
GA	Grassland A
GB	Grassland B
LH	Low Hill
LSH	Limestone Hill
M	Mangrove
MDLA	Major Drainage Line A
MDLB	Major Drainage Line B
MDLC	Major Drainage Line C
MDLD	Major Drainage Line 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	Samphire A
SMB	Samphire B
W	Washout

env Australia

CLIENT	BHPBIO
JOB NO.	J100489
AUTHOR	E. Carroll
DRAWN	M. Mikkonen
DATE	30-09-2011
SCALE	1:80,000 @ A3
PROJECTION	GDA 94 MGA 50
FIGURE	7a

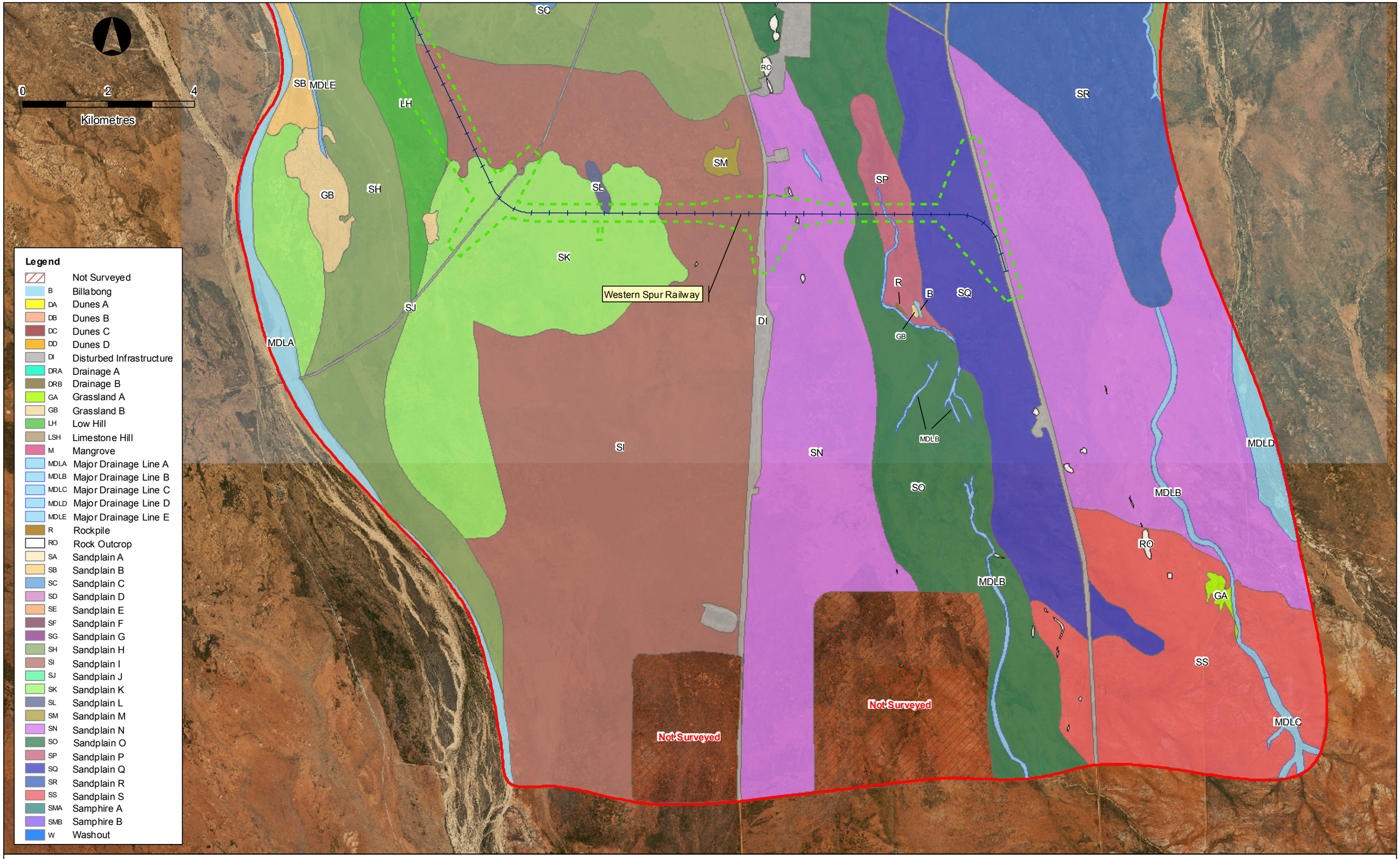
Legend

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



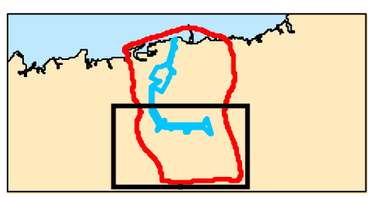
Vegetation Mapping

Port Hedland Regional Flora and Vegetation Assessment



CLIENT: BHPBIO
JOB NO.: J100489
AUTHOR: E. Carroll
DRAWN: M. Mikkonen
DATE: 30-09-2011
SCALE: 1:80,000 @ A3
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 *Eucalyptus victrix* trees over scattered mixed grasses.
DA	Dunes A -	Scattered *Acacia bivenosa* shrubs over a low open *Crotalaria cunninghamii* shrubland over a **Cenchrus ciliaris* tussock grassland over scattered **Aerva javanica* herbs.
DB	Dunes B -	An *Atalaya hemiglauca, Santalum lanceolatum and Acacia bivenosa* shrubland over a **Cenchrus ciliaris* tussock grassland.
DC	Dunes C -	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.
DD	Dunes D -	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.
DI	Disturbed Infrastructure	
DRA	Drainage A -	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.
DRB	Drainage B -	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.
GA	Grassland A -	*Triodia secunda* and *Triodia epactia* hummock grassland.
GB	Grassland B -	*Triodia epactia* hummock grassland.
LH	Low Hill -	An *Acacia tumida* var. *pilbarensis* shrubland over a low *Acacia stellaticeps* shrubland over a *Triodia epactia* hummock grassland.
LSH	Limestone Hill -	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.
M	Mangroves -	A high closed *Rhizophora stylosa* and *Avicennia marina* shrubland.
MDLA	Major Drainage Line A -	Scattered low *Eucalyptus victrix* trees over a high open *Melaleuca argentea, Acacia ampliceps* and *Acacia trachycarpa* shrubland over scattered *Adriana tomentosa* var. *tomentosa* and *Pluchea ferdinandi-muelleri* shrubs over an open *Triodia epactia* hummock grassland.
MDLB	Major Drainage Line B -	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.
MDLC	Major Drainage Line C -	Low open *Corymbia candida* subsp. *lautifola* woodland over high open *Acacia colei* var. *colei, Acacia trachycarpa* and *Acacia tumida* var. *pilbarensis* shrubland over *Triodia epactia* open tussock grassland.
MDLD	Major Drainage Line D -	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.
MDLE	Major Drainage Line E -	Open *Eucalyptus camaldulensis* subsp. *refulgens* woodland over *Acacia tumida* var. *pilbarensis* and *Cajanus cinereus* shrubland over very open *Triodia epactia* hummock grassland.
R	Rockpile -	Scattered low *Ficus brachypoda, Clerodendrum tomentosum* var. *lanceolatum* and *Carissa lanceolata* trees over scattered herbs.
RO	Rock Outcrop -	Scattered *Acacia colei* var. *colei* and *Acacia inaequilatera* shrubs over scattered herbs over scattered *Triodia spp.* hummock grasses.
SA	Sandplain A -	Low *Acacia stellaticeps* shrublands over *Triodia epactia* and *Triodia secunda* hummock grasslands/ *Triodia epactia* and *Triodia secunda* hummock grasslands mosaic.
SB	Sandplain B -	An open *Acacia colei* var. *colei* shrublands 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.
SC	Sandplain C -	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.
SD	Sandplain D -	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.
SE	Sandplain E -	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.
SF	Sandplain F -	Open *Acacia tumida* var. *pilbarensis* and *Acacia colei* var. *colei* shrubland over an open *Triodia epactia* hummock grassland.
SG	Sandplain G -	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.
SH	Sandplain H -	*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.
SI	Sandplain I -	*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.
SJ	Sandplain J -	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.
SK	Sandplain K -	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.
SL	Sandplain L -	Low open *Corymbia zygophylla* woodland over an open *Acacia colei* var. *colei, Acacia inaequilatera* and *Acacia ancistrocarpa* shrubland over a low *Acacia sericophylla, Acacia stellaticep, Senna artemisioides* aff. subsp. *oligophylla* (thinly sericeous) and *Dodonaea coriacea* shrubland over a very open *Triodia lanigera* and *Triodia epactia* hummock grassland.
SM	Sandplain M -	Open *Acacia ancistrocarpa, Acacia tumida* var. *pilbarensis* and *Acacia inaequilatera* shrubland over a *Triodia lanigera* hummock grassland.
SN	Sandplain N -	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.
SO	Sandplain O -	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.
SP	Sandplain P -	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.
SQ	Sandplain Q -	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.
SR	Sandplain R -	Low open *Corymbia candida* subsp. *lautifolia* and *Corymbia hamersleyana* over *Acacia colei* var. *colei* and *Acacia tumida* var. *pilbarensis* open shrubland over *Triodia epactia* and *Triodia lanigera* hummock grassland.
SS	Sandplain S -	Scattered *Acacia inaequilatera* shrubs over *Triodia epactia* and *Triodia lanigera* very open hummock grassland.
SMA	Samphire A -	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.
SMB	Samphire B -	Scattered *Avicennia marina* shrubs over a low open *Tecticornia halocnemoides* subsp. *tenuis, Tecticornia halocnemoides* and *Trianthema turgidifolia* shrubland.
W	Washout	

env Australia

CLIENT: BHPBIO
JOB NO.: J100489
AUTHOR: E. Carroll
DRAWN: M. Mikkonen
DATE: 06-10-2011
FIGURE: 7c

Vegetation Mapping Legend

Port Hedland Regional Flora and Vegetation Assessment



CLIENT: BHPBIO
JOB NO.: J100489
AUTHOR: E. Carroll
DRAWN: M. Mikkonen
DATE: 13-10-2011
SCALE: 1:80,000 @ A3
PROJECTION: GDA 94 MGA 50
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

0 2 4
Kilometres

SC
RO
SB
MDLE
LH
SR
SM
SP
GB
SH
SL
SK
Western Spur Railway
R
B
SQ
SJ
DI
GB
MDLA
MDLB
SI
SN
MDLD
SO
MDLB
RO
MDLB
GA
SS
Not Surveyed
Not Surveyed
MDLC

CLIENT			JOB NO.
BHPBIO			J100489
AUTHOR	DRAWN		DATE
E. Carroll	M. Mikkonen		13-10-2011
SCALE	PROJECTION		FIGURE
1:80,000 @ A3	GDA 94 MGA 50		8b

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

0 2 4
Kilometres

Transfer Station
Not Surveyed
Infrastructure Corridor
Stockyards
Car Dumpers
Boodarie Rail Loop
Goldsworthy Rail Loop
Not Surveyed

Legend

Vegetation Condition

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

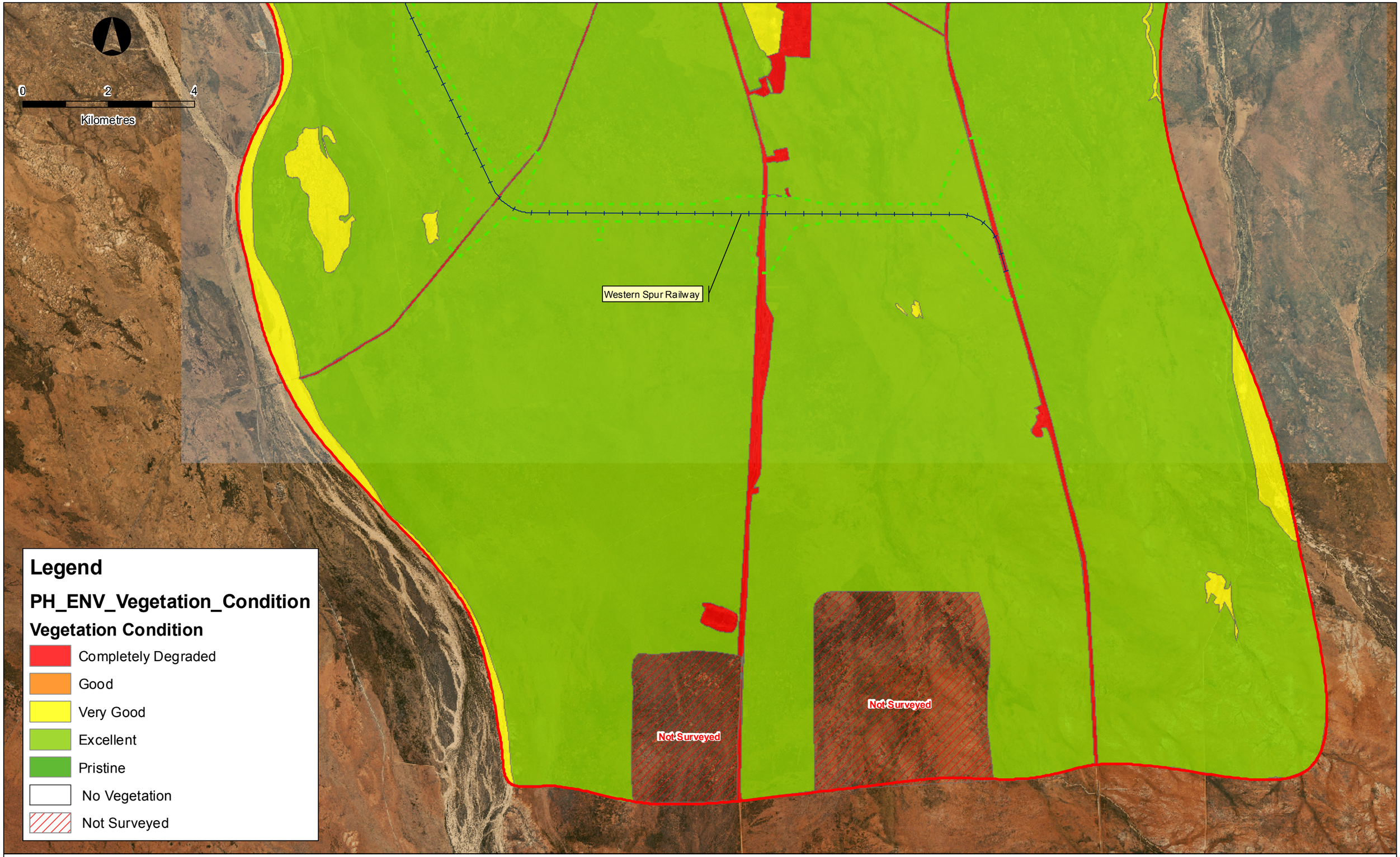
CLIENT: BHPBIO
JOB NO.: J100489
AUTHOR: E. Carroll
DRAWN: M. Mikkonen
DATE: 17-10-2011
SCALE: 1:80,000 @ A3
PROJECTION: GDA 94 MGA 50
FIGURE: 9a

Legend

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

Vegetation Condition

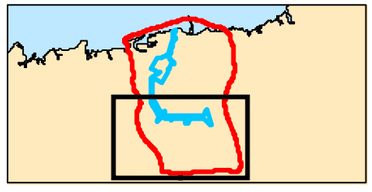
Port Hedland Regional Flora and Vegetation Assessment



CLIENT		JOB NO.
BHPBIO		J100489
AUTHOR	DRAWN	DATE
E. Carroll	M. Mikkonen	17-10-2011
SCALE	PROJECTION	FIGURE
1:80,000 @ A3	GDA 94 MGA 50	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

0 2 4
Kilometres

Transfer Station
Infrastructure Corridor
Stockyards
Car Dumpers
Boodarie Rail Loop
Goldsworthy Rail Loop

Key

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

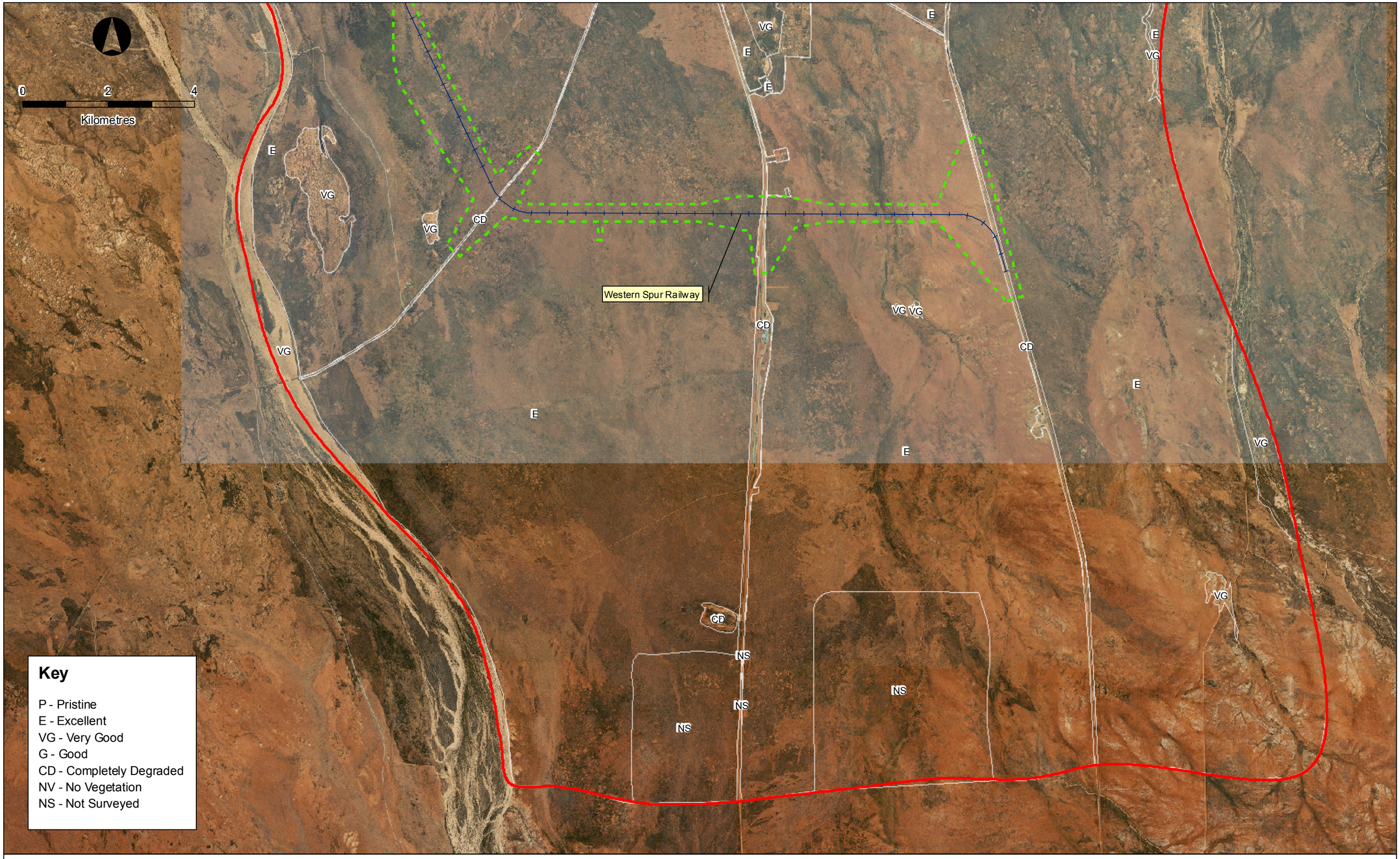
CLIENT			JOB NO.
BHPBIO			J100489
AUTHOR	DRAWN	DATE	
E. Carroll	M. Mikkonen	9-12-2011	
SCALE	PROJECTION	FIGURE	
1:80,000 @ A3	GDA 94 MGA 50	10a	

Legend

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

Vegetation Condition - Linework

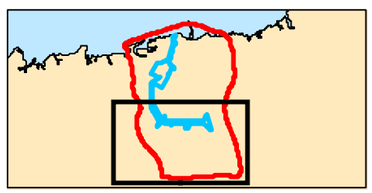
Port Hedland Regional Flora and Vegetation Assessment



CLIENT		JOB NO.
BHPBIO		J100489
AUTHOR	DRAWN	DATE
E. Carroll	M. Mikkonen	9-12-2011
SCALE	PROJECTION	FIGURE
1:80,000 @ A3	GDA 94 MGA 50	10b

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

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	**Presumed Extinct Flora (Declared Rare Flora – Extinct)** "Taxa which have been adequately searched for and there is no reasonable doubt that the last individual has died, and have been gazetted as such (Schedule 2 under the *Wildlife Conservation Act 1950*)."
T	**Threatened Flora (Declared Rare Flora – Extant)** "Taxa which have been adequately searched for and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such (Schedule 1 under the *Wildlife Conservation Act 1950*)." "Threatened Flora (Schedule 1) are further ranked by the Department according to their level of threat using IUCN Red List criteria: • CR: Critically Endangered – considered to be facing an extremely high risk of extinction in the wild; • EN: Endangered – considered to be facing a very high risk of extinction in the wild; • VU: Vulnerable – considered to be facing a high risk of extinction in the wild."
P1	**Priority One: Poorly-known taxa** "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."
P2	**Priority Two: Poorly-known taxa** "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."
P3	**Priority Three: Poorly-known taxa** "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."

Conservation Code	Category
P4	**Priority Four: Rare, Near Threatened and other taxa in need of monitoring** 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." 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." c. "Taxa that have been removed from the list of threatened species during the past five years for reasons other than taxonomy."
P5	**Priority Five: Conservation Dependent taxa** "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."

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	**Extinct** Taxa which at a particular time if, at the time, there is no reasonable doubt that the last member of the species has died**.**
ExW	**Extinct in the Wild** 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.
CE	**Critically Endangered** 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.
E	**Endangered** 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.
V	**Vulnerable** 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.
CD	**Conservation Dependent** 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.

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

CHAIN OF CUSTODY

Submission of flora specimens to BHPB funded botanist

Company ENV Australia

Date submitted 21-Jul-11

Date results required ASAP

bhpbilliton

Project Area	Specimen No	Consultant ID	Habit	Habitat	Consultant Comment	Steve Dillon ID	ID date	Steve Dillon Comment
	PSOPCW24	Abutilon pritzelianum MS	0.5 m	Plain		*Abutilon pritzelianum*		
	PSOPCW25	Abutilon pritzelianum MS	1.5 m	Plain		*Abutilon pritzelianum*		
	PSOPCW79	Abutilon pritzelianum MS	0.2 m	Plain		*Abutilon pritzelianum*		
	PSOPKM22	Abutilon pritzelianum MS	1 m	Plain		*Abutilon pritzelianum*		
	PSOPKM25	Abutilon pritzelianum MS	1 m	Plain		*Abutilon pritzelianum*		
	PSOPEC34	Goodenia nuda	0.3 m	Plain		*Goodenia ? tridiophila*		Sterile so ID is tentative
	PSOPEC99	Goodenia nuda	0.3 m	Plain		*Goodenia ? tridiophila*		Sterile so ID is tentative
11.079 - Port Hedland	PSOPBW10	Goodenia nuda	0.3 m	Plain		*Goodenia tridiophila*		
	PSOPBW11	Goodenia nuda	0.3 m	Plain		*Goodenia tridiophila*		
	PSOPBW35	Goodenia nuda	0.3 m	Plain		*Goodenia tridiophila*		
	PSOPCW77	Goodenia nuda	0.3 m	Plain		*Goodenia tridiophila*		
	PSOPEC10	Goodenia nuda	0.3 m	Plain		*Goodenia tridiophila*		
	PSOPEC11	Goodenia nuda	0.3 m	Plain		*Goodenia tridiophila*		
	PSOPEC38	Goodenia nuda	0.3 m	Plain		*Goodenia tridiophila*		
	PSOPEC41	Goodenia nuda	0.3 m	Plain		*Goodenia tridiophila*		
	PSOPKM06	Goodenia nuda	0.2 m	Plain		*Goodenia tridiophila*		
	PSOPKM46	Goodenia nuda	0.3 m	Plain		*Goodenia tridiophila*		
	PSOPBW15	Heliotropium muticum	0.1-0.3 m	Plain		*Heliotropium muticum*		
	PSOPBW22	Heliotropium muticum	0.2 m	Plain		*Heliotropium muticum*		
	PSOPCW36	Heliotropium muticum	0.2 m	Plain		*Heliotropium muticum*		
	PSOPCW38	Heliotropium muticum	0.2 m	Plain		*Heliotropium muticum*		
	PSOPCW47	Heliotropium muticum	0.2-0.4 m	Plain		*Heliotropium muticum*		
	PSOPCW49	Heliotropium muticum	0.3 m	Plain		*Heliotropium muticum*		
	PSOPCW52	Heliotropium muticum	0.2 m	Plain		*Heliotropium muticum*		
	PSOPCW74	Heliotropium muticum	0.2 m	Plain		*Heliotropium muticum*		
	PSOPEC49	Heliotropium muticum	0.2 m	Plain		*Heliotropium muticum*		
	PSOPKM31	Heliotropium muticum	0.3 m	Plain		*Heliotropium muticum*		
	PSOPKM35	Heliotropium muticum	0.3 m	Plain		*Heliotropium muticum*		
	PSOPKM37	Heliotropium muticum	0.3 m	Plain		*Heliotropium muticum*		
	PSOPKM38	Heliotropium muticum	0.3 m	Plain		*Heliotropium muticum*		
	PSOPKM39	Heliotropium muticum	0.1 m	Plain		*Heliotropium muticum*		
	PSOPKM41	Heliotropium muticum	0.3 m	Plain		*Heliotropium muticum*		
	PSOPKM42	Heliotropium muticum	0.3 m	Plain		*Heliotropium muticum*		
	PSOPKM51	Heliotropium muticum	0.1-0.3 m	Plain		*Heliotropium muticum*		
	PSOPKM52	Heliotropium muticum	0.2 m	Plain		*Heliotropium muticum*		

CHAIN OF CUSTODY

Submission of flora specimens to BHPB funded botanist

Company	ENV Australia
Date submitted	9-Aug-11
Date results required	ASAP



Project Area	Specimen No	Consultant ID	Habit	Habitat	Consultant Comment	Steve Dillon ID	ID date	Steve Dillon Comment
Port Hedland J100489	PI 40.07	*Gomphrena*				*Gomphrena pusilla*		Matches the det'd collection from Finucane Island
	PI 154.11	*Gomphrena*				*Gomphrena leptoclada* subsp. *leptoclada*		Matches the det'd collections from the Pilbara
	PI 85.03	*Gomphrena*				*Gomphrena leptoclada* subsp. *leptoclada*		Matches the det'd collections from the Pilbara

CHAIN OF CUSTODY

Submission of flora specimens to BHPB funded botanist

Company	ENV Australia
Date submitted	9-Sep-11
Date results required	ASAP

bhpbilliton

Project Area	Specimen No	Consultant ID	Habit	Habitat	Consultant Comment	Steve Dillon ID	ID date	Steve Dillon Comment
Port Hedland	PSOPEC24					*Peplidium ? muelleri*		Bteer material would be required to be certain of the ID. The indumentum of eglandular hairs along with the leaf shape & size places this as *Peplidum muelleri* , although it is quite small compared to the ref. herb. material. This genus is difficult even with good material. Now in Phrymaceae.
	PI44.09					*Rotala diandra*		
	PI80.01					*Vigna lanceolata* var. *lanceolata*		
	PSOPEC25					*Bergia ? pusilla*		Elatinaceae. Keys out to this (4 stamens, 4 sepals, glabrous, elliptic to obovate leaves, seeds smooth to faintly alveolate) but difficult to be 100% certain of the ID as we only have 1 collection in WA (the other one is a mis-ID - who let Mr Sedgewick loose with ID slips?) and the material is only in fruit. It's one hell of a range extension but this isn't uncommon for wet area species (water fowl get around). I've attached the image of the type from the Kew website. If it's not this then it would be an undescribed species. Probably worth lodging (but better material would be nice).

CHAIN OF CUSTODY

Submission of flora specimens to BHPB funded botanist

Company	ENV Australia
Date submitted	19-Sep-11
Date results required	ASAP

bhpbilliton

Project Area	Specimen No	Consultant ID	Habit	Habitat	Consultant Comment	Steve Dillon ID	ID date	Steve Dillon Comment
11.079 - Port Hedland	PI125.02	Heliotropium muticum		Sand plain		*Heliotropium muticum*		
Priorities	PI099.11	Heliotropium muticum	0.3 m	Sand plain		*Heliotropium muticum*		
	PI030.06	Heliotropium muticum	0.2 m	Sand plain		*Heliotropium muticum*		
	PI152.01	Heliotropium muticum	0.2 m	Sand plain		*Heliotropium muticum*		
	PI117.04	Heliotropium muticum	0.2 m	Sand plain		*Heliotropium muticum*		
	PI124.07	Heliotropium muticum	0.2 m	Sand plain		*Heliotropium muticum*		
	PI114.04	Heliotropium muticum	0.3 m	Sand plain		*Heliotropium muticum*		
	PI128.09	Heliotropium muticum	0.2 m	Sand plain		*Heliotropium muticum*		
	PI126.02	Heliotropium muticum	0.2 m	Sand plain		*Heliotropium muticum*		
	PI034.09	Heliotropium muticum	0.3 m	Sand plain		*Heliotropium muticum*		
	PI116.06	Heliotropium muticum	0.05 m	Sand plain		*Heliotropium muticum*		
	PI116.03	Heliotropium muticum	0.2 m	Sand plain		*Heliotropium muticum*		
	PI140.01	Heliotropium muticum	0.2 m	Sand plain		*Heliotropium muticum*		
	PI118.08	Heliotropium muticum	0.3 m	Sand plain		*Heliotropium muticum*		
	PSOPKM01	Tephrosia rosea var. venulosa	0.4 m	Sand plain		*Tephrosia rosea* var. *? venulosa*		Indumentum not as crisped as typical var. *venulosa*
	PSOPKM02	Tephrosia rosea var. venulosa	0.5 m	Sand plain		*Tephrosia rosea* var. *venulosa*		
	PSOPKM04	Tephrosia rosea var. venulosa	0.5 m	Sand plain		*Tephrosia rosea* var. *venulosa*		
	PSOPKM05	Tephrosia rosea var. venulosa	0.4 m	Sand plain		*Tephrosia rosea* var. *? venulosa*		Indumentum not as crisped as typical var. *venulosa*
	PSOPCW02	Tephrosia rosea var. venulosa	0.4 m	Sand plain		*Tephrosia rosea* var. *venulosa*		
	PI008.02a	Tephrosia rosea var. venulosa	0.4 m	Sand plain		*Tephrosia rosea*		Not var. *venulosa.*
	PSOPCW01	Tephrosia rosea var. venulosa	0.4 m	Sand plain		*Tephrosia rosea* var. *? venulosa*		Indumentum not as crisped as typical var. *venulosa*
	PI161.05	Abutilon pritzelianum	1.3 m	Sand plain		*Abutilon pritzelianum*		
	PI137.04	Abutilon pritzelianum	0.4 m	Sand plain		*Abutilon pritzelianum*		
	PI108.07	Abutilon pritzelianum	1 m	Sand plain		*Abutilon pritzelianum*		
	PI130.05	Abutilon pritzelianum	1.5 m	Sand plain		*Abutilon ? pritzelianum*		Male plant. Atypical in that it has glandular hairs on the stems & petioles & the flowers are quite small for this taxon.
	PI070.36	Abutilon pritzelianum	1.2 m	Sand plain		*Abutilon pritzelianum*		
11.079 - Port Hedland								
Range Extention	PI068.22	Dentella minutissima	Creeper	Major riverbed		*Dentella asperata*		*D. minutissima* has smaller leaves that are spathulate with a distinct & relatively long petiole.
	PI069.11	Dentella minutissima	Prostrate	Wide flat drainage line		*Dentella asperata*		See note above
	PI059.06	Mimulus uvedaliae	0.02 m	Sand plain		*Stemodia lathraia*		Unusual in that it's an annual but apart from that it's an exact match for this species. Not sure how you got this to *Mimulus*
	PI077.09	Mimulus uvedaliae	0.2 m	Sand plain/ flood plain		*Stemodia lathraia*		See note above
	PI141.01	Mimulus uvedaliae	0.1 m	Sand plain		*Stemodia lathraia*		See note above
	PI046.10	Mimulus uvedaliae	0.1 m	Sand plain		*Mimulus uvedaliae* var. *uvedaliae*		
	PI044.07	Mimulus uvedaliae	0.1 m	Plain		*Stemodia lathraia*		2 different taxa in this bag.
	PI044.07	Mimulus uvedaliae	0.1 m	Plain		*Mimulus uvedaliae* var. *uvedaliae*		2 different taxa in this bag.
	PI086.08	Eriachne sulcata	0.2 m	Sand plain		*Eriachne glauca* var. *glauca*		The specimen of *E. sulcata* in the Reference Herbarium is actually *E. glacua* . The fine hairs on the glumes, the contracted & relatively dense panicle, the glabrous nodes & the vesicles on the upper leaf surface place this as *E. glauca* . This appears to be a highly variable species, especially in regards to overall size & the length & curvature of the lemma awns, & it is possible there are more than the 2 varieties currently recognised.
	PI115.05	Eriachne sulcata	0.15 m	Small creek		*Eriachne glauca* var. *glauca*		See above note
	PSOPEC09	Tephrosia simplicifolia	0.3 m	Unknown		*Tephrosia simplicifolia*		Worth lodging
	PI123.37	Tephrosia simplicifolia	0.3 m	Low hill with quartz outcrops		*Tephrosia simplicifolia*		
	PI156.11	Tephrosia simplicifolia	0.1 m	Low rocky hill		*Tephrosia simplicifolia*		
	PI089.07	Tephrosia simplicifolia	0.3 m	Sand plain		*Tephrosia simplicifolia*		Worth lodging
	PI032.08	Tephrosia simplicifolia	0.1 m	Sand plain		*Tephrosia simplicifolia*		Worth lodging
	PI053.04	Calandrinia creethiae	Creeper	Sand plain		*Calandrinia stagnensis*		
	PSOPEC15	Calandrinia creethiae	0.05 m	Sand plain		*Calandrinia pumila*		
	PSOPEC17	Calandrinia creethiae	0.1 m	Veg; T. secunda		*Calandrinia stagnensis*		
	PI068.11	Calandrinia creethiae	0.03 m	Major riverbed		*Calandrinia quadrivalvis*		In the broad sense
	PI145.04	Calandrinia creethiae	Prostrate	Plain		*Calandrinia stagnensis*		
	PI083.04	Calandrinia creethiae	0.1 m	Plain		*Calandrinia stagnensis*		
	PI020.07	Drosera burmanni	0.1 m	Plain		*Drosera burmanni*		Mouldy, not worth lodging
	PI045.02	Drosera burmanni	0.05 m	Plain		*Drosera burmanni*		Worth lodging
	PSOPEC08	Drosera burmanni	0.1 m	Plain		*Drosera burmanni*		Worth lodging

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Mitrosacme connata **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** N/A New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0659237
Long / Easting: 7739702
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				30+
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Goodenia nuda **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P3 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0665716
Long / Easting: 7736596
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				5
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Goodenia nuda **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P3 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0665711
Long / Easting: 7736533
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				40+
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Goodenia nuda **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P3 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0667436
Long / Easting: 7737014
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				15
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Goodenia nuda **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P3 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0667333
Long / Easting: 7736661
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				20+
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Goodenia nuda **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P3 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0668552
Long / Easting: 7735406
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				5
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Goodenia nuda **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P3 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0668272
Long / Easting: 7735341
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				6
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Goodenia nuda **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P3 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0667402
Long / Easting: 7736996
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				11
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Goodenia nuda **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P3 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0667175
Long / Easting: 7736693
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				8
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Goodenia nuda **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P3 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0667228
Long / Easting: 7736682
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				7
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Goodenia nuda **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P3 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0667511
Long / Easting: 7736767
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				3
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Goodenia nuda **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P3 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0667538
Long / Easting: 7736919
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				6
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Goodenia nuda **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P3 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0668451
Long / Easting: 7735424
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				5
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Goodenia nuda **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P3 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0668388
Long / Easting: 7735140
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				20
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Goodenia nuda **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P3 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0668544
Long / Easting: 7735146
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				5
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Goodenia nuda **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P3 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0669954
Long / Easting: 7735525
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				2
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0669782
Long / Easting: 7735229
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				2
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0668783
Long / Easting: 7731786
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				2
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0668875
Long / Easting: 7731787
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				6
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0669728
Long / Easting: 7731644
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				1
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0669888

Long / Easting: 7731587

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: Map used:

Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				3
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0669961
Long / Easting: 7731593
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				8
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0670012

Long / Easting: 7731634

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: Map used:

Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				16
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0670009
Long / Easting: 7731708
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				4
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0669971
Long / Easting: 7731730
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				1
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0671226
Long / Easting: 7731303
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				8
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0671226
Long / Easting: 7731303
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				8
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0672172

Long / Easting: 7727677

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: Map used:

Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				1
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0672219
Long / Easting: 7727895
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				5
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0672086
Long / Easting: 7727865
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				1
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0670232

Long / Easting: 7728053

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: Map used:

Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				12
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0670188
Long / Easting: 7728006
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				4
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0673050
Long / Easting: 7724475
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				3
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0672997
Long / Easting: 7724328
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				2
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0668255
Long / Easting: 7731721
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				25
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0666746
Long / Easting: 7733296
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				11
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0666492
Long / Easting: 7734980
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				17
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0666523
Long / Easting: 7734950
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				24
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0666554
Long / Easting: 7735011
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				19
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0666505
Long / Easting: 7735062
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				15
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0666475
Long / Easting: 7735036
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				18
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0666048
Long / Easting: 7741050
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				1
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Goodenia nuda **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P3 New population ☐

OBSERVER/S: Bridget Watkins **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0664428

Long / Easting: 7741713

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: Map used:

Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				1
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Abutilon pritzelianum **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Cathy **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: Pilbara **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0655858
Long / Easting: 7730355
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☒ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				1
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Abutilon pritzelianum **TPFL Pop. No:**

OBSERVATION DATE: 05/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Cathy **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: Pilbara **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0665849
Long / Easting: 7730367
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenemant

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☒ Extrapolation ☐ Estimate ☐ Count method:
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				1
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Cathy **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0675808
Long / Easting: 7721621
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				2
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Cathy **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0675858
Long / Easting: 7721637
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				2
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Cathy **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0675880
Long / Easting: 7721649
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				2
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Cathy **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0675891
Long / Easting: 7721649
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				2
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Cathy **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0675899
Long / Easting: 7721583
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				2
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Cathy **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0675959
Long / Easting: 7721577
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				2
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Cathy **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0675845

Long / Easting: 7721587

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: Map used:

Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				2
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Cathy **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0675895
Long / Easting: 7721598
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				12+
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Cathy **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0673004
Long / Easting: 7726547
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				1
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Cathy **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0673039
Long / Easting: 7726622
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				2
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Cathy **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0673022
Long / Easting: 7726615
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				2
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Cathy **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0673014
Long / Easting: 7726609
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				2
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Cathy **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0672923
Long / Easting: 7726544
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				2
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Cathy **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0674238
Long / Easting: 7727913
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m^2:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				14
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Cathy **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0674238
Long / Easting: 7727910
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				7
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Cathy **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0674236 - 0674240
Long / Easting: 7727906 - 7727884
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: Map used:
Boundary polygon captured: ☐ Map scale:

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole ____ to ____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²):

EFFORT: Time spent surveying (minutes): No. of minutes spent / 100 m²:

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: (Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				34
Dead				

Area of pop (m²):

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. Size Data attached ☐ Total area of quadrats (m²):

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: %

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by: **Sheet No.:** **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Cathy **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0674284
Long / Easting: 7727744
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: ___ Map used: ____
Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				1
Dead				

Area of pop (m²): ____
Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Cathy **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0674234
Long / Easting: 7727860
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: ___ Map used: ____
Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				6
Dead				

Area of pop (m²): ____
Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Cathy **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0674227 - 0674228
Long / Easting: 7727879 - 7727921
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: ___ Map used: ____
Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				65+
Dead				

Area of pop (m²): ____
Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Cathy **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0675285
Long / Easting: 7727540
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: ___ Map used: ____
Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				20+
Dead				

Area of pop (m²): ____
Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Cathy **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0675285 - 0675352

Long / Easting: 7727540 - 7727514

ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				40+
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Cathy **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0675462
Long / Easting: 7727456
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: ___ Map used: ____
Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				6
Dead				

Area of pop (m²): ____
Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Cathy **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0675445
Long / Easting: 7727448
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: ___ Map used: ____
Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				2
Dead				

Area of pop (m²): ____
Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 05/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Cathy **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0676208
Long / Easting: 7730144
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: ___ Map used: ____
Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				18+
Dead				

Area of pop (m²): ____
Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 05/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Cathy **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0676207
Long / Easting: 7730158
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: ___ Map used: ____
Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				5
Dead				

Area of pop (m²): ____
Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 05/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Cathy **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0676209
Long / Easting: 7730177
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: ___ Map used: ____
Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				9+
Dead				

Area of pop (m²): ____
Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 05/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Cathy **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0676222
Long / Easting: 7730190
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: ___ Map used: ____
Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				20+
Dead				

Area of pop (m²): ____
Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 05/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Cathy **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0676237
Long / Easting: 7730206
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: ___ Map used: ____
Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				5
Dead				

Area of pop (m²): ____
Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 05/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Cathy **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0676330 - 0676332

Long / Easting: 7730300 - 7730262

ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				12+
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Goodenia nuda **TPFL Pop. No:**

OBSERVATION DATE: 05/05/2011 **CONSERVATION STATUS:** P3 New population ☐

OBSERVER/S: Cathy **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0674202
Long / Easting: 7739456
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: ___ Map used: ____
Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				3
Dead				

Area of pop (m²): ____
Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Goodenia nuda **TPFL Pop. No:**

OBSERVATION DATE: 05/05/2011 **CONSERVATION STATUS:** P3 New population ☐

OBSERVER/S: Cathy **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0674197
Long / Easting: 7739450
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: ___ Map used: ____
Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				6
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Goodenia nuda **TPFL Pop. No:**

OBSERVATION DATE: 05/05/2011 **CONSERVATION STATUS:** P3 New population ☐

OBSERVER/S: Cathy **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0674204
Long / Easting: 7739441
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: ___ Map used: ____
Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				6
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Goodenia nuda **TPFL Pop. No:**

OBSERVATION DATE: 05/05/2011 **CONSERVATION STATUS:** P3 New population ☐

OBSERVER/S: Cathy **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0674201

Long / Easting: 7739437

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				6
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Goodenia nuda **TPFL Pop. No:**

OBSERVATION DATE: 05/05/2011 **CONSERVATION STATUS:** P3 New population ☐

OBSERVER/S: Cathy **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0674198
Long / Easting: 7739412
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: ___ Map used: ____
Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				15
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Goodenia nuda **TPFL Pop. No:**

OBSERVATION DATE: 05/05/2011 **CONSERVATION STATUS:** P3 New population ☐

OBSERVER/S: Cathy **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0674200 - 0674213
Long / Easting: 7739401 - 7739349
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: ___ Map used: ____
Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				42
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☒
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Goodenia nuda **TPFL Pop. No:**

OBSERVATION DATE: 05/05/2011 **CONSERVATION STATUS:** P3 New population ☐

OBSERVER/S: Cathy **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0674230 - 0674233
Long / Easting: 7739292 - 7739282
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: ___ Map used: ____
Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				11
Dead				

Area of pop (m²): ____
Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☒
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Abutilon pritzelianum **TPFL Pop. No:**

OBSERVATION DATE: 05/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Cathy **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0665000
Long / Easting: 7723753
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: ___ Map used: ____
Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				1
Dead				

Area of pop (m²): ____
Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Drosera burmannii **TPFL Pop. No:**

OBSERVATION DATE: 30/04/2011 **CONSERVATION STATUS:** N/A New population ☐

OBSERVER/S: Emma Carroll **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0662004
Long / Easting: 7744983
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: ___ Map used: ____
Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				10
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Tephrosia simplicifolia **TPFL Pop. No:**

OBSERVATION DATE: 30/04/2011 **CONSERVATION STATUS:** N/A New population ☐

OBSERVER/S: Emma Carroll **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0661985

Long / Easting: 7745112

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				1
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Goodenia nuda **TPFL Pop. No:**

OBSERVATION DATE: 30/04/2011 **CONSERVATION STATUS:** P3 New population ☐

OBSERVER/S: Emma Carroll **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0661172

Long / Easting: 7742696

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				2
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Goodenia nuda **TPFL Pop. No:**

OBSERVATION DATE: 30/04/2011 **CONSERVATION STATUS:** P3 New population ☐

OBSERVER/S: Emma Carroll **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0661410
Long / Easting: 7742696
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: ___ Map used: ____
Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				10
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Goodenia nuda **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P3 New population ☐

OBSERVER/S: Emma Carroll **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0664912

Long / Easting: 7740163

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				4
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Goodenia nuda **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P3 New population ☐

OBSERVER/S: Emma Carroll **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0668712

Long / Easting: 7735457

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				4
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Goodenia Nuda **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P3 New population ☐

OBSERVER/S: **PHONE:** 9214 6100

ROLE: **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Reserve No:

DEC DISTRICT: Pilbara **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0668767
Long / Easting: 7735483
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: ___ Map used: ____
Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☒ Extrapolation ☐ Estimate ☐ Count method: ____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				5
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. OPCOLL Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____

ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____

COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Goodenia nuda **TPFL Pop. No:**

OBSERVATION DATE: 04/05/2011 **CONSERVATION STATUS:** P3 New population ☐

OBSERVER/S: Emma Carroll **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0664545

Long / Easting: 7741532

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				1
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Goodenia nuda **TPFL Pop. No:**

OBSERVATION DATE: 30/04/2011 **CONSERVATION STATUS:** P3 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0661685
Long / Easting: 7746486
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: ___ Map used: ____
Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				2
Dead				

Area of pop (m²): ____
Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Abutilon pritzelianum **TPFL Pop. No:**

OBSERVATION DATE: 01/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0654754

Long / Easting: 7730120

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				2
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Abutilon pritzelianum **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0655899

Long / Easting: 7730259

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				2
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Abutilon pritzelianum **TPFL Pop. No:**

OBSERVATION DATE: 02/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0655834

Long / Easting: 7730244

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				2
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0675797

Long / Easting: 7721608

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				1
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0675759
Long / Easting: 7721601
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: ___ Map used: ____
Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				9
Dead				

Area of pop (m²): ____
Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0675735

Long / Easting: 7721589

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				2
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0675728
Long / Easting: 7721582
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: ___ Map used: ____
Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				1
Dead				

Area of pop (m²): ____
Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0675695
Long / Easting: 7721563
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: ___ Map used: ____
Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				1
Dead				

Area of pop (m²): ____
Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0675735

Long / Easting: 7721555

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				1
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0675474

Long / Easting: 7723597

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				1
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0673514

Long / Easting: 7721680

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				3
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0673526

Long / Easting: 7721675

ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				1
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0672956

Long / Easting: 7726524

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				1
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0672970

Long / Easting: 7726526

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				4
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0673013

Long / Easting: 7726536

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				1
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0673013

Long / Easting: 7726536

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				1
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0672014

Long / Easting: 7726620

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				5
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0672912

Long / Easting: 7726560

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				1
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0673184

Long / Easting: 7728706

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				1
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0674238

Long / Easting: 7727966

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				2
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0674241
Long / Easting: 7727970
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: ___ Map used: ____
Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				3
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0674248

Long / Easting: 7727980

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				2
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Goodenia nuda **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P3 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0674255

Long / Easting: 7739127

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				1
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0674258

Long / Easting: 7727985

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				6
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0674263

Long / Easting: 7727946

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				6
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0674239

Long / Easting: 7728047

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				12
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0674218

Long / Easting: 7728032

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				7
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0674213

Long / Easting: 7728012

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				1
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0674216

Long / Easting: 7727982

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				3
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0674213

Long / Easting: 7727968

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				2
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0674217

Long / Easting: 7727947

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				3
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0674228

Long / Easting: 7727937

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				1
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0674232

Long / Easting: 7727924

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				1
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0674252 - 0675248
Long / Easting: 7727593 - 7727647
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: ___ Map used: ____
Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				40
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Goodenia nuda **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P3 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0674292
Long / Easting: 7739193
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: ____ Map used: ____
Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				4
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ____ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Goodenia nuda **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P3 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0674318

Long / Easting: 7739016

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				1
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Goodenia nuda **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P3 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0674262

Long / Easting: 7739112

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				1
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Goodenia nuda **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P3 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0674255

Long / Easting: 7739127

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				1
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Goodenia nuda **TPFL Pop. No:**

OBSERVATION DATE: 03/05/2011 **CONSERVATION STATUS:** P3 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0674255 - 0674257

Long / Easting: 7739127 - 7739190

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				8
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 05/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0676784 - 0676738
Long / Easting: 7726317 - 7726413
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: ___ Map used: ____
Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				52
Dead				

Area of pop (m²): ____
Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 05/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0676738 - 0676843

Long / Easting: 7726413 - 7726278

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				47
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 05/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒
Lat / Northing: 0676023
Long / Easting: 7730049
ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐
No. satellites: ___ Map used: ____
Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				2
Dead				

Area of pop (m²): ____
Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 05/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:

GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)

DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0676011

Long / Easting: 7730037

ZONE: 50

METHOD USED:

GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____

(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:

	Mature:	Juveniles:	Seedlings:	Totals:
Alive				5
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒

Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

Please complete as much of the form as possible, with emphasis on those sections bordered in black.

TAXON: Heliotropium muticum **TPFL Pop. No:**

OBSERVATION DATE: 05/05/2011 **CONSERVATION STATUS:** P1 New population ☐

OBSERVER/S: Kellie McMaster **PHONE:** 9214 6100

ROLE: Botanist **ORGANISATION:** ENV. Australia

DESCRIPTION OF LOCATION (Provide at least nearest town/named locality, and the distance and direction to that place)**:**

Port Hedland

Reserve No:

DEC DISTRICT: **LGA:** Land manager present: ☐

DATUM:
GDA94 / MGA94 ☐
AGD84 / AMG84 ☐
WGS84 ☒
Unknown ☐

COORDINATES: (If UTM coords provided, **Zone** is also required)
DecDegrees ☐ DegMinSec ☐ UTMs ☒

Lat / Northing: 0675932 - 0676076

Long / Easting: 7730049 - 7730063

ZONE: 50

METHOD USED:
GPS ☒ Differential GPS ☐ Map ☐

No. satellites: ___ Map used: ____

Boundary polygon captured: ☐ Map scale: ____

LAND TENURE:

Nature reserve ☐	Timber reserve ☐	Private property ☐	Rail reserve ☐	Shire road reserve ☐
National park ☐	State forest ☐	Pastoral lease ☐	MRWA road reserve ☐	Other Crown reserve ☐
Conservation park ☐	Water reserve ☐	UCL ☐	SLK/Pole _____ to _____	Specify other: Mining Tenement

AREA ASSESSMENT: Edge survey ☐ Partial survey ☐ Full survey ☒ Area observed (m²): ____

EFFORT: Time spent surveying (minutes): ____ No. of minutes spent / 100 m^2: ____

POP'N COUNT ACCURACY: Actual ☐ Extrapolation ☐ Estimate ☐ Count method: ____
(Refer to field manual for list)

WHAT COUNTED: Plants ☒ Clumps ☐ Clonal stems ☐

TOTAL POP'N STRUCTURE:	**Mature:**	**Juveniles:**	**Seedlings:**	**Totals:**
Alive				17
Dead				

Area of pop (m²): ____

Note: Pls record count as numbers (not percentages) for database.

QUADRATS PRESENT: No. ___ Size _____ Data attached ☐ Total area of quadrats (m²): ____

Summary Quad. Totals: Alive				

REPRODUCTIVE STATE: Clonal ☐ Vegetative ☐ Flowerbud ☐ Flower ☒
Immature fruit ☐ Fruit ☐ Dehisced fruit ☐ Percentage in flower: ____%

CONDITION OF PLANTS: Healthy ☒ Moderate ☐ Poor ☐ Senescent ☐

COMMENT:

THREATS - type, agent and supporting information: Eg clearing, too frequent fire, weed, disease. Refer to field manual for list of threats & agents. **Specify agent** where relevant. Rate current and potential threat impact: N=Nil, L=Low, M=Medium, H=High, E=Extreme Estimate time to potential impact: S=Short (<12mths), M=Medium (<5yrs), L=Long (5yrs+)	**Current impact (N-E)**	**Potential Impact (L-E)**	**Potential Threat Onset (S-L)**
• Development	L	H	
• Introduced Flora	L	M	
•			

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

Department of Environment and Conservation
Our environment, our future

Threatened and Priority Flora Report Form

Version 1.0 January 2010

HABITAT INFORMATION:

LANDFORM:
Crest ☐
Hill ☐
Ridge ☐
Outcrop ☐
Slope ☐
Flat ☒
Open depression ☐
Drainage line ☐
Closed depression ☐
Wetland ☐

ROCK TYPE:
Granite ☐
Dolerite ☐
Laterite ☐
Ironstone ☐
Limestone ☐
Quartz ☐
Specify other: _____

LOOSE ROCK:
(on soil surface; eg gravel, quartz fields)
0-10% ☐
10-30% ☐
30-50% ☐
50-100% ☐

SOIL TYPE:
Sand ☐
Sandy loam ☒
Loam ☐
Clay loam ☐
Light clay ☐
Peat ☐
Specify other: _____

SOIL COLOUR:
Red ☐
Brown ☒
Yellow ☐
White ☐
Grey ☐
Black ☐
Specify other: _____

DRAINAGE:
Well drained ☒
Seasonally inundated ☐
Permanently inundated ☐
Tidal ☐

Specific **Landform** Element: _____
(Refer to field manual for additional values)

CONDITION OF SOIL: Dry ☒ Moist ☐ Waterlogged ☐ Inundated ☐

VEGETATION CLASSIFICATION*:
Eg: **1**. Banksia woodland (B. attenuata, B. ilicifolia); **2**. Open shrubland (Hibbertia sp., Acacia spp.) ; **3**. Isolated clumps of sedges (Mesomelaena tetragona)

1. _____
2. _____
3. _____
4. _____

ASSOCIATED SPECIES: _____

Other (non-dominant) spp _____

* Please record up to four of the most representative vegetation layers (with up to three dominant species in each layer). Structural Formations should follow 2009 *Australian Soil and Land Survey Field Handbook* guidelines – refer to field manual for further information and structural formation table.

CONDITION OF HABITAT: Pristine ☐ Excellent ☒ Very good ☐ Good ☐ Degraded ☐ Completely degraded ☐

COMMENT: _____

FIRE HISTORY: **Last Fire:** Season/Month: _____ Year: _____ **Fire Intensity:** High ☐ Medium ☐ Low ☐ No signs of fire ☐

FENCING: Not required ☐ Present ☐ Replace / repair ☐ Required ☐ Length req'd: _____

ROADSIDE MARKERS: Not required ☐ Present ☐ Replace / reposition ☐ Required ☐ Quantity req'd: _____

OTHER COMMENTS: (Please include recommended management actions and/or implemented actions - include date. Also include details of additional data available, and how to locate it.) _____

SPECIMEN: Collectors No: _____ WA Herb. ☐ Regional Herb. ☐ District Herb. ☐ Other: _____
ATTACHED: Map ☐ Mudmap ☐ Photo ☐ GIS data ☐ Field notes ☐ Other: _____
COPY SENT TO: Regional Office ☐ District Office ☐ Other:

Submitter of Record: _____ Role: _____ Signed: _____ Date: / /

Please return completed form to DEC, Locked Bag 104, BENTLEY DELIVERY CENTRE WA 6983

RECORDS: Please forward to **Administrative Officer, Flora,** Species and Communities Branch.

Record entered by:_____ **Sheet No.:**_____ **Record Entered in Database** ❑

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



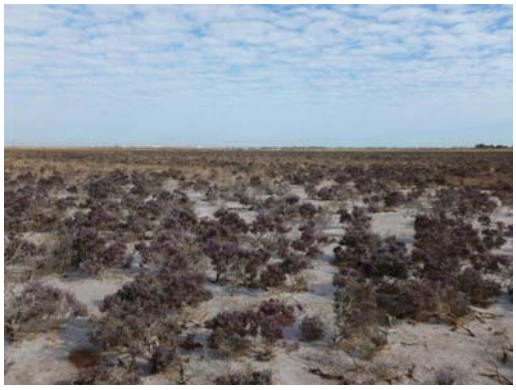
SPECIES LIST:

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

Port Hedland RS **Site** PI002

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

Location Port Hedland



MGA Zone 50 671284 **mE** 7752324 **mN**

Habitat Salt flat/plain

Soil Light brown clayey loam/sand with salt crust

Rock Type N/A

Vegetation Low Shrubland of *Tecticornia auriculata*, *Tecticornia indica* subsp. *bidens* and *Tecticornia* sp. Dennys Crossing (K.A.Shepherd & J. English KS 552) over Scattered Grasses of *Cyperus rigidellus*

Veg Condition Excellent to very good

Fire Age Old

Notes Aspect: N/A
Bare Ground: 80%
Litter Cover: 0% Logs, +% Twigs, 1% Lvs
Disturbance: Rubbish and tracks

SPECIES LIST:

Name	Cover	Height	Specimen	Notes
Cyperus rigidellus	(1%)	0.2 m	PI002.05	
Frankenia ambita	+	0.3 m	PI002.02	
Tecticornia auriculata	20%	0.3 m	PI002.01	
Tecticornia indica subsp. bidens	2%	0.3 m	PI002.04	
Tecticornia sp. Dennys Crossing (K.A. Shepherd & J. English KS 552)	1%	0.3 m	PI002.03	

Port Hedland RS **Site** PI003

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

Location Port Hedland

MGA Zone 50 672084 **mE** 7752590 **mN**

Habitat Sand dune

Soil Yellow sand

Rock Type

Vegetation Low Shrubland of *Acacia stellaticeps* over Very Open Hummock Grassland of *Triodia epactia*

Veg Condition Good

Fire Age Old

Notes Aspect: North
Bare Ground: 90%
Litter Cover: 0% Logs, 1% Twigs, 3% Lvs
Disturbance: Weeds, tracks and litter



SPECIES LIST:

Name	Cover	Height	Specimen	Notes
Acacia stellaticeps	20%	0.6 m	PI043.01	
**Aerva javanica*	+	0.6 m	PI156.12	
Amaranthus undulatus	+	0.4 m	PI133.03	
**Cenchrus ciliaris*	+	0.4 m	PI052.06	
Cleome viscosa	(+)	0.3 m	PI026.10	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.4 m	PI042.04	
Dentella asperata	+	prostrate	PI069.11	
Euphorbia alsiniflora	+	0.3 m	PI056.08	
Rhynchosia minima	+	0.2 m	PI113.03	
Tephrosia leptoclada	+	0.3 m	PI003.03	
Triodia epactia	5%	0.3 m	PI003.02	

Port Hedland RS **Site** PI004

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

Location Port Hedland

MGA Zone 50 672331 **mE** 7751680 **mN**
Habitat Mangroves
Soil Brown mud
Rock Type
Vegetation Closed Scrub of *Avicennia marina*.
Veg Condition Excellent
Fire Age Very old
Notes Aspect: N/A
Bare Ground: 99%
Litter Cover: 0% Logs, 0% Twigs, 0% Lvs
Disturbance: Litter



SPECIES LIST:

Name	Cover	Height	Specimen	Notes
Avicennia marina	90%	2-3 m	PI015.02	

Port Hedland RS **Site** PI005

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

Location Port Hedland



MGA Zone 50 672947 **mE** 7751641 **mN**
Habitat Samphire flat
Soil Pale brown silt with salt crust
Rock Type N/A
Vegetation Low open Shrubland of *Tecticornia indica* subsp. *bidens* over Scattered Tussock Grasses of **Cenchrus ciliaris*, *Sporobolus australasicus* and *Eragrostis falcata*
Veg Condition Very good
Fire Age Very old
Notes Aspect: N/A
Bare Ground: 99%
Litter Cover: 0% Logs, +% Twigs, +% Lvs
Disturbance: Weeds and tracks

SPECIES LIST:

Name	Cover	Height	Specimen	Notes
**Cenchrus ciliaris*	(+)	0.3 m	PI052.06	
Dactyloctenium radulans	(+)	0.2 m	PI037.14	
Eragrostis falcata	+	0.2 m	PI011.03	
Neobassia astrocarpa	+	0.3 m	PI005.01	
Portulaca pilosa	+	0.3 m	PI030.01	
Sporobolus australasicus	+	0.2 m	PI145.03	
Sporobolus virginicus	+	0.2 m	PI011.06	
Tecticornia indica subsp. *bidens*	7%	0.5 m	PI011.01	

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
Adriana tomentosa	+	1 m	PI006.03	
**Aerva javanica*	1%	0.4 m	PI076.05	
Bonamia alatisemina	4%	1 m	PI083.10	
**Cenchrus ciliaris*	30%	0.3 m	PI103.06	
Chrysopogon fallax	+	0.4 m	PI084.10	
Cleome viscosa	+	0.3 m	PI065.17	
Codonocarpus cotinifolius	+	0.5 m	PI006.04	
Crotalaria cunninghamii subsp. *sturtii*	+	0.6 m	PI006.06	
Cucumis maderaspatanus	+	cr	PI141.04	
Euphorbia australis	+	0.2 m	PI084.08	
Euphorbia tannensis subsp. *eremophila*	+	0.3 m	PI013.10	
Melhania oblongifolia	+	0.3 m	PI006.05	
Rhagodia eremaea	+	1 m	PI006.08	
Rhynchosia minima	+	cr	PI094.11	
Scaevola amblyanthera var. *centralis*	1%	0.3 m	PI006.07	
Tephrosia leptoclada	+	0.5 m	PI006.01	
Triodia epactia	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
Acacia colei var. *colei*	+	2.5 m	PI070.38	
**Aerva javanica*	+	0.3 m	PI147.05	
Amaranthus undulatus	+	0.6 m	PI007.08	
Bonamia media var. *villosa*	+	0.1 m	PI007.05	
Bulbostylis barbata	+	0.1 m	PI070.17	
Calandrinia pumila	+	cr	PI086.02	
**Cenchrus ciliaris*	25%	0.3 m	PI070.29	
Cleome viscosa	+	0.4 m	PI099.07	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.3 m	PI070.02	
Crotalaria ramosissima	+	0.3 m	PI007.01	
Eriachne benthamii	+	0.1 m	PI007.06	
Eriachne mucronata	+	0.3 m	PI114.03	
Euphorbia alsiniflora	+	0.15 m	PI072.10	
Euphorbia australis	+	cr	PI108.12	
Heliotropium cunninghamii	+	0.2 m	PI046.19	
Hybanthus aurantiacus	+	0.5 m	PI099.02	
Indigofera linifolia	+	0.2 m	PI007.10	
Kennedia prorepens	+	cr	PI007.09	
Mollugo molluginea	+	0.1 m	PI070.35	
Portulaca pilosa	+	0.1 m	PI147.22	
Pterocaulon sphaeranthoides	+	0.1 m	PI007.07	
Tephrosia rosea var. *rosea*	+	0.3 m	PI007.12	
Tephrosia simplicifolia	+	0.1 m	PI032.08	Range ext
Tephrosia sp. B Kimberley Flora (C.A. Gardner 7300)	+	0.3 m	PI007.11	
Tinospora smilacina	+	cr	PI087.09	
Tricoryne corynothecoides	+	0.4 m	PI007.03	
Triodia epactia	20%	0.4 m	PI007.02	
Triumfetta chaetocarpa	1%	0.3 m	PI007.04	

**Vaccaria hispanica*	+	0.2 m	PI007.13
Whiteochloa airoides	+	0.5 m	PI007.14
Zornia muelleriana	+	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
Acacia stellaticeps	45%	0.3 m	PI070.01	
Aristida holathera var. *holathera*	+	0.3 m	PI070.10	
Bonamia alatisemina	+	cr	PI008.04	
Bonamia rosea	1%	0.3 m	PI008.03	
Bulbostylis barbata	+	0.1 m	PI070.17	
Calandrinia pumila	+	0.2 m	PI086.02	
Chrysopogon fallax	+	1 m	PI070.21	
Cleome viscosa	+	0.4 m	PI099.07	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.3 m	PI070.02	
Dodonaea coriacea	+	0.3 m	PI032.03	
Eriachne mucronata	1%	0.3 m	PI008.01	
Evolvulus alsinoides var. *villosicalyx*	+	0.1 m	PI008.06	
Fimbristylis dichotoma	2%	0.3 m	PI081.07	
Goodenia microptera	+	0.2 m	PI008.05	
Hibiscus brachychlaenus	+	0.2 m	PI008.08	
Hybanthus aurantiacus	+	0.4 m	PI099.02	
Indigofera monophylla	+	0.3 m	PI072.03	
Mollugo molluginea	+	0.1 m	PI070.35	
Ptilotus astrolasius	+	0.5 m	PI089.05	
Ptilotus polystachyus	+	0.3 m	PI147.19	
Senna notabilis	+	0.2 m	PI070.14	
Tephrosia sp. B Kimberley Flora (C.A. Gardner 7300)	+	0.2 m	PI007.11	
Triodia epactia	5%	0.5 m	PI008.02	
Triodia schinzii	5%	0.4 m	PI008.07	
Yakirra australiensis var. *australiensis*	+	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
Acacia stellaticeps	2%	0.4 m	PI043.01	
Aristida holathera var. *holathera*	+	0.3 m	PI049.07	
Bonamia media var. *villosa*	+	0.2 m	PI008a.05	
Bonamia rosea	1%	0.3 m	PI030.04	
Bulbostylis barbata	+	0.1 m	PI129.01	
**Cenchrus ciliaris*	+	0.4 m	PI052.06	
Cleome viscosa	+	0.3 m	PI101.04	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.3 m	PI042.04	
Corchorus tectus	+	0.3 m	PI030.02	
Corymbia hamersleyana	+	0.8 m	PI008a.04	
Digitaria brownii	1%	0.3 m	PI008a.06	
Eragrostis eriopoda	+	0.4 m	PI047.02	
Eriachne aristidea	+	0.3 m	PI136.03	
Eriachne mucronata	+	0.3 m	PI049.01	
Hibiscus burtonii	+	0.3 m	PI008a.01	
Hybanthus aurantiacus	+	0.4 m	PI043.13	
Indigofera monophylla	+	0.3 m	PI146.02	
Mollugo molluginea	+	0.1 m	PI043.29	
Polycarpaea corymbosa var. *corymbosa*	+	0.2 m	PI043.06	
Portulaca pilosa	+	0.3 m	PI030.01	
Ptilotus astrolasius	+	0.4 m	PI056.18	
Ptilotus polystachyus	+	0.3 m	PI030.03	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.1 m	PI043.14	
Solanum diversiflorum	+	0.2 m	PI049.04	
Tephrosia rosea	+	0.4 m	PI008a.02	
Trianthema pilosa	+	0.1 m	PI052.09	
Triodia schinzii	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
Acacia colei var. *colei*	+	0.5 m	PI091.12	
Acacia stellaticeps	25%	0.3 m	PI065.01	
Bonamia alatisemina	+	0.1 m	PI117.11	
Bonamia rosea	+	0.3 m	PI090.02	
Bulbostylis barbata	+	0.1 m	PI090.18	
Chrysopogon fallax	+	0.5 m	PI051.04	
Eriachne mucronata	6%	0.4 m	PI109.05	
Euphorbia alsiniflora	+	0.2 m	PI117.03	
Evolvulus alsinoides var. *decumbens*	+	0.1 m	PI094.10	
Fimbristylis oxystachya	+	0.1 m	PI025.05	
Goodenia forrestii	+	0.2 m	PI009.03	
Hybanthus aurantiacus	+	0.4 m	PI043.13	
Indigofera monophylla	+	0.2 m	PI065.13	
Mollugo molluginea	+	0.1 m	PI132.04	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI058.10	
Ptilotus astrolasius	+	0.2 m	PI009.02	
Ptilotus calostachyus	+	1 m	PI109.10	
Ptilotus fusiformis	+	0.5 m	PI065.28	
Ptilotus polystachyus	+	0.5 m	PI025.13	
Schizachyrium fragile	+	0.2 m	PI075.02	
Trianthema pilosa	+	0.1 m	PI065.03	
Triodia schinzii	8%	0.3 m	PI009.01	
Yakirra australiensis var. *australiensis*	+	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
Acacia pyrifolia	+	1.2 m	PI107.03	
Acacia trachycarpa	1%	1 m	PI010.01	
Acacia trachycarpa x *tumida*	+	1.2 m	PI010.02	
Aristida holathera var. *holathera*	+	0.3 m	PI123.18	
Bonamia alatisemina	+	cr	PI083.10	
Bonamia rosea	+	0.3 m	PI123.05	
Bulbostylis barbata	+	0.2 m	PI121.05	
Calandrinia pentavalvis	+	0.2 m	PI123.38	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.4 m	PI084.06	
Crotalaria ramosissima	+	0.3 m	PI027.05	
Euphorbia alsiniflora	+	0.3 m	PI123.36	
Evolvulus alsinoides var. *villosicalyx*	+	0.2 m	PI123.25	
Fimbristylis dichotoma	+	0.3 m	PI121.06	
Goodenia microptera	+	0.3 m	PI123.12	
Hakea lorea subsp. lorea	+	1 m	PI051.03	
Hybanthus aurantiacus	+	0.3 m	PI123.03	
Indigofera monophylla	+	0.3 m	PI123.02	
Mitrasacme connata	+	0.2 m	PI010.03	
Pluchea tetranthera	+	0.3 m	PI083.11	
Polycarpaea corymbosa var. *corymbosa*	+	0.2 m	PI083.12	
Polygala linariifolia	+	0.2 m	PI019.01	
Ptilotus fusiformis	+	0.3 m	PI083.08	
Schizachyrium fragile	+	0.3 m	PI076.06	
Trianthema pilosa	+	0.3 m	PI065.03	
Triodia epactia	30%	0.3 m	PI010.05	
Triodia lanigera	5%	0.3 m	PI010.06	
Triumfetta ramosa	+	0.3 m	PI010.04	
Yakirra australiensis var. *australiensis*	+	0.1 m	PI084.03	

Port Hedland RS **Site** PI011

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

Location Port Hedland

MGA Zone 50 669588 **mE** 7749349 **mN**

Habitat Samphire flat

Soil Brown salty sand

Rock Type N/A

Vegetation Scattered Low Shrubs of *Tecticornia halocnemoides* subsp. *tenuis*, *Tecticornia indica* subsp. *bidens* and *Tecticornia* sp. Dennys Crossing (K.A. Shepherd & J. English KS 552) over Scattered Tussock Grasses of *Eragrostis falcata*

Veg Condition Very good to excellent

Fire Age Old

Notes Aspect: N/A
Bare Ground: 98%
Litter Cover: 0% Logs, 0% Twigs, +% Lvs
Disturbance: Tracks and houses near by



SPECIES LIST:

Name	Cover	Height	Specimen	Notes
Eragrostis falcata	1%	0.2 m	PI011.03	
Muellerolimon salicorniaceum	+	0.2 m	PI011.04	
Sporobolus virginicus	+	0.2 m	PI011.06	
Tecticornia halocnemoides subsp. *tenuis*	+	0.2 m	PI011.05	
Tecticornia indica subsp. *bidens*	+	0.2 m	PI011.01	
Tecticornia sp. Dennys Crossing (K.A. Shepherd & J. English KS 552)	+	0.2 m	PI011.02	
Xerochloa laniflora	+	0.3 m	PI011.07	

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
Avicennia marina	30%	1-3 m	PI012.02	
Rhizophora stylosa	25%	1-4 m	PI012.03	
Tecticornia 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
Acacia bivenosa	1%	1 m	PI121.09	
**Aerva javanica*	+	0.4 m	PI076.05	
Boerhavia coccinea	+	0.2 m	PI123.29	
Cleome viscosa	+	0.3 m	PI065.17	
Corchorus tectus	+	0.3 m	PI123.35	
Corymbia hamersleyana	+	3 m	PI013.03	
Eriachne mucronata	+	0.3 m	PI076.13	
Euphorbia alsiniflora	+	0.3 m	PI123.36	
Euphorbia tannensis subsp. *eremophila*	+	0.3 m	PI013.10	
Goodenia microptera	+	0.2 m	PI123.12	
Heliotropium ovalifolium	+	0.3 m	PI013.08	
Heliotropium tenuifolium	+	0.3 m	PI013.11	
Indigofera monophylla	+	0.3 m	PI123.02	
Pluchea tetranthera	+	0.3 m	PI083.11	
Ptilotus axillaris	+	0.2 m	PI013.06	
Ptilotus exaltatus	+	0.3 m	PI013.01	
Scaevola amblyanthera var. *centralis*	+	0.3 m	PI013.05	
Scaevola spinescens	2%	1.2 m	PI013.02	
Sida sp. verrucose glands (F.H. Mollemans 2423)	+	0.2 m	PI013.07	
Trianthema glossostigma	+	0.3 m	PI013.09	
Tribulus macrocarpus	+	0.1 m	PI084.11	
Triodia schinzii	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
Acacia stellaticeps	+	0.5 m	PI083.01	
Aristida holathera var. *holathera*	1%	0.3 m	PI123.18	
Bulbostylis barbata	+	0.1 m	PI121.05	
Calandrinia pentavalvis	+	0.3 m	PI123.38	
Cleome viscosa	+	1 m	PI065.17	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.2 m	PI084.06	
Crotalaria ramosissima	+	0.3 m	PI027.05	
Drosera indica	+	0.2 m	PI045.01	
Eragrostis eriopoda	2%	0.3 m	PI084.04	
Euphorbia alsiniflora	+	0.3 m	PI123.36	
Fimbristylis dichotoma	+	0.3 m	PI121.06	
Fimbristylis simulans	+	0.3 m	PI014.02	
Gomphrena sordida	+	cr	PI014.05	
Heliotropium inexplicitum	+	0.2 m	PI014.04	
Hybanthus aurantiacus	+	0.3 m	PI123.03	
Mitrasacme connata	+	0.2 m	PI010.03	
Murdannia graminea	+	0.3 m	PI020.10	
Portulaca pilosa	+	0.3 m	PI123.17	
Ptilotus polystachyus	+	0.3 m	PI076.02	
Schizachyrium fragile	2%	0.3 m	PI076.06	
Senna notabilis	+	0.2 m	PI123.20	
Sida sp. verrucose glands (F.H. Mollemans 2423)	+	0.2 m	PI014.01	
Stackhousia intermedia	+	0.2 m	PI046.03	
Triodia secunda	55%	0.3 m	PI121.07	
Yakirra australiensis var. *australiensis*	+	0.3 m	PI083.02	
Zornia muelleriana	+	0.3 m	PI014.03	

Port Hedland RS **Site** PI015

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

Location Port Hedland

MGA Zone 50 669991 **mE** 7750185 **mN**

Habitat Mangroves

Soil Brown mud

Rock Type N/A

Vegetation Shrubland of *Avicennia marina* and *Bruguiera exaristata* over Scattered Herbs of *Threlkeldia diffusa*

Veg Condition Excellent

Fire Age Very old

Notes Aspect: N/A
Bare Ground: 99%
Litter Cover: 0% Logs, 0% Twigs, 0% Lvs
Disturbance: Litter



SPECIES LIST:

Name	Cover	Height	Specimen	Notes
Avicennia marina	25%	0.8 m	PI015.02	
Bruguiera exaristata	1%	0.8 m	PI015.03	
Threlkeldia diffusa	1%	0.2 m	PI015.01	

Port Hedland RS **Site** PI016

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

Location Port Hedland

MGA Zone 50 667162 **mE** 7747748 **mN**

Habitat Mudflats

Soil Brown clayey sand

Rock Type N/A

Vegetation Low Shrubland of *Muellerolimon salicorniaceum* and *Tecticornia* sp. Dennys Crossing (K.A. Shepherd & J. English KS 552) over Scattered Tussock Grasses of *Eragrostis falcata*



Veg Condition Excellent to very good

Fire Age Old

Notes Aspect: N/A
Bare Ground: 85%
Litter Cover: +% Logs, +% Twigs, +% Lvs
Disturbance: Rubbish

SPECIES LIST:

Name	Cover	Height	Specimen	Notes
Avicennia marina	+	0.5 m	PI017.01	
Eragrostis falcata	+	0.2 m	PI016.03	
Muellerolimon salicorniaceum	8%	0.2 m	PI016.01	
Tecticornia sp. Dennys Crossing (K.A. Shepherd & J. English KS 552)	10%	0.2 m	PI016.02	

Port Hedland RS **Site** PI017

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

Location Port Hedland

MGA Zone 50 667139 **mE** 7747938 **mN**
Habitat Mangrove
Soil Brown mud
Rock Type N/A
Vegetation Closed Scrub of *Avicennia marina*
Veg Condition Excellent
Fire Age Very old
Notes Aspect: N/A
Bare Ground: 60%
Litter Cover: +% Logs, +% Twigs, +% Lvs
Disturbance: None



SPECIES LIST:

Name	Cover	Height	Specimen	Notes
Avicennia marina	80%	1.5 m	PI017.01	
Threlkeldia diffusa	+	0.3 m	PI017.02	

Port Hedland RS **Site** PI018

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



Location Port Hedland

MGA Zone 50 667432 **mE** 7747570 **mN**

Habitat Plain island between salt flats

Soil light orange brown/salmon sandy loam

Rock Type N/A

Vegetation Scattered Low Shrubs of *Pterocaulon sphacelatum* over Closed Hummock Grassland of *Triodia secunda* over Scattered Tussock Grasses of **Cenchrus ciliaris*

Veg Condition Very good

Fire Age Old

Notes Aspect: N/A
Bare Ground: 10%
Litter Cover: 0% Logs, 1% Twigs, 10% Lvs
Disturbance: Buffel, rubbish and tracks near by and within site

SPECIES LIST:

Name	Cover	Height	Specimen	Notes
**Aerva javanica*	+	0.5 m	PI076.05	
Bulbostylis barbata	+	0.2 m	PI121.05	
**Cenchrus ciliaris*	1%	0.3 m	PI103.06	
Cleome viscosa	+	0.3 m	PI065.17	
Euphorbia alsiniflora	+	0.1 m	PI123.36	
Neobassia astrocarpa	+	0.3	PI018.04	
Panicum decompositum	+	0.4 m	PI018.03	
Pterocaulon sphacelatum	1%	0.3 m	PI020.02	
Sarcostemma viminale subsp. *australe*	+	0.5 m	PI037.10	
Swainsona pterostylis	+	0.3 m	PI018.02	
Triodia secunda	90%	0.3 m	PI121.07	
Whiteochloa airoides	+	0.4 m	PI018.01	

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
Acacia colei var. colei	+	0.8 m	PI076.14	
Acacia stellaticeps	2%	0.5 m	PI083.01	
Aristida inaequiglumis	+	0.4 m	PI034.08	
Bulbostylis barbata	+	0.2 m	PI121.05	
Calandrinia pentavalvis	+	0.3 m	PI123.38	
Cassytha capillaris	+	cr	PI019.05	
Commelina ensifolia	(+)	cr	PI019.02	
Crotalaria ramosissima	+	0.2 m	PI027.05	
Cyperus cunninghamii subsp. *cunninghamii*	+	0.3 m	PI034.06	
Desmodium filiforme	+	cr	PI019.04	
Drosera indica	+	0.2 m	PI045.01	
Eriachne mucronata	10%	0.3 m	PI076.13	
Euphorbia alsiniflora	+	0.2 m	PI123.36	
Fimbristylis dichotoma	+	0.3 m	PI121.06	
Hybanthus aurantiacus	+	0.2 m	PI123.03	
Indigofera linifolia	+	0.3 m	PI076.10	
Indigofera sp.	+	0.2 m	PI019.03	Material inadequate
Mitrasacme connata	+	0.2 m	PI072.07	
Murdannia graminea	+	0.4 m	PI020.10	
Panicum decompositum	+	0.3 m	PI018.03	
Polycarpaea corymbosa var. *corymbosa*	+	0.2 m	PI083.12	
Polygala linariifolia	+	0.2 m	PI019.01	
Ptilotus polystachyus	+	0.3 m	PI076.02	
Schizachyrium fragile	+	0.2 m	PI076.06	
Stackhousia intermedia	+	0.3 m	PI046.03	
Triodia secunda	70%	0.3 m	PI121.07	
Vigna lanceolata var. *filiformis*	+	0.3 m	PI020.01	
Whiteochloa airoides	+	0.4 m	PI018.01	
Yakirra australiensis var. *australiensis*	+	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
	Acacia stellaticeps	5%		0.4 m	PI083.01	
	Aristida holathera var. *holathera*	+		0.3 m	PI123.18	
	Aristida inaequiglumis	+		0.4 m	PI034.08	
	Bulbostylis barbata	1%		0.1 m	PI121.05	
	Calandrinia pentavalvis	+		0.2 m	PI123.38	
	Calandrinia pumila	+		0.1 m	PI020.08	
	Chrysopogon fallax	+		0.3 m	PI084.10	
	Cyperus cunninghamii subsp. *cunninghamii*	1%		0.4 m	PI020.05	
	Drosera burmanni	+		0.1 m	PI020.07	
	Drosera indica	2%		0.1 m	PI045.01	
	Eriachne mucronata	2%		0.3 m	PI076.13	
	Fimbristylis simulans	+		0.3 m	PI072.08	
	Goodenia stobbsiana	+		0.3 m	PI123.23	
	Mimulus gracilis	+		0.2 m	PI020.06	
	Mitrasacme connata	1%		0.3 m	PI072.07	
	Murdannia graminea	+		0.2 m	PI020.10	Range ext
	Paraneurachne muelleri	+		0.3 m	PI084.09	
	Pluchea rubelliflora	+		0.2 m	PI020.04	
	Polycarpaea corymbosa var. *corymbosa*	+		0.2 m	PI083.12	
	Polygala linariifolia	+		0.1 m	PI033.02	
	Pterocaulon sphacelatum	+		0.2 m	PI020.02	
	Ptilotus fusiformis	+		0.3 m	PI083.08	
	Schizachyrium fragile	+		0.3 m	PI076.06	
	Streptoglossa decurrens	+		0.2 m	PI121.02	
	Synaptantha tillaeacea var. *tillaeacea*	+		0.1 m	PI020.03	
	Triodia schinzii	5%		0.3 m	PI020.09	
	Triodia secunda	25%		0.3 m	PI121.07	
	Vigna lanceolata var. *filiformis*	+		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
Acacia stellaticeps	1%	0.4 m	PI065.01	
Acacia tumida var. *pilbarensis*	+	1 m	PI150.07	
Aristida holathera var. *holathera*	+	0.4 m	PI094.04	
Bonamia alatisemina	+	0.1 m	PI117.11	
Bulbostylis barbata	+	0.1 m	PI090.18	
Calandrinia pentavalvis	+	0.1 m	PI066.03	
Cassytha capillaris	+	cr	PI091.09	
Chrysopogon fallax	3%	0.6 m	PI051.04	
Cleome viscosa	+	0.3 m	PI065.17	
Cyperus cunninghamii subsp. *cunninghamii*	+	0.3 m	PI021.06	
Eragrostis speciosa	+	1 m	PI022.20	
Eriachne mucronata	20%	0.3 m	PI021.05	
Euphorbia alsiniflora	+	0.1 m	PI117.03	
Evolvulus alsinoides var. *decumbens*	+	0.2 m	PI094.10	
Hybanthus aurantiacus	+	0.2 m	PI043.13	
Ipomoea muelleri	+	cr	PI021.04	
Mitrasacme connata	+	0.1 m	PI010.03	
Pluchea tetranthera	1%	0.3 m	PI066.22	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI058.10	
Pterocaulon sphacelatum	+	0.3 m	PI021.02	
Ptilotus fusiformis	+	0.4 m	PI065.28	
Ptilotus polystachyus	+	0.4 m	PI025.13	
Salsola tragus subsp. *grandiflora*	+	0.2 m	PI091.15	
Schizachyrium fragile	+	0.3 m	PI075.02	
Triodia epactia	28%	0.3 m	PI021.01	
Yakirra australiensis var. *australiensis*	+	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
Acacia ancistrocarpa	+	1-2 m	PI022.01	Hybrid with unknown
Acacia colei var. *colei*	+	1-2 m	PI091.12	
Acacia trachycarpa	7%	1.5-2 m	PI107.02	
Acacia tumida var. *pilbarensis*	2%	1-2 m	PI150.07	
Amaranthus undulatus	+	0.2 m	PI022.10	
Aristida holathera var. *holathera*	+	0.2 m	PI094.04	
Bonamia media var. *villosa*	+	0.1 m	PI022.04	
Bulbostylis barbata	+	0.1 m	PI090.18	
Calandrinia pentavalvis	+	0.1 m	PI022.02	
**Cenchrus ciliaris*	1%	0.4 m	PI103.06	
Chloris pectinata	+	0.3 m	PI022.16	
Chrysopogon fallax	+	0.6 m	PI051.04	
Cleome viscosa	+	0.5 m	PI065.17	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.3 m	PI094.08	
Crotalaria cunninghamii subsp. *sturtii*	+	0.7 m	PI022.13	PH; 274-275
Cyperus ixiocarpus	+	0.3 m	PI022.03	
Dysphania kalpari	+	0.1 m	PI022.09	
Dysphania saxatilis	+	0.2 m	PI090.11	
Eragrostis cumingii	+	0.2 m	PI080.06	
Eragrostis eriopoda	+	0.2 m	PI090.04	
Eragrostis speciosa	+	0.3-0.7 m	PI022.06	
Eriachne aristidea	+	0.2 m	PI063.03	
Eriachne mucronata	+	0.2 m	PI049.01	
Eucalyptus victrix	4%	7-10 m	PI022.14	
Euphorbia alsiniflora	+	0.2 m	PI117.03	
Euphorbia australis	+	0.3 m	PI139.02	
Fimbristylis oxystachya	+	0.1 m	PI025.05	
Hybanthus aurantiacus	+	0.3 m	PI043.13	

Ipomoea muelleri	+	cr	PI103.12	
Mollugo molluginea	+	0.1 m	PI132.04	
Paspalidium tabulatum	+	0.2 m	PI117.07	
Pluchea rubelliflora	+	0.05 m	PI154.10	
Pluchea tetranthera	+	0.3 m	PI022.18	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI058.10	
**Portulaca oleracea*	+	0.05 m	PI128.04	
Portulaca pilosa	+	0.2 m	PI090.15	
Ptilotus fusiformis	+	0.1 m	PI065.28	
Schizachyrium fragile	+	0.1 m	PI075.02	
Senna notabilis	+	0.3 m	PI051.12	
Senna venusta	+	0.6 m	PI022.11	
Setaria dielsii	+	0.3 m	PI022.17	
Sida rohlenae subsp. *rohlenae*	+	0.2 m	PI154.05	
Sorghum sp.	+	0.8 m	PI022.19	Material inadequate
Stemodia grossa	+	0.2 m	PI022.21	
Striga squamigera	+	0.2 m	PI022.15	
Synaptantha tillaeacea var. *tillaeacea*	+	0.01 m	PI022.08	
Triodia epactia	5%	0.4 m	PI022.07	
Wahlenbergia tumidifructa	+	0.2 m	PI022.05	
Yakirra australiensis var. *australiensis*	+	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
Acacia stellaticeps	6%	0.5 m	PI043.01	
Aristida holathera var. *holathera*	+	0.3 m	PI049.07	
Bonamia rosea	+	0.3 m	PI030.04	
Bulbostylis barbata	+	0.1 m	PI129.01	
Chrysopogon fallax	+	0.4 m	PI042.09	
Crotalaria ramosissima	+	0.3 m	PI029.01	
Eragrostis eriopoda	+	0.3 m	PI047.02	
Eriachne aristidea	+	0.3 m	PI136.03	
Euphorbia alsiniflora	+	0.2 m	PI056.08	
Indigofera monophylla	+	0.3 m	PI052.03	
Mollugo molluginea	+	0.2 m	PI043.29	
Polycarpaea corymbosa var. *corymbosa*	+	0.2 m	PI043.06	
Ptilotus astrolasius	+	0.3 m	PI056.18	
Ptilotus calostachyus	+	0.7 m	PI140.03	
Ptilotus fusiformis	+	0.4 m	PI043.11	
Ptilotus polystachyus	+	0.4 m	PI030.03	
Triodia schinzii	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
Acacia stellaticeps	5%	0.5 m	PI070.01	
Aristida holathera var. *holathera*	+	0.2 m	PI070.10	
Aristida inaequiglumis	+	0.8 m	PI070.24	
Bonamia rosea	+	0.2 m	PI088.02	
Bulbostylis barbata	+	0.1 m	PI070.17	
**Cenchrus ciliaris*	+	0.3 m	PI070.29	
Codonocarpus cotinifolius	+	1 m	PI050.06	
Cucumis maderaspatanus	+	cr	PI077.11	
Dolichandrone heterophylla	+	1 m	PI148.05	
Dysphania saxatilis	+	0.3 m	PI053.07	
Eriachne mucronata	+	0.3 m	PI024.02	
Euphorbia alsiniflora	+	0.15 m	PI072.10	
Fimbristylis dichotoma	+	0.3 m	PI081.07	
Fimbristylis simulans	+	0.1 m	PI072.08	
Goodenia microptera	+	0.4 m	PI040.12	
Goodenia stobbsiana	+	0.5 m	PI024.04	
Hybanthus aurantiacus	+	0.2 m	PI099.02	
Mitrasacme connata	+	0.2 m	PI072.07	
Mollugo molluginea	+	0.1 m	PI070.35	
Pimelea ammocharis	+	0.6 m	PI070.23	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI072.02	
**Portulaca oleracea*	+	0.2 m	PI086.11	
Ptilotus calostachyus	+	0.8 m	PI032.04	
Schizachyrium fragile	+	0.3 m	PI110.05	
Senna artemisioides subsp. *oligophylla* x subsp. *helmsii*	+	1 m	PI024.05	
Triodia lanigera	2%	0.3 m	PI024.03	
Triodia schinzii	45%	0.5 m	PI024.01	
Yakirra australiensis var. *australiensis*	+	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
Acacia stellaticeps	4%	0.6 m	PI065.01	
Bonamia rosea	+	0.4 m	PI025.01	
Bulbostylis barbata	+	0.1 m	PI066.04	
Chrysopogon fallax	+	0.4 m	PI051.04	
Desmodium filiforme	+	0.05 m	PI025.11	
Digitaria brownii	+	0.2 m	PI025.07	
Drosera indica	+	0.1 m	PI045.01	
Eriachne helmsii	+	0.4 m	PI027.02	
Euphorbia alsiniflora	+	0.1 m	PI025.12	
Evolvulus alsinoides var. *villosicalyx*	+	0.2 m	PI025.06	
Fimbristylis oxystachya	+	0.1 m	PI025.05	
Hybanthus aurantiacus	+	0.1 m	PI043.13	
Kennedia prorepens	+	cr	PI025.08	
Mitrasacme connata	+	0.2 m	PI025.09	
Mollugo molluginea	+	0.1 m	PI132.04	
Ptilotus fusiformis	+	0.4 m	PI065.28	
Ptilotus polystachyus	+	0.5 m	PI025.13	
Senna notabilis	+	0.1 m	PI051.12	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI058.05	
Sida sp. verrucose glands (F.H. Mollemans 2423)	+	0.3 m	PI025.10	
Solanum diversiflorum	+	0.2 m	PI048.09	
Solanum ellipticum	+	0.4 m	PI065.26	
Triodia epactia	9%	0.4 m	PI025.02	
Triodia schinzii	15%	0.4 m	PI025.03	
Waltheria indica	+	0.3 m	PI065.27	
Yakirra australiensis var. *australiensis*	+	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
Acacia stellaticeps	2%	0.6 m	PI043.01	
Alternanthera nana	+	0.3 m	PI026.07	
Bonamia alatisemina	+	0.2 m	PI026.11	
Bulbostylis barbata	+	0.1 m	PI067.01	
Calandrinia pentavalvis	+	0.1 m	PI049.11	
Carissa lanceolata	+	0.7 m	PI052.07	
Chrysopogon fallax	+	0.6 m	PI042.09	
Cleome viscosa	(+)	0.3 m	PI026.10	
Crotalaria ramosissima	+	0.2 m	PI026.01	
**Cucumis melo subsp. agrestis*	+	0.2 m	PI026.08	
Cyperus vaginatus	+	0.3 m	PI026.12	
Drosera indica	+	0.1 m	PIOPBW01a	
Eriachne mucronata	+	0.3 m	PI049.01	
Eucalyptus victrix	1%	7 m	PI026.05	
Glycine canescens	+	0.2 m	PI026.03	
Hybanthus aurantiacus	+	0.2 m	PI026.02	
Mitrasacme connata	+	0.2 m	PI071.03	
Ptilotus fusiformis	+	0.4 m	PI043.11	
Schizachyrium fragile	+	0.3 m	PI026.04	
Senna notabilis	+	0.3 m	PI043.09	
Solanum ellipticum	+	0.3 m	PI026.13	
Triodia schinzii	40%	0.5 m	PI026.06	
Yakirra australiensis var. *australiensis*	+	0.2 m	PI042.06	
Zornia muelleriana	+	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
Acacia stellaticeps	1%	0.6 m	PI065.01	
Bonamia alatisemina	+	0.1 m	PI027.06	
Bonamia media var. *villosa*	+	0.1 m	PI027.06a	
Bulbostylis barbata	+	0.1 m	PI027.03	
Chrysopogon fallax	+	0.6 m	PI051.04	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.3 m	PI027.04	
Crotalaria ramosissima	+	0.2 m	PI027.05	
Cucumis maderaspatanus	+	cr	PI045.15	
Eragrostis eriopoda	+	0.2 m	PI065.04	
Eriachne helmsii	5%	0.3 m	PI027.02	
Euphorbia alsiniflora	+	0.1 m	PI025.12	
Evolvulus alsinoides var. *villosicalyx*	+	0.05 m	PI027.09	
Glycine canescens	+	0.1 m	PI027.08	
Hybanthus aurantiacus	+	0.2 m	PI043.13	
Mollugo molluginea	+	0.1 m	PI132.04	
Portulaca pilosa	+	0.2 m	PI027.11	
Ptilotus fusiformis	+	0.4 m	PI065.28	
Ptilotus polystachyus	+	0.7 m	PI025.13	
Senna notabilis	+	0.2 m	PI051.12	
Sida sp. B Kimberley Flora (A.A. Mitchell 2745)	+	0.3 m	PI027.07	
Solanum ellipticum	+	0.4 m	PI027.12	
Tribulopis angustifolia	+	cl	PI027.10	
Triodia schinzii	6%	0.3 m	PI027.01	
Yakirra australiensis var. *australiensis*	+	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 stellat*iceps 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
Acacia stellaticeps	3%	0.5 m	PI043.01	
Bulbostylis barbata	+	0.05 m	PI067.01	
Calandrinia pentavalvis	+	0.1 m	PI049.11	
Chrysopogon fallax	+	0.6 m	PI042.09	
Digitaria brownii	+	0.3 m	PI028.04	
Drosera indica	+	0.1 m	PIOPBW01a	
Eriachne mucronata	+	0.3 m	PI049.01	
Fimbristylis simulans	+	0.3 m	PI028.03	
Indigofera monophylla	+	0.4 m	PI028.02	
Mitrasacme connata	+	0.2 m	PI071.03	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI043.06	
Polymeria ambigua	+	cr	PI028.01	
Ptilotus fusiformis	+	0.3 m	PI043.11	
Triodia epactia	10%	0.4 m	PI028.05	
Triodia schinzii	4%	0.5 m	PI026.06	
Yakirra australiensis var. *australiensis*	+	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
Acacia colei var. *colei*	+	1.5 m	PI043.16	
Acacia stellaticeps	4%	0.5 m	PI043.01	
Bonamia rosea	1%	0.4 m	PI030.04	
Bulbostylis barbata	+	0.1 m	PI129.01	
Calandrinia stagnensis	+	0.2 m	PI145.04	
Chrysopogon fallax	+	0.5 m	PI042.09	
Crotalaria ramosissima	+	0.4 m	PI029.01	
**Cucumis melo subsp. agrestis*	+	cr	PI026.08	
Digitaria brownii	+	0.2 m	PI028.04	
Dysphania saxatilis	+	0.2 m	PI056.15	
Eragrostis eriopoda	+	0.4 m	PI047.02	
Eriachne mucronata	+	0.4 m	PI049.01	
Euphorbia australis	+	prostrate	PI104.02	
Hakea lorea subsp. *lorea*	+	1.5 m	PI043.07	
Indigofera monophylla	+	0.3 m	PI052.03	
Portulaca pilosa	+	0.3 m	PI030.01	
Ptilotus fusiformis	+	0.4 m	PI043.11	
Ptilotus polystachyus	+	0.5 m	PI030.03	
Santalum lanceolatum	+	1.2 m	PI029.02	
Triodia epactia	8%	0.4 m	PI029.03	
Yakirra australiensis var. *australiensis*	+	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
Acacia stellaticeps	+	0.4 m	PI043.01	
Aristida holathera var. *holathera*	+	0.4 m	PI049.07	
Bonamia rosea	1%	0.4 m	PI030.04	
Bulbostylis barbata	+	0.1 m	PI056.01	
Calandrinia stagnensis	+	0.2 m	PI145.04	
Carissa lanceolata	+	1.6 m	PI052.07	
Chrysopogon fallax	+	0.6 m	PI042.09	
Cleome viscosa	+	0.5 m	PI026.10	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.4 m	PI042.04	
Corchorus tectus	+	0.4 m	PI030.02	
Corymbia candida subsp. *dipsodes*	1%	1.8 m	PI146.07	
Eragrostis eriopoda	+	0.4 m	PI047.02	
Eriachne mucronata	6%	0.4 m	PI049.01	
Euphorbia australis	+	prostrate	PI104.02	
Goodenia microptera	+	0.4 m	PI060.02	
Gossypium australe	+	0.6 m	PI104.08	
Heliotropium muticum	+	0.3 m	PI030.06	12 ind. Photo; 592-596 LD
Hybanthus aurantiacus	+	0.4 m	PI043.13	
Indigofera monophylla	+	0.4 m	PI052.03	
Mitrasacme connata	+	0.2 m	PI049.10	
Mollugo molluginea	+	0.2 m	PI043.29	
Paraneurachne muelleri	+	0.2 m	PI043.15	
Pluchea tetranthera	+	0.5 m	PI064.02	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI043.06	
Portulaca pilosa	+	0.3 m	PI030.01	
Ptilotus astrolasius	+	0.4 m	PI056.18	
Ptilotus fusiformis	+	0.4 m	PI043.11	
Ptilotus polystachyus	+	0.6 m	PI030.03	

Senna notabilis	+	0.4 m	PI043.09
Sida clementii	+	0.4 m	PI069.01
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.3 m	PI043.14
Trianthema pilosa	+	0.2 m	PI052.09
Triodia epactia	2%	0.4 m	PI030.05
Waltheria indica	+	0.6 m	PI104.06
Yakirra australiensis var. *australiensis*	+	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
Acacia stellaticeps	42%	0.6 m	PI065.01	
Bonamia rosea	+	0.2 m	PI090.02	
Bulbostylis barbata	+	0.1 m	PI090.18	
Chrysopogon fallax	+	0.4 m	PI051.04	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.1 m	PI094.08	
Corymbia candida subsp. *dipsodes*	+	1 m	PI051.02	
Cucumis maderaspatanus	+	cl	PI045.15	
Euphorbia alsiniflora	+	0.1 m	PI025.12	
Goodenia forrestii	+	0.2 m	PI031.02	
Hybanthus aurantiacus	+	0.3 m	PI043.13	
Indigofera monophylla	+	0.3 m	PI065.13	
Mollugo molluginea	(+)	0.1 m	PI132.04	
Paraneurachne muelleri	+	0.2 m	PI090.12	
Polycarpaea corymbosa var. *corymbosa*	+	0.05 m	PI058.10	
Polymeria ambigua	+	cr	PI117.10	
Portulaca pilosa	+	0.1 m	PI090.15	
Ptilotus astrolasius	+	0.4 m	PI090.03	
Ptilotus fusiformis	+	0.3 m	PI065.28	
Senna notabilis	+	0.1 m	PI051.12	
Trianthema pilosa	+	0.1 m	PI065.03	
Triodia schinzii	16%	0.2 m	PI031.01	
Yakirra australiensis var. *australiensis*	+	0.1 m	PI043.08	

Port Hedland RS **Site** PI032

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



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
Acacia stellaticeps	35%	0.5 m	PI070.01	
Aristida holathera var. *holathera*	+	0.3 m	PI070.10	
Bonamia alatisemina	+	cr	PI053.02	
Bonamia rosea	+	0.3 m	PI088.02	
Bulbostylis barbata	+	0.1 m	PI070.17	
Cassytha capillaris	+	cr	PI055.03	
Chrysopogon fallax	+	0.7 m	PI070.21	
Cleome viscosa	+	0.3 m	PI099.07	
Crotalaria ramosissima	+	0.3 m	PI089.02	
Dodonaea coriacea	+	0.5 m	PI032.03	
Eriachne benthamii	+	0.3 m	PI032.02	
Euphorbia alsiniflora	+	0.15 m	PI072.10	
Hakea lorea subsp. *lorea*	+	0.7 m	PI070.05	
Heliotropium inexplicitum	+	0.1 m	PI032.09	
Hybanthus aurantiacus	+	0.4 m	PI099.02	
Indigofera monophylla	+	0.4 m	PI072.03	
Keraudrenia velutina subsp. *elliptica*	+	0.5 m	PI032.06	
Mollugo molluginea	+	0.15 m	PI070.35	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI072.02	
Polygala linariifolia	+	0.1 m	PI032.07	
Polymeria ambigua	+	cr	PI086.06	
Ptilotus astrolasius	+	0.5 m	PI089.05	
Ptilotus calostachyus	+	0.6 m	PI032.04	
Senna notabilis	+	0.15 m	PI070.14	
Tephrosia simplicifolia	+	0.1 m	PI032.08	Range ext
Tribulopis angustifolia	+	cr	PI032.05	
Triodia schinzii	40%	0.4 m	PI032.01	
Yakirra australiensis var. *australiensis*	+	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
Acacia colei var. *colei*	+	1.5 m	PI076.14	
Acacia stellaticeps	10%	0.5 m	PI083.01	
Aristida holathera var. *holathera*	+	0.3 m	PI123.18	
Aristida inaequiglumis	+	0.4 m	PI034.08	
Bonamia alatisemina	+	0.1 m	PI083.10	
Bonamia rosea	+	0.3 m	PI033.01	
Bulbostylis barbata	+	0.1 m	PI121.05	
Chrysopogon fallax	+	0.4 m	PI084.10	
Dysphania saxatilis	+	0.1 m	PI090.11	
Eriachne mucronata	+	0.3 m	PI076.13	
Euphorbia alsiniflora	+	0.2 m	PI123.36	
Hakea lorea subsp. *lorea*	+	1.2 m	PI043.07	
Indigofera monophylla	+	0.3 m	PI123.02	
Paraneurachne muelleri	+	0.3 m	PI084.09	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI083.12	
Polygala linariifolia	+	0.1 m	PI033.02	
Ptilotus calostachyus	+	0.4 m	PI109.10	
Ptilotus fusiformis	+	0.3 m	PI083.08	
Ptilotus polystachyus	+	0.5 m	PI076.02	
Schizachyrium fragile	+	0.3 m	PI076.06	
Solanum ellipticum	+	0.3 m	PI065.26	
Triodia epactia	10%	0.3 m	PI076.16	
Triodia lanigera	40%	0.3 m	PI076.17	
Yakirra australiensis var. *australiensis*	+	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
Acacia colei var. *colei*	1%	1-2 m	PI076.14	
Acacia sericophylla	+	1 m	PI034.04	
Acacia stellaticeps	5%	0.5-1 m	PI083.01	
Acacia tumida var. *pilbarensis*	2%	3.5 m	PI076.15	
Aristida holathera var. *holathera*	+	0.3 m	PI123.18	
Aristida inaequiglumis	+	0.4 m	PI034.08	
Bonamia alatisemina	+	0.1 m	PI083.10	
Bulbostylis barbata	+	0.1 m	PI121.05	
Carissa lanceolata	+	1.2 m	PI034.03	
**Cenchrus ciliaris*	+	0.3 m	PI103.06	
Cleome viscosa	+	0.3 m	PI065.17	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.3 m	PI084.06	
Corymbia candida subsp. *dipsodes*	+	1 m	PI141.08	
Cucumis maderaspatanus	+	cr	PI141.04	
Cyperus cunninghamii subsp. *cunninghamii*	+	0.3 m	PI034.06	
Eragrostis eriopoda	+	0.3 m	PI084.04	
Eriachne mucronata	+	0.3 m	PI076.13	
Euphorbia alsiniflora	+	0.3 m	PI123.36	
Euphorbia australis	+	0.2 m	PI084.08	
Evolvulus alsinoides var. *villosicalyx*	+	0.1 m	PI123.25	
Goodenia microptera	+	0.3 m	PI123.12	
Goodenia triodiophila	+	0.3 m	PI034.10	1 ind
Heliotropium muticum	+	0.2 m	PI034.09	1 ind
Hibiscus leptocladus	+	0.3 m	PI034.01	
Hybanthus aurantiacus	+	0.3 m	PI034.05	
Indigofera monophylla	+	0.3 m	PI123.02	
Mollugo molluginea	+	0.2 m	PI123.09	
Paraneurachne muelleri	+	0.3 m	PI084.09	

Pluchea tetranthera	+	0.3 m	PI083.11
Portulaca pilosa	+	0.3 m	PI123.17
Ptilotus astrolasius	+	0.3 m	PI034.07
Ptilotus polystachyus	+	0.4 m	PI076.02
Schizachyrium fragile	+	0.3 m	PI076.06
Senna notabilis	+	0.1 m	PI123.20
Sida rohlenae subsp. *rohlenae*	+	0.3 m	PI034.02
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.3 m	PI123.04
Solanum ellipticum	+	0.3 m	PI065.26
Triodia epactia	55%	0.3 m	PI076.16
Triodia lanigera	2%	0.3 m	PI076.17
Yakirra australiensis var. *australiensis*	+	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
Acacia colei var. *colei*	+	1.2 m	PI070.38	
Acacia sericophylla	+	0.9 m	PI099.13	
Acacia stellaticeps	10%	0.5 m	PI070.01	
Aristida holathera var. *holathera*	+	0.4 m	PI070.10	
Bulbostylis barbata	+	0.1 m	PI070.17	
Chrysopogon fallax	+	1.2 m	PI070.21	
Cleome viscosa	+	0.4 m	PI040.10	
Cucumis maderaspatanus	+	cr	PI147.17	
Eriachne aristidea	+	0.2 m	PI070.28	
Euphorbia australis	+	cr	PI108.12	
Fimbristylis dichotoma	+	0.3 m	PI081.07	
Paraneurachne muelleri	+	0.2 m	PI054.09	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI072.02	
**Portulaca oleracea*	+	0.1 m	PI086.11	
Ptilotus calostachyus	+	0.6 m	PI032.04	
Ptilotus fusiformis	+	0.4 m	PI070.22	
Ptilotus polystachyus	+	0.5 m	PI147.19	
Schizachyrium fragile	+	0.3 m	PI110.05	
Solanum lasiophyllum	+	0.2 m	PI070.37	
Triodia epactia	45%	0.5 m	PI035.01	
Triodia lanigera	2%	0.3 m	PI035.02	
Yakirra australiensis var. *australiensis*	+	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
Acacia colei var. *colei*	+	0.5 m	PI070.38	
Acacia stellaticeps	1%	0.2 m	PI070.01	
Aristida holathera var. *holathera*	+	0.3 m	PI070.10	
Bonamia alatisemina	+	0.1 m	PI036.04	
Bulbostylis barbata	+	0.1 m	PI070.17	
Calandrinia pentavalvis	+	0.1 m	PI072.14	
Chrysopogon fallax	+	0.4 m	PI070.21	
Cyperus dactylotes	+	0.4 m	PI036.07	
Digitaria brownii	+	0.5 m	PI036.08	
Drosera indica	+	0.1 m	PI053.11	
Eriachne mucronata	10%	0.3 m	PI046.07	
Fimbristylis simulans	+	0.15 m	PI072.08	
Goodenia triodiophila	+	0.3 m	PI036.01	
Hakea lorea subsp. *lorea*	+	0.5 m	PI070.05	
Hibiscus burtonii	+	0.3 m	PI036.06	
Hybanthus aurantiacus	+	0.3 m	PI099.02	
Leptosema anomalum	+	0.2 m	PI153.13	
Mitrasacme connata	+	0.1 m	PI036.10	
Mollugo molluginea	+	0.15 m	PI070.35	
Murdannia graminea	(+)	0.1 m	PI046.13	Range ext
Pluchea tetranthera	+	0.3 m	PI046.18	
Polycarpaea corymbosa var. *corymbosa*	+	0.15 m	PI072.02	
Schizachyrium fragile	+	0.2 m	PI046.12	
Senna notabilis	+	0.4 m	PI070.14	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.3 m	PI070.03	
Stackhousia intermedia	+	0.15 m	PI046.03	
Tephrosia leptoclada	+	0.2 m	PI036.02	
Triodia schinzii	30%	0.2 m	PI036.05	
Yakirra australiensis var. *australiensis*	+	0.1 m	PI072.06	
Zornia muelleriana	+	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
**Aerva javanica*	+	0.4 m	PI147.05	
Atriplex codonocarpa	+	0.3 m	PI037.01	
**Cenchrus ciliaris*	+	0.3 m	PI070.29	
Chrysopogon fallax	+	0.6 m	PI070.21	
Dactyloctenium radulans	+	0.15 m	PI037.14	
Dichanthium sericeum subsp. *humilius*	+	0.3 m	PI037.11	
Eragrostis falcata	+	0.3 m	PI037.18	
Euphorbia alsiniflora	+	0.2 m	PI040.14	
Indigofera trita	+	0.4 m	PI037.19	
Maireana tomentosa	1%	0.3 m	PI037.03	
Neptunia dimorphantha	+	0.2 m	PI037.20	
Panicum decompositum	+	0.5 m	PI037.09	
Paspalidium tabulatum	+	0.1 m	PI037.16	
Pluchea rubelliflora	+	0.15 m	PI037.15	
**Portulaca oleracea*	+	0.1 m	PI053.03	
Portulaca pilosa	+	0.1 m	PI037.17	
Sarcostemma viminale subsp. *australe*	+	0.3 m	PI037.10	
Sesbania cannabina	+	2 m	PI037.08	
Sida fibulifera	+	0.2 m	PI037.12	
Sporobolus australasicus	1%	0.1 m	PI037.07	
Swainsona kingii	+	cr	PI037.06	
Swainsona pterostylis	+	0.2 m	PI037.04	
Tecticornia auriculata	2%	0.6 m	PI037.02	
Trianthema triquetra	+	0.2 m	PI037.05	
Triodia secunda	40%	0.2 m	PI037.13	

Port Hedland RS **Site** PI038

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

Location Port Hedland

MGA Zone 50 655188 **mE** 7748094 **mN**

Habitat Mangrove flats

Soil Brown clayey mud

Rock Type N/A

Vegetation Scattered low trees of *Bruguiera exaristata* over Low Closed Heath of *Muellerolimon salicorniaceum* and *Tecticornia* sp. Dennys Crossing (K.A. Shepherd & J. English KS 552).

Veg Condition Excellent

Fire Age Old

Notes Aspect: N/A
Bare Ground: 20%
Litter Cover: +% Logs, +% Twigs, +% Lvs
Disturbance: Tracks and rubbish



SPECIES LIST:

Name	Cover	Height	Specimen	Notes
Avicennia marina	+	0.5 m	PI038.06	
Bruguiera exaristata	1%	0.8 m	PI038.01	
Eragrostis cumingii	+		PI038.13	
Muellerolimon salicorniaceum	50%	0.2 m	PI038.02	
Sporobolus virginicus	+	0.15 m	PI038.04	
Tecticornia halocnemoides subsp. *tenuis*	+	0.3 m	PI038.05	
Tecticornia sp. Dennys Crossing (K.A. Shepherd & J. English KS 552)	30%	0.4 m	PI038.03	

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
Eragrostis falcata	+	0.15 m	PI039.04	
Muellerolimon salicorniaceum	10%	0.2 m	PI039.02	
Tecticornia halocnemoides subsp. *tenuis*	10%	0.2 m	PI039.01	
Tecticornia indica subsp. *bidens*	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
Acacia bivenosa	3%	2 m	PI040.01	
**Aerva javanica*	1-2%	0.4 m	PI147.05	
Boerhavia coccinea	+	cr	PI040.25	
Bulbostylis barbata	+	0.1 m	PI070.17	
**Cenchrus ciliaris*	15%	0.4 m	PI070.29	
Cleome viscosa	+	0.3 m	PI040.10	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.4 m	PI070.02	
Enneapogon caerulescens	+	0.1 m	PI040.17	
Enneapogon sp.	+	0.2 m	PI040.23	Material inadequate
Eriachne mucronata	+	0.3 m	PI040.22	
Euphorbia alsiniflora	+	0.3 m	PI040.14	
Evolvulus alsinoides var. *villosicalyx*	+	0.1 m	PI040.16	
Gomphrena pusilla	+	0.2 m	PI040.07	
Goodenia microptera	+	0.2 m	PI040.12	
Hakea lorea subsp. *lorea*	+	1 m	PI070.05	
Indigofera colutea	+	0.1 m	PI040.18	
Indigofera linifolia	+	0.1 m	PI040.13	
Indigofera monophylla	+	0.3 m	PI072.03	
Indigofera trita	+	0.1 m	PI040.05	
Melhania oblongifolia	+	0.2 m	PI040.06	
Myoporum montanum	+	0.3 m	PI040.11	
**Portulaca oleracea*	+	0.1 m	PI040.09	
Ptilotus axillaris	+	cr	PI040.03	
Rhagodia eremaea	+	0.3 m	PI040.15	
Rhynchosia minima	+	cr	PI040.04	
Scaevola amblyanthera var. *centralis*	+	0.2 m	PI040.08	
Scaevola sericophylla	+	0.2 m	PI040.19	
Solanum lasiophyllum	+	0.4 m	PI070.37	
Trianthema pilosa	+	0.15 m	PI072.13	
Triodia epactia	30%	0.4 m	PI040.02	
Whiteochloa airoides	+	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
Acacia ampliceps	+	0.5 m	PI041.06	
Acacia pyrifolia	+	0.4 m	PI041.02	
Acacia trachycarpa	1%	3 m	PI068.03	
Aristida holathera var. *holathera*	+	0.6 m	PI041.03	
Cajanus cinereus	+	1.5 m	PI068.08	
Calandrinia pentavalvis	+	0.2 m	PI072.14	
Cassytha capillaris	+	cl	PI068.21	
**Cenchrus ciliaris*	+	0.3 m	PI070.29	
Crotalaria cunninghamii subsp. *sturtii*	+	1.8 m	PI041.01	
Cyperus vaginatus	+	0.8 m	PI068.16	
Eriachne aristidea	+	0.4 m	PI041.04	
Euphorbia alsiniflora	+	0.5 m	PI040.14	
Melaleuca argentea	2%	3 m	PI068.10	
Ptilotus fusiformis	+	0.3 m	PI070.22	
Sporobolus virginicus	+	0.3 m	PI041.05	
Tephrosia rosea var. *clementii*	+	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
Acacia stellaticeps	4%	0.5 m	PI043.01	
Aristida holathera var. *holathera*	+	0.5 m	PI042.07	
Bonamia alatisemina	+	0.2 m	PI042.11	
Bulbostylis barbata	+	0.1 m	PI042.02	
Carissa lanceolata	+	0.5 m	PI042.12	
Chrysopogon fallax	+	0.6 m	PI042.09	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.3 m	PI042.04	
Cyperus dactylotes	+	0.5 m	PI042.10	
Eragrostis eriopoda	+	0.4 m	PI042.05	
Goodenia triodiophila	+	0.3 m	PI042.01	
Hybanthus aurantiacus	+	0.4 m	PI043.13	
Paraneurachne muelleri	+	0.3 m	PI043.15	
Pluchea tetranthera	+	0.3 m	PI042.03	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI043.06	
Triodia epactia	+	0.3 m	PI043.03	
Triodia schinzii	22%	0.4 m	PI042.08	
Yakirra australiensis var. *australiensis*	+	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
Acacia colei var. *colei*	+	1.2 m	PI043.16	
Acacia stellaticeps	2%	0.5 m	PI043.01	
Aristida holathera var. *holathera*	+	0.6 m	PI043.25	
Bonamia media var. *villosa*	+	cr	PI043.19	
Bulbostylis barbata	+	0.02 m	PI043.33	
Chrysopogon fallax	+	0.5 m	PI043.20	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.1 m	PI043.30	
Desmodium filiforme	+	0.1 m	PI043.18	
Drosera indica	+	0.2 m	PIOPBW01a	
Eriachne aristidea	+	0.3 m	PI043.04	
Evolvulus alsinoides var. *villosicalyx*	+	0.2 m	PI043.26	
Goodenia lamprosperma	+	0.3 m	PI043.21	
Goodenia triodiophila	+	0.3 m	PI043.05	
Hakea lorea subsp. *lorea*	+	1 m	PI043.07	
Hybanthus aurantiacus	+	0.4 m	PI043.13	
Mollugo molluginea	+	0.1 m	PI043.29	
Paraneurachne muelleri	+	0.3 m	PI043.10	
Pluchea ferdinandi-muelleri	+	0.3 m	PI043.23	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI043.06	
Polygala linariifolia	+	0.1 m	PI043.12	
Polymeria ambigua	+	0.02 m	PI043.22	
Ptilotus fusiformis	+	0.4 m	PI043.11	
Senna notabilis	+	0.2 m	PI043.09	
Sida fibulifera	+	0.1 m	PI043.32	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI043.14	
Stackhousia muricata	+	0.3 m	PI043.28	
Triodia epactia	25%	0.4 m	PI043.03	
Triodia lanigera	+	0.1 m	PI043.02	
Urochloa holosericea subsp. *velutina*	+	0.4 m	PI043.24	
Waltheria indica	+	0.3 m	PI043.27	
Yakirra australiensis var. *australiensis*	+	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
Acacia colei var. *colei*	+	0.8 m	PI045.14	
Bergia pedicellaris	+	0.05 m	PI044.11	
Bulbostylis barbata	+	0.1 m	PI066.04	
Calandrinia pumila	+	0.01 m	PI045.18	
Chrysopogon fallax	+	0.7 m	PI051.04	
Cyperus dactylotes	+	0.4 m	PI044.06	
Drosera indica	+	0.1 m	PI045.01	
Eriachne mucronata	+	0.4 m	PI044.02	
Eulalia fulva	+	0.4 m	PI044.04	
Fimbristylis simulans	+	0.1 m	PI044.03	
Marsilea mutica	+	0.02 m	PI044.08	
Mimulus gracilis	+	0.1 m	PI044.10	
Mimulus uvedaliae var. *uvedaliae*	+	0.1 m	PI044.07	
Mitrasacme connata	+	0.05 m	PI045.04	
Mollugo molluginea	+	0.1 m	PI132.04	
Murdannia graminea	+	0.3 m	PI045.21	Range ext
Pluchea tetranthera	+	0.2 m	PI066.22	
Polygala linariifolia	+	0.1 m	PI045.22	
Ptilotus fusiformis	+	0.7 m	PI065.28	
Rotala diandra	+	0.05 m	PI044.09	
Stylidium desertorum	+	0.05 m	PI045.19	
Triodia epactia	4%	0.3 m	PI044.01	
Triodia secunda	5%	0.3 m	PI048.05	
Yakirra australiensis var. *australiensis*	+	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
Acacia colei var. *colei*	+	1.5 m	PI045.14	
Acacia sericophylla	+	2 m	PI045.08	
Acacia stellaticeps	3%	0.6 m	PI065.01	
Acacia tumida var. *tumida*	+	2 m	PI045.07	
Amaranthus undulatus	+	0.3 m	PI045.16	
Bulbostylis barbata	+	0.1 m	PI066.04	
Calandrinia pentavalvis	+	0.1 m	PI066.03	
Calandrinia pumila	+	0.01 m	PI045.18	
Cassytha capillaris	+	cl	PI051.06	
Chrysopogon fallax	+	0.3 m	PI051.04	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.1 m	PI045.17	
Corymbia candida subsp. *dipsodes*	+	2 m	PI051.02	
Crotalaria ramosissima	+	0.2 m	PI045.13	
Cucumis maderaspatanus	+	cl	PI045.15	
Desmodium filiforme	+	0.05 m	PI045.24	
Drosera burmanni	+	0.05 m	PI045.02	
Drosera indica	+	0.1 m	PI045.01	
Eragrostis cumingii	+	0.05 m	PI045.23	
Eriachne mucronata	+	0.4 m	PI065.05	
Evolvulus alsinoides var. *villosicalyx*	+	0.1 m	PI045.09	
Fimbristylis oxystachya	+	0.1 m	PI025.05	
Fimbristylis simulans	+	0.1 m	PI065.07	
Hibiscus leptocladus	+	0.3 m	PI045.10	
Indigofera monophylla	+	0.3 m	PI065.13	
Mimulus gracilis	+	0.1 m	PI045.20	
Mitrasacme connata	+	0.1 m	PI045.04	
Murdannia graminea	+	0.3 m	PI045.21	Range ext
Pluchea ferdinandi-muelleri	+	0.6 m	PI045.05	
Polygala linariifolia	+	0.1 m	PI045.22	
**Portulaca oleracea*	+	0.1 m	PI066.21	
Ptilotus astrolasius	+	0.4 m	PI045.06	
Ptilotus fusiformis	+	0.3 m	PI065.28	
Schizachyrium fragile	+	0.2 m	PI045.12	

Sida sp. dark green fruits (S. van Leeuwen 2260)	+	0.3 m	PI065.23
Solanum ellipticum	+	0.2 m	PI065.26
Stackhousia intermedia	+	0.2 m	PI066.14
Stylidium desertorum	+	0.01 m	PI045.19
Triodia epactia	25%	0.4 m	PI045.03
Waltheria indica	+	0.2 m	PI065.27
Yakirra australiensis var. *australiensis*	+	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
Acacia colei var. *colei*	+	0.5 m	PI070.38	
Acacia stellaticeps	5%	0.3 m	PI070.01	
Calandrinia pentavalvis	+	0.2 m	PI072.14	
Carissa lanceolata	+	0.8 m	PI046.14	
Chrysopogon fallax	+	0.8 m	PI070.21	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.4 m	PI070.02	
Desmodium filiforme	+	cr	PI046.11	
Drosera indica	+	0.03 m	PI053.11	
Eragrostis speciosa	+	0.3 m	PI046.15	
Eriachne aristidea	+	0.3 m	PI070.28	
Eriachne mucronata	1%	0.3 m	PI046.07	
Fimbristylis simulans	+	0.1 m	PI072.08	
Heliotropium cunninghamii	+	0.1 m	PI046.19	
Hibiscus burtonii	+	0.3 m	PI046.04	
Hybanthus aurantiacus	+	0.4 m	PI099.02	
Mimulus uvedaliae var. *uvedaliae*	+	0.1 m	PI046.10	
Mitrasacme connata	+	0.1 m	PI046.01	
Mollugo molluginea	+	0.2 m	PI070.35	
Murdannia graminea	+	0.1 m	PI046.13	Range ext
Pluchea tetranthera	+	0.3 m	PI046.18	
Polygala linariifolia	+	0.2 m	PI046.17	
**Portulaca oleracea*	+	0.0.1 m	PI053.03	
Ptilotus fusiformis	+	0.3 m	PI070.22	
Schizachyrium fragile	+	0.2 m	PI046.12	
Senna notabilis	+	0.2 m	PI070.14	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI070.03	
Solanum lasiophyllum	+	0.6 m	PI070.37	
Stackhousia intermedia	+	0.15 m	PI046.03	
Stylidium desertorum	+	0.08 m	PI046.02	
Triodia epactia	30%	0.4 m	PI046.06	
Triodia schinzii	10%	0.5 m	PI046.05	

Triumfetta ramosa	+	0.2 m	PI046.09
Waltheria indica	+	0.5 m	PI053.14
Yakirra australiensis var. *australiensis*	+	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
Acacia colei var. *colei*	1%	1-1.6 m	PI043.16	
Acacia stellaticeps	+	0.5 m	PI049.02	
Aristida holathera var. *holathera*	+	0.4 m	PI049.07	
Bonamia alatisemina	+	cr	PI047.06	
Bulbostylis barbata	+	0.1 m	PI067.01	
Calandrinia creethiae	+	prostrate	PI064.06	
Chrysopogon fallax	+	0.7 m	PI042.09	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.4 m	PI042.04	
Eragrostis eriopoda	+	0.3 m	PI047.02	
Eriachne mucronata	+	0.2 m	PI049.01	
Fimbristylis dichotoma	+	0.2 m	PI049.15	
Hakea lorea subsp. *lorea*	+	0.7 m	PI043.07	
Hibiscus burtonii	+	0.4 m	PI049.09	
Hibiscus sturtii var. *campylochlamys*	+	0.3 m	PI047.03	
Hybanthus aurantiacus	+	0.4 m	PI043.13	
Mitrasacme connata	+	0.3 m	PI047.01	
Mollugo molluginea	+	0.2 m	PI043.29	
Pluchea ferdinandi-muelleri	+	0.4 m	PI067.02	
Pluchea tetranthera	+	0.4 m	PI064.02	
Polycarpaea corymbosa var. *corymbosa*	+	0.2 m	PI043.06	
Ptilotus fusiformis	+	0.3 m	PI043.11	
Senna notabilis	+	0.3 m	PI043.09	
Sida sp. B Kimberley Flora (A.A. Mitchell 2745)	+	0.3 m	PI047.05	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	1%	0.6 m	PI043.14	
Triodia epactia	16%	0.4 m	PI047.04	
Yakirra australiensis var. *australiensis*	+	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
Acacia colei var. *colei*	+	0.6-2 m	PI045.14	
Acacia stellaticeps	1%	0.4 m	PI065.01	
Acacia tumida var. *tumida*	+	2 m	PI045.07	
Bonamia alatisemina	+	0.1 m	PI048.06	
Bulbostylis barbata	+	0.1 m	PI066.04	
Calandrinia pentavalvis	+	0.1 m	PI066.03	
Calandrinia pumila	+	0.01 m	PI045.18	
Cassytha capillaris	+	cl	PI051.06	
Chrysopogon fallax	+	0.5 m	PI051.04	
Drosera indica	+	0.1 m	PI045.01	
Eragrostis eriopoda	+	0.5 m	PI065.04	
Eriachne mucronata	+	0.2 m	PI048.10	
Evolvulus alsinoides var. *villosicalyx*	+	0.2 m	PI048.03	
Hibiscus burtonii	+	0.3 m	PI048.08	
Mollugo molluginea	+	0.1 m	PI132.04	
Murdannia graminea	+	0.2 m	PI045.21	Range ext
Pluchea ferdinandi-muelleri	+	0.4 m	PI045.05	
Pluchea tetranthera	+	0.2 m	PI066.22	
Polygala linariifolia	+	0.1 m	PI045.22	
Ptilotus fusiformis	+	0.4 m	PI065.28	
Senna notabilis	+	0.2 m	PI051.12	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.3 m	PI048.02	
Solanum diversiflorum	+	0.2 m	PI048.09	
Solanum ellipticum	+	0.3 m	PI065.26	
Stackhousia intermedia	+	0.2 m	PI066.14	
Triodia epactia	8%	0.4 m	PI048.07	
Triodia secunda	12%	0.2 m	PI048.05	
Waltheria indica	+	0.4 m	PI048.01	
Yakirra australiensis var. *australiensis*	+	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
Acacia inaequilatera	+	2 m	PI049.06	
Acacia stellaticeps	+	0.3-1 m	PI049.02	
Acacia tumida var. *pilbarensis*	+	1.1 m	P!043.01	
Aristida holathera var. *holathera*	+	0.6 m	PI049.07	
Bulbostylis barbata	+	0.1 m	PI067.01	
Calandrinia creethiae	+	prostrate	PI064.06	
Calandrinia pentavalvis	+	0.1 m	PI049.11	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.3 m	PI042.04	
Drosera indica	+	0.2 m	PIOPBW01a	
Eriachne mucronata	+	0.2 m	PI049.01	
Fimbristylis dichotoma	+	0.3 m	PI049.15	
Fimbristylis oxystachya	+	0.3 m	PI049.08	
Hibiscus burtonii	+	0.4 m	PI049.09	
Hybanthus aurantiacus	+	0.2 m	PI049.03	
Leptosema anomalum	+	0.1 m	PI049.12	
Mitrasacme connata	+	0.1 m	PI049.10	
Mollugo molluginea	+	0.2 m	PI043.29	
Pluchea tetranthera	+	0.3 m	PI064.02	
Ptilotus fusiformis	+	0.4 m	PI043.11	
Senna notabilis	+	0.4 m	PI043.09	
Sida sp. B Kimberley Flora (A.A. Mitchell 2745)	+	0.4 m	PI049.05	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI043.14	
Solanum diversiflorum	+	0.3 m	PI049.04	
Stackhousia muricata	+	0.2 m	PI043.28	
Triodia epactia	16%	0.4 m	PI049.13	
Yakirra australiensis var. *australiensis*	+	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
Acacia stellaticeps	10%	0.4 m	PI070.01	
Acacia tumida var. *pilbarensis*	1%	0.8 m	PI070.30	
Aristida holathera var. *holathera*	+	0.4 m	PI070.10	
Bonamia alatisemina	+		PI053.02	
Bonamia media var. *villosa*	+	cr	PI050.08	
Bulbostylis barbata	+	0.1 m	PI070.17	
Chrysopogon fallax	+	0.8 m	PI070.21	
Cleome viscosa	(+)	0.3 m	PI050.10	
Codonocarpus cotinifolius	+	0.5 m	PI050.06	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.5 m	PI070.02	
Dysphania saxatilis	+	0.03 m	PI053.07	
Eragrostis eriopoda	25%	0.3 m	PI070.13	
Eriachne aristidea	+	0.2 m	PI070.28	
Euphorbia australis	+	cr	PI147.10	
Evolvulus alsinoides var. *villosicalyx*	+	0.1 m	PI050.03	
Hibiscus burtonii	+	0.3 m	PI050.02	
Hybanthus aurantiacus	+	0.3 m	PI099.02	
Indigofera monophylla	+	0.5 m	PI072.03	
Ipomoea muelleri	+	cr	PI050.07	
Mollugo molluginea	+	0.2 m	PI070.35	
Paraneurachne muelleri	+	0.2 m	PI054.09	
Pluchea tetranthera	+	0.4 m	PI050.05	
Ptilotus astrolasius	+	0.4 m	PI050.09	
Senna notabilis	+	0.2 m	PI070.14	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.6 m	PI070.03	
Solanum lasiophyllum	1%	0.5 m	PI070.37	
Triodia epactia	10%	0.3 m	PI050.01	
Waltheria indica	+	0.4 m	PI053.14	
Yakirra australiensis var. *australiensis*	+	0.1 m	PI072.06	

Port Hedland RS **Site** PI051

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

Location Port Hedland

MGA Zone 50 659348 **mE** 7737258 **mN**

Habitat Plain

Soil Orange brown sandy loam

Rock Type

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: Tracks near by



SPECIES LIST:

Name	Cover	Height	Specimen	Notes
Acacia sericophylla	+	2 m	PI051.08	
Acacia stellaticeps	12%	0.6 m	PI065.01	Fl; yellow
Acacia trudgeniana	+	1.5 m	PI065.31	
Bulbostylis barbata	+	0.05 m	PI066.04	
Cassytha capillaris	+	cl	PI051.06	
Chrysopogon fallax	+	0.5 m	PI051.04	
Codonocarpus cotinifolius	+	1 m	PI051.03	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.05 m	PI051.11	
Corymbia candida subsp. *dipsodes*	+	2 m	PI051.02	
Cucumis maderaspatanus	+	cr	PI051.10	
Pluchea tetranthera	+	0.4 m	PI051.09	
Schizachyrium fragile	+	0.2 m	PI051.07	
Senna notabilis	+	0.2 m	PI051.12	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.3 m	PI051.05	
Stackhousia intermedia	+	0.1 m	PI066.14	
Triodia epactia	20%	0.5 m	PI051.01	

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
Acacia colei var. *colei*	+	1.2 m	PI043.16	
Acacia sericophylla	+	1.8 m	PI052.01	
Acacia stellaticeps	40%	0.6 m	PI043.01	
Amaranthus undulatus	+	0.6 m	PI052.10	
Bulbostylis barbata	+	0.1 m	PI067.01	
Bulbostylis turbinata	+	0.2 m	PI052.04	
Carissa lanceolata	+	2 m	PI052.07	
**Cenchrus ciliaris*	0.5%	0.4 m	PI052.06	
Chrysopogon fallax	+	0.5 m	PI042.09	
Corymbia candida subsp. *dipsodes*	+	2 m	PI146.07	
Eriachne benthamii	+	0.1 m	PI052.02	
Eriachne mucronata	+	0.2 m	PI064.04	
Euphorbia alsiniflora	+	0.3 m	PI052.08	
Goodenia forrestii	+	0.3 m	PI052.05	
Indigofera monophylla	+	0.4 m	PI052.03	
Trianthema pilosa	+	prostrate	PI052.09	
Triodia epactia	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
Acacia colei var. *colei*	1%	0.5 m	PI070.38	
Acacia inaequilatera	+	1 m	PI054.05	
Acacia stellaticeps	15%	0.2 m	PI070.01	
Aristida holathera var. *holathera*	+	0.3 m	PI070.10	
Aristida inaequiglumis	+	0.2 m	PI053.06	
Bonamia alatisemina	+	cr	PI053.02	
Bulbostylis barbata	+	0.1 m	PI070.17	
Calandrinia stagnensis	+	cr	PI053.04	
Calandrinia pentavalvis	+	0.1 m	PI072.14	
Corymbia candida subsp. *dipsodes*	+	2.9 m	PI053.08	
Drosera indica	+	0.05 m	PI053.11	
Dysphania saxatilis	+	0.1 m	PI053.07	
Eragrostis eriopoda	+	0.3 m	PI070.13	
Eragrostis speciosa	+	0.1 m	PI053.05	
Eriachne aristidea	+	0.1 m	PI070.28	
Euphorbia australis	+	cr	PI147.10	
Fimbristylis simulans	+	0.1 m	PI053.16	
Hakea lorea subsp. *lorea*	+	0.2 m	PI070.05	
Hibiscus leptocladus	+	0.1 m	PI053.12	
Hybanthus aurantiacus	+	0.3 m	PI099.02	
Indigofera monophylla	+	0.4 m	PI072.03	
Mitrasacme connata	+	0.2 m	PI072.07	
Paraneurachne muelleri	+	0.3 m	PI054.09	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI072.02	
**Portulaca oleracea*	+	cr	PI053.03	
Ptilotus fusiformis	+	0.2 m	PI070.22	
Senna notabilis	+	0.2 m	PI070.14	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI053.09	
Solanum lasiophyllum	+	0.2 m	PI070.37	
Triodia epactia	20%	0.2 m	PI053.01	
Waltheria indica	+	0.4 m	PI053.14	
Yakirra australiensis var. *australiensis*	+	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
Acacia colei var. *colei*	+	0.7 m	PI070.38	
Acacia inaequilatera	+	1.5 m	PI054.05	
Acacia pyrifolia	+	0.4 m	PI054.10	
Acacia sericophylla	+	2.5 m	PI070.04	
Acacia stellaticeps	40%	0.7 m	PI070.01	
Acacia tumida var. *pilbarensis*	+	0.8 m	PI070.30	
Aristida holathera var. *holathera*	+	0.3 m	PI070.10	
Bulbostylis barbata	+	0.1 m	PI070.17	
Bulbostylis turbinata	+	0.15 m	PI054.06	
Chrysopogon fallax	+	0.8 m	PI070.21	
Cleome viscosa	+	0.3 m	PI054.04	
Cucumis maderaspatanus	+	cr	PI147.17	
Eriachne aristidea	+	0.2 m	PI054.03	
Eriachne mucronata	+	0.3 m	PI054.02	
Euphorbia alsiniflora	+	0.1 m	PI072.10	
Euphorbia australis	+	cr	PI147.10	
Indigofera monophylla	+	0.4 m	PI072.03	
Keraudrenia velutina subsp. *elliptica*	+	0.3 m	PI054.11	
Paraneurachne muelleri	+	0.3 m	PI054.09	
Pimelea ammocharis	+	0.6 m	PI070.23	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI072.02	
Portulaca pilosa	+	0.15 m	PI147.22	
Senna notabilis	+	0.1 m	PI070.14	
Sida sp. verrucose glands (F.H. Mollemans 2423)	+	0.05 m	PI054.08	
Triodia epactia	50%	0.5 m	PI054.01	
Waltheria indica	+	0.01 m	PI054.07	
Yakirra australiensis var. *australiensis*	+	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

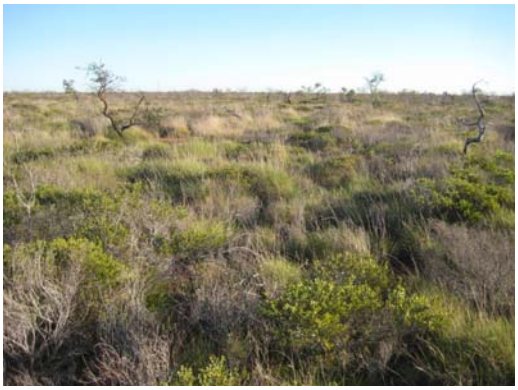
Rock Type N/A

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
Acacia inaequilatera	1%	2 m	PI054.05	
Acacia sericophylla	+	2.5 m	PI070.04	
Acacia stellaticeps	20%	0.6 m	PI070.01	
Acacia tumida var. *pilbarensis*	+	0.8 m	PI070.30	
Aristida holathera var. *holathera*	+	0.4 m	PI070.10	
Aristida inaequiglumis	+	0.2 m	PI070.24	
Bonamia rosea	+	0.1 m	PI055.04	
Bulbostylis barbata	+	0.1 m	PI070.17	
Cassytha capillaris	+	cr	PI055.03	
Chrysopogon fallax	+	1 m	PI070.21	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.3 m	PI070.02	
Cucumis maderaspatanus	+	cr	PI147.17	
Dysphania saxatilis	+	0.1 m	PI053.07	
Eragrostis eriopoda	+	0.3 m	PI070.13	
Eriachne aristidea	+	0.2 m	PI070.28	
Eriachne mucronata	+	0.3 m	PI055.02	
Hakea lorea subsp. *lorea*	+	0.2 m	PI070.05	
Indigofera monophylla	+	0.4 m	PI072.03	
Paraneurachne muelleri	+	0.3 m	PI054.09	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI072.02	
Polymeria ambigua	+	cr	PI096.04	
Ptilotus astrolasius	+	0.3 m	PI089.05	
Ptilotus fusiformis	+	0.4 m	PI070.22	
Senna notabilis	+	0.2 m	PI070.14	
Sida sp.	+	0.1 m	PI055.05	Material inadequate
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.2 m	PI070.03	
Triodia epactia	60%	0.5 m	PI055.01	
Yakirra australiensis var. *australiensis*	+	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
Acacia colei var. *colei*	1%	0.7 m	PI043.16	
Acacia inaequilatera	+	1-2 m	PI049.06	
Acacia stellaticeps	1%	0.5 m	PI043.01	
Amaranthus undulatus	+	0.4 m	PI056.05	
Aristida holathera var. *holathera*	2%	0.5 m	PI049.07	
Boerhavia coccinea	+	0.1 m	PI067.15	
Bulbostylis barbata	+	0.1 m	PI056.01	
Calandrinia pentavalvis	+	0.2 m	PI049.11	
Carissa lanceolata	+	0.8 m	PI052.07	
Cleome viscosa	+	0.4 m	PI026.10	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.4 m	PI042.04	
Dysphania saxatilis	+	0.3 m	PI056.11	
Eragrostis eriopoda	+	0.2 m	PI047.02	
Euphorbia alsiniflora	+	0.2 m	PI056.08	
Euphorbia australis	+	prostrate	PI056.10	
Fimbristylis dichotoma	+	0.2 m	PI049.15	
Fimbristylis simulans	+	0.2 m	PI028.03	
Hakea lorea subsp. *lorea*	+	0.8 m	PI043.07	
Hibiscus burtonii	+	0.4 m	PI049.09	
Hibiscus leptocladus	+	0.4 m	PI056.14	
Indigofera monophylla	+	0.4 m	PI052.03	
Mollugo molluginea	+	0.1 m	PI043.29	
Owenia reticulata	1%	5-7 m	PI067.17	
Paraneurachne muelleri	+	0.3 m	PI056.16	
Polycarpaea corymbosa var. *corymbosa*	+	0.2 m	PI043.06	
Polymeria calycina	+	0.2 m	PI056.06	
**Portulaca oleracea*	+	0.1 m	PI056.07	
Ptilotus astrolasius	+		PI056.18	

Ptilotus fusiformis	+	0.4 m	PI043.11
Senna notabilis	+	0.3 m	PI043.09
Sida sp. B Kimberley Flora (A.A. Mitchell 2745)	+	0.4 m	PI056.13
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI056.09
Trianthema pilosa	+	0.1 m	PI056.02
Tribulopis angustifolia	+	0.2 m	PI056.17
Triodia epactia	5%	0.4 m	PI056.03
Triodia lanigera	1%	0.1 m	PI056.04
Waltheria indica	+	0.3 m	PI056.12
Yakirra australiensis var. *australiensis*	+	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
Acacia ancistrocarpa	+	1.2 m	PI131.04	
Acacia colei var. *colei*	+	0.9 m	PI070.38	
Acacia inaequilatera	3%	3 m	PI054.05	
Acacia stellaticeps	+	0.3 m	PI070.01	
Acacia tumida var. *pilbarensis*	1%	0.25 m	PI070.30	
Aristida holathera var. *holathera*	+	0.4 m	PI070.10	
Boerhavia coccinea	+	cr	PI072.12	
Bonamia alatisemina	+	cr	PI053.02	
Bonamia rosea	+	0.3 m	PI088.02	
Bulbostylis barbata	+	0.1 m	PI070.17	
Chrysopogon fallax	+	1.2 m	PI070.21	
Cleome viscosa	+	0.4 m	PI040.10	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.3 m	PI070.02	
Crotalaria ramosissima	+	0.3 m	PI089.02	
Cucumis maderaspatanus	+	cr	PI147.17	
Dysphania saxatilis	+	0.1 m	PI053.07	
Eriachne aristidea	+	0.3 m	PI070.28	
Euphorbia australis	+	cr	PI108.12	
Evolvulus alsinoides var. *villosicalyx*	+	0.1 m	PI070.07	
Fimbristylis dichotoma	+	0.2 m	PI081.07	
Goodenia microptera	+	0.3 m	PI096.01	
Hybanthus aurantiacus	+	0.4 m	PI099.02	
Indigofera monophylla	+	0.3 m	PI072.03	
Mollugo molluginea	+	0.1 m	PI070.35	
Polycarpaea corymbosa var. *corymbosa*	+	0.15 m	PI072.02	
Polymeria ambigua	+	cr	PI086.06	
**Portulaca oleracea*	+	0.1 m	PI086.11	
Ptilotus axillaris	+	0.1 m	PI057.03	

Ptilotus fusiformis	+	0.3 m	PI070.22	
Senna glaucifolia	+	0.6 m	PI057.02	
Senna notabilis	+	0.2 m	PI070.14	
Sida rohlenae subsp. *rohlenae*	+	0.4 m	PI105.08	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.2 m	PI070.03	
Solanum lasiophyllum	+	0.3 m	PI070.37	
Tephrosia simplicifolia	+	0.1 m	PI032.08	Range ext
Tinospora smilacina	+	cl	PI087.09	
Triodia epactia	40%	0.5 m	PI057.01	
Triumfetta ramosa	+	0.3 m	PI099.05	
Yakirra australiensis var. *australiensis*	+	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
Acacia stellaticeps	2%	0.8-1 m	PI065.01	
Acacia trudgeniana	1%	2-3 m	PI065.31	
Acacia tumida var. *tumida*	+	2-3 m	PI045.07	
Aristida holathera var. *holathera*	+	0.2 m	PI058.07	
Aristida inaequiglumis	+	1 m	PI058.04	
Bonamia alatisemina	+	0.1 m	PI027.06	
Bulbostylis barbata	+	0.1 m	PI066.04	
Chrysopogon fallax	+	0.3 m	PI051.04	
Cucumis maderaspatanus	+	cl	PI045.15	
Dysphania saxatilis	+	0.2 m	PI058.12	
Eriachne helmsii	+	0.4 m	PI027.02	
Evolvulus alsinoides var. *villosicalyx*	+	0.2 m	PI058.08	
Fimbristylis oxystachya	+	0.2 m	PI025.05	
Hybanthus aurantiacus	+	0.1 m	PI043.13	
Indigofera monophylla	+	0.3 m	PI065.13	
Paraneurachne muelleri	+	0.3 m	PI058.06	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI058.10	
Ptilotus astrolasius	+	0.2 m	PI058.09	
Ptilotus fusiformis	+	0.3 m	PI065.28	
Scaevola parvifolia subsp. *pilbarae*	+	0.2 m	PI058.11	
Senna notabilis	+	0.2 m	PI051.12	
Sida clementii	+	0.3 m	PI065.21	
Sida sp. B Kimberley Flora (A.A. Mitchell 2745)	+	0.2 m	PI150.06	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.6 m	PI058.05	
Solanum ellipticum	+	0.2 m	PI065.26	
Triodia epactia	13%	0.4 m	PI058.03	
Triodia lanigera	6%	0.4 m	PI058.01	
Waltheria indica	+	0.3 m	PI065.27	
Yakirra australiensis var. *australiensis*	+	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
Acacia colei var. *colei*	+	0.5 m	PI043.16	
Acacia sericophylla	+	2 m	PI104.07	
Acacia stellaticeps	+	0.4 m	PI043.01	
Alternanthera nana	+	0.4 m	PI059.04	
Amaranthus undulatus	+	0.4 m	PI059.08	
Aristida holathera var. *holathera*	+	0.4 m	PI049.07	
Bonamia rosea	+	0.4 m	PI030.04	
Calandrinia stagnensis	+	0.2 m	PI145.04	
Calandrinia pumila	+	prostrate	PI045.18	
Carissa lanceolata	+	0.8 m	PI052.07	
**Cenchrus ciliaris*	+	0.5 m	PI052.06	
Chrysopogon fallax	1%	0.6 m	PI042.09	
Cleome viscosa	(+)	0.4 m	NC	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.4 m	PI042.04	
Corchorus tectus	+	0.4 m	PI030.02	
Corymbia candida subsp. *dipsodes*	1%	3-4 m	PI146.07	
Cyperus dactylotes	+	0.6 m	PI059.10	
Desmodium filiforme	+	0.2 m	PI059.02	
Drosera indica	+	0.2 m	PIOPBW01a	
Eriachne benthamii	+	0.4 m	PI092.06	
Eriachne mucronata	+	0.4 m	PI049.01	
Eucalyptus victrix	4%	7-10 m	PI059.03	
Euphorbia alsiniflora	+	0.4 m	PI056.08	
Goodenia lamprosperma	+	0.4 m	PI043.21	
Goodenia triodiophila	+	0.4 m	PI059.05	
Hakea lorea subsp. *lorea*	+	0.7 m	PI043.07	
Hybanthus aurantiacus	+	0.4 m	PI043.13	
Indigofera linifolia	+	0.4 m	PI133.06	

Indigofera monophylla	+	0.4 m	PI052.03
Stemodia lathraia	+	0.02 m	PI059.06
Mollugo molluginea	+	0.2 m	PI043.29
Pluchea tetranthera	+	0.4 m	PI066.22
Rhynchosia minima	+	cr	PI059.07
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI043.14
Solanum diversiflorum	+	0.3 m	PI049.04
Stylidium desertorum	+	0.02 m	PI045.19
Tephrosia leptoclada	+	0.2 m	PI059.09
Triodia epactia	7%	0.3 m	PI059.01
Yakirra australiensis var. *australiensis*	+	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
Acacia inaequilatera	+	1.6 m	PI049.06	
Acacia stellaticeps	2%	0.6 m	PI043.01	
Aristida holathera var. *holathera*	+	0.3 m	PI049.07	
Bulbostylis barbata	+	0.1 m	PI056.01	
Calandrinia pentavalvis	+	0.2 m	PI049.11	
Crotalaria medicaginea var. *neglecta*	+	0.4 m	PI060.01	
Digitaria brownii	+	0.4 m	PI028.04	
Dysphania saxatilis	+	0.3 m	PI069.03	
Euphorbia alsiniflora	+	0.2 m	PI056.08	
Fimbristylis dichotoma	+	0.2 m	PI049.15	
Fimbristylis simulans	+	0.2 m	PI028.03	
Goodenia microptera	+	0.4 m	PI060.02	
Hybanthus aurantiacus	+	0.4 m	PI043.13	
Indigofera monophylla	+	0.4 m	PI052.03	
Mollugo molluginea	+	0.2 m	PI043.29	
Polycarpaea corymbosa var. *corymbosa*	+	0.2 m	PI043.06	
Polymeria calycina	+	0.2 m	PI060.04	
**Portulaca oleracea*	+	0.1 m	PI056.07	
Ptilotus astrolasius	+	0.3 m	PI056.18	
Ptilotus fusiformis	+	0.3 m	PI043.11	
Senna notabilis	+	0.4 m	PI043.09	
Sida rohlenae subsp. *rohlenae*	+	0.2 m	PI060.05	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.1 m	PI056.09	
Tribulus hirsutus	+	prostrate	PI060.03	
Triodia lanigera	15%	0.4 m	PI060.06	
Yakirra australiensis var. *australiensis*	+	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
Acacia inaequilatera	+	2.3 m	PI054.05	
Acacia sericophylla	+	0.5 m	PI070.04	
Acacia stellaticeps	2%	0.5 m	PI070.01	
Acacia tumida var. *pilbarensis*	+	3 m	PI070.30	
Aristida holathera var. *holathera*	1%	0.3 m	PI061.02	
Boerhavia coccinea	+	cr	PI072.12	
Bonamia alatisemina	+	cr	PI053.02	
Bulbostylis barbata	+	0.1 m	PI070.17	
Cleome viscosa	+	0.3 m	PI099.07	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.2 m	PI070.02	
Crotalaria ramosissima	+	0.2 m	PI089.02	
Dolichandrone heterophylla	+	1.2 m	PI061.05	
Dysphania saxatilis	+	0.2 m	PI053.07	
Eriachne aristidea	+	0.3 m	PI070.28	
Euphorbia australis	+	cr	PI108.12	
Evolvulus alsinoides var. *villosicalyx*	+	0.1 m	PI070.07	
Fimbristylis dichotoma	1%	0.4 m	PI081.07	
Fimbristylis simulans	+	0.3 m	PI072.08	
Goodenia microptera	+	0.3 m	PI096.01	
Gossypium australe	+	0.3 m	PI105.15	
Hibiscus brachychlaenus	+	0.3 m	PI061.04	
Hybanthus aurantiacus	+	0.4 m	PI099.02	
Indigofera monophylla	+	0.3 m	PI072.03	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI072.02	
Polymeria ambigua	+	cr	PI096.04	
Ptilotus astrolasius	+	0.5 m	PI089.05	
Ptilotus fusiformis	+	0.3 m	PI070.22	
Ptilotus polystachyus	+	0.4 m	PI147.19	

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

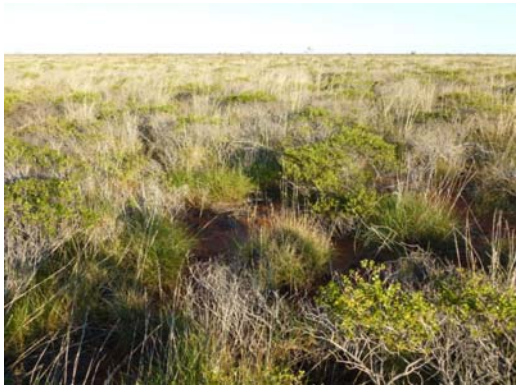
Name	Cover	Height	Specimen	Notes
Acacia ancistrocarpa	+	1.5 m	PI062.03	
Acacia colei var. *colei*	+	1.7 m	PI043.16	
Acacia inaequilatera	1%	1-2 m	PI049.06	
Acacia stellaticeps	3%	0.6 m	PI043.01	
Bulbostylis barbata	+	0.1 m	PI056.01	
Chrysopogon fallax	+	0.6 m	PI042.09	
Corymbia candida subsp. *dipsodes*	+	1.5 m	PI146.07	
**Cucumis melo subsp. agrestis*	+	cr	PI026.08	
Digitaria brownii	+	0.4 m	PI062.05	
Eriachne aristidea	+	0.2 m	PI062.02	
Eriachne mucronata	+	0.2 m	PI049.01	
Euphorbia australis	+	0.2 m	PI062.06	
Evolvulus alsinoides var. *villosicalyx*	+	0.1 m	PI062.04	
Fimbristylis dichotoma	+	0.2 m	PI049.15	
Fimbristylis simulans	+	0.2 m	PI028.03	
Goodenia microptera	+	0.4 m	PI060.02	
Hybanthus aurantiacus	+	0.3 m	PI043.13	
Indigofera monophylla	+	0.4 m	PI052.03	
Polycarpaea corymbosa var. *corymbosa*	+	0.2 m	PI043.06	
Polymeria calycina	+	0.2 m	PI056.06	
Ptilotus astrolasius	+	0.4 m	PI056.18	
Senna notabilis	+	0.2 m	PI043.09	
Sida clementii	+	0.1 m	PI069.01	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.3 m	PI043.14	
Solanum diversiflorum	+	0.2 m	PI049.04	
Triodia lanigera	15%	0.4 m	PI062.01	
Yakirra australiensis var. *australiensis*	+	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
Acacia stellaticeps	2%	0.7 m	PI065.01	
Acacia tumida var. *pilbarensis*	+	0.3 m	PI150.07	
Aristida holathera var. *holathera*	+	0.1 m	PI063.09	
Aristida inaequiglumis	+	0.7 m	PI058.04	
Bonamia media var. *villosa*	+	0.1 m	PI063.05	
Bulbostylis barbata	+	0.1 m	PI027.03	
Chrysopogon fallax	+	0.5 m	PI051.04	
Digitaria brownii	+	0.4 m	PI063.07	
Eriachne aristidea	+	0.4 m	PI063.03	
Eriachne mucronata	+	0.5 m	PI063.04	
Euphorbia alsiniflora	+	0.1 m	PI025.12	
Evolvulus alsinoides var. *villosicalyx*	+	0.1 m	PI063.10	
Fimbristylis oxystachya	+	0.2 m	PI025.05	
Goodenia microptera	+	0.2 m	PI063.14	
Hibiscus brachychlaenus	+	0.1 m	PI063.11	
Hybanthus aurantiacus	+	0.3 m	PI043.13	
Indigofera monophylla	+	0.2 m	PI065.13	
Paraneurachne muelleri	+	0.2 m	PI058.06	
Polycarpaea corymbosa var. *corymbosa*	+	0.2 m	PI063.08	
Polymeria calycina	+	0.1 m	PI063.13	
Portulaca pilosa	+	0.2 m	PI090.15	
Ptilotus astrolasius	+	0.2 m	PI045.06	
Ptilotus fusiformis	+	0.3 m	PI065.28	
Ptilotus polystachyus	+	0.6 m	PI025.13	
Senna notabilis	+	0.2 m	PI051.12	
Trianthema pilosa	+	0.1 m	PI065.03	
Triodia lanigera	6%	0.4 m	PI063.01	
Triodia schinzii	11%	0.4 m	PI063.02	
Triumfetta ramosa	+	0.1 m	PI063.12	
Waltheria indica	+	0.05 m	PI063.06	
Yakirra australiensis var. *australiensis*	+	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
Calandrinia creethiae	+	prostrate	PI064.06	
Cyperus squarrosus	(+)	0.03 m	PI064.08	
Eragrostis dielsii	+	0.03 m	PI064.05	
Eriachne mucronata	+	0.1 m	PI064.04	
Fimbristylis rara	(+)	0.1 m	PI064.03	
Pluchea tetranthera	+	0.4 m	PI064.02	
Triodia epactia	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
Acacia stellaticeps	1%	0.6 m	PI065.01	Fl; yellow
Acacia trudgeniana	+	0.8 m	PI065.31	
Acacia tumida var. *pilbarensis*	+	0.2 m	PI065.19	
Aristida holathera var. *holathera*	1%	0.3 m	PI065.06	
Boerhavia coccinea	+	cr	PI065.20	
Bonamia alatisemina	+	cr	PI065.11	
Bonamia media var. *villosa*	+	0.2 m	PI065.18	
Bulbostylis barbata	+	0.05 m	PI066.04	
Cleome viscosa	+	0.4 m	PI065.17	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.3 m	PI065.15	
Eragrostis eriopoda	+	0.2 m	PI065.04	
Eriachne mucronata	+	0.3 m	PI065.05	
Euphorbia alsiniflora	+	0.1 m	PI065.30	
Euphorbia australis	+	0.1 m	PI065.25	
Evolvulus alsinoides var. *villosicalyx*	+	0.3 m	PI065.16	
Fimbristylis simulans	+	0.3 m	PI065.07	
Grevillea pyramidalis subsp. *leucadendron*	+	1.5 m	PI065.29	
Hakea lorea subsp. *lorea*	+	2 m	PI065.32	
Hibiscus sturtii var. *campylochlamys*	+	0.2 m	PI065.14	
Hybanthus aurantiacus	+	0.4 m	PI043.13	
Indigofera monophylla	+	0.5 m	PI065.13	Fl; pink
Mollugo molluginea	+	0.1 m	PI132.04	
Polycarpaea corymbosa var. *corymbosa*	+	0.2 m	PI065.08	
Portulaca pilosa	+	0.1 m	PI065.24	
Ptilotus fusiformis	+	0.5 m	PI065.28	
Senna notabilis	+	0.1 m	PI051.12	
Sida clementii	+	0.7 m	PI065.21	
Sida sp. dark green fruits (S. van Leeuwen 2260)	+	0.4 m	PI065.23	

Solanum ellipticum	+	0.2 m	PI065.26	
Trianthema pilosa	+	0.1 m	PI065.03	Fl; purple
Triodia epactia	20%	0.6 m	PI065.02	
Triodia lanigera	6%	0.5 m	PI065.12	
Waltheria indica	+	0.2 m	PI065.27	
Yakirra australiensis var. *australiensis*	+	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
Aristida holathera var. *holathera*	+	0.2 m	PI066.11	
Bulbostylis barbata	+	0.05 m	PI066.04	
Calandrinia pentavalvis	+	0.1 m	PI066.03	
Centipeda minima subsp. *macrocephala*	+	0.1 m	PI066.15a	
Dactyloctenium radulans	+	0.1 m	PI066.08	
Eragrostis cumingii	+	0.3 m	PI066.17	
Eragrostis pergracilis	+	0.1 m	PI066.09	
Eriachne aristidea	+	0.2 m	PI066.07	
Fimbristylis dichotoma	+	0.2 m	PI066.06	
Fimbristylis simulans	+	0.1 m	PI065.07	
Gomphrena sordida	+	0.1 m	PI066.10	
Ipomoea coptica	+	cr	PI066.16	
Marsilea hirsuta	+	0.02 m	PI066.20	
Pluchea rubelliflora	+	0.2 m	PI066.16a	
Pluchea tetranthera	+	0.1 m	PI066.22	
**Portulaca oleracea*	+	0.1 m	PI066.21	
Pterocaulon sphaeranthoides	+	0.2 m	PI066.19	
Ptilotus murrayi	+	0.01 m	PI066.12	
Senna notabilis	+	0.05 m	PI051.12	
Solanum ellipticum	+	0.1 m	PI066.23	
Sporobolus australasicus	1%	0.1 m	PI066.02	
Stackhousia intermedia	+	0.2 m	PI066.14	
Synaptantha tillaeacea var. *tillaeacea*	+	0.02 m	PI066.13	
Trianthema triquetra	+	0.1 m	PI066.15	
Triodia epactia	17%	0.4 m	PI066.01	
Xerochloa laniflora	+	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
Acacia colei var. *colei*	2%	1-2 m	PI043.16	
Acacia stellaticeps	1%	0.6 m	PI043.01	
Aristida holathera var. *holathera*	+	0.5 m	PI067.07	
Boerhavia coccinea	+	0.1 m	PI067.15	
Bulbostylis barbata	+	0.1 m	PI067.01	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.5 m	PI067.08	
Cucumis maderaspatanus	+	cr	PI067.16	
Desmodium filiforme	+	prostrate	PI067.10	
Drosera indica	+	0.1 m	PIOPBW01a	
Eragrostis cumingii	+	0.1 m	PI067.04	
Evolvulus alsinoides var. *villosicalyx*	+	0.3 m	PI067.14	
Fimbristylis oxystachya	+	0.1 m	PI067.03	
Hakea lorea subsp. lorea	+	0.8 m	PI043.07	
Ipomoea polymorpha	+	0.1 m	PI067.13	
Owenia reticulata	1%	6 m	PI067.17	
Pluchea ferdinandi-muelleri	+	0.4 m	PI067.02	
Polygala linariifolia	+	0.2 m	PI067.09	
Senna notabilis	+	0.1 m	PI043.09	
Sida rohlenae subsp. *rohlenae*	+	0.4 m	PI069.07	
Solanum lasiophyllum	+	0.6 m	PI067.06	
Stackhousia muricata	+	0.2 m	PI043.28	
Synaptantha tillaeacea var. *tillaeacea*	+	0.1 m	PI067.12	
Triodia epactia	25%	0.5 m	PI067.18	
Yakirra australiensis var. *australiensis*	+	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
Acacia ampliceps	1%	3 m	PI068.19	
Acacia dictyophleba	+	3.5 m	PI068.20	
Acacia stellaticeps	+	0.3 m	PI070.01	
Acacia trachycarpa	2%	2.3 m	PI068.03	
Acacia tumida var. *pilbarensis*	+	3 m	PI070.30	
Aristida holathera var. *holathera*	+	0.4 m	PI068.06	
Cajanus cinereus	+	2 m	PI068.08	
Calandrinia quadrivalvis	+	0.03 m	PI068.11	
Cassytha capillaris	+	cl	PI068.21	
***Cenchrus ciliaris*	+	0.5 m	PI070.29	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.5 m	PI068.04	
Cyperus vaginatus	1%	1 m	PI068.16	
Dentella asperata	+	cr	PI068.22	
Eriachne aristidea	+	0.3 m	PI068.05	
Eriachne mucronata	+	0.2 m	PI068.24	
Eucalyptus camaldulensis subsp. *refulgens*	1%	6 m	PI068.01	
Euphorbia alsiniflora	+	0.1 m	PI068.12	
Hybanthus aurantiacus	+	0.5 m	PI099.02	
Melaleuca argentea	2%	4.5 m	PI068.10	
Melaleuca glomerata	+	2.8 m	PI068.09	
Melaleuca linophylla	+	1 m	PI068.02	
Pimelea ammocharis	+	1 m	PI070.23	
Pluchea rubelliflora	+	0.1 m	PI068.18	
Pterocaulon sphaeranthoides	+	0.02 m	PI068.17	
Schoenoplectus laevis	+	0.05 m	PI068.23	
Sida rohlenae subsp. *rohlenae*	+	1 m	PI068.13	
Trichodesma zeylanicum var. *zeylanicum*	+	0.3 m	PI068.15	
Triodia epactia	+	0.5 m	PI068.07	
Triodia lanigera	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
Acacia pyrifolia	1%	0.8 m	PI069.06	
Acacia tumida var. *pilbarensis*	15%	1.7 m	PI069.09	
Bonamia media var. *villosa*	+	prostrate	PI069.12	
Cajanus cinereus	15%	1.6 m	PI069.04	
Chrysopogon fallax	+	0.5 m	PI042.09	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.4 m	PI042.04	
Crotalaria cunninghamii subsp. *sturtii*	+	1.2 m	PI069.10	
Dentella asperata	+	prostrate	PI069.11	
Dysphania saxatilis	+	0.1 m	PI069.03	
Eucalyptus camaldulensis subsp. *refulgens*	4%	10-20 m	PI069.08	
Goodenia forrestii	+	0.2 m	PI069.02	
Goodenia triodiophila	+	0.3 m	PI069.13	2 ind.
Hybanthus aurantiacus	+	0.4 m	PI043.13	
Mollugo molluginea	+	0.02 m	PI043.29	
Paraneurachne muelleri	+	0.2 m	PI043.15	
Senna notabilis	+	0.3 m	PI043.09	
Sida clementii	+	0.8 m	PI069.01	
Sida rohlenae subsp. *rohlenae*	+	1 m	PI069.07	
Triodia epactia	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
Abutilon pritzelianum ms	+	1.2 m	PI070.36	
Acacia colei var. *colei*	+	1.5 m	PI070.38	
Acacia sericophylla	+	2 m	PI070.04	
Acacia stellaticeps	40%	0.9 m	PI070.01	
Acacia tumida var. *pilbarensis*	+	2 m	PI070.30	
Aristida holathera var. *holathera*	+	0.5 m	PI070.10	
Aristida inaequiglumis	+	0.7 m	PI070.24	
Bonamia alatisemina	+	cr	PI070.18	
Bonamia media var. *villosa*	+	cr	PI070.08	
Bulbostylis barbata	+	0.1 m	PI070.17	
Calandrinia pentavalvis	+	cr	PI070.20	
**Cenchrus ciliaris*	+	0.2 m	PI070.29	
Chrysopogon fallax	+	1.2 m	PI070.21	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.3 m	PI070.02	
Desmodium filiforme	+	0.1 m	PI070.32	
Eragrostis cumingii	+	0.2 m	PI070.11	
Eragrostis eriopoda	+	0.3 m	PI070.13	
Eriachne aristidea	+	0.2 m	PI070.28	
Eriachne mucronata	+	0.3 m	PI070.12	
Euphorbia australis	+	0.1 m	PI070.06	
Evolvulus alsinoides var. *villosicalyx*	+	0.1 m	PI070.07	
Hakea lorea subsp. *lorea*	+	1.5 m	PI070.05	
Hibiscus burtonii	+	0.4 m	PI070.39	
Hibiscus sturtii var. *campylochlamys*	+	0.4 m	PI070.31	
Mollugo molluginea	+	0.2 m	PI070.35	
Paraneurachne muelleri	+	0.3 m	PI070.19	
Pimelea ammocharis	+	0.7 m	PI070.23	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI070.15	
**Portulaca oleracea*	+	cr	PI070.34	
Ptilotus fusiformis	+	0.3 m	PI070.22	
Senna notabilis	+	0.2 m	PI070.14	

Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI070.03
Solanum lasiophyllum	+	0.5 m	PI070.37
Tribulopis angustifolia	+	cr	PI070.26
Tribulus occidentalis	+	cr	PI070.27
Triodia epactia	20%	0.5 m	PI070.09
Waltheria indica	+	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
Acacia colei var. *colei*	3%	2.5 m	PI043.16	
Acacia stellaticeps	4%	0.7 m	PI043.01	
Bulbostylis barbata	+	0.1 m	PI067.01	
Calandrinia creethiae	+	prostrate	PI064.06	
Calandrinia pentavalvis	+	0.1 m	PI049.11	
Chrysopogon fallax	+	0.6 m	PI042.09	
Cucumis maderaspatanus	+	cr	PI071.01	
Drosera indica	+	0.1 m	PIOPBW01a	
Eriachne mucronata	+	0.3 m	PI049.01	
Fimbristylis dichotoma	+	0.1 m	PI049.15	
Hybanthus aurantiacus	+	0.3 m	PI043.13	
Ipomoea muelleri	+	cr	PI071.02	
Mitrasacme connata	+	0.2 m	PI071.03	
Paspalidium tabulatum	+	0.2 m	PI071.08	
Pluchea ferdinandi-muelleri	+	0.5 m	PI067.02	
Polycarpaea corymbosa var. *corymbosa*	+	0.2 m	PI043.06	
Senna notabilis	+	0.3 m	PI043.09	
Sida rohlenae subsp. *rohlenae*	+	0.1 m	PI071.06	
Stylidium desertorum	+	0.1 m	PI071.05	
Triodia epactia	25%	0.4 m	PI071.09	
Waltheria indica	+	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
Acacia colei var. *colei*	+	0.7 m	PI070.38	
Acacia stellaticeps	3%	0.3 m	PI070.01	
Acacia tumida var. *pilbarensis*	1%	1.2 m	PI070.30	
Aristida holathera var. *holathera*	+	0.5 m	PI070.10	
Boerhavia coccinea	+	cr	PI072.12	
Bonamia media var. *villosa*	+	0.1 m	PI072.11	
Bonamia rosea	+	0.4 m	PI072.09	
Bulbostylis barbata	+	0.1 m	PI070.17	
Calandrinia pentavalvis	+	0.1 m	PI072.14	
Chrysopogon fallax	+	0.8 m	PI070.21	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.4 m	PI070.02	
Eragrostis eriopoda	+	0.3 m	PI070.13	
Euphorbia alsiniflora	+	0.1 m	PI072.10	
Fimbristylis simulans	+	0.1 m	PI072.08	
Hibiscus burtonii	+	0.5 m	PI072.15	
Hybanthus aurantiacus	+	0.4 m	PI072.05	
Indigofera monophylla	+	0.4 m	PI072.03	
Mitrasacme connata	+	0.2 m	PI072.07	
Mollugo molluginea	+	0.2 m	PI070.35	
Paraneurachne muelleri			PI054.09	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI072.02	
Ptilotus fusiformis	+	0.2 m	PI070.22	
Senna notabilis	+	0.2 m	PI070.14	
Sida fibulifera	+	0.2 m	PI072.04	
Solanum lasiophyllum	+	0.6 m	PI070.37	
Trianthema pilosa	+	0.2 m	PI072.13	
Triodia epactia	40%	0.5 m	PI072.01	
Yakirra australiensis var. *australiensis*	+	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
Acacia stellaticeps	+	0.2 m	PI070.01	
Acacia tumida var. *pilbarensis*	6%	1.5 m	PI070.30	
Aristida holathera var. *holathera*	+	0.3 m	PI073.02	
Bulbostylis barbata	+	0.1 m	PI070.17	
Chrysopogon fallax	+	0.8 m	PI070.21	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.6 m	PI070.02	
Dolichandrone heterophylla	1%	0.5 m	PI073.01	
Eragrostis eriopoda	20%	0.4 m	PI070.13	
Euphorbia alsiniflora	+	0.1 m	PI072.10	
Evolvulus alsinoides var. *villosicalyx*	+	0.1 m	PI073.10	
Grevillea pyramidalis subsp. *leucadendron*	+	1.5 m	PI073.06	
Hibiscus sturtii var. *campylochlamys*	+	0.2 m	PI073.09	
Hybanthus aurantiacus	+	0.4 m	PI099.02	
Ipomoea polymorpha	+	0.2 m	PI073.13	
Mollugo molluginea	+	0.2 m	PI070.35	
Polycarpaea corymbosa var. *corymbosa*	+	0.05 m	PI072.02	
Portulaca pilosa	+	0.1 m	PI073.03	
Senna notabilis	+	0.4 m	PI070.14	
Sida fibulifera	+	cr	PI072.04	
Sida sp. B Kimberley Flora (A.A. Mitchell 2745)	+	0.6 m	PI073.04	
Solanum ellipticum	+	0.3 m	PI073.12	
Solanum lasiophyllum	+	0.1 m	PI070.37	
Trianthema pilosa	+	0.1 m	PI072.13	
Tribulopis angustifolia	+	cr	PI073.08	
Triodia epactia	15%	0.5 m	PI073.05	
Waltheria indica	+	0.1 m	PI073.11	
Yakirra australiensis var. *australiensis*	+	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
Acacia bivenosa	1%	1 m	PI117.05	
Acacia colei var. *colei*	+	2 m	PI091.12	
Acacia sericophylla	+	2 m	PI117.14	
Acacia sphaerostachya	1%	2 m	PI134.01	
Acacia stellaticeps	4%	0.7 m	PI065.01	
Acacia trudgeniana	+	2 m	PI065.31	
Aristida holathera var. *holathera*	+	0.2 m	PI094.04	
Bonamia alatisemina	+	0.1 m	PI117.11	
Bonamia rosea	+	0.3 m	PI090.02	
Bulbostylis barbata	+	0.1 m	PI090.18	
Calandrinia pumila	+	0.01 m	PI045.18	
Carissa lanceolata	+	1 m	PI094.09	
**Cenchrus ciliaris*	1%	0.4 m	PI103.06	
Chrysopogon fallax	+	0.4 m	PI051.04	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.3 m	PI094.08	
Corymbia candida subsp. *dipsodes*	3%	3 m	PI074.01	
**Cucumis melo subsp. agrestis*	+	cr	PI154.04	
Dysphania saxatilis	+	0.2 m	PI090.11	
Eriachne aristidea	+	0.2 m	PI063.03	
Eriachne mucronata	+	0.3 m	PI109.05	
Eucalyptus camaldulensis subsp. *refulgens*	+	6 m	PI079.01	
Euphorbia alsiniflora	+	0.2 m	PI117.03	
Fimbristylis oxystachya	(+)	0.1 m	PI025.05	
Goodenia lamprosperma	+	0.1 m	PI079.03	
Hybanthus aurantiacus	+	0.3 m	PI043.13	
Mollugo molluginea	+	0.1 m	PI132.04	
Paspalidium tabulatum	+	0.1 m	PI117.07	
Pimelea ammocharis	+	0.8 m	PI090.05	

Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI058.10
**Portulaca oleracea*	+	0.05 m	PI128.04
Ptilotus fusiformis	+	0.4 m	PI065.28
Senna notabilis	+	0.2 m	PI051.12
Sida rohlenae subsp. *rohlenae*	+	0.2 m	PI154.05
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.2 m	PI058.05
Solanum diversiflorum	+	0.2 m	PI048.09
Solanum ellipticum	+	0.4 m	PI103.10
Sporobolus australasicus	+	0.1 m	PI066.02
Triodia epactia	20%	0.6 m	PI074.02
Triodia lanigera	28%	0.6 m	PI074.03
Yakirra australiensis var. *australiensis*	+	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
Acacia colei var. *colei*	1%	1-2 m	PI043.16	
Acacia sericophylla	1%	1-2 m	PI104.07	
Acacia stellaticeps	2%	0.6 m	PI043.01	
Aristida holathera var. *holathera*	+	0.4 m	PI049.07	
Aristida inaequiglumis	+	0.5 m	PI075.01	
Bonamia rosea	+	0.4 m	PI030.04	
Bulbostylis barbata	+	0.1 m	PI129.01	
**Cenchrus ciliaris*	+	0.4 m	PI052.06	
Chrysopogon fallax	2%	0.5 m	PI042.09	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.5 m	PI042.04	
Corymbia candida subsp. *dipsodes*	1%	2-3 m	PI146.07	
Crotalaria ramosissima	+	0.3 m	PI029.01	
Digitaria brownii	+	0.3 m	PI028.04	
Dysphania saxatilis	+	0.2 m	PI069.03	
Eriachne mucronata	+	0.4 m	PI049.01	
Euphorbia alsiniflora	+	0.3 m	PI056.08	
Hybanthus aurantiacus	+	0.4 m	PI043.13	
Indigofera monophylla	+	0.3 m	PI052.03	
Mollugo molluginea	+	0.2 m	PI043.29	
Pluchea tetranthera	+	0.4 m	PI064.02	
Polycarpaea corymbosa var. *corymbosa*	+	0.2 m	PI043.06	
Portulaca pilosa	+	0.2 m	PI030.01	
Ptilotus fusiformis	+	0.4 m	PI043.11	
Ptilotus polystachyus	+	0.3 m	PI030.03	
Schizachyrium fragile	+	0.4 m	PI075.02	
Triodia lanigera	20%	0.4 m	PI075.03	
Yakirra australiensis var. *australiensis*	+	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
Acacia colei var. *colei*	2%	1-3 m	PI076.14	
Acacia pyrifolia	+	0.3 m	PI107.03	
Acacia sericophylla	1%	1.5-2 m	PI141.12	
Acacia stellaticeps	2%	0.7 m	PI083.01	
Acacia tumida var. *pilbarensis*	3%	1-3 m	PI076.15	
**Aerva javanica*	+	0.4 m	PI076.05	
Aristida contorta	+	0.3 m	PI076.04	
Aristida holathera var. *holathera*	8%	0.4 m	PI076.07	
Boerhavia coccinea	+	0.3 m	PI123.29	
Bonamia alatisemina	+	cr	PI083.10	
Bulbostylis barbata	+	0.1 m	PI121.05	
**Cenchrus ciliaris*	+	0.4 m	PI103.06	
Chrysopogon fallax	+	0.3 m	PI084.10	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.3 m	PI084.06	
Corymbia candida subsp. *dipsodes*	1%	2-3 m	PI141.08	
Cucumis maderaspatanus	+	cr	PI141.04	
Dolichandrone heterophylla	1%	1 m	PI076.11	
Eragrostis eriopoda	+	0.3 m	PI084.04	
Eriachne mucronata	+	0.3 m	PI076.13	
Euphorbia alsiniflora	+	0.2 m	PI123.36	
Euphorbia australis	+	0.2 m	PI084.08	
Goodenia forrestii	+	0.3 m	PI076.08	
Grevillea pyramidalis subsp. *leucadendron*	+	1 m	PI076.03	
Hibiscus sturtii var. *campylochlamys*	+	0.3 m	PI123.16	
Indigofera linifolia	+	0.3 m	PI076.10	
Indigofera monophylla	+	0.3 m	PI123.02	
Mollugo molluginea	+	0.1 m	PI123.09	
Pimelea ammocharis	+	0.3 m	PI076.01	
Pluchea tetranthera	+	0.3 m	PI083.11	

Polycarpaea corymbosa var. *corymbosa*	+	0.2 m	PI083.12
Portulaca pilosa	+	0.2 m	PI123.17
Ptilotus fusiformis	+	0.3 m	PI083.08
Ptilotus polystachyus	+	0.4 m	PI076.02
Rhynchosia minima	+	0.3 m	PI076.09
Schizachyrium fragile	+	0.3 m	PI076.06
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.3 m	PI123.04
Solanum ellipticum	+	0.3 m	PI065.26
Tinospora smilacina	+	cr	PI076.12
Triodia epactia	5%	0.3 m	PI076.16
Triodia lanigera	15%	0.3 m	PI076.17
Yakirra australiensis var. *australiensis*	+	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
Acacia colei var. *colei*	5%	3 m	PI070.38	
Acacia sericophylla	+	1.5 m	PI099.13	
Acacia tumida var. *pilbarensis*	6%	3 m	PI070.30	
Alternanthera nana	+	cr	PI077.05a	
Aristida holathera var. *holathera*	+	0.3 m	PI070.10	
Atalaya hemiglauca	+	3 m	PI077.05	
Bonamia alatisemina	+	4 m	PI053.02	
Bulbostylis barbata	+	0.1 m	PI070.17	
Carissa lanceolata	+	2 m	PI086.09	
**Cenchrus ciliaris*	+	0.5 m	PI070.29	
Chrysopogon fallax	12%	1 m	PI070.21	
Cleome viscosa	+	0.5 m	PI040.10	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.5 m	PI070.02	
Corymbia candida subsp. *dipsodes*	2%	5 m	PI088.08	
Corymbia hamersleyana	10%	4 m	PI077.01	
Cucumis maderaspatanus	+	cr	PI077.11	
Digitaria sp.	+	0.5 m	PI077.07	sterile
Dysphania saxatilis	+	0.3 m	PI053.07	
Eragrostis cumingii	+	0.1 m	PI077.09	atypical form
Eragrostis cumingii	+	0.3 m	PI077.03	
Eriachne aristidea	+	0.3 m	PI070.28	
Eriachne helmsii	+	0.3 m	PI077.06	
Euphorbia alsiniflora	+	0.2 m	PI072.10	
Evolvulus alsinoides var. *villosicalyx*	+	0.2 m	PI070.07	
Goodenia lamprosperma	+	0.4 m	PI094.05	
Goodenia triodiophila	+	0.4 m	PI077.13	
Hybanthus aurantiacus	+	0.3 m	PI099.02	
Marsilea hirsuta	+	0.1 m	PI077.08	

Stemodia lathraia	+	0.2 m	PI077.09
Paspalidium tabulatum	+	0.2 m	PI077.12
Pluchea rubelliflora	+	0.3 m	PI077.04
**Portulaca oleracea*	+	0.1 m	PI086.11
Rhynchosia minima	+	cr	PI077.10
Schizachyrium fragile	+	0.3 m	PI110.05
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.2 m	PI070.03
Sporobolus australasicus	+	0.1 m	PI037.07
Streptoglossa decurrens	+	0.3 m	PI115.18
Triodia epactia	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
Abutilon lepidum	+	0.3 m	PI078.01	
Acacia ancistrocarpa	+	1.2 m	PI062.03	
Acacia colei var. colei	3%	1-2 m	PI043.16	
Acacia sericophylla	+	1.6 m	PI104.07	
Acacia stellaticeps	+	0.6 m	PI043.01	
Amaranthus undulatus	(+)	0.2 m	PI133.03	
Aristida holathera var. *holathera*	+	0.4 m	PI049.07	
Calandrinia stagnensis	+	0.3 m	PI145.04	
**Cenchrus ciliaris*	+	0.4 m	PI052.06	
Chrysopogon fallax	1%	0.6 m	PI042.09	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.3 m	PI042.04	
Corymbia hamersleyana	3%	2-4 m	PI113.01	
**Cucumis melo subsp. agrestis*	+	cr	PI026.08	
Euphorbia alsiniflora	+	0.4 m	PI056.08	
Euphorbia australis	+	prostrate	PI104.02	
Indigofera monophylla	+	0.4 m	PI052.03	
Mollugo molluginea	+	0.2 m	PI043.29	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI043.06	
Rhynchosia minima	+	cr	PI078.02	
Triodia epactia	60%	0.6 m	PI078.03	
Yakirra australiensis var. *australiensis*	+	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
Acacia colei var. *colei*	1%	1-3 m	PI091.12	
Acacia sericophylla	+	1-2 m	PI117.14	
Acacia sphaerostachya	2%	1.5 m	PI134.01	
Acacia stellaticeps	+	0.6 m	PI065.01	
Acacia trudgeniana	+	1-2.5 m	PI065.31	
Alternanthera nana	+	0.2 m	PI094.07	
Amaranthus undulatus	+	0.3 m	PI045.16	
Aristida inaequiglumis	+	0.4 m	PI058.04	
Boerhavia coccinea	+	0.1 m	PI079.07	
Bonamia alatisemina	+	cr	PI117.11	
Bonamia rosea	+	0.2 m	PI090.02	
Bulbostylis barbata	+	0.1 m	PI090.18	
Calandrinia pentavalvis	+	0.1 m	PI066.03	
Calandrinia pumila	+	0.01 m	PI045.18	
Carissa lanceolata	+	1 m	PI094.09	
**Cenchrus ciliaris*	+	0.3 m	PI103.06	
Chrysopogon fallax	1%	0.6 m	PI051.04	
Cleome viscosa	+	0.6 m	PI065.17	
Corymbia zygophylla	2%	2-4 m	PI112.02	
**Cucumis melo subsp. agrestis*	+	cr	PI154.04	
Dysphania saxatilis	+	0.1 m	PI090.11	
Eragrostis cumingii	+	0.1 m	PI080.06	
Eragrostis eriopoda	+	0.2 m	PI134.06	
Eriachne aristidea	+	0.2 m	PI063.03	
Eriachne glauca var. *glauca*	+	0.1 m	PI079.05	
Eucalyptus camaldulensis subsp. *refulgens*	4%	6-9 m	PI079.01	
Goodenia lamprosperma	+	0.1 m	PI079.03	
Goodenia triodiophila	+	0.15 m	PI079.04	

Hybanthus aurantiacus	+	0.2 m	PI043.13
Indigofera monophylla	+	0.2 m	PI065.13
Marsilea mutica	+	0.05 m	PI044.08
Mimulus gracilis	+	0.05 m	PI094.06
Mollugo molluginea	+	0.1 m	PI132.04
Paraneurachne muelleri	+	0.2 m	PI117.09
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI058.10
**Portulaca oleracea*	+	0.05 m	PI128.04
Ptilotus fusiformis	+	0.4 m	PI065.28
Senna notabilis	+	0.2 m	PI051.12
Sida rohlenae subsp. *rohlenae*	+	0.1 m	PI154.05
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.1 m	PI079.08
Sporobolus australasicus	+	0.1 m	PI066.02
Triodia epactia	20%	0.5 m	PI079.02
Triodia lanigera	8%	0.4 m	PI079.06
Yakirra australiensis var. *australiensis*	+	0.1 m	PI043.08
Zornia muelleriana	+	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
Acacia colei var. *colei*	+	0.6 m	PI091.12	
Acacia trudgeniana	+	1.5 m	PI065.31	
Acacia tumida var. *pilbarensis*	3%	1-2 m	PI150.07	
Alternanthera nana	+	0.2 m	PI094.07	
Aristida holathera var. *holathera*	+	0.3 m	PI090.08	
Aristida inaequiglumis	+	0.4 m	PI058.04	
Bulbostylis barbata	+	0.1 m	PI090.18	
Calandrinia pentavalvis	+	0.1 m	PI066.03	
Calandrinia pumila	+	0.01 m	PI045.18	
Chrysopogon fallax	32%	0.6 m	PI051.04	
Cleome viscosa	+	0.3 m	PI065.17	
Corchorus tectus	+	0.3 m	PI091.07	
Corymbia candida subsp. *dipsodes*	+	2 m	PI051.02	
Crotalaria ramosissima	+	0.2 m	PI027.05	
Ehretia saligna var. *saligna*	+	0.4 m	PI091.08	
Eragrostis cumingii	+	0.2 m	PI080.06	
Eriachne aristidea	+	0.2 m	PI063.03	
Eriachne glauca var. *glauca*	+	0.2 m	PI097.03	
Eucalyptus victrix	5%	6 m	PI094.03	
Euphorbia alsiniflora	+	0.2 m	PI025.12	
Euphorbia australis	+	0.01 m	PI103.13	
Goodenia lamprosperma	+	0.2 m	PI094.05	
Goodenia triodiophila	+	0.3 m	PI080.07	
Hybanthus aurantiacus	+	0.4 m	PI043.13	
Indigofera colutea	+	0.1 m	PI103.11	
Indigofera linifolia	+	0.2 m	PI090.13	
Mimulus gracilis	+	0.1 m	PI080.03	
Mollugo molluginea	+	0.1 m	PI132.04	

Perotis rara	+	0.1 m	PI106.11
Pluchea rubelliflora	+	0.2 m	PI080.02
Pluchea tetranthera	+	0.2 m	PI066.22
**Portulaca oleracea*	+	0.2 m	PI128.04
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.3 m	PI058.05
Solanum ellipticum	+	0.2 m	PI065.26
Stylidium desertorum	+	0.05 m	PI045.19
Triodia epactia	8%	0.4 m	PI080.04
Vigna lanceolata var. *lanceolata*	1%	cr	PI080.01
Yakirra australiensis var. *australiensis*	+	0.2 m	PI043.08
Zornia muelleriana	+	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
Acacia colei var. *colei*	+	1.2 m	PI070.38	
Acacia inaequilatera	OUT	1.5 m	PI054.05	
Acacia stellaticeps	8%	0.5 m	PI070.01	
Bulbostylis barbata	+	0.1 m	PI070.17	
Dactyloctenium radulans	1%	0.1 m	PI037.14	
Eragrostis cumingii	+	0.1 m	PI081.06	
Eriachne mucronata	1%	0.2 m	PI102.06	
Eriachne glauca var. *glauca*	+	0.1 m	PI081.02	
Fimbristylis dichotoma	(1%)	0.3 m	PI081.07	
Goodenia lamprosperma	+	0.2 m	PI086.04	
Pluchea rubelliflora	+	0.2 m	PI127.05	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI072.02	
**Portulaca oleracea*	+	0.1 m	PI086.11	
Pterocaulon serrulatum	+	0.2 m	PI081.05	
Ptilotus fusiformis	+	0.3 m	PI070.22	
Senna notabilis	+	0.2 m	PI070.14	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI070.03	
Sporobolus australasicus	+	0.2 m	PI037.07	
Trianthema triquetra	+	0.1 m	PI081.03	
Triodia epactia	35%	0.4 m	PI081.01	
Triodia lanigera	+	0.3 m	PI081.04	
Yakirra australiensis var. *australiensis*	+	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
Acacia colei var. *colei*	+	0.6 m	PI070.38	
Acacia inaequilatera	2%	2 m	PI054.05	
Amaranthus undulatus	+	0.5 m	PI120.10	
Aristida inaequiglumis	+	0.8 m	PI070.24	
Boerhavia coccinea	+	cr	PI072.12	
Bonamia alatisemina	+	cr	PI053.02	
Bulbostylis barbata	+	0.15 m	PI070.17	
Calandrinia pumila	+	cr	PI086.02	
Carissa lanceolata	+	0.15 m	PI086.09	
**Cenchrus ciliaris*	+	0.5 m	PI070.29	
Chrysopogon fallax	5%	1.2 m	PI070.21	
Cleome viscosa	+	0.3 m	PI099.07	
Corchorus lasiocarpus subsp. *lasiocarpus*	1%	0.4 m	PI070.02	
Corchorus tectus	+	0.3 m	PI095.02	
Corymbia candida subsp. *dipsodes*	3%	4 m	PI088.08	
Dysphania saxatilis	+	0.2 m	PI053.07	
Evolvulus alsinoides var. *villosicalyx*	+	0.15 m	PI070.07	
Fimbristylis dichotoma	+	0.5 m	PI081.07	
Goodenia triodiophila	+	0.3 m	PI082.04	
Hakea lorea subsp. *lorea*	+	1.5 m	PI070.05	
Heliotropium cunninghamii	+	0.4 m	PI046.19	
Hybanthus aurantiacus	+	0.4 m	PI082.01	
Mollugo molluginea	+	0.1 m	PI070.35	
Paraneurachne muelleri	+	0.2 m	PI054.09	
Pluchea rubelliflora	+	0.1 m	PI127.05	
Polycarpaea corymbosa var. *corymbosa*	+	0.15 m	PI072.02	
Polymeria calycina	+	0.1 m	PI082.02	
**Portulaca oleracea*	+	0.1 m	PI086.11	

Portulaca pilosa	+	0.4 m	PI147.22
Ptilotus fusiformis	+	0.3 m	PI070.22
Senna notabilis	+	0.3 m	PI070.14
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	1%	0.6 m	PI070.03
Solanum lasiophyllum	+	0.5 m	PI070.37
Synaptantha tillaeacea var. *tillaeacea*	+	cr	PI082.03
Triodia epactia	+	0.2 m	PI082.05
Yakirra australiensis var. *australiensis*	+	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
Acacia stellaticeps	30%	0.8 m	PI083.01	
Aristida holathera var. *holathera*	+	0.3 m	PI123.18	
Bonamia alatisemina	+	cr	PI083.10	
Bulbostylis barbata	+	0.2 m	PI121.05	
Calandrinia stagnensis	+	0.1 m	PI083.04	
Dysphania saxatilis	+	0.1 m	PI090.11	
Eriachne pulchella subsp. *dominii*	+	0.2 m	PI083.07	
Fimbristylis dichotoma	+	0.3 m	PI083.03	
Indigofera monophylla	+	0.3 m	PI123.02	
Mollugo molluginea	+	0.2 m	PI123.09	
Pluchea rubelliflora	+	0.2 m	PI083.05	
Pluchea tetranthera	+	0.3 m	PI083.11	
Polycarpaea corymbosa var. *corymbosa*	+	0.2 m	PI083.12	
Ptilotus calostachyus	+	0.2 m	PI109.10	
Ptilotus fusiformis	+	0.3 m	PI083.08	
Senna notabilis	+	0.2 m	PI123.20	
Sporobolus australasicus	+	0.2 m	PI121.01	
Streptoglossa decurrens	+	0.3 m	PI121.02	
Triodia epactia	35%	0.3 m	PI083.09	
Triodia lanigera	25%	0.3 m	PI083.06	
Yakirra australiensis var. *australiensis*	+	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
Acacia inaequilatera	2%	1-1.5 m	PI123.15	
Acacia tumida var. *pilbarensis*	2%	0.4 m	PI123.08	
Aristida contorta	+	0.2 m	PI084.14	
Aristida holathera var. *holathera*	+	0.3 m	PI123.18	
Bonamia alatisemina	+	cr	PI083.10	
Bulbostylis barbata	1%	0.2 m	PI121.05	
Calandrinia stagnensis	1%	0.1 m	PI083.04	
Calandrinia pentavalvis	+	0.2 m	PI123.38	
Chrysopogon fallax	1%	0.4 m	PI084.10	
Cleome viscosa	+	0.3 m	PI065.17	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.3 m	PI084.06	
Corchorus tectus	10%	0.4 m	PI123.35	
Dysphania saxatilis	+	0.2 m	PI090.11	
Eragrostis eriopoda	1%	0.3 m	PI084.04	
Eriachne glauca var. *glauca*	+	0.2 m	PI084.13	
Euphorbia australis	+	0.2 m	PI084.08	
Fimbristylis dichotoma	1%	0.3 m	PI083.03	
Goodenia lamprosperma	+	0.2 m	PI084.15	
Goodenia microptera	+	0.3 m	PI123.12	
Hibiscus burtonii	+	0.4 m	PI084.01	
Indigofera colutea	+	0.2 m	PI084.07	
Mitrasacme connata	+	0.2 m	PI072.07	
Mollugo molluginea	+	0.2 m	PI123.09	
Paraneurachne muelleri	+	0.3 m	PI084.09	
Pluchea rubelliflora	+	0.3 m	PI083.05	
Pluchea tetranthera	+	0.2 m	PI083.11	
Polycarpaea corymbosa var. *corymbosa*	+	0.2 m	PI083.12	
Portulaca pilosa	+	0.2 m	PI123.17	

Senna notabilis	+	0.3 m	PI123.20
Sida clementii	2%	0.4 m	PI084.02
Sida rohlenae subsp. rohlenae	+	0.3 m	PI084.05
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	10%	0.5 m	PI123.04
Solanum diversiflorum	+	0.3 m	PI048.09
Solanum ellipticum	+	0.4 m	PI065.26
Sporobolus australasicus	+	0.2 m	PI121.01
Streptoglossa decurrens	+	0.3 m	PI121.02
Synaptantha tillaeacea var. *tillaeacea*	+	0.01 m	PI084.12
Tribulus macrocarpus	+	cr	PI084.11
Triodia epactia	1%	0.3 m	PI083.09
Yakirra australiensis var. *australiensis*	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
Acacia ancistrocarpa	+	1-2 m	PI062.03	
Acacia inaequilatera	+	1.5-2 m	PI049.06	
Acacia stellaticeps	+	0.6 m	PI043.01	
Acacia synchronicia	1%	1-2 m	PI140.10	
Aristida holathera var. *holathera*	+	0.3 m	PI049.07	
Bulbostylis barbata	+	0.1 m	PI129.01	
Calandrinia stagnensis	+	0.2 m	PI145.04	
Cleome viscosa	+	0.2 m	PI101.04	
Dentella asperata	+	prostrate	PI069.11	
Dysphania saxatilis	+	0.2 m	PI056.15	
Eriachne pulchella subsp. *dominii*	+	0.2 m	PI140.06	
Euphorbia australis	+	prostrate	PI104.02	
Fimbristylis dichotoma	+	0.3 m	PI049.15	
Gomphrena leptoclada subsp. *leptoclada*	+	prostrate	PI085.03	
Goodenia microptera	+	0.4 m	PI060.02	
Heliotropium muticum	+	0.2 m	PI030.06	12 ind
Indigofera monophylla	+	0.3 m	PI146.02	
Isotropis atropurpurea	+	0.4 m	PI145.10	
Mollugo molluginea	+	0.2 m	PI043.29	
Pluchea rubelliflora	+	0.2 m	PI122.01	
Polycarpaea corymbosa var. *corymbosa*	+	0.2 m	PI043.06	
Polycarpaea holtzei	+	0.1 m	PI140.07	
Polymeria ambigua	+	prostrate	PI145.07	
Ptilotus fusiformis	+	0.4 m	PI043.11	
Senna notabilis	+	0.3 m	PI043.09	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI043.14	
Sporobolus australasicus	+	0.2 m	PI145.03	
Tephrosia supina	+	0.6 m	PI085.01	
Triodia epactia	1%	0.3 m	PI085.04	
Triodia lanigera	15%	0.3 m	PI085.02	
Yakirra australiensis var. *australiensis*	+	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
Acacia ancistrocarpa	+	0.5 m	PI086.05	
Acacia colei var. *colei*	+	1 m	PI070.38	
Acacia inaequilatera	+	2 m	PI054.05	
Acacia stellaticeps	1%	0.2 m	PI070.01	
Aristida holathera var. *holathera*	+	0.3 m	PI070.10	
Boerhavia coccinea	+	cr	PI072.12	
Bonamia alatisemina	+	cr	PI053.02	
Bulbostylis barbata	+	0.1 m	PI070.17	
Calandrinia pentavalvis	+	0.1 m	PI072.14	
Calandrinia pumila	1%	cr	PI086.02	
Carissa lanceolata	+	0.6 m	PI086.09	
Chrysopogon fallax	+	1.2 m	PI070.21	
Cleome viscosa	+	0.5 m	PI040.10	
Corchorus tectus	2%	0.3 m	PI095.02	
Dysphania saxatilis	+	0.4 m	PI053.07	
Eriachne mucronata	+	0.15 m	PI102.06	
Eriachne glauca var. *glauca*	1%	0.2 m	PI086.08	
Euphorbia australis	+	cr	PI108.12	
Goodenia lamprosperma	+	0.15 m	PI086.04	
Goodenia microptera	+	0.3 m	PI096.01	
Hakea lorea subsp. *lorea*	+	1.5 m	PI070.05	
Hibiscus burtonii	+	0.3 m	PI086.10	
Indigofera monophylla	2%	0.3 m	PI072.03	
Mimulus gracilis	+	0.15 m	PI086.03	
Mollugo molluginea	+	0.1 m	PI070.35	
Pluchea rubelliflora	+	0.15 m	PI086.07	
Pluchea tetranthera	+	0.3 m	PI088.09	
Polymeria ambigua	+	cr	PI086.06	

**Portulaca oleracea*	+	cr	PI086.11
Ptilotus fusiformis	+	0.4 m	PI070.22
Senna notabilis	+	0.3 m	PI070.14
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.3 m	PI070.03
Streptoglossa decurrens	+	0.2 m	PI115.18
Tribulus occidentalis	+	cr	PI070.27
Triodia epactia	30%	0.3 m	PI086.01
Triodia lanigera	+	0.3 m	PI086.12
Yakirra australiensis var. *australiensis*	+	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
Acacia colei var. *colei*	+	1.5 m	PI070.38	
Acacia pyrifolia	1%	2 m	PI054.10	
Acacia stellaticeps	2%	0.2 m	PI070.01	
Aristida holathera var. *holathera*	1%	0.4 m	PI070.10	
Boerhavia coccinea	+	cr	PI072.12	
Bonamia alatisemina	+	cl	PI087.11	
Bonamia rosea	1%	0.4 m	PI088.02	
Bulbostylis barbata	+	0.1 m	PI070.17	
Calandrinia pentavalvis	+	0.1 m	PI072.14	
Carissa lanceolata	+	0.6 m	PI086.09	
**Cenchrus ciliaris*	+	0.5 m	PI070.29	
Chrysopogon fallax	+	1 m	PI070.21	
Cleome viscosa	+	0.2 m	PI087.02	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.5 m	PI070.02	
Corchorus tectus	1%	0.4 m	PI095.02	
Corymbia candida subsp. *dipsodes*	+	1.5 m	PI088.08	
Drosera indica	+	0.1 m	PI053.11	
Dysphania saxatilis	1%	0.2 m	PI053.07	
Eragrostis eriopoda	+	0.3 m	PI088.07	
Eriachne aristidea	+	0.3 m	PI070.28	
Euphorbia australis	+	cr	PI108.12	
Evolvulus alsinoides var. *villosicalyx*	+	0.2 m	PI087.03	
Goodenia microptera	+	0.4 m	PI096.01	
Hakea lorea subsp. *lorea*	+	1 m	PI070.05	
Hibiscus burtonii	+	0.5 m	PI086.10	
Indigofera monophylla	+	0.3 m	PI072.03	
Mollugo molluginea	+	0.1 m	PI070.35	
Paraneurachne muelleri	+	0.3 m	PI087.10	

Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI072.02
Polymeria ambigua	+	cr	PI086.06
**Portulaca oleracea*	1%	cr	PI053.03
Ptilotus astrolasius	+	0.4 m	PI089.05
Ptilotus axillaris	ASS	cr	PI087.12
Ptilotus fusiformis	+	0.3 m	PI070.22
Ptilotus polystachyus	+	1 m	PI147.19
Senna notabilis	+	0.2 m	PI070.14
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	1%	0.7 m	PI070.03
Streptoglossa decurrens	+	0.5 m	PI087.12a
Tinospora smilacina	+	cr	PI087.09
Trianthema pilosa	+	cr	PI088.04
Tribulus occidentalis	+	cr	PI070.27
Triodia epactia	30%	0.3 m	PI087.01
Triodia lanigera	2%	0.3 m	PI087.04
Yakirra australiensis var. *australiensis*	+	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

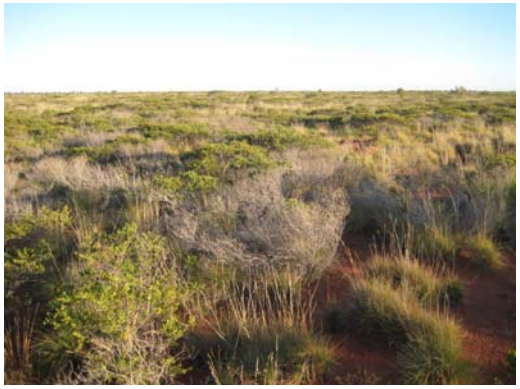
Rock Type N/A

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
Acacia ancistrocarpa	+	2 m	PI131.04	
Acacia sphaerostachya	1%	0.8 m	PI088.03	
Acacia stellaticeps	30%	0.5 m	PI070.01	
Aristida holathera var. *holathera*	+	0.3 m	PI070.10	
Bonamia alatisemina	+	cr	PI053.02	
Bonamia rosea	+	0.4 m	PI088.02	
Bulbostylis barbata	+	0.1 m	PI070.17	
Chrysopogon fallax	+	1.2 m	PI070.21	
Cleome viscosa	+	0.4 m	PI040.10	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.1 m	PI070.02	
Corymbia candida subsp. *dipsodes*	+	3 m	PI088.08	
Cucumis maderaspatanus	+	cr	PI147.17	
Dysphania saxatilis	+	0.1 m	PI053.07	
Eragrostis eriopoda	+	0.3 m	PI088.07	
Eriachne aristidea	+	0.3 m	PI088.06	
Euphorbia alsiniflora	+	0.15 m	PI072.10	
Euphorbia australis	+	cr	PI108.12	
Mollugo molluginea	+	0.1 m	PI070.35	
Pluchea tetranthera	+	0.5 m	PI088.09	
Polycarpaea corymbosa var. *corymbosa*	+	0.15 m	PI072.02	
Portulaca pilosa	+	0.2 m	PI147.22	
Ptilotus fusiformis	+	0.3 m	PI070.22	
Senna notabilis	+	0.2 m	PI070.14	
Sida rohlenae subsp. *rohlenae*	+	0.4 m	PI105.08	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.1 m	PI070.03	
Trianthema pilosa	+	cr	PI088.04	
Triodia epactia	20%	0.5 m	PI088.05	
Triodia lanigera	20%	0.3 m	PI088.01	
Yakirra australiensis var. *australiensis*	+	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
Acacia ancistrocarpa	+	3 m	PI131.04	
Acacia sericophylla	+	2 m	PI070.04	
Acacia stellaticeps	5%	0.4 m	PI070.01	
Aristida holathera var. *holathera*	+	0.3 m	PI070.10	
Bonamia rosea	+	0.4 m	PI088.02	
Bulbostylis barbata	+	0.1 m	PI070.17	
Chrysopogon fallax	+	1 m	PI070.21	
Corymbia candida subsp. *dipsodes*	+	3 m	PI088.08	
Crotalaria ramosissima	+	0.2 m	PI089.02	
Desmodium filiforme	+	cr	PI089.06	
Drosera indica	+	0.15 m	PI053.11	
Dysphania saxatilis	+	0.15 m	PI053.07	
Eragrostis eriopoda	+	0.3 m	PI088.07	
Eriachne aristidea	1%	0.3 m	PI088.06	
Euphorbia alsiniflora	+	0.2 m	PI072.10	
Gossypium australe	+	0.2 m	PI105.15	
Heliotropium inexplicitum	+	cr	PI089.03	
Hybanthus aurantiacus	+	0.5 m	PI099.02	
Indigofera monophylla	+	0.4 m	PI072.03	
Kennedia prorepens	+	0.2 m	PI089.08	
Mitrasacme connata	+	0.2 m	PI072.07	
Mollugo molluginea	+	0.1 m	PI070.35	
Paraneurachne muelleri	+	0.3 m	PI054.09	
Polycarpaea corymbosa var. *corymbosa*	+	0.15 m	PI072.02	
Polymeria ambigua	+	cr	PI096.04	
Portulaca pilosa	+	0.2 m	PI147.22	
Ptilotus astrolasius	+	0.2 m	PI089.05	
Ptilotus fusiformis	+	0.3 m	PI070.22	

Ptilotus polystachyus	+	0.2 m	PI147.19	
Schizachyrium fragile	+	0.3 m	PI110.05	
Senna notabilis	+	0.2 m	PI070.14	
Solanum lasiophyllum	+	0.2 m	PI070.37	
Tephrosia rosea var. *clementii*	+	0.5 m	PI089.09	
Tephrosia simplicifolia	+	0.3 m	PI089.07	Range ext
Triodia epactia	10%	0.5 m	PI089.04	
Triodia schinzii	60%	0.5 m	PI089.01	
Yakirra australiensis var. *australiensis*	+	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
Acacia sericophylla	+	2 m	PI090.17	
Aristida holathera var. *holathera*	+	0.3 m	PI090.08	
Bonamia alatisemina	+	cr	PI090.10	
Bonamia rosea	1%	0.3 m	PI090.02	
Bulbostylis barbata	+	0.1 m	PI090.18	
**Cenchrus ciliaris*	+	0.5 m	PI103.06	
Cleome viscosa	+	0.6 m	PI065.17	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.2 m	PI090.20	
Corymbia candida subsp. *dipsodes*	+	2 m	PI051.02	
Corymbia hamersleyana	+	1.5 m	PI090.21	
Dysphania saxatilis	+	0.3 m	PI090.11	
Eragrostis eriopoda	+	0.5 m	PI090.04	
Euphorbia australis	+	0.01 m	PI103.13	
Goodenia forrestii	+	0.2 m	PI090.06	
Goodenia microptera	+	0.2 m	PI090.14	
Gossypium australe	+	0.4 m	PI090.09	
Grevillea pyramidalis subsp. *leucadendron*	+	2 m	PI065.29	
Hibiscus leptocladus	+	0.3 m	PI090.16	
Hybanthus aurantiacus	+	0.3 m	PI043.13	
Indigofera linifolia	+	0.3 m	PI090.13	
Mollugo molluginea	+	0.2 m	PI132.04	
Paraneurachne muelleri	+	0.2 m	PI090.12	
Pimelea ammocharis	+	0.9 m	PI090.05	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI058.10	
**Portulaca oleracea*	+	0.1 m	PI128.04	
Portulaca pilosa	+	0.2 m	PI090.15	
Ptilotus astrolasius	+	0.3 m	PI090.03	
Ptilotus polystachyus	+	0.9 m	PI025.13	

Scaevola parvifolia subsp. *pilbarae*	+	0.1 m	PI090.07
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI058.05
Solanum lasiophyllum	+	0.2 m	PI090.22
Tinospora smilacina	+	cl	PI103.08
Trianthema pilosa	+	0.1 m	PI065.03
Tribulus hirsutus	+	0.1 m	PI106.08
Triodia schinzii	12%	0.4 m	PI090.01
Yakirra australiensis var. *australiensis*	+	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
Abutilon otocarpum	+	0.4 m	PI091.10	
Acacia colei var. *colei*	+	0.5 m	PI091.12	
Acacia stellaticeps	2%	0.3 m	PI065.01	
Acacia trudgeniana	+	0.7 m	PI065.31	
Aristida holathera var. *holathera*	+	0.3 m	PI090.08	
Boerhavia coccinea	+	0.2 m	PI103.09	
Bonamia alatisemina	+	cr	PI091.04	
Bonamia rosea	1%	0.3 m	PI090.02	
Bulbostylis barbata	+	0.1 m	PI027.03	
Cassytha capillaris	+	cl	PI091.09	
**Cenchrus ciliaris*	+	0.4 m	PI103.06	
Chrysopogon fallax	+	0.5 m	PI051.04	
Cleome viscosa	+	0.3 m	PI065.17	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.3 m	PI090.20	
Corchorus tectus	+	0.3 m	PI091.07	
Corymbia candida subsp. *dipsodes*	1%	2-3 m	PI051.02	
Dysphania saxatilis	+	0.1 m	PI090.11	
Ehretia saligna var. *saligna*	+	1 m	PI091.08	
Eriachne aristidea	+	0.2 m	PI063.03	
Eriachne benthamii	+	0.3 m	PI106.01	
Euphorbia australis	+	0.01 m	PI103.13	
Euphorbia tannensis subsp. *eremophila*	+	0.2 m	PI091.14	
Evolvulus alsinoides var. *villosicalyx*	+	0.1 m	PI091.11	
Goodenia microptera	+	0.3 m	PI090.14	
Goodenia triodiophila	+	0.3 m	PI091.03	
Hakea lorea subsp. *lorea*	+	1 m	PI091.01	
Hibiscus burtonii	+	0.2 m	PI091.06	
Hybanthus aurantiacus	+	0.3 m	PI043.13	

Indigofera linifolia	+	0.2 m	PI090.13
Indigofera monophylla	+	0.2 m	PI065.13
Ipomoea polymorpha	+	0.1 m	PI103.05
Mollugo molluginea	+	0.1 m	PI132.04
Paraneurachne muelleri	+	0.2 m	PI058.06
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI058.10
**Portulaca oleracea*	+	0.1 m	PI128.04
Portulaca pilosa	+	0.2 m	PI090.15
Ptilotus astrolasius	+	0.2 m	PI090.03
Ptilotus polystachyus	+	0.7 m	PI025.13
Salsola tragus subsp. *grandiflora*	+	1 m	PI091.15
Senna glaucifolia	+	1 m	PI091.16
Senna notabilis	+	0.4 m	PI051.12
Sida fibulifera	+	0.1 m	PI091.13
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	1%	0.1-0.6 m	PI091.05
Solanum diversiflorum	+	0.2 m	PI048.09
Tinospora smilacina	+	cl	PI103.08
Trianthema pilosa	+	0.1 m	PI065.03
Tribulus hirsutus	+	0.05 m	PI106.08
Triodia epactia	4%	0.3 m	PI091.02
Yakirra australiensis var. *australiensis*	+	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
Acacia colei var. *colei*	+	0.8 m	PI043.16	
Alternanthera angustifolia	+	0.4 m	PI092.02	
Ammannia multiflora	+	0.03 m	PI092.04	
Bergia pedicellaris	+	0.05 m	PI092.09	
Calandrinia pumila	+	prostrate	PI092.07	
Carissa lanceolata	+	1.1 m	PI052.07	
Chrysopogon fallax	+	0.5 m	PI042.09	
Digitaria brownii	1%	0.6 m	PI028.04	
Eriachne benthamii	4%	0.6 m	PI092.06	
Eucalyptus victrix	5%	7-10 m	PI092.01	
Goodenia lamprosperma	+	0.4 m	PI043.21	
Marsilea mutica	+	0.03 m	PI092.03	
Mimulus gracilis	+	0.05 m	PI092.05	
Triodia epactia	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
Acacia colei var. *colei*	+	0.8 m	PI043.16	
Aristida contorta	+	0.3 m	PI093.02	
Calandrinia stagnensis	+	0.2 m	PI145.04	
Calandrinia pumila	+	prostrate	PI092.07	
Carissa lanceolata	+	1.2 m	PI052.07	
Chrysopogon fallax	1%	0.6 m	PI042.09	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.4 m	PI042.04	
Corchorus tectus	+	0.4 m	PI030.02	
Corymbia candida subsp. *dipsodes*	+	2 m	PI146.07	
Dysphania saxatilis	+	0.3 m	PI056.15	
Eriachne benthamii	8%	0.5 m	PI092.06	
Eucalyptus victrix	6%	5-8 m	PI092.01	
Goodenia lamprosperma	+	0.3 m	PI043.21	
Indigofera monophylla	1%	0.5 m	PI052.03	
Mimulus gracilis	+	0.05 m	PI092.05	
Triodia epactia	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
Acacia colei var. *colei*	+	0.5 m	PI091.12	
Acacia sericophylla	+	1 m	PI090.17	
Acacia tumida var. *pilbarensis*	+	1-1.5 m	PI150.07	
Alternanthera nana	+	0.2 m	PI094.07	
Aristida holathera var. *holathera*	+	0.2 m	PI094.04	
Calandrinia pumila	+	0.01 m	PI045.18	
Carissa lanceolata	+	1 m	PI094.09	
Chrysopogon fallax	11%	0.5 m	PI051.04	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.3 m	PI094.08	
Corymbia candida subsp. *dipsodes*	+	1.5-2 m	PI051.02	
Eriachne benthamii	+	0.3 m	PI106.01	
Eucalyptus victrix	4%	4-7 m	PI094.02	Photo; 203-204 LD
Evolvulus alsinoides var. *decumbens*	+	0.1 m	PI094.10	
Goodenia lamprosperma	+	0.2 m	PI094.05	
Grevillea pyramidalis subsp. *leucadendron*	+	0.5 m	PI065.29	
Indigofera monophylla	+	0.2 m	PI065.13	
Marsilea mutica	+	0.1 m	PI044.08	
Mimulus gracilis	+	0.05 m	PI094.06	
Paraneurachne muelleri	+	0.3 m	PI090.12	
Pluchea tetranthera	+	0.3 m	PI066.22	
**Portulaca oleracea*	+	0.05 m	PI128.04	
Rhynchosia minima	+	cr	PI094.11	
Sida rohlenae subsp. *rohlenae*	+	0.3 m	PI103.20	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.2 m	PI058.05	
Solanum ellipticum	+	0.2 m	PI065.26	
Stemodia grossa	+	0.1 m	PI094.12	
Triodia epactia	2%	0.3 m	PI094.01	
Yakirra australiensis var. *australiensis*	+	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
Acacia colei var. *colei*	+	0.5 m	PI070.38	
Acacia stellaticeps	1%	0.2 m	PI070.01	
Amaranthus undulatus	+	0.2 m	PI095.06	
Aristida holathera var. *holathera*	+	0.4 m	PI070.10	
Bonamia alatisemina	+	cr	PI095.13	
Bulbostylis barbata	+	0.1 m	PI070.17	
Calandrinia pentavalvis	+	0.05 m	PI095.10	
Carissa lanceolata	+	0.5 m	PI095.15	
Cassytha capillaris	+	cr	PI095.05	
Chrysopogon fallax	+	0.9 m	PI070.21	
Cleome viscosa	+	0.5 m	PI040.10	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.4 m	PI070.02	
Corchorus tectus	4%	0.3 m	PI095.02	
Eriachne aristidea	+	0.2 m	PI070.28	
Eriachne pulchella	(+)	0.2 m	PI095.12	
Eucalyptus victrix	1%	1.5 m	PI095.01	
Goodenia lamprosperma	+	0.2 m	PI095.19	
Goodenia triodiophila	+	0.2 m	PI095.20	
Hibiscus burtonii	+	0.3 m	PI095.11	
Hybanthus aurantiacus	+	0.2 m	PI099.02	
Ipomoea coptica	+	cr	PI095.17	
Mimulus gracilis	+	0.15 m	PI095.18	
Mitrasacme connata	+	0.15 m	PI072.07	
Mollugo molluginea	+	0.1 m	PI070.35	
Pluchea rubelliflora	+	0.15 m	PI095.14	
Pluchea tetranthera	+	0.3 m	PI095.16	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI072.02	
Polygala isingii	+	0.05 m	PI095.09	

**Portulaca oleracea*	+	cr	PI053.03
Senna notabilis	+	0.2 m	PI070.14
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.2 m	PI070.03
Sporobolus australasicus	+	0.1 m	PI037.07
Streptoglossa decurrens	+	0.3 m	PI095.08
Tephrosia uniovulata	+	0.4 m	PI095.04
Triodia epactia	25%	0.3 m	PI095.03
Triodia lanigera	1%	0.4 m	PI095.07
Yakirra australiensis var. *australiensis*	+	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
Acacia colei var. *colei*	+	0.2 m	PI070.38	
Acacia inaequilatera	1%	2.5 m	PI054.05	
Acacia stellaticeps	+	0.2 m	PI070.01	
Alternanthera nana	+	0.2 m	PI096.10	
Aristida holathera var. *holathera*	8%	0.4 m	PI070.10	
Bonamia media var. *villosa*	+	cr	PI096.02	
Bulbostylis barbata	+	0.1 m	PI070.17	
Calandrinia pentavalvis	+	0.1 m	PI072.14	
Carissa lanceolata	+	0.4 m	PI095.15	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.4 m	PI070.02	
Corchorus tectus	+	0.3 m	PI095.02	
Corymbia candida subsp. *dipsodes*	+	4 m	PI096.09	
Dysphania saxatilis	+	0.1 m	PI053.07	
Eriachne aristidea	2%	0.3 m	PI070.28	
Euphorbia australis	+	cr	PI096.11	
Goodenia microptera	1%	0.4 m	PI096.01	
Hibiscus burtonii	+	0.6 m	PI096.08	
Hybanthus aurantiacus	+	0.2 m	PI099.02	
Indigofera monophylla	+	0.4 m	PI072.03	
Mollugo molluginea	+	0.2 m	PI070.35	
Paraneurachne muelleri	+	0.3 m	PI054.09	
Phyllanthus erwinii	+	0.3 m	PI096.05	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI072.02	
Polymeria ambigua	+	cr	PI096.04	
**Portulaca oleracea*	+	0.1 m	PI053.03	
Ptilotus fusiformis	+	0.3 m	PI070.22	
Senna notabilis	+	0.3 m	PI070.14	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI070.03	

Sporobolus australasicus	+	0.1 m	PI037.07
Synaptantha tillaeacea var. *tillaeacea*	+	cr	PI096.06
Trianthema pilosa	+	cr	PI072.13
Triodia epactia	20%	0.4 m	PI096.03
Triodia lanigera	+	0.3 m	PI096.07
Yakirra australiensis var. *australiensis*	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
Acacia colei var. *colei*	+	1-2 m	PI091.12	
Acacia sericophylla	+	1 m	PI051.08	
Acacia tumida var. *pilbarensis*	1%	1-2 m	PI150.07	
Aeschynomene indica	+	1.2 m	PI097.07	
Alternanthera nana	+	0.2 m	PI094.07	
Aristida contorta	+	0.2 m	PI097.02	
Aristida inaequiglumis	+	0.5 m	PI058.04	
Atalaya hemiglauca	+	1 m	PI097.04	
Carissa lanceolata	+	1-1.5 m	PI094.09	
Cassytha capillaris	+	cl	PI091.09	
Chrysopogon fallax	3%	0.6 m	PI051.04	
Cleome viscosa	+	0.4 m	PI065.17	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.3 m	PI094.08	
Corymbia candida subsp. *dipsodes*	+	2 m	PI051.02	
Ehretia saligna var. *saligna*	+	0.7 m	PI091.08	
Eriachne glauca var. *glauca*	+	0.2 m	PI097.03	
Eucalyptus victrix	2%	3-7 m	PI094.03	
Fimbristylis oxystachya	+	0.05 m	PI025.05	
Goodenia lamprosperma	+	0.2 m	PI094.05	
Mimulus gracilis	+	0.05 m	PI094.06	
Pluchea rubelliflora	+	0.1 m	PI097.05	
Polymeria ambigua	+	cr	PI097.06	
**Portulaca oleracea*	+	0.05 m	PI128.04	
Rhynchosia minima	+	cl	PI094.11	
Sporobolus australasicus	+	0.1 m	PI066.02	
Triodia epactia	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
Acacia colei var. *colei*	+	0.1 m	PI091.12	
Acacia tumida var. *pilbarensis*	+	0.8 m	PI150.07	
Aristida holathera var. *holathera*	+	0.2 m	PI090.08	
Bulbostylis barbata	+	0.1 m	PI090.18	
Calandrinia pumila	+	0.01 m	PI045.18	
Carissa lanceolata	+	1 m	PI094.09	
Centipeda minima subsp. *macrocephala*	+	0.1 m	PI098.02	
Chrysopogon fallax	5%	0.4 m	PI051.04	
Cleome viscosa	+	0.3 m	PI065.17	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.3 m	PI094.08	
Corchorus tectus	+	0.2 m	PI091.07	
Corymbia candida subsp. *dipsodes*	+	1 m	PI051.02	
Cullen stipulaceum	+	0.3 m	PI098.05	
Eragrostis cumingii	+	0.1 m	PI080.06	
Eucalyptus victrix	11%	2-7 m	PI094.03	
Euphorbia australis	+	0.01 m	PI103.13	
Goodenia lamprosperma	+	0.2 m	PI094.05	
Goodenia triodiophila	+	0.2 m	PI080.07	
Ipomoea coptica	+	cr	PI098.07	
Mimulus gracilis	+	0.1 m	PI094.06	
Neptunia dimorphantha	+	0.1 m	PI098.03	
Pluchea rubelliflora	+	0.2 m	PI080.02	
Polymeria ambigua	+	cr	PI098.04	
**Portulaca oleracea*	+	0.1 m	PI128.04	
Ptilotus murrayi	+	0.1 m	PI098.06	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.3 m	PI058.05	
Sporobolus australasicus	+	0.1 m	PI066.02	
Stackhousia intermedia	+	0.1 m	PI066.14	
Triodia epactia	8%	0.4 m	PI098.01	
Waltheria indica	+	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
Acacia ancistrocarpa	+	0.4 m	PI131.04	
Acacia inaequilatera	+	1.5 m	PI054.05	
Acacia maitlandii	+	0.1 m	PI099.09	
Acacia sericophylla	+	0.5 m (2 m)	PI099.13	
Acacia sphaerostachya	+	0.6 m	PI088.03	
Acacia stellaticeps	+	0.3 m	PI070.01	
Acacia trachycarpa	2%	0.5 m	PI099.10	
Acacia trachycarpa x *tumida*	+	0.6 m	PI099.14	
Aristida holathera var. *holathera*	+	0.3 m	PI070.10	
Bonamia alatisemina	+	cr	PI053.02	
Bonamia rosea	+	0.3 m	PI088.02	
Bulbostylis barbata	+	0.1 m	PI070.17	
Chrysopogon fallax	+	1.2 m	PI070.21	
Cleome viscosa	+	0.3 m	PI099.07	
Corchorus tectus	+	0.3 m	PI095.02	
Corymbia candida subsp. *dipsodes*	1%	2.5 m	PI088.08	
Desmodium filiforme	+	cr	PI089.06	
Dysphania saxatilis	+	0.1 m	PI053.07	
Eriachne pulchella subsp. *dominii*	(+)	0.2 m	PI099.04	
Goodenia microptera	+	0.3 m	PI096.01	
Hakea lorea subsp. *lorea*	+	1.2 m	PI099.12	
Heliotropium muticum	+	0.3 m	PI099.11	
Hybanthus aurantiacus	+	0.4 m	PI099.02	
Indigofera monophylla	2%	0.3 m	PI099.06	
Mollugo molluginea	+	0.1 m	PI070.35	
Paraneurachne muelleri	+	0.3 m	PI054.09	
Polycarpaea corymbosa var. *corymbosa*	+	0.15 m	PI072.02	
**Portulaca oleracea*	+	0.1 m	PI086.11	

Ptilotus astrolasius	+	0.2 m	PI089.05
Ptilotus calostachyus	+	0.3 m	PI032.04
Scaevola browniana subsp. *browniana*	+	0.3 m	PI099.08
Schizachyrium fragile	+	0.2 m	PI110.05
Senna notabilis	+	0.4 m	PI070.14
Sida rohlenae subsp. *rohlenae*	+	0.4 m	PI105.08
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.5 m	PI070.03
Tephrosia uniovulata	1%	0.3 m	PI099.03
Tinospora smilacina	+	cl	PI087.09
Triodia lanigera	8%	0.3 m	PI099.01
Triumfetta ramosa	+	0.2 m	PI099.05
Yakirra australiensis var. *australiensis*	+	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
Acacia inaequilatera	1%	0.5-2 m	PI049.06	mostly between 1-2 m
Acacia stellaticeps	1%	0.4 m	PI043.01	
Aristida holathera var. *holathera*	+	0.3 m	PI049.07	
Bonamia alatisemina	+	prostrate	PI145.11	
Bonamia rosea	+	0.4 m	PI030.04	
Bulbostylis barbata	+	0.1 m	PI104.01	
Calandrinia stagnensis	+	0.2 m	PI145.04	
Cleome viscosa	+	0.3 m	PI101.04	
Corchorus tectus	+	0.4 m	PI030.02	
Dysphania saxatilis	+	0.2 m	PI069.03	
Eragrostis eriopoda	+	0.4 m	PI047.02	
Eriachne aristidea	+	0.2 m	PI136.03	
Goodenia microptera	+	0.4 m	PI060.02	
Heliotropium muticum	+	0.3 m	PI030.06	26 ind
Hibiscus leptocladus	+	0.4 m	PI145.08	
Indigofera monophylla	+	0.3 m	PI052.03	
Isotropis atropurpurea	+	0.4 m	PI145.10	
Mollugo molluginea	+	0.2 m	PI043.29	
Polycarpaea corymbosa var. *corymbosa*	+	0.2 m	PI043.06	
Ptilotus fusiformis	+	0.4 m	PI043.11	
Senna notabilis	+	0.2 m	PI043.09	
Sida clementii	+	0.5 m	PI100.02	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.3 m	PI043.14	
Tephrosia uniovulata	+	0.4 m	PI100.01	
Tribulus hirsutus	+	prostrate	PI060.03	
Triodia epactia	2%	0.4 m	PI100.03	
Triodia lanigera	1%	0.4 m	PI100.04	
Yakirra australiensis var. *australiensis*	+	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
Acacia ancistrocarpa	+	1.5 m	PI062.03	
Acacia inaequilatera	2%	1-3 m	PI049.06	
Acacia sericophylla	+	1.5 m	PI101.01	
Acacia stellaticeps	2%	0.6 m	PI043.01	
Amaranthus undulatus	+	0.3 m	PI133.03	
Boerhavia coccinea	+	prostrate	PI067.15	
Bulbostylis barbata	+	0.1 m	PI104.01	
Calandrinia stagnensis	+	prostrate	PI145.04	
Cleome viscosa	+	0.3 m	PI101.04	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.3 m	PI042.04	
Corymbia candida subsp. *dipsodes*	1%	2-3 m	PI146.07	
Crotalaria medicaginea var. *neglecta*	+	0.4 m	PI101.03	
Cucumis maderaspatanus	+	cr	PI067.16	
**Cucumis melo subsp. agrestis*	+	cr	PI026.08	
Dysphania saxatilis	+	0.1 m	PI069.03	
Eragrostis eriopoda	+	0.3 m	PI047.02	
Eriachne mucronata	+	0.4 m	PI049.01	
Evolvulus alsinoides var. *villosicalyx*	+	0.1 m	PI104.04	
Goodenia microptera	+	0.4 m	PI060.02	
Gossypium australe	+	0.4 m	PI104.08	
Hibiscus austrinus var. *austrinus*	+	0.3 m	PI101.02	
Hybanthus aurantiacus	+	0.3 m	PI043.13	
Indigofera monophylla	+	0.4 m	PI052.03	
Isotropis atropurpurea	+	0.2 m	PI145.10	
Mollugo molluginea	+	0.2 m	PI043.29	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI043.06	
Ptilotus astrolasius	+	0.2 m	PI056.18	
Ptilotus fusiformis	+	0.4 m	PI043.11	

Senna notabilis	+	0.3 m	PI043.09
Sida rohlenae subsp. *rohlenae*	+	0.3 m	PI069.07
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.2 m	PI043.14
Trianthema pilosa	+	0.2 m	PI052.09
Tribulus hirsutus	+	0.2 m	PI060.03
Triodia lanigera	12%	0.4 m	PI101.05
Yakirra australiensis var. *australiensis*	+	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
Acacia colei var. *colei*	2%	3 m	PI070.38	
Acacia inaequilatera	+	0.1 m	PI054.05	
Acacia stellaticeps	50%	1 m	PI070.01	
Acacia tumida var. *pilbarensis*	+	3.5 m	PI070.30	
Aristida holathera var. *holathera*	+	0.3 m	PI070.10	
Aristida inaequiglumis	+	1 m	PI070.24	
Bulbostylis barbata	+	0.1 m	PI070.17	
Chrysopogon fallax	+	1.1 m	PI070.21	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.4 m	PI070.02	
Drosera indica	+	0.1 m	PI053.11	
Dysphania saxatilis	+	0.1 m	PI053.07	
Eragrostis eriopoda	+	0.3 m	PI070.13	
Eriachne aristidea	+	0.3 m	PI070.28	
Eriachne mucronata	+	0.4 m	PI102.06	
Mitrasacme connata	+	0.2 m	PI072.07	
Paraneurachne muelleri	+	0.3 m	PI054.09	
Pluchea tetranthera	+	0.05 m	PI102.04	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI072.02	
Senna notabilis	+	0.15 m	PI070.14	
Sida fibulifera	+	cr	PI102.07	
Solanum lasiophyllum	+	0.5 m	PI070.37	
Synaptantha tillaeacea var. *tillaeacea*	+	cr	PI102.02	
Triodia epactia	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
Abutilon otocarpum	+	0.5 m	PI103.18	
Acacia stellaticeps	2%	0.6 m	PI065.01	
Acacia trudgeniana	+	2 m	PI065.31	
Acacia tumida var. *pilbarensis*	+	1-2 m	PI150.07	
**Aerva javanica*	+	0.6 m	PI103.07	
Amaranthus undulatus	+	0.3 m	PI045.16	
Aristida holathera var. *holathera*	5%	0.3 m	PI103.03	
Boerhavia coccinea	+	0.1 m	PI103.09	
Bulbostylis barbata	+	0.1 m	PI027.03	
**Cenchrus ciliaris*	1%	0.3 m	PI103.06	
Chrysopogon fallax	+	0.8 m	PI051.04	
Cleome viscosa	+	0.6 m	PI065.17	
Cucumis maderaspatanus	+	cl	PI045.15	
Eragrostis eriopoda	3%	0.3 m	PI103.02	
Eriachne aristidea	+	0.2 m	PI063.03	
Euphorbia australis	+	0.01 m	PI103.13	
Evolvulus alsinoides var. *villosicalyx*	+	0.2 m	PI103.19	
Grevillea pyramidalis subsp. *leucadendron*	+	0.3 m	PI065.29	
Indigofera colutea	+	0.2 m	PI103.11	
Indigofera monophylla	+	0.2 m	PI065.13	
Ipomoea muelleri	+	cl	PI103.12	
Ipomoea polymorpha	+	0.1 m	PI103.05	
Owenia reticulata	1%	2-3 m	PI103.01	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI058.10	
Portulaca pilosa	+	0.2 m	PI090.15	
Senna artemisioides subsp. *oligophylla x*	+	1-1.5 m	PI103.14	
Senna notabilis	+	0.1 m	PI051.12	
Sida rohlenae subsp. *rohlenae*	+	0.3 m	PI103.20	

Solanum ellipticum	+	0.2 m	PI103.10
Tinospora smilacina	+	cl	PI103.08
Trianthema pilosa	+	0.1 m	PI065.03
Triodia epactia	2%	0.4 m	PI103.17
Triodia lanigera	+	0.05 m	PI063.01
Triumfetta ramosa	+	0.4 m	PI103.16
Waltheria indica	+	0.3 m	PI103.15
Yakirra australiensis var. *australiensis*	+	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
Acacia ancistrocarpa	+	1.6 m	PI062.03	
Acacia colei var. *colei*	+	0.7 m	PI043.16	
Acacia inaequilatera	1%	1-2 m	PI049.06	
Acacia sericophylla	+	1.8 m	PI104.07	
Acacia stellaticeps	+ (6%)	0.1-0.6 m	PI043.01	
Aristida holathera var. *holathera*	+	0.4 m	PI049.07	
Boerhavia coccinea	+	prostrate	PI067.15	
Bonamia rosea	+	0.4 m	PI111.01	
Bulbostylis barbata	+	0.1 m	PI104.01	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.4 m	PI042.04	
Dentella asperata	+	prostrate	PI069.11	
Dysphania saxatilis	+	0.2 m	PI069.03	
Eragrostis eriopoda	+	0.4 m	PI047.02	
Eriachne aristidea	+	0.4 m	PI136.03	
Euphorbia australis	+	prostrate	PI104.02	
Evolvulus alsinoides var. *villosicalyx*	+	0.2 m	PI104.04	
Fimbristylis simulans	+	0.3 m	PI136.07	
Goodenia microptera	+	0.4 m	PI060.02	
Gossypium australe	+	0.6 m	PI104.08	
Hybanthus aurantiacus	+	0.4 m	PI043.13	
Indigofera linifolia	+	0.2 m	PI133.06	
Indigofera monophylla	+	0.4 m	PI052.03	
Mollugo molluginea	+	0.1 m	PI043.29	
Polycarpaea corymbosa var. *corymbosa*	+	0.2 m	PI043.06	
Ptilotus astrolasius	+	0.4 m	PI056.18	
Scaevola parvifolia subsp. *pilbarae*	+	0.3 m	PI104.05	
Senna notabilis	+	0.3 m	PI043.09	
Triodia lanigera	12%	0.4 m	PI104.03	
Triumfetta chaetocarpa	+	0.4 m	PI133.04	
Waltheria indica	+	0.7 m	PI104.06	
Yakirra australiensis var. *australiensis*	+	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
Abutilon otocarpum	+	0.4 m	PI105.13	
Acacia inaequilatera	+	3.2 m	PI054.05	
Acacia sericophylla	+	2.5 m	PI070.04	
Acacia stellaticeps	10%	0.5 m	PI070.01	
Acacia tumida var. *pilbarensis*	1%	2 m	PI070.30	
Achyranthes aspera	+	0.3 m	PIOPLD01a	
Amaranthus undulatus	+	0.2 m	PI105.06	
Aristida holathera var. *holathera*	+	0.4 m	PI070.10	
Bonamia alatisemina	+	cr	PI053.02	
Bulbostylis barbata	+	0.15 m	PI070.17	
Bulbostylis turbinata	+	0.3 m	PI105.03	
Chrysopogon fallax	+	1.2 m	PI070.21	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.2 m	PI070.02	
Corymbia zygophylla	+	3 m	PI105.07	
Crotalaria ramosissima	+	0.2 m	PI105.05	
Cucumis maderaspatanus	+	cr	PI147.17	
Dolichandrone heterophylla	+	0.5 m	PI108.10	
Dysphania saxatilis	+	0.15 m	PI053.07	
Eragrostis eriopoda	1%	0.3 m	PI070.13	
Eriachne mucronata	2%	0.3 m	PI105.02	
Euphorbia australis	+	cr	PI105.14	
Evolvulus alsinoides var. *villosicalyx*	+	cr	PI070.07	
Goodenia forrestii	+	0.3 m	PI131.07	
Goodenia microptera	+	0.4 m	PI096.01	
Gossypium australe	+	0.3 m	PI105.15	
Heliotropium inexplicitum	+	0.15 m	PI105.17	
Hibiscus brachychlaenus	+	0.3 m	PI105.18	
Hybanthus aurantiacus	+	0.4 m	PI099.02	

Indigofera monophylla	+	0.4 m	PI072.03	
Ipomoea polymorpha	+	0.1 m	PI105.10	Infected plant
Mollugo molluginea	+	0.1 m	PI070.35	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI072.02	
Portulaca pilosa	+	0.2 m	PI147.22	
Ptilotus fusiformis	+	0.3 m	PI070.22	
Schizachyrium fragile	+	0.2 m	PI110.05	
Sida rohlenae subsp. *rohlenae*	+	0.4 m	PI105.08	
Sida sp. dark green fruits (S. van Leeuwen 2260)	+	0.2 m	PI105.11	
Solanum ellipticum	+	0.3 m	PI073.12	
Solanum lasiophyllum	+	0.2 m	PI105.04	
Trianthema pilosa	+	cr	PI072.13	
Tribulus occidentalis	+	cr	PI105.09	
Triodia epactia	15%	0.4 m	PI105.01	
Triodia lanigera	10%	0.3 m	PI105.16	
Yakirra australiensis var. *australiensis*	+	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
Acacia stellaticeps	3%	0.8 m	PI065.01	
Acacia trudgeniana	+	2-2.5 m	PI065.31	
Acacia tumida var. *pilbarensis*	+	1-2 m	PI150.07	
**Aerva javanica*	+	0.5 m	PI103.07	
Aristida holathera var. *holathera*	2%	0.3 m	PI103.03	
Aristida inaequiglumis	+	0.8 m	PI058.04	
Boerhavia coccinea	+	0.1 m	PI103.09	
Bonamia rosea	+	0.3 m	PI106.06	
Bulbostylis barbata	+	0.1 m	PI027.03	
Chrysopogon fallax	+	0.6 m	PI051.04	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.3 m	PI094.08	
Cucumis maderaspatanus	+	cr	PI045.15	
Eragrostis eriopoda	+	0.3 m	PI103.02	
Eriachne aristidea	+	0.2 m	PI063.03	
Eriachne benthamii	1%	0.3 m	PI106.01	
Euphorbia australis	+	0.01 m	PI103.13	
Evolvulus alsinoides var. *villosicalyx*	+	0.05 m	PI103.19	
Fimbristylis oxystachya	+	0.2 m	PI025.05	
Grevillea pyramidalis subsp. *leucadendron*	+	2-3 m	PI065.29	
Hybanthus aurantiacus	+	0.3 m	PI043.13	
Indigofera colutea	+	0.1 m	PI103.11	
Ipomoea muelleri	+	cr	PI103.12	
Ipomoea polymorpha	+	0.05 m	PI106.07	
Owenia reticulata	++	0.3 m	PI103.01	
Perotis rara	+	0.1 m	PI106.11	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI058.10	
Polymeria calycina	+	0.05 m	PI106.10	
Ptilotus fusiformis	+	0.3 m	PI065.28	

Senna notabilis	+	0.2 m	PI051.12
Sida sp. verrucose glands (F.H. Mollemans 2423)	+	0.1 m	PI106.03
Solanum ellipticum	+	0.2 m	PI103.10
Tribulus hirsutus	+	0.05 m	PI106.08
Triodia epactia	4%	0.6 m	PI106.02
Triumfetta chaetocarpa	+	0.1 m	PI106.09
Triumfetta ramosa	+	0.3 m	PI103.16
Urochloa holosericea subsp. *velutina*	+	0.1 m	PI106.05
Waltheria indica	+	0.3 m	PI106.04
Yakirra australiensis var. *australiensis*	+	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
Acacia pyrifolia	out	1.4 m	PI107.03	
Acacia trachycarpa	out	1.2 m	PI107.02	
Melaleuca argentea	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
Abutilon otocarpum	+	0.4 m	PI108.04	
Abutilon pritzelianum MS	+	1 m	PI108.07	
Acacia inaequilatera	1%	2 m	PI054.05	
Acacia stellaticeps	10%	1.3 m	PI070.01	
Acacia tumida var. *pilbarensis*	5%	2.5 m	PI070.30	
**Aerva javanica*	+	0.6 m	PI147.05	
Amaranthus undulatus	+	0.5 m	PI147.06	
Aristida holathera var. *holathera*	50%	0.4 m	PI108.01	
Boerhavia coccinea	+	cr	PI108.09	
Bonamia media var. *villosa*	+	0.2 m	PI108.03	
Bulbostylis barbata	+	0.1 m	PI070.17	
Cleome viscosa	+	0.4 m	PI040.10	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.4 m	PI070.02	
Crotalaria ramosissima	+	0.3 m	PI108.15	
Cucumis maderaspatanus	+	cr	PI147.17	
Dolichandrone heterophylla	+	1.5 m	PI108.10	
Eragrostis eriopoda	+	0.4 m	PI070.13	
Eriachne aristidea	+	0.2 m	PI070.28	
Eriachne mucronata	5%	0.5 m	PI108.06	
Euphorbia alsiniflora	+	0.15 m	PI072.10	
Euphorbia australis	+	cr	PI108.12	
Evolvulus alsinoides var. *villosicalyx*	+	0.1 m	PI070.07	
Indigofera colutea	+	0.1 m	PI108.02	
Indigofera linifolia	+	0.3 m	PI108.14	
Indigofera monophylla	+	0.4 m	PI072.03	
Ipomoea muelleri	+	cr	PI108.11	
Mollugo molluginea	+	0.2 m	PI070.35	
Pimelea ammocharis	+	0.5 m	PI070.23	

Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI072.02
Portulaca pilosa	+	0.2 m	PI147.22
Senna notabilis	+	0.5 m	PI070.14
Sida fibulifera	+	cr	PI102.07
Sida rohlenae subsp. *rohlenae*	+	0.4 m	PI108.05
Solanum ellipticum	+	0.2 m	PI073.12
Solanum lasiophyllum	+	0.3 m	PI070.37
Triodia epactia	15%	0.4 m	PI108.08
Triumfetta chaetocarpa	+	0.2 m	PI108.13
Waltheria indica	+	0.5 m	PI053.14
Yakirra australiensis var. *australiensis*	+	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
Abutilon lepidum	+	0.3 m	PI109.09	
Acacia stellaticeps	3%	0.6 m	PI065.01	
Acacia trudgeniana	+	2-2.5 m	PI065.31	
Acacia tumida var. *pilbarensis*	+	1-2 m	PI150.07	
Amaranthus undulatus	+	0.3 m	PI109.07	
Aristida holathera var. *holathera*	+	0.3 m	PI066.11	
Aristida inaequiglumis	+	0.8 m	PI058.04	
Bonamia alatisemina	+	0.05 m	PI027.06	
Bonamia media var. *villosa*	+	0.05 m	PI109.03	
Bulbostylis barbata	+	0.1 m	PI027.03	
Cassytha capillaris	+	cl	PI051.06	
Chrysopogon fallax	+	0.6 m	PI051.04	
Corymbia candida subsp. *dipsodes*	3%	2-3 m	PI051.02	
Cucumis maderaspatanus	+	cl	PI045.15	
Dysphania saxatilis	+	0.05 m	PI058.12	
Eragrostis eriopoda	+	0.2 m	PI134.06	
Eriachne aristidea	+	0.2 m	PI063.03	
Eriachne mucronata	+	0.4 m	PI109.05	
Euphorbia australis	+	0.05 m	PI103.13	
Evolvulus alsinoides var. *villosicalyx*	+	0.1 m	PI063.10	
Grevillea pyramidalis subsp. *leucadendron*	+	1 m	PI065.29	
Hibiscus brachychlaenus	+	0.4 m	PI109.06	
Hibiscus sturtii var. *campylochlamys*	+	0.2 m	PI109.08	
Hybanthus aurantiacus	+	0.2 m	PI043.13	
Indigofera monophylla	+	0.3 m	PI065.13	
Ipomoea polymorpha	+	0.05 m	PI103.05	
Mollugo molluginea	+	0.1 m	PI132.04	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI058.10	

Ptilotus astrolasius	+	0.3 m	PI045.06
Ptilotus calostachyus	+	0.7 m	PI109.10
Ptilotus fusiformis	+	0.3 m	PI065.28
Scaevola parvifolia subsp. *pilbarae*	+	0.2 m	PI058.11
Senna notabilis	+	0.2 m	PI051.12
Sida rohlenae subsp. *rohlenae*	+	0.4 m	PI109.04
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.3 m	PI058.05
Solanum ellipticum	+	0.2 m	PI103.10
Tinospora smilacina	+	cl	PI103.08
Trianthema pilosa	+	0.1 m	PI065.03
Triodia epactia	11%	0.3 m	PI109.01
Triodia lanigera	6%	0.3 m	PI109.02
Urochloa holosericea subsp. *velutina*	+	0.1 m	PI106.05
Waltheria indica	+	0.3 m	PI106.04
Yakirra australiensis var. *australiensis*	+	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
Acacia ancistrocarpa	+	1.3 m	PI131.04	
Acacia inaequilatera	+	0.3 m	PI054.05	
Acacia sphaerostachya	+	1.2 m	PI110.07	
Acacia stellaticeps	5%	0.5 m	PI070.01	
Acacia tumida var. *pilbarensis*	+	1.5 m	PI070.30	
Aristida holathera var. *holathera*	+	0.2 m	PI110.02	
Aristida inaequiglumis	1%	0.7 m	PI070.24	
Bulbostylis barbata	+	0.15 m	PI070.17	
Cassytha capillaris	+	cl	PI055.03	
Chrysopogon fallax	+	0.3 m	PI070.21	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.2 m	PI070.02	
Cucumis maderaspatanus	+	cr	PI147.17	
Dysphania saxatilis	+	0.15 m	PI053.07	
Eragrostis eriopoda	+	0.3 m	PI070.13	
Eriachne aristidea	+	0.2 m	PI070.28	
Eriachne benthamii	+	0.3 m	PI110.04	
Eriachne mucronata	1%	0.3 m	PI102.06	
Eriachne pulchella subsp. *dominii*	+	0.15 m	PI131.03	
Euphorbia australis	+	cr	PI108.12	
Evolvulus alsinoides var. *villosicalyx*	+	0.1 m	PI110.03	
Goodenia forrestii	+	0.2 m	PI131.07	
Goodenia microptera	+	0.3 m	PI096.01	
Hakea lorea subsp. *lorea*	+	0.4 m	PI070.05	
Hibiscus brachychlaenus	+	0.5 m	PI110.09	
Hybanthus aurantiacus	+	0.5 m	PI099.02	
Indigofera monophylla	+	0.3 m	PI072.03	
Mollugo molluginea	+	0.2 m	PI070.35	
Paraneurachne muelleri	+	0.3 m	PI054.09	

Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI072.02
**Portulaca oleracea*	+	0.1 m	PI053.03
Portulaca pilosa	+	0.2 m	PI147.22
Ptilotus astrolasius	+	0.4 m	PI089.05
Ptilotus fusiformis	+	0.3 m	PI070.22
Scaevola parvifolia subsp. *pilbarae*	+	0.2 m	PI131.05
Schizachyrium fragile	+	0.2 m	PI110.05
Senna notabilis	+	0.2 m	PI070.14
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.6 m	PI070.03
Solanum ellipticum	+	0.2 m	PI073.12
Solanum lasiophyllum	+	0.2 m	PI070.37
Tribulus hirsutus	+	cr	PI110.10
Triodia epactia	+	0.4 m	PI110.06
Triodia lanigera	40%	0.4 m	PI110.01
Urochloa holosericea subsp. *velutina*	+	0.2 m	PI110.08
Yakirra australiensis var. *australiensis*	+	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
Acacia ancistrocarpa	+	1-2 m	PI062.03	
Acacia colei var. *colei*	+	1.5 m	PI043.16	
Acacia inaequilatera	+	1-2 m	PI049.06	
Acacia sphaerostachya	+	1.2 m	PI136.04	
Acacia stellaticeps	10%	0.7 m	PI043.01	
Boerhavia coccinea	+	prostrate	PI067.15	
Bonamia rosea	+	0.4 m	PI111.01	
Bulbostylis barbata	+	0.1 m	PI056.01	
Cassytha capillaris	+	cr	PI111.02	
Chrysopogon fallax	+	0.4 m	PI042.09	
Cleome viscosa	+	0.4 m	PI111.04	
Corymbia candida subsp. *dipsodes*	out	1.5 m	PI146.07	
Dysphania saxatilis	+	0.2 m	PI056.15	
Eragrostis eriopoda	+	0.4 m	PI047.02	
Eriachne aristidea	+	0.3 m	PI136.03	
Goodenia microptera	+	0.3 m	PI060.02	
Hakea lorea subsp. *lorea*	+	0.8 m	PI043.07	
Indigofera monophylla	+	0.4 m	PI052.03	
Mollugo molluginea	+	0.2 m	PI043.29	
Polycarpaea corymbosa var. *corymbosa*	+	0.2 m	PI043.06	
Senna notabilis	+	0.2 m	PI043.09	
Sida echinocarpa	+	0.2 m	PI111.03	
Triodia lanigera	9%	0.4 m	PI136.06	
Yakirra australiensis var. *australiensis*	+	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
Acacia sericophylla	+	0.9 m	PI090.17	
Acacia sphaerostachya	3%	1-1.5 m	PI134.01	
Acacia stellaticeps	3%	0.7 m	PI065.01	
Acacia trudgeniana	+	1-2 m	PI065.31	
Aristida holathera var. *holathera*	+	0.2 m	PI094.04	
Boerhavia coccinea	+	0.1 m	PI112.04	
Bonamia alatisemina	+	0.1 m	PI027.06	
Bonamia media var. *villosa*	+	0.1 m	PI112.11	
Bonamia rosea	+	0.3 m	PI090.02	
Bulbostylis barbata	+	0.1 m	PI090.18	
Chrysopogon fallax	+	0.6 m	PI051.04	
Cleome viscosa	+	0.2 m	PI112.06	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.1 m	PI094.08	
Corymbia zygophylla	2%	1-3 m	PI112.02	
Cucumis maderaspatanus	+	cr	PI045.15	
Dysphania saxatilis	+	0.1 m	PI090.11	
Eragrostis eriopoda	+	0.3 m	PI090.04	
Eriachne aristidea	+	0.2 m	PI063.03	
Eriachne mucronata	+	0.3 m	PI109.05	
Euphorbia australis	+	0.05 m	PI112.12	
Evolvulus alsinoides var. *villosicalyx*	+	0.1 m	PI112.05	
Fimbristylis oxystachya	+	0.1 m	PI025.05	
Goodenia microptera	+	0.2 m	PI112.09	
Hibiscus brachychlaenus	+	0.7 m	PI112.08	
Hybanthus aurantiacus	+	0.3 m	PI043.13	
Indigofera monophylla	+	0.2 m	PI065.13	
Mollugo molluginea	+	0.1 m	PI132.04	
Paraneurachne muelleri	+	0.2 m	PI058.06	

Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI058.10
Ptilotus astrolasius	+	0.3 m	PI090.03
Senna artemisioides subsp. *oligophylla*	+	1 m	PI112.10
Senna artemisioides subsp. *oligophylla* x subsp. *helmsii*	+	1 m	PI112.07
Senna notabilis	+	0.3 m	PI051.12
Trianthema pilosa	+	0.1 m	PI065.03
Triodia epactia	30%	0.6 m	PI112.03
Triodia lanigera	4%	0.4 m	PI112.01
Waltheria indica	+	0.1 m	PI103.15
Yakirra australiensis var. *australiensis*	+	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
Acacia colei var. *colei*	15%	1-3 m	PI043.16	
Acacia stellaticeps	+	0.3 m	PI043.01	
Aristida holathera var. *holathera*	+	0.3 m	PI049.07	
Bulbostylis barbata	+	0.1 m	PI104.01	
Chrysopogon fallax	+	0.5 m	PI042.09	
Corchorus tectus	+	0.5 m	PI030.02	
Corymbia hamersleyana	2%	3 m	PI113.01	
Eragrostis cumingii	+	0.4 m	PI113.04	
Eragrostis eriopoda	+	0.4 m	PI047.02	
Eucalyptus victrix	2%	6-10 m	PI113.02	
Goodenia lamprosperma	+	0.4 m	PI043.21	
Hybanthus aurantiacus	+	0.4 m	PI043.13	
Indigofera monophylla	+	0.4 m	PI052.03	
Mimulus gracilis	+	0.1 m	PI092.05	
Mollugo molluginea	+	0.2 m	PI043.29	
Polymeria ambigua	+	cr	PI113.05	
Rhynchosia minima	+	cr	PI113.03	
Senna notabilis	+	0.4 m	PI043.09	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.5 m	PI043.14	
Triodia epactia	15%	0.4 m	PI113.06	
Yakirra australiensis var. *australiensis*	+	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
Acacia ancistrocarpa	+	0.3 m	PI086.05	
Acacia colei var. *colei*	+	0.5 m	PI070.38	
Acacia inaequilatera	+	1.2 m	PI054.05	
Acacia sericophylla	+	0.6 m	PI099.13	
Acacia stellaticeps	+	0.2 m	PI070.01	
Acacia tumida var. *pilbarensis*	+	0.6 m	PI070.30	
Aristida holathera var. *holathera*	2%	0.5 m	PI070.10	
Bonamia alatisemina	+	cr	PI053.02	
Bulbostylis barbata	+	0.1 m	PI070.17	
Calandrinia pumila	+	cr	PI086.02	
Chrysopogon fallax	+	1.2 m	PI070.21	
Cleome viscosa	+	0.3 m	PI099.07	
Corchorus tectus	+	0.3 m	PI095.02	
Corymbia candida subsp. *dipsodes*	+	3 m	PI088.08	
Cyperus cunninghamii subsp. *cunninghamii*	+	0.5 m	PI114.08	
Eragrostis eriopoda	+	0.3 m	PI088.07	
Eriachne mucronata	+	0.3 m	PI114.03	
Eucalyptus camaldulensis subsp. *refulgens*	4%	6 m	PI068.01	
Fimbristylis simulans	+	0.1 m	PI072.08	
Goodenia lamprosperma	+	0.3 m	PI086.04	
Goodenia microptera	+	0.4 m	PI096.01	
Hakea lorea subsp. *lorea*	+	0.9 m	PI070.05	
Heliotropium muticum	+	0.3 m	PI114.04	
Hybanthus aurantiacus	+	0.4 m	PI099.02	
Indigofera monophylla	1%	0.3 m	PI072.03	
Isotropis atropurpurea	+	0.4 m	PI114.07	
Mimulus gracilis	+	0.1 m	PI114.05	
Mollugo molluginea	+	0.15 m	PI070.35	

Pluchea tetranthera	+	0.4 m	PI088.09
Polymeria ambigua	+	cr	PI086.06
Polymeria calycina	+	cr	PI114.06
**Portulaca oleracea*	+	0.1 m	PI086.11
Ptilotus fusiformis	+	0.3 m	PI070.22
Senna notabilis	+	0.2 m	PI070.14
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI070.03
Stackhousia muricata	+	0.2 m	PI114.02
Triodia epactia	30%	0.4 m	PI114.01
Triodia lanigera	2%	0.3 m	PI114.09
Yakirra australiensis var. *australiensis*	+	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
Acacia colei var. *colei*	+	0.5 m	PI070.38	
Acacia stellaticeps	+	0.5 m	PI070.01	
Acacia synchronicia	+	0.3 m	PI115.20	
Acacia trachycarpa x *tumida*	+	0.5 m	PI099.14	
Bonamia rosea	+	0.2 m	PI088.02	
Calandrinia pentavalvis	+	0.1 m	PI072.14	
Carissa lanceolata	1%	0.9 m	PI086.09	
Cassytha capillaris	+	cl	PI055.03	
Centipeda minima subsp. *macrocephala*	+	0.2 m	PI115.06	
Chrysopogon fallax	1%	1.2 m	PI070.21	
Cleome viscosa	+	0.5 m	PI040.10	
Corchorus tectus	+	0.4 m	PI095.02	
Ehretia saligna var. *saligna*	+	1 m	PI115.24	
Eragrostis tenellula	+	0.2 m	PI115.15	
Eriachne benthamii	+	0.6 m	PI115.10	
Eriachne glauca var. *glauca*	+	0.15 m	PI115.05	
Eucalyptus camaldulensis subsp. *refulgens*	15%	4 m	PI115.01	
Eulalia fulva	+	0.6 m	PI115.07	
Euphorbia alsiniflora	+	0.3 m	PI072.10	
Goodenia lamprosperma	+	0.2 m	PI086.04	
Goodenia triodiophila	+	0.3 m	PI115.23	
Hakea lorea subsp. *lorea*	+	1 m	PI099.12	
Indigofera monophylla	+	0.3 m	PI072.03	
Ipomoea coptica	+	cr	PI115.13	
Mollugo molluginea	+	0.1 m	PI070.35	
Neptunia dimorphantha	+	cr	PI115.14	
Panicum decompositum	2%	0.8 m	PI115.11	
Phyllanthus maderaspatensis	+	0.8 m	PI115.08	

Pluchea ferdinandi-muelleri	+	0.5 m	PI115.21
Pluchea rubelliflora	+	0.2 m	PI115.04
Polymeria ambigua	+	cr	PI086.06
Pterocaulon sphaeranthoides	+	0.5 m	PI115.09
Ptilotus fusiformis	+	0.3 m	PI070.22
Senna artemisioides subsp. *oligophylla* x	+	0.9 m	PI115.22
Sesbania cannabina	+	0.5 m	PI115.12
Streptoglossa decurrens	+	0.3 m	PI115.18
Tinospora smilacina	+	cr	PI087.09
Trianthema triquetra	+	0.1 m	PI115.19
Triodia epactia	45%	0.5 m	PI115.02
Triodia longiceps	+	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
Acacia ancistrocarpa	+	1 m	PI116.07	
Acacia stellaticeps	+	0.3 m	PI065.01	
Acacia trudgeniana	+	0.8 m	PI065.31	
Aristida holathera var. *holathera*	+	0.2 m	PI094.04	
Bonamia alatisemina	+	0.1 m	PI027.06	
Bulbostylis barbata	+	0.1 m	PI090.18	
Corchorus tectus	+	0.3 m	PI091.07	
Eragrostis pergracilis	+	0.05 m	PI116.05	
Euphorbia alsiniflora	+	0.1 m	PI116.09	
Euphorbia australis	+	0.01	PI103.13	
Goodenia microptera	+	0.3 m	PI090.14	
Goodenia triodiophila	+	0.3 m	PI091.03	
Heliotropium muticum	+	0.2 m	PI116.03	15 ind within quadrat. Mostly occurring on the west side.
Hybanthus aurantiacus	+	0.2 m	PI043.13	
Indigofera monophylla	+	0.3 m	PI116.02	
Isotropis atropurpurea	+	0.2 m	PI125.05	
Mollugo molluginea	+	0.1 m	PI132.04	
Pluchea rubelliflora	+	0.2 m	PI080.02	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI058.10	
Polymeria ambigua	+	cr	PI117.10	
Polymeria calycina	+	0.1 m	PI116.08	
**Portulaca oleracea*	+	0.1 m	PI128.04	
Ptilotus fusiformis	+	0.3 m	PI065.28	
Senna notabilis	+	0.2 m	PI051.12	
Sporobolus australasicus	+	0.2 m	PI066.02	
Streptoglossa decurrens	+	0.2 m	PI116.11	
Tephrosia supina	+	0.2 m	PI116.10	
Tephrosia uniovulata	+	0.3 m	PI116.04	
Triodia lanigera	3%	0.3 m	PI116.01	
Yakirra australiensis var. *australiensis*	+	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
Acacia bivenosa	+	0.3 m	PI117.05	
Acacia sericophylla	2%	1 m	PI117.14	
Acacia sphaerostachya	+	0.5 m	PI134.01	
Acacia trudgeniana	+	0.5-1.5 m	PI065.31	
Alternanthera nana	+	0.1 m	PI094.07	
Amaranthus undulatus	+	0.3 m	PI117.08	
Aristida holathera var. *holathera*	+	0.2 m	PI117.13	
Boerhavia coccinea	+	cr	PI117.17	
Bonamia alatisemina	+	0.1 m	PI117.11	
Bonamia rosea	+	0.4 m	PI090.02	
Bulbostylis barbata	+	0.1 m	PI027.03	
Calandrinia pumila	+	0.01 m	PI045.18	
Cleome viscosa	+	0.2 m	PI112.06	
Corchorus tectus	+	0.3 m	PI091.07	
Dysphania saxatilis	+	0.1 m	PI090.11	
Eriachne aristidea	+	0.2 m	PI063.03	
Eriachne mucronata	+	0.2 m	PI117.12	
Eucalyptus camaldulensis subsp. refulgens	1%	2-3 m	PI117.01	
Euphorbia alsiniflora	+	0.2 m	PI117.03	
Evolvulus alsinoides var. *villosicalyx*	+	0.1 m	PI117.06	
Goodenia microptera	+	0.3 m	PI112.09	
Heliotropium muticum	+	0.2 m	PI117.04	7 ind. Within quadrat
Hybanthus aurantiacus	+	0.1 m	PI043.13	
Indigofera monophylla	1%	0.4 m	PI065.13	
Mollugo molluginea	+	0.1 m	PI132.04	
Paraneurachne muelleri	+	0.2 m	PI117.09	
Paspalidium tabulatum	1%	0.2 m	PI117.07	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI058.10	

Polycarpaea holtzei	+	0.05 m	PI117.16
Polymeria ambigua	+	cr	PI117.10
Polymeria calycina	+	0.1 m	PI125.06
Ptilotus calostachyus	+	0.8 m	PI109.10
Ptilotus fusiformis	+	0.4 m	PI065.28
Senna notabilis	+	0.2 m	PI051.12
Sida sp. B Kimberley Flora (A.A. Mitchell 2745)	+	0.2 m	PI150.06
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI058.05
Solanum ellipticum	+	0.6 m	PI065.26
Sporobolus australasicus	+	0.1 m	PI117.15
Swainsona formosa	+	0.3 m	PIR151.06
Tephrosia supina	+	0.1 m	PI125.08
Tephrosia uniovulata	+	0.3 m	PI128.07
Triodia lanigera	+	0.2 m	PI117.02
Yakirra australiensis var. *australiensis*	+	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
Acacia colei var. *colei*	5%	0.9 (3) m	PI070.38	
Acacia inaequilatera	+	0.9 m	PI054.05	
Bonamia alatisemina	+	clPI053.02		
Bulbostylis barbata	+	0.1 m	PI070.17	
Cajanus cinereus	+	0.5 m	PI118.14	
Calandrinia pentavalvis	+	0.1 m	PI072.14	
Calandrinia pumila	+	cr	PI086.02	
Chrysopogon fallax	1%	1 m	PI070.21	
Cleome viscosa	+	0.4 m	PI099.07	
Corchorus lasiocarpus subsp. *lasiocarpus*	5%	0.4 m	PI070.02	
Corchorus tectus	+	0.3 m	PI095.02	
Crotalaria ramosissima	+	0.3 m	PI089.02	
Dactyloctenium radulans	+	0.1 m	PI118.12	
Desmodium filiforme	+	cr	PI118.13	
Dysphania saxatilis	+	0.3 m	PI053.07	
Eragrostis cumingii	2%	0.2 m	PI118.05	
Eriachne aristidea	1%	0.3 m	PI118.02	
Euphorbia alsiniflora	+	0.3 m	PI072.10	
Euphorbia australis	+	cr	PI108.12	
Evolvulus alsinoides var. *villosicalyx*	+	0.3 m	PI118.09	
Fimbristylis dichotoma	1%	0.4 m	PI081.07	
Goodenia lamprosperma	+	0.3 m	PI118.06	
Goodenia microptera	+	0.4 m	PI096.01	
Heliotropium muticum	1%	0.3 m	PI118.08	
Heliotropium ovalifolium	+	0.4 m	PI118.07	
Hibiscus burtonii	+	0.5 m	PI118.10	
Hybanthus aurantiacus	+	0.4 m	PI099.02	
Indigofera monophylla	1%	0.3 m	PI072.03	

Mollugo molluginea	+	0.1 m	PI070.35	
Pluchea rubelliflora	+	0.2 m	PI127.05	
Pluchea tetranthera	+	0.1 m	PI118.03	
Polycarpaea corymbosa var. *corymbosa*	+	0.15 m	PI072.02	
Polymeria calycina	+	cr	PI118.04	
**Portulaca oleracea*	+	0.1 m	PI086.11	
Ptilotus fusiformis	+	0.3 m	PI070.22	
Senna notabilis	+	0.2 m	PI070.14	
Sida rohlenae subsp. *rohlenae*	+	0.3 m	PI105.08	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	2%	0.6 m	PI118.11	
Solanum lasiophyllum	+	0.5 m	PI070.37	
Sporobolus australasicus	+	0.1 m	PI037.07	
Streptoglossa decurrens	+	0.2 m	PI115.18	
Tephrosia simplicifolia	+	0.1 m	PI032.08	Range ext
Tephrosia uniovulata	+	0.2 m	PI099.03	
Triodia epactia	3%	0.3 m	PI118.01	
Waltheria indica	+	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
Acacia trachycarpa	2%	3 m	PI068.03	
**Aerva javanica*	+	0.6 m	PI147.05	
Amaranthus undulatus	+	0.4 m	PI120.10	
Ammannia multiflora	+	0.3 m	PI120.04	
Cajanus cinereus	+	2 m	PI119.04	
Calandrinia pentavalvis	+	0.1 m	PI072.14	
Cassytha capillaris	+	cr	PI055.03	
**Cenchrus ciliaris*	15%	0.5 m	PI070.29	
Chloris pectinata	3%	0.3 m	PI120.05	
Cleome viscosa	+	0.4 m	PI040.10	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.5 m	PI070.02	
Crotalaria cunninghamii subsp. *sturtii*	+	0.5 m	PI120.09	
Cucumis maderaspatanus	+	cr	PI147.17	
Cynanchum floribundum	+	cr	PI119.07	
Cyperus vaginatus	+	0.7 m	PI068.16	
Desmodium filiforme	+	cr	PI046.11	
Eragrostis cumingii	+	0.2 m	PI118.05	
Eragrostis tenellula	+		PI119.06	
Eucalyptus camaldulensis subsp. *refulgens*	1%	8 m	PI068.01	
Euphorbia alsiniflora	+	0.2 m	PI123.36	
**Flaveria trinervia*	+	0.4 m	PI120.16	
Goodenia lamprosperma	+	0.3 m	PI094.05	
Hibiscus austrinus var. *austrinus*	+	0.8 m	PI120.06	
Hybanthus aurantiacus	+	0.6 m	PI099.02	
Melaleuca lasiandra	18%	3 m	PI120.01	
Phyllanthus maderaspatensis	+	0.1 m	PI119.03	
Pluchea rubelliflora	+	0.3 m	PI119.09	
Polycarpaea longiflora	+	0.3 m	PI119.01	

Polymeria ambigua	+	cr	PI086.06
Pterocaulon sphaeranthoides	+	0.3 m	PI119.05
Sesbania cannabina	+	0.9 m	PI120.02
Streptoglossa decurrens	+	0.2 m	PI115.18
Striga squamigera	+	0.1 m	PI120.17
Tephrosia sp. B Kimberley Flora (C.A. Gardner 7300)	+	0.2 m	PI120.15
Triodia epactia	2%	0.4 m	PI119.02
Wahlenbergia tumidifructa	+	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
Acacia ampliceps	+	0.5 m	PI068.19	
Acacia colei var. *colei*	+	1.5 m	PI070.38	
Acacia trachycarpa	+	0.9 m	PI068.03	
**Aerva javanica*	+	0.5 m	PI147.05	
Amaranthus undulatus	+	0.3 m	PI120.10	
Ammannia multiflora	1%	0.4 m	PI120.04	
Calandrinia pentavalvis	+	cr	PI072.14	
Cassytha capillaris	+	cr	PI055.03	
**Cenchrus ciliaris*	3%	0.5 m	PI070.29	
Chloris pectinata	(8%)	0.5 m	PI120.05	
Chrysopogon fallax	+	1.2 m	PI070.21	
Cleome viscosa	+	0.5 m	PI040.10	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.5 m	PI070.02	
Crotalaria cunninghamii subsp. *sturtii*	+	0.4 m	PI120.09	
Cyperus cunninghamii subsp. *cunninghamii*	+	0.1 m	PI120.11	
Cyperus vaginatus	+	0.6 m	PI068.16	
Eragrostis cumingii	+	0.2 m	PI118.05	
**Eragrostis curvula*	+	6.6 m	PI120.08	Range extension
Eucalyptus camaldulensis subsp. *refulgens*	1%	4 m	PI068.01	
Fimbristylis littoralis	+	0.2 m	PI120.03	
**Flaveria trinervia*	+	0.5 m	PI120.16	
Hibiscus austrinus var. *austrinus*	+	1 m	PI120.06	
Melaleuca argentea	1%	3 m	PI068.10	
Melaleuca lasiandra	10%	3 m	PI120.01	
**Physalis angulata*	+	0.3 m	PI120.13	Range extension
Pluchea rubelliflora	+	0.1 m	PI127.05	
Sesbania cannabina	+	0.5 m	PI120.02	
Stemodia viscosa	+	0.5 m	PI120.12	

Streptoglossa decurrens	+	0.2 m	PI115.18
Striga squamigera	+	0.5 m	PI120.17
Tephrosia sp. B Kimberley Flora (C.A. Gardner 7300)	+	0.5 m	PI120.15
Triodia epactia	+	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
Acacia bivenosa	+	1 m	PI121.09	
Bulbostylis barbata	+	0.2 m	PI121.05	
Calandrinia pentavalvis	+	0.2 m	PI123.38	
**Cenchrus ciliaris*	+	0.3 m	PI103.06	
Corchorus tectus	+	0.3 m	PI123.35	
Euphorbia alsiniflora	+	0.2 m	PI123.36	
Fimbristylis dichotoma	+	0.3 m	PI121.06	
Pluchea tetranthera	+	0.2 m	PI121.08	
Portulaca pilosa	+	0.2 m	PI123.17	
Sporobolus actinocladus	1%	0.3 m	PI121.04	
Sporobolus australasicus	20%	0.2 m	PI121.01	
Streptoglossa decurrens	+	0.3 m	PI121.02	
Trianthema triquetra	+	0.2 m	PI121.03	
Triodia secunda	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
Acacia colei var. *colei*	1%	5 m	PI122.07	
Acacia stellaticeps	5%	0.7 m	PI043.01	
Acacia synchronicia	+	1.5 m	PI140.10	
Acacia trachycarpa	3%	3-4 m	PI107.02	
Acacia trachycarpa x *tumida*	1%	5 m	PI122.06	
Achyranthes aspera	+	0.6 m	PI122.05	
Aristida holathera var. *holathera*	+	0.4 m	PI049.07	
Bulbostylis barbata	+	0.1 m	PI129.01	
Cajanus cinereus	+	1.2 m	PI122.10	
Calandrinia stagnensis	+	0.2 m	PI145.04	
**Cenchrus ciliaris*	1%	0.5 m	PI052.06	
Cleome viscosa	(+)	0.5 m	NC	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.4 m	PI042.04	
Corchorus tectus	+	0.4 m	PI030.02	
Corymbia candida subsp. *dipsodes*	2%	8-10 m	PI146.07	
Crotalaria ramosissima	+	0.3 m	PI029.01	
Cyperus vaginatus	+	0.7 m	PI122.11	
Eragrostis cumingii	+	0.3 m	PI113.04	
Fimbristylis dichotoma	+	0.2 m	PI049.15	
Gossypium australe	+	0.5 m	PI104.08	
Hibiscus austrinus var. *austrinus*	+	0.4 m	PI122.04	
Indigofera colutea	+	0.1 m	PI122.03	
Indigofera hirsuta	+	0.4 m	PI122.02	
Indigofera monophylla	+	0.4 m	PI052.03	
Pluchea rubelliflora	+	0.4 m	PI122.01	
Pluchea tetranthera	+	0.3 m	PI064.02	
Polycarpaea corymbosa var. *corymbosa*	+	0.2 m	PI043.06	
Portulaca pilosa	+	0.2 m	PI030.01	

Senna notabilis	+	0.2 m	PI043.09
Sida clementii	+	0.5 m	PI100.02
Sida rohlenae subsp. *rohlenae*	+	0.6 m	PI069.07
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI043.14
Sporobolus australasicus	+	0.2 m	PI145.03
Streptoglossa decurrens	+	0.4 m	PI122.08
Striga squamigera	+	0.3 m	PI122.09
Trianthema pilosa	+	0.2 m	PI052.09
Triodia epactia	25%	0.4 m	PI122.12
Waltheria indica	+	0.1 m	PI122.13
Yakirra australiensis var. *australiensis*	+	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
Abutilon lepidum	+	0.3 m	PI123.31	
Acacia ancistrocarpa	+	1.5 m	PI123.13	
Acacia inaequilatera	1%	1-2 m	PI123.15	
Acacia maitlandii	+	1 m	PI123.01	
Acacia orthocarpa	1%	1 m	PI123.34	
Acacia tumida var. *pilbarensis*	3%	0.5-1 m	PI123.08	
Amaranthus undulatus	+	0.3 m	PI123.32	
Aristida holathera var. *holathera*	10%	0.3 m	PI123.18	
Boerhavia coccinea	+	cr	PI123.29	
Bonamia rosea	1%	0.3 m	PI123.05	
Calandrinia pentavalvis	+	0.3 m	PI123.38	
**Cenchrus ciliaris*	1%	0.3 m	PI103.06	
Cleome viscosa	+	0.3 m	PI065.17	
Corchorus tectus	+	0.3 m	PI123.35	
Eriachne ciliata	1%	0.2 m	PI123.19	
Euphorbia alsiniflora	+	0.3 m	PI123.36	
Euphorbia australis	+	0.1 m	PI123.11	
Evolvulus alsinoides var. *villosicalyx*	+	0.2 m	PI123.25	
Gomphrena cunninghamii	+	0.2 m	PI123.10	
Goodenia microptera	+	0.3 m	PI123.12	
Goodenia stobbsiana	+	0.3 m	PI123.23	
Gossypium australe	+	0.4 m	PI123.24	
Grevillea pyramidalis subsp. *leucadendron*	+	1.5 m	PI123.39	
Hibiscus sturtii var. *campylochlamys*	+	0.3 m	PI123.16	
Hybanthus aurantiacus	1%	0.3 m	PI123.21	
Indigofera monophylla	+	0.3 m	PI123.02	
Mollugo molluginea	+	0.2 m	PI123.09	
Polycarpaea holtzei	+	0.1 m	PI123.07	

Polygala isingii	+	0.1 m	PI123.14	
Portulaca pilosa	+	0.2 m	PI123.17	
Ptilotus calostachyus	+	0.3 m	PI109.10	
Senna glutinosa subsp. *glutinosa*	+	0.6 m	PI123.22	
Senna notabilis	+	0.4 m	PI123.20	
Sida rohlenae subsp. *rohlenae*	+	0.3 m	PI123.26	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI123.04	
Solanum diversiflorum	+	0.3 m	PI048.09	
Solanum ellipticum	+	1 m	PI065.26	
Tephrosia simplicifolia	+	0.3 m	PI123.37	Range ext
Tephrosia supina	+	0.1 m	PI123.06	
Tinospora smilacina	+	cr	PI123.28	
Trachymene oleracea subsp. *oleracea*	+	0.3 m	PI123.30	
Triodia epactia	10%	0.3 m	PI123.33	
Waltheria indica	+	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
Acacia bivenosa	2%	1-2 m	PI117.05	
Acacia sphaerostachya	+	1 m	PI134.01	
Acacia stellaticeps	4%	0.6 m	PI065.01	
Acacia trudgeniana	1%	1-3 m	PI065.31	
Aristida holathera var. *holathera*	(+)	0.3 m	PI090.08	
Bonamia rosea	+	0.3 m	PI090.02	
Bulbostylis barbata	+	0.1 m	PI090.18	
Cleome viscosa	+	0.3 m	PI065.17	
Corchorus tectus	+	0.2 m	PI091.07	
Cullen cinereum	+	0.2 m	PI124.02	
Eriachne pulchella subsp. *dominii*	(+)	0.1 m	PI128.03	
Euphorbia alsiniflora	+	0.2 m	PI117.03	
Euphorbia australis	+	0.3 m	PI139.02	
Gossypium australe	+	0.2 m	PI124.06	
Heliotropium muticum	+	0.2 m	PI124.07	
Hibiscus brachychlaenus	+	0.2 m	PI134.04	
Hybanthus aurantiacus	+	0.2 m	PI043.13	
Indigofera monophylla	+	0.3 m	PI065.13	
Mollugo molluginea	+	0.1 m	PI132.04	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI058.10	
Polycarpaea holtzei	+	0.05 m	PI117.16	
Polymeria ambigua	+	cr	PI117.10	
Polymeria calycina	+	0.1 m	PI125.06	
**Portulaca oleracea*	+	0.1 m	PI128.04	
Ptilotus astrolasius	+	0.3 m	PI090.03	
Ptilotus fusiformis	+	0.3 m	PI065.28	
Salsola tragus subsp. *grandiflora*	+	0.3 m	PI124.05	
Senna notabilis	+	0.3 m	PI051.12	

Sida sp. B Kimberley Flora (A.A. Mitchell 2745)	+	0.3 m	PI150.06
Swainsona formosa	+	0.3 m	PIR151.06
Tephrosia supina	+	0.1 m	PI125.08
Tribulus hirsutus	+	0.1 m	PI106.08
Triodia epactia	2%	0.3 m	PI124.04
Triodia lanigera	18%	0.3 m	PI124.01
Yakirra australiensis var. *australiensis*	+	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
Acacia inaequilatera	2%	0.5-2 m	PI125.01	
Acacia sphaerostachya	+	0.8 m	PI134.01	
Acacia stellaticeps	+	0.6 m	PI065.01	
Bonamia alatisemina	+	0.1 m	PI027.06	
Bonamia rosea	+	0.2 m	PI090.02	
Bulbostylis barbata	+	0.1 m	PI090.18	
Cleome viscosa	+	0.2 m	PI065.17	
Corchorus tectus	+	0.3 m	PI091.07	
Eriachne pulchella subsp. *dominii*	(+)	0.1 m	PI128.03	
Euphorbia australis	+	0.05 m	PI103.13	
Gomphrena cunninghamii	+	0.1 m	PI125.10	
Goodenia microptera	+	0.3 m	PI112.09	
Gossypium australe	+	0.4 m	PI125.09	
Heliotropium muticum	+	0.2 m	PI125.02	
Hybanthus aurantiacus	+	0.1 m	PI043.13	
Indigofera monophylla	+	0.2 m	PI065.13	
Isotropis atropurpurea	+	0.4 m	PI125.05	
Keraudrenia velutina subsp. *elliptica*	+	0.3 m	PI134.07	
Mollugo molluginea	+	0.1 m	PI132.04	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI058.10	
Polymeria calycina	+	0.1 m	PI125.06	
**Portulaca oleracea*	+	0.05 m	PI128.04	
Ptilotus axillaris	+	cr	PI125.11	
Ptilotus fusiformis	+	0.2 m	PI065.28	
Sporobolus australasicus	+	0.1 m	PI066.02	
Tephrosia supina	+	0.1 m	PI125.08	
Tephrosia uniovulata	+	0.4 m	PI128.07	
Triodia epactia	8%	0.4 m	PI125.04	
Triodia lanigera	6%	0.4 m	PI125.03	
Yakirra australiensis var. *australiensis*	+	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 quadrate not so much.

SPECIES LIST:

Name	Cover	Height	Specimen	Notes
Acacia sphaerostachya	2%	0.3-2 m	PI134.01	
Acacia trudgeniana	+	1-2 m	PI065.31	
Acacia tumida var. *pilbarensis*	+	1 m	PI150.07	
Aristida holathera var. *holathera*	+	0.2 m	PI094.04	
Bonamia alatisemina	+	cr	PI117.11	
Bonamia rosea	+	0.3 m	PI090.02	
Bulbostylis barbata	+	0.1 m	PI090.18	
Cleome viscosa	+	0.2 m	PI112.06	
Corchorus tectus	1%	0.2 m	PI091.07	
Dysphania saxatilis	+	0.1 m	PI090.11	
Eriachne pulchella subsp. *dominii*	+	0.1 m	PI128.03	
Goodenia microptera	+	0.3 m	PI112.09	
Heliotropium muticum	+	0.2 m	PI126.02	
Hibiscus brachychlaenus	+	0.5 m	PI134.04	
Indigofera monophylla	2%	0.2 m	PI065.13	
Isotropis atropurpurea	8%	0.4 m	PI126.03	
Mollugo molluginea	+	0.1 m	PI132.04	
Paraneurachne muelleri	+	0.2 m	PI117.09	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI058.10	
Polymeria ambigua	+	cr	PI117.10	
Polymeria calycina	+	cr	PI125.06	
**Portulaca oleracea*	+	0.05 m	PI128.04	
Ptilotus astrolasius	+	0.3 m	PI090.03	
Ptilotus calostachyus	+	1.2 m	PI109.10	
Ptilotus fusiformis	+	0.3 m	PI065.28	
Senna curvistyla	+	0.1 m	PI126.04	
Senna notabilis	+	0.05 m	PI051.12	

Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.3 m	PI058.05
Solanum diversiflorum	+	0.2 m	PI048.09
Tephrosia uniovulata	1%	0.4 m	PI128.07
Trianthema pilosa	+	0.1 m	PI065.03
Tribulus hirsutus	+	0.1 m	PI126.05
Triodia lanigera	4%	0.2 m	PI126.01
Yakirra australiensis var. *australiensis*	+	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
Acacia ancistrocarpa	1%	0.3 m	PI086.05	
Acacia colei var. *colei*	1%	1.5 m	PI070.38	
Acacia inaequilatera	+	1 m	PI054.05	
Acacia stellaticeps	10%	0.3 m	PI070.01	
Acacia tumida var. *pilbarensis*	1%	0.6 m	PI070.30	
Aristida holathera var. *holathera*	+	0.3 m	PI070.10	
Bonamia alatisemina	+	cr	PI053.02	
Bulbostylis barbata	+	0.1 m	PI070.17	
Calandrinia pentavalvis	+	0.1 m	PI072.14	
Calandrinia pumila	+	cr	PI086.02	
Chrysopogon fallax	+	1.2 m	PI070.21	
Cleome viscosa	+	0.3 m	PI099.07	
Corchorus tectus	+	0.3 m	PI095.02	
Drosera indica	+	0.05 m	PI053.11	
Eriachne pulchella subsp. *dominii*	+	0.15 m	PI127.04	
Eriachne glauca var. *glauca*	+	0.1 m	PI127.03	
Eucalyptus camaldulensis subsp. *refulgens*	+	5 m	PI068.01	
Goodenia lamprosperma	+	0.3 m	PI086.04	
Goodenia microptera	+	0.2 m	PI096.01	
Goodenia triodiophila	+	0.3 m	PI127.06	
Hakea lorea subsp. lorea	+	0.6 m	PI070.05	
Hybanthus aurantiacus	+	0.4 m	PI099.02	
Indigofera monophylla	+	0.2 m	PI072.03	
Isotropis atropurpurea	2%	0.3 m	PI114.07	
Mollugo molluginea	+	0.1 m	PI070.35	
Pluchea rubelliflora	+	0.15 m	PI127.05	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI072.02	
Polymeria ambigua	+	cr	PI086.06	

**Portulaca oleracea*	+	0.1 m	PI086.11
Ptilotus fusiformis	+	0.4 m	PI070.22
Senna notabilis	+	0.1 m	PI070.14
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI070.03
Solanum lasiophyllum	+	0.3 m	PI105.04
Stackhousia muricata	+	0.1 m	PI114.02
Stylidium desertorum	+	0.1 m	PI127.02
Triodia epactia	40%	0.3 m	PI127.01
Yakirra australiensis var. *australiensis*	+	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
Acacia colei var. *colei*	+	0.6 m	PI091.12	
Acacia sphaerostachya	1%	0.8 m	PI134.01	
Acacia stellaticeps	1%	0.4 m	PI065.01	
Acacia trudgeniana	3%	1-2 m	PI065.31	
Acacia tumida var. *pilbarensis*	+	1-1.5 m	PI150.07	
Aristida holathera var. *holathera*	+	0.1 m	PI094.04	
Bonamia alatisemina	+	0.1 m	PI027.06	
Bulbostylis barbata	+	0.05 m	PI066.04	
Cassytha capillaris	+	cr	PI091.09	
Cleome viscosa	+	0.3 m	PI112.06	
Corchorus tectus	+	0.3 m	PI091.07	
Dysphania saxatilis	+	0.1 m	PI090.11	
Eriachne aristidea	+	0.2 m	PI063.03	
Eriachne pulchella subsp. *dominii*	(+)	0.1 m	PI128.03	
Goodenia forrestii	+	0.3 m	PI128.06	
Heliotropium muticum	+	0.2 m	PI128.09	6 ind. Within quadrat
Hybanthus aurantiacus	+	0.2 m	PI043.13	
Isotropis atropurpurea	+	0.4 m	PI128.10	
Mollugo molluginea	+	0.1 m	PI132.04	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI058.10	
Polymeria ambigua	+	cr	PI128.08	
**Portulaca oleracea*	+	0.1 m	PI128.04	
Senna notabilis	+	0.2 m	PI051.12	
Sida echinocarpa	+	0.6 m	PI128.05	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI058.05	
Solanum diversiflorum	+	0.2 m	PI048.09	
Solanum ellipticum	+	0.6 m	PI065.26	
Tephrosia uniovulata	+	0.4 m	PI128.07	
Triodia epactia	3%	0.3 m	PI128.01	
Triodia lanigera	12%	0.3 m	PI128.02	
Yakirra australiensis var. *australiensis*	+	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
Acacia ancistrocarpa	+	0.6 m	PI062.03	
Acacia colei var. *colei*	1%	0.5-1 m	PI043.16	
Acacia inaequilatera	1%	0.6-2 m	PI049.06	
Acacia stellaticeps	1%	0.4 m	PI043.01	
Aristida holathera var. *holathera*	+	0.3 m	PI049.07	
Bonamia alatisemina	+	cr	PI145.11	
Bonamia rosea	+	0.4 m	PI030.04	
Bulbostylis barbata	+	0.1 m	PI129.01	
Chrysopogon fallax	+	0.6 m	PI042.09	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.4 m	PI129.04	
Corchorus tectus	+	0.4 m	PI030.02	
Dysphania saxatilis	+	0.2 m	PI069.03	
Eragrostis eriopoda	+	0.4 m	PI047.02	
Eriachne aristidea	+	0.4 m	PI136.03	
Euphorbia australis	+	prostrate	PI104.02	
Hakea lorea subsp. *lorea*	1%	1.5 m	PI043.07	
Indigofera monophylla	+	0.3 m	PI052.03	
Mollugo molluginea	+	0.3 m	PI043.29	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI043.06	
Ptilotus astrolasius	+	0.4 m	PI056.18	
Ptilotus fusiformis	+	0.4 m	PI043.11	
Senna notabilis	+	0.2 m	PI043.09	
Sida clementii	+	0.4 m	PI100.02	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI043.14	
Solanum lasiophyllum	+	0.6 m	PI067.06	
Trianthema pilosa	+	prostrate	PI052.09	
Triodia epactia	8%	0.4 m	PI129.03	
Triodia lanigera	+	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
Abutilon lepidum	+	0.4 m	PI130.08	
Abutilon pritzelianum MS	+	1.5 m	PI130.05	
Acacia colei var. *colei*	+	2-3 m	PI091.12	
Acacia sericophylla	+	1-3 m	PI130.03	
Acacia sphaerostachya	+	2 m	PI134.01	
Acacia stellaticeps	1%	0.7 m	PI065.01	
Acacia trudgeniana	+	1-3 m	PI065.31	
Acacia tumida var. *pilbarensis*	4%	2-4 m	PI150.07	
Amaranthus undulatus	+	0.3 m	PI045.16	
Aristida holathera var. *holathera*	+	0.2 m	PI090.08	
Aristida inaequiglumis	+	0.6 m	PI058.04	
Boerhavia coccinea	+	0.2 m	PI130.04	
Bonamia alatisemina	+	0.1 m	PI027.06	
Bulbostylis barbata	+	0.1 m	PI090.18	
Cassytha capillaris	+	cl	PI091.09	
Chrysopogon fallax	+	0.5 m	PI051.04	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.1 m	PI094.08	
Corymbia zygophylla	7%	2-5 m	PI112.02	
Cucumis maderaspatanus	+	cl	PI045.15	
Dolichandrone heterophylla	+	0.4 m	PI130.06	
Dysphania saxatilis	+	0.2 m	PI090.11	
Eragrostis eriopoda	+	0.3 m	PI090.04	
Eriachne aristidea	+	0.2 m	PI063.03	
Eriachne benthamii	+	0.3 m	PI106.01	
Euphorbia australis	+	0.05 m	PI132.05	
Evolvulus alsinoides var. *villosicalyx*	+	0.1 m	PI091.11	
Fimbristylis oxystachya	+	0.2 m	PI025.05	
Hybanthus aurantiacus	+	0.2 m	PI043.13	

Indigofera monophylla	+	0.3 m	PI065.13
Mollugo molluginea	+	0.1 m	PI132.04
Owenia reticulata	+	3 m	PI103.01
Paraneurachne muelleri	+	0.1 m	PI058.06
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI058.10
**Portulaca oleracea*	+	0.05 m	PI128.04
Scaevola parvifolia subsp. *pilbarae*	+	0.2 m	PI090.07
Senna notabilis	+	0.2 m	PI051.12
Sida rohlenae subsp. *rohlenae*	+	0.2 m	PI103.20
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.6 m	PI058.05
Tinospora smilacina	+	cl	PI103.08
Trianthema pilosa	+	0.1 m	PI065.03
Tribulus hirsutus	+	0.05 m	PI106.08
Triodia epactia	20%	0.6 m	PI130.01
Triodia lanigera	12%	0.4 m	PI130.02
Triumfetta clementii	+	0.2 m	PI130.07
Waltheria indica	+	0.1 m	PI103.15
Yakirra australiensis var. *australiensis*	+	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
Acacia ancistrocarpa	3%	2 m	PI131.04	
Acacia colei var. *colei*	+	1 m	PI070.38	
Acacia inaequilatera	1%	2.5 m	PI054.05	
Acacia sericophylla	+	1.5 m	PI070.04	
Acacia sphaerostachya	+	0.4 m	PI131.13	
Acacia stellaticeps	5%	0.7 m	PI070.01	
Acacia tumida var. *pilbarensis*	1%	2.5 m	PI070.30	
Aristida holathera var. *holathera*	+	0.4 m	PI070.10	
Bonamia alatisemina	+	cr	PI131.08	
Bonamia rosea	1%	0.5 m	PI131.02	
Bulbostylis barbata	+	0.15 m	PI070.17	
Cassytha capillaris	+	cr	PI055.03	
Chrysopogon fallax	+	0.5 m	PI070.21	
Cleome viscosa	+	0.3 m	PI040.10	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.3 m	PI070.02	
Cucumis maderaspatanus	+	cr	PI147.17	
Eragrostis eriopoda	+	0.3 m	PI070.13	
Eriachne mucronata	+	0.4 m	PI102.06	
Eriachne pulchella subsp. *dominii*	+	0.15 m	PI131.03	
Euphorbia alsiniflora	+	0.15 m	PI131.12	
Euphorbia australis	+	cr	PI108.12	
Goodenia forrestii	+	0.2 m	PI131.07	
Gossypium australe	+	0.5 m	PI131.06	
Hybanthus aurantiacus	+	0.5 m	PI099.02	
Indigofera monophylla	+	0.4 m	PI072.03	
Mollugo molluginea	+	0.2 m	PI070.35	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI072.02	
Portulaca pilosa	+	0.3 m	PI147.22	

Ptilotus astrolasius	+	0.5 m	PI089.05
Ptilotus fusiformis	+	0.4 m	PI070.22
Ptilotus polystachyus	+	0.5 m	PI131.11
Scaevola parvifolia subsp. *pilbarae*	+	0.2 m	PI131.05
Senna glaucifolia	+	0.3 m	PI131.09
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.5 m	PI070.03
Solanum ellipticum	+	0.3 m	PI073.12
Tinospora smilacina	+	cr	PI131.10
Trianthema pilosa	+	cr	PI072.13
Triodia lanigera	40%	0.3 m	PI131.01
Waltheria indica	+	0.4 m	PI053.14
Yakirra australiensis var. *australiensis*	+	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
Acacia sphaerostachya	+	1-1.5 m	PI134.01	
Acacia stellaticeps	5%	0.6 m	PI065.01	
Acacia trudgeniana	+	1-2 m	PI065.31	
Acacia tumida var. *pilbarensis*	1%	1-2.5 m	PI150.07	
Aristida holathera var. *holathera*	+	0.2 m	PI066.11	
Aristida inaequiglumis	+	1 m	PI058.04	
Bulbostylis barbata	+	0.1 m	PI027.03	
Calandrinia pumila	+	0.01 m	PI045.18	
Cassytha capillaris	+	cl	PI051.06	
Chrysopogon fallax	+	0.3 m	PI051.04	
Drosera indica	+	0.1 m	PI045.01	
Dysphania saxatilis	+	0.2 m	PI058.12	
Eriachne aristidea	+	0.1 m	PI063.03	
Eriachne benthamii	+	0.4 m	PI106.01	
Euphorbia australis	+	0.01 m	PI132.05	
Evolvulus alsinoides var. *villosicalyx*	+	0.1 m	PI063.10	
Heliotropium inexplicitum	+	0.05 m	PI132.06	
Hybanthus aurantiacus	+	0.2 m	PI043.13	
Indigofera monophylla	+	0.4 m	PI065.13	
Keraudrenia velutina subsp. *elliptica*	+	0.5 m	PI132.09	
Leptosema anomalum	+	0.2 m	PI150.03	range ext
Mollugo molluginea	+	0.1 m	PI132.04	
Paraneurachne muelleri	+	0.2 m	PI058.06	
Pluchea tetranthera	+	0.2 m	PI066.22	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI058.10	
Ptilotus astrolasius	+	0.2 m	PI045.06	
Ptilotus fusiformis	+	0.3 m	PI065.28	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.8 m	PI132.07	

Synaptantha tillaeacea var. *tillaeacea*	+	0.01 m	PI132.03
Triodia epactia	11%	0.4 m	PI132.02
Triodia lanigera	9%	0.4 m	PI132.01
Triumfetta chaetocarpa	+	0.4 m	PI132.08
Waltheria indica	+	0.5 m	PI065.27
Yakirra australiensis var. *australiensis*	+	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
Abutilon otocarpum	+	0.4 m	PI133.02	
Acacia colei var. *colei*	+	1.2 m	PI043.16	
Acacia inaequilatera	2%	2-3 m	PI049.06	
Acacia sericophylla	+	prostrate	PI052.01	
Acacia stellaticeps	+	0.5 m	PI043.01	
Amaranthus undulatus	+	0.4 m	PI133.03	
Aristida holathera var. *holathera*	1%	0.3 m	PI049.07	
Boerhavia coccinea	+	prostrate	PI067.15	
Bulbostylis barbata	+	0.1 m	PI056.01	
Chrysopogon fallax	+	0.4 m	PI042.09	
Cleome viscosa	+	0.3 m	PI026.10	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.3 m	PI042.04	
Crotalaria ramosissima	+	0.2 m	PI133.08	
Digitaria brownii	+	0.2 m	PI028.04	
Dysphania saxatilis	+	0.1 m	PI069.03	
Eragrostis eriopoda	10%	0.4 m	PI047.02	
Eriachne mucronata	1%	0.3 m	PI049.01	
Euphorbia alsiniflora	+	0.2 m	PI056.08	
Evolvulus alsinoides var. *villosicalyx*	+	prostrate/c	PI062.04	
Fimbristylis simulans	+	0.2 m	PI028.03	
Grevillea pyramidalis subsp. *leucadendron*	+	1.2 m	PI133.05	
Hybanthus aurantiacus	+	0.3 m	PI043.13	
Indigofera linifolia	+	0.1 m	PI133.06	
Ipomoea muelleri	+	0.2 m	PI133.01	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI043.06	
Sida rohlenae subsp. *rohlenae*	+	0.4 m	PI069.07	
Solanum lasiophyllum	+	0.2 m	PI067.06	
Triodia epactia	1%	0.4 m	PI133.07	
Triumfetta chaetocarpa	+	0.2 m	PI133.04	
Yakirra australiensis var. *australiensis*	+	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
Acacia sphaerostachya	1%	1-1.5 m	PI134.01	
Acacia stellaticeps	6%	0.6 m	PI065.01	
Acacia trudgeniana	+	1-2 m	PI065.31	
Acacia tumida var. *pilbarensis*	+	1-2 m	PI150.07	
Aristida holathera var. *holathera*	+	0.3 m	PI103.03	
Bulbostylis barbata	+	0.1 m	PI027.03	
Cassytha capillaris	+	cl	PI051.06	
Chrysopogon fallax	+	0.5 m	PI051.04	
Cleome viscosa	+	0.3 m	PI065.17	
Cucumis maderaspatanus	+	cl	PI045.15	
Dysphania saxatilis	+	0.2 m	PI058.12	
Eragrostis eriopoda	+	0.2 m	PI134.06	
Evolvulus alsinoides var. *villosicalyx*	+	0.05 m	PI063.10	
Fimbristylis oxystachya	+	0.2 m	PI025.05	
Hibiscus brachychlaenus	+	0.1 m	PI134.04	
Indigofera monophylla	+	0.3 m	PI065.13	
Keraudrenia velutina subsp. *elliptica*	+	0.6 m	PI134.07	
Mimulus gracilis	+	0.3 m	PI044.10	
Mollugo molluginea	+	0.1 m	PI132.04	
Paraneurachne muelleri	+	0.2 m	PI058.06	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI058.10	
**Portulaca oleracea*	+	0.05 m	PI134.05	
Portulaca pilosa	+	0.05 m	PI090.15	
Ptilotus astrolasius	+	0.3 m	PI045.06	
Ptilotus fusiformis	+	0.3 m	PI065.28	
Ptilotus polystachyus	+	0.3 m	PI025.13	
Scaevola parvifolia subsp. *pilbarae*	+	0.1 m	PI058.11	
Senna notabilis	+	0.2 m	PI051.12	

Sida sp. B Kimberley Flora (A.A. Mitchell 2745)	+	0.1 m	PI150.06
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.2 m	PI134.08
Trianthema pilosa	+	0.1 m	PI065.03
Triodia epactia	3%	0.5 m	PI134.03
Triodia lanigera	4%	0.3 m	PI134.02
Waltheria indica	+	0.1 m	PI103.15
Yakirra australiensis var. *australiensis*	+	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
Acacia colei var. *colei*	1%	2-3 m	PI043.16	
Acacia inaequilatera	1%	2-3 m	PI049.06	
Acacia sericophylla	+	2.5 m	PI104.07	
Acacia stellaticeps	1%	0.8 m	PI043.01	
Aristida holathera var. *holathera*	+	0.4 m	PI049.07	
Boerhavia coccinea	+	prostrate	PI067.15	
Bulbostylis barbata	+	0.1 m	PI129.01	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.3 m	PI042.04	
**Cucumis melo subsp. agrestis*	+	cr	PI026.08	
Dolichandrone heterophylla	+	1.5 m	PI135.01	
Eragrostis eriopoda	+	0.4 m	PI047.02	
Eriachne aristidea	+	0.4 m	PI136.03	
Eriachne mucronata	+	0.4 m	PI049.01	
Euphorbia australis	+	prostrate	PI104.02	
Evolvulus alsinoides var. *villosicalyx*	+	0.2 m	PI104.04	
Gossypium australe	+	0.8 m	PI104.08	
Indigofera monophylla	+	0.4 m	PI052.03	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI043.06	
Senna notabilis	+	0.2 m	PI043.09	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.3 m	PI043.14	
Trianthema pilosa	+	0.2 m	PI052.09	
Triodia epactia	1%	0.5 m	PI135.04	
Triodia lanigera	10%	0.4 m	PI135.02	
Triumfetta ramosa	+	0.3 m	PI135.03	
Yakirra australiensis var. *australiensis*	+	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
Acacia ancistrocarpa	1%	1-2 m	PI062.03	
Acacia colei var. *colei*	+	1.2 m	PI043.16	
Acacia inaequilatera	1%	1-2 m	PI049.06	
Acacia sericophylla	+	1.6 m	PI052.01	
Acacia sphaerostachya	+	1.2 m	PI136.04	
Acacia stellaticeps	8%	0.7 m	PI043.01	
Boerhavia coccinea	+	0.1 m	PI067.15	
Bulbostylis barbata	+	0.1 m	PI056.01	
Chrysopogon fallax	+	0.4 m	PI042.09	
Cleome viscosa	+	0.4 m	PI026.10	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.2 m	PI042.04	
**Cucumis melo subsp. agrestis*	+	cr	PI026.08	
Dentella asperata	+	prostrate	PI069.11	
Dysphania saxatilis	+	0.1 m	PI056.15	
Eriachne aristidea	+	0.2 m	PI136.03	
Eriachne mucronata	+	0.4 m	PI049.01	
Euphorbia alsiniflora	+	0.2 m	PI056.08	
Fimbristylis simulans	+	0.3 m	PI136.07	
Hibiscus brachychlaenus	+	0.2 m	PI136.02	
Mimulus uvedaliae var. *uvedaliae*	+	0.4 m	PI044.07	
Polycarpaea corymbosa var. *corymbosa*	+	0.2 m	PI043.06	
Ptilotus fusiformis	+	0.4 m	PI043.11	
Senna notabilis	+	0.2 m	PI043.09	
Sida clementii	+	0.1 m	PI069.01	
Triodia epactia	4%	0.4 m	PI136.05	
Triodia lanigera	8%	0.3 m	PI136.06	
Triumfetta chaetocarpa	+	0.2 m	PI133.04	
Waltheria indica	+	0.2 m	PI136.01	
Yakirra australiensis var. *australiensis*	+	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
Abutilon pritzelianum MS	+	0.4 m	PI137.04	
Acacia colei var. *colei*	2%	3-5 m	PI043.16	
Acacia inaequilatera	1%	1-2 m	PI049.06	
Acacia sericophylla	+	1.8 m	PI104.07	
Acacia stellaticeps	+	0.7 m	PI043.01	
Acacia tumida var. *pilbarensis*	+	1.8 m	PI137.05	
Aristida holathera var. *holathera*	+	0.3 m	PI049.07	
Boerhavia coccinea	(+)	prostrate	PI067.15	
Bulbostylis barbata	+	0.1 m	PI129.01	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.3 m	PI042.04	
Corymbia candida subsp. *dipsodes*	+	4 m	PI146.07	
**Cucumis melo subsp. agrestis*	+	cr	PI026.08	
Eragrostis eriopoda	+	0.3 m	PI047.02	
Eriachne mucronata	+	0.3 m	PI049.01	
Euphorbia alsiniflora	+	0.3 m	PI056.08	
Euphorbia australis	+	prostrate	PI104.02	
Polycarpaea corymbosa var. *corymbosa*	+	0.2 m	PI043.06	
Polymeria calycina	+	0.2 m	PI137.01	
Schizachyrium fragile	+	0.2 m	PI075.02	
Senna notabilis	+	1.5 m	PI043.09	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI043.14	
Solanum lasiophyllum	+	0.5 m	PI067.06	
Triodia epactia	1%	0.4 m	PI137.02	
Triodia lanigera	35%	0.4 m	PI137.03	
Yakirra australiensis var. *australiensis*	+	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
Acacia ancistrocarpa	+	0.4 m	PI123.13	
Acacia colei var. *colei*	+	1.2 m	PI076.14	
Acacia inaequilatera	1%	1 m	PI123.15	
Alternanthera angustifolia	+	0.3 m	PI138.16	
Aristida holathera var. *holathera*	+	0.3 m	PI123.18	
Bergia pedicellaris	+	0.1 m	PI138.09	
Bulbostylis barbata	+	0.1 m	PI121.05	
Calandrinia stagnensis	+	0.1 m	PI083.04	
Calandrinia pentavalvis	+	0.1 m	PI138.11	
**Cenchrus ciliaris*	+	0.3 m	PI103.06	
Chloris pectinata	+	0.3 m	PI138.14	
Chrysopogon fallax	+	0.4 m	PI084.10	
Cleome viscosa	+	0.3 m	PI065.17	
Corchorus tectus	2%	0.3 m	PI123.35	
Cullen cinereum	+	0.1 m	PI138.08	
Dichanthium sericeum subsp. *humilius*	+	0.3 m	PI138.03	
Dysphania saxatilis	+	0.3 m	PI090.11	
Eragrostis eriopoda	+	0.3 m	PI084.04	
Eragrostis speciosa	+	0.3 m	PI138.10	
Euphorbia australis	+	0.1 m	PI084.08	
Evolvulus alsinoides var. *villosicalyx*	+	0.2 m	PI123.25	
Fimbristylis dichotoma	+	0.3 m	PI121.06	
Goodenia lamprosperma	+	0.3 m	PI141.02	
Goodenia microptera	+	0.3 m	PI123.12	
Indigofera monophylla	+	0.3 m	PI123.02	
Mollugo molluginea	+	0.1 m	PI123.09	
Neptunia dimorphantha	+	0.2 m	PI138.15	
Pluchea ferdinandi-muelleri	+	0.4 m	PI138.12	
Pluchea rubelliflora	+	0.3 m	PI138.17	
Pluchea tetranthera	+	0.3 m	PI083.11	
Polymeria ambigua	+	cr	PI138.04	

Polymeria calycina	+	0.3 m	PI138.01
Portulaca pilosa	+	0.2 m	PI123.17
Pterocaulon serrulatum	+	0.3 m	PI138.05
Senna notabilis	+	0.2 m	PI123.20
Sida clementii	+	0.3 m	PI138.02
Sporobolus australasicus	1%	0.2 m	PI121.01
Stemodia grossa	+	0.1 m	PI138.07
Streptoglossa decurrens	+	0.3 m	PI138.06
Triodia epactia	40%	0.3 m	PI138.18
Yakirra australiensis var. *australiensis*	+	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
Acacia inaequilatera	1%	0.7-2 m	PI125.01	
Acacia sphaerostachya	+	0.8 m	PI134.01	
Boerhavia coccinea	+	0.2 m	PI139.04	
Bulbostylis barbata	+	0.1 m	PI090.18	
Cleome viscosa	+	0.3 m	PI065.17	
Corchorus tectus	+	0.3 m	PI091.07	
Dysphania saxatilis	+	0.1 m	PI090.11	
Eriachne pulchella subsp. *dominii*	(+)	0.1 m	PI128.03	
Euphorbia australis	+	0.1 m	PI139.02	
Goodenia microptera	+	0.3 m	PI139.01	
Hybanthus aurantiacus	+	0.2 m	PI043.13	
Indigofera monophylla	+	0.3 m	PI065.13	
Mollugo molluginea	+	0.1 m	PI132.04	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI058.10	
Polymeria calycina	+	0.2 m	PI125.06	
**Portulaca oleracea*	+	0.05 m	PI128.04	
Senna notabilis	+	0.1 m	PI051.12	
Sida echinocarpa	+	0.6 m	PI139.03	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI058.05	
Sporobolus australasicus	+	0.1 m	PI066.02	
Synaptantha tillaeacea var. *tillaeacea*	+	0.01 m	PI139.05	
Tephrosia supina	+	0.1 m	PI125.08	
Tephrosia uniovulata	+	0.3 m	PI128.07	
Tribulus hirsutus	+	0.1 m	PI106.08	
Triodia epactia	5%	0.3 m	PI125.04	
Triodia lanigera	3%	0.3 m	PI125.03	
Yakirra australiensis var. *australiensis*	+	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
Acacia ancistrocarpa	1%	0.8 m	PI062.03	
Acacia inaequilatera	1%	0.5-3 m	PI049.06	
Acacia stellaticeps	+	0.4 m	PI043.01	
Acacia synchronicia	+	1.2 m	PI140.10	
Bulbostylis barbata	+	0.1 m	PI129.01	
Cassytha capillaris	+	prostrate	PI140.09	
Cleome viscosa	+	0.4 m	PI101.04	
Corchorus tectus	+	0.4 m	PI030.02	
Eriachne pulchella subsp. *dominii*	1%	0.1 m	PI140.06	
Goodenia microptera	+	0.5 m	PI060.02	
Heliotropium muticum	+	0.2 m	PI140.01	
Indigofera monophylla	+	0.3 m	PI052.03	
Mollugo molluginea	+	0.2 m	PI043.29	
Polycarpaea corymbosa var. *corymbosa*	+	0.2 m	PI043.06	
Polycarpaea holtzei	+	0.05 m	PI140.07	
Polymeria calycina	+	0.4 m	PI140.02	
Ptilotus astrolasius	+	0.4 m	PI056.18	
Ptilotus auriculifolius	+	0.4 m	PI140.08	
Ptilotus axillaris	+	prostrate	PI140.04	
Ptilotus calostachyus	+	0.6 m	PI140.03	
Ptilotus fusiformis	+	0.4 m	PI043.11	
Scaevola amblyanthera var. *centralis*	+	0.4 m	PI140.05	Photo; 649-653 BW
Senna notabilis	+	0.2 m	PI043.09	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI043.14	
Sporobolus australasicus	+	0.1 m	PI145.03	
Triodia epactia	5%	0.3 m	PI140.11	
Yakirra australiensis var. *australiensis*	+	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
Acacia colei	3%	1-2 m	PI141.03	
Acacia sericophylla	+	1.2 m	PI141.12	
Acacia stellaticeps	+	0.5 m	PI083.01	
Alternanthera nana	+	0.3 m	PI141.09	
Amaranthus undulatus	+	0.3 m	PI123.32	
Aristida holathera var. *holathera*	+	0.3 m	PI123.18	
Bonamia alatisemina	+	cr	PI083.10	
Bonamia media var. *villosa*	+	0.1 m	PI141.10	
Bulbostylis barbata	+	0.1 m	PI121.05	
Calandrinia stagnensis	+	0.1 m	PI083.04	
**Cenchrus ciliaris*	+	0.3 m	PI103.06	
Chrysopogon fallax	1%	0.3 m	PI084.10	
Corymbia candida subsp. *dipsodes*	3%	2-5 m	PI141.08	
Cucumis maderaspatanus	+	cr	PI141.04	
Ehretia saligna var. *saligna*	+	1.5 m	PI141.06	
Eragrostis eriopoda	1%	0.3 m	PI084.04	
Euphorbia alsiniflora	+	0.2 m	PI123.36	
Evolvulus alsinoides var. *villosicalyx*	+	0.1 m	PI123.25	
Goodenia lamprosperma	+	0.3 m	PI141.02	
Goodenia triodiophila	+	0.3 m	PI141.11	1 ind
Hybanthus aurantiacus	+	0.3 m	PI123.03	
Stemodia lathraia	+	0.1 m	PI141.01	
Mollugo molluginea	+	0.2 m	PI123.09	
Paspalidium tabulatum	+	0.3 m	PI141.13	
Pluchea tetranthera	+	0.3 m	PI083.11	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI083.12	
Polygala linariifolia	+	0.1 m	PI141.05	
Portulaca pilosa	+	0.1 m	PI123.17	

Ptilotus calostachyus	+	0.2 m	PI109.10
Ptilotus fusiformis	+	0.3 m	PI083.08
Senna notabilis	+	0.2 m	PI123.20
Sida rohlenae subsp. *rohlenae*	+	0.3 m	PI141.07
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.2 m	PI123.04
Sporobolus australasicus	+	0.2 m	PI121.01
Stylidium desertorum	+	0.1 m	PI141.16
Triodia epactia	40%	0.3 m	PI141.14
Yakirra australiensis var. *australiensis*	+	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
Abutilon trudgenii MS	+	0.3 m	PI142.04	
Acacia ancistrocarpa	1%	0.5 m	PI123.13	
Acacia inaequilatera	1%	0.3-2 m	PI123.15	
Aristida contorta	15%	0.3 m	PI142.03	
Aristida holathera var. *holathera*	1%	0.4 m	PI123.18	
Bulbostylis barbata	+	0.1 m	PI121.05	
Cleome viscosa	+	0.4 m	PI065.17	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.1 m	PI042.04	
Corchorus tectus	1%	0.3 m	PI123.35	
Dysphania saxatilis	+	0.3 m	PI090.11	
Eragrostis eriopoda	+	0.3 m	PI084.04	
Eriachne pulchella subsp. *dominii*	15%	0.3 m	PI142.01	
Euphorbia alsiniflora	+	0.3 m	PI123.36	
Euphorbia australis	+	0.1 m	PI084.08	
Gomphrena cunninghamii	+	0.1 m	PI123.10	
Goodenia microptera	+	0.3 m	PI123.12	
Gossypium australe	+	0.3 m	PI142.08	
Heliotropium muticum	+	0.3 m	PI034.09	
Indigofera monophylla	2%	0.3 m	PI123.02	
Mollugo molluginea	+	0.2 m	PI123.09	
Polycarpaea corymbosa var. *corymbosa*	+	0.2 m	PI083.12	
Polycarpaea holtzei	+	0.1 m	PI123.07	
Polymeria ambigua	+	cr	PI138.04	
Polymeria calycina	+	0.2 m	PI138.01	
**Portulaca oleracea*	+	0.1 m	PI142.06	
Portulaca pilosa	+	0.2 m	PI123.17	
Ptilotus auriculifolius	+	0.4 m	PI142.09	
Ptilotus fusiformis	+	0.3 m	PI083.08	

Salsola tragus subsp. *grandiflora*	+	0.2 m	PI142.02
Schizachyrium fragile	+	0.3 m	PI076.06
Senna glutinosa subsp. x *luerssenii*	+	0.6 m	PI142.07
Senna notabilis	+	0.2 m	PI123.20
Sida clementii	+	0.5 m	PI142.05
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.3 m	PI123.04
Solanum diversiflorum	+	0.3 m	PI048.09
Tribulus macrocarpus	+	cr	PI084.11
Triodia epactia	5%	0.3 m	PI138.18
Yakirra australiensis var. *australiensis*	+	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
Acacia stellaticeps	7%	0.5 m	PI043.01	
Aristida holathera var. *holathera*	+	0.3 m	PI049.07	
Bulbostylis barbata	+	0.1 m	PI129.01	
Chrysopogon fallax	+	0.5 m	PI042.09	
Drosera indica	+	0.05 m	PIOPBW01a	
Eriachne aristidea	+	0.3 m	PI136.03	
Eriachne mucronata	+	0.2 m	PI049.01	
Euphorbia alsiniflora	+	0.2 m	PI056.08	
Euphorbia australis	+	0.1 m	PI104.02	
Fimbristylis dichotoma	+	0.2 m	PI049.15	
Fimbristylis simulans	+	0.2 m	PI136.07	
Goodenia microptera	+	0.2 m	PI060.02	
Hakea lorea subsp. *lorea*	+	0.7 m	PI143.04	
Hybanthus aurantiacus	+	0.2 m	PI043.13	
Indigofera monophylla	+	0.2 m	PI052.03	
Mollugo molluginea	+	0.2 m	PI043.29	
Polycarpaea corymbosa var. *corymbosa*	+	0.2 m	PI043.06	
Ptilotus astrolasius	+	0.4 m	PI056.18	
Ptilotus fusiformis	+	0.4 m	PI043.11	
Schizachyrium fragile	+	0.3 m	PI075.02	
Senna notabilis	+	0.2 m	PI043.09	
Tribulopis angustifolia	+	cr	PI143.01	
Triodia epactia	2%	0.4 m	PI143.02	
Triodia lanigera	7%	0.4 m	PI143.03	
Yakirra australiensis var. *australiensis*	+	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
Acacia ancistrocarpa	1%	0.5 m	PI145.05	
Acacia inaequilatera	1%	0.5-2 m	PI049.06	mostly below 1m
Acacia stellaticeps	+	0.2 m	PI043.01	
Acacia trachycarpa	+	0.7 m	PI107.02	
Aristida contorta	+	0.2 m	PI093.02	
Aristida holathera var. *holathera*	+	0.3 m	PI049.07	
Bonamia alatisemina	+	prostrate	PI145.11	
Bonamia rosea	+	0.4 m	PI030.04	
Calandrinia stagnensis	+	prostrate	PI145.04	
Cleome viscosa	+	0.3 m	PI026.10	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.2 m	PI042.04	
Corchorus tectus	+	0.3 m	PI030.02	
Corymbia candida subsp. *dipsodes*	1%	5 m	PI146.07	
Dentella asperata	+	prostrate	PI069.11	
Dysphania saxatilis	+	0.2 m	PI069.03	
Eriachne aristidea	+	0.3 m	PI136.03	
Goodenia microptera	+	0.5 m	PI060.02	
Hibiscus leptocladus	+	0.3 m	PI145.08	
Hybanthus aurantiacus	+	0.4 m	PI043.13	
Indigofera monophylla	+	0.4 m	PI052.03	
Isotropis atropurpurea	+	0.5 m	PI145.10	
Mollugo molluginea	+	0.2 m	PI043.29	
Polymeria ambigua	+	prostrate	PI145.07	
Polymeria calycina	+	prostrate	PI145.09	
Ptilotus fusiformis	+	0.4 m	PI043.11	
Senna notabilis	+	0.2 m	PI043.09	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.5 m	PI043.14	
Sporobolus australasicus	+	0.3 m	PI145.03	
Tribulus hirsutus	+	prostrate	PI060.03	
Triodia epactia	4%	0.3 m	PI145.02	
Triodia lanigera	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
Acacia colei var. *colei*	15%	2.3 m	PI146.01	
Acacia pyrifolia	+	1.8 m	PI107.03	
Acacia stellaticeps	+	0.4 m	PI043.01	
Acacia tumida var. *pilbarensis*	+	3 m	PI146.06	
Cajanus cinereus	+	1.4 m	PI069.04	
Chrysopogon fallax	+	0.4 m	PI042.09	
Corymbia candida subsp. *dipsodes*	1%	7-10 m	PI146.07	
Dentella asperata	+	prostrate	PI069.11	
Eucalyptus victrix	6%	7-10 m	PI146.04	
Goodenia lamprosperma	+	0.3 m	PI043.21	
Indigofera monophylla	+	0.5 m	PI146.02	
Pluchea ferdinandi-muelleri	+	0.5 m	PI146.05	
Pluchea tetranthera	+	0.4 m	PI042.03	
Triodia epactia	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
Abutilon otocarpum	+	0.5 m	PI147.04	
Acacia stellaticeps	5%	0.5 m	PI070.01	
Achyranthes aspera	+	0.15 m	PI147.07	
**Aerva javanica*	+	0.3 m	PI147.05	
Amaranthus undulatus	+	0.3 m	PI147.06	
Aristida holathera var. *holathera*	+	0.9 m	PI070.10	
Boerhavia coccinea	+	cr	PI147.11	
Bonamia media var. *villosa*	+	cr	PI147.14	
Bulbostylis barbata	+	0.1 m	PI070.17	
Chrysopogon fallax	+	1 m	PI070.21	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.5 m	PI070.02	
Crotalaria ramosissima	+	0.1 m	PI147.20	
Cucumis maderaspatanus	+	cr	PI147.17	
Dolichandrone heterophylla	+	1 m	PI073.01	
Eragrostis eriopoda	40%	0.3 m	PI070.13	
Eriachne aristidea	+	0.3 m	PI070.28	
Eriachne mucronata	+	0.4 m	PI147.18	
Evolvulus alsinoides var. *villosicalyx*	+	0.1 m	PI147.12	
Gossypium australe	+	0.5 m	PI147.16	
Hybanthus aurantiacus	1%	0.6 m	PI099.02	
Indigofera colutea	+	0.05 m	PI147.09	
Indigofera monophylla	1%	0.5 m	PI072.03	
Ipomoea polymorpha	+	cr	PI147.08	
Owenia reticulata	1%	4 m	PI147.01	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI072.02	
Portulaca pilosa	+	0.1 m	PI147.22	
Ptilotus polystachyus	+	0.6 m	PI147.19	
Senna notabilis	+	0.2 m	PI070.14	

Sida fibulifera	+	0.2 m	PI147.21
Sida rohlenae subsp. *rohlenae*	+	0.5 m	PI147.03
Solanum ellipticum	+	0.2 m	PI073.12
Solanum lasiophyllum	+	0.3 m	PI070.37
Tinospora smilacina	+	cl	PI147.02
Trianthema pilosa	+	0.2 m	PI072.13
Triodia epactia	+	0.4 m	PI147.15
Waltheria indica	+	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
Acacia colei var. *colei*	+	2.5 m	PI070.38	
Acacia sphaerostachya	+	1 m	PI148.07	
Acacia stellaticeps	20%	0.6 m	PI070.01	
Acacia tumida var. *pilbarensis*	+	2 m	PI070.30	
Aristida holathera var. *holathera*	+	0.3 m	PI070.10	
Aristida inaequiglumis	+	0.9 m	PI070.24	
Bulbostylis barbata	+	0.1 m	PI070.17	
**Cenchrus ciliaris*	+	0.5 m	PI070.29	
Cleome viscosa	+	0.4 m	PI040.10	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.2 m	PI070.02	
Corymbia candida subsp. *dipsodes*	+	3.5 m	PI148.01	
Cucumis maderaspatanus	+	cr	PI147.17	
Dolichandrone heterophylla	+	0.4 m	PI148.05	
Dysphania saxatilis	+	0.1 m	PI053.07	
Eragrostis eriopoda	+	0.3 m	PI070.13	
Eriachne mucronata	+	0.3 m	PI148.06	
Euphorbia alsiniflora	+	0.3 m	PI072.10	
Euphorbia australis	+	cr	PI108.12	
Evolvulus alsinoides var. *villosicalyx*	+	0.1 m	PI070.07	
Goodenia microptera	+	0.3 m	PI148.08	
Mollugo molluginea	+	0.1 m	PI070.35	
Paraneurachne muelleri	+	0.3 m	PI054.09	
Polycarpaea corymbosa var. *corymbosa*	+	0.15 m	PI072.02	
**Portulaca oleracea*	+	0.1 m	PI086.11	
Portulaca pilosa	+	0.2 m	PI147.22	
Ptilotus fusiformis	+	0.4 m	PI070.22	
Ptilotus polystachyus	+	0.4 m	PI147.19	
Senna notabilis	+	0.2 m	PI070.14	

Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI070.03
Solanum lasiophyllum	+	0.2 m	PI148.03
Sporobolus australasicus	+	0.2 m	PI037.07
Tinospora smilacina	+	cr	PI087.09
Triodia epactia	15%	0.4 m	PI148.04
Triodia lanigera	20%	0.3 m	PI148.02
Yakirra australiensis var. *australiensis*	+	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
Acacia colei var. *colei*	2%	2-3 m	PI076.14	
Alternanthera nana	+	0.2 m	PI094.07	
Chrysopogon fallax	1%	0.4 m	PI084.10	
Corymbia candida subsp. *dipsodes*	1%	5 m	PI149.10	Photo; 95 EC
Cyperus difformis	+	0.3 m	PI149.07	
Eragrostis cumingii	+	0.2 m	PI080.06	
Eragrostis eriopoda	+	0.4 m	PI084.04	
Eriachne aristidea	+	0.3 m	PI149.01	
Eulalia fulva	40%	0.5 m	PI149.05	
Euphorbia australis	+	0.1 m	PI084.08	
Fimbristylis dichotoma	+	0.3 m	PI121.06	
Goodenia lamprosperma	+	0.2 m	PI149.11	
Goodenia microptera	+	0.1 m	PI149.06	
Indigofera monophylla	+	0.4 m	PI123.02	
**Indigofera oblongifolia*	+	1.5 m	PI149.09	
Ipomoea muelleri	+	cr	PI149.13	
Marsilea mutica	+	0.2 m	PI044.08	
Pluchea rubelliflora	+	0.2 m	PI149.02	
Pluchea tetranthera	+	0.4 m	PI083.11	
Portulaca pilosa	+	0.2 m	PI123.17	
Ptilotus murrayi	+	0.1 m	PI149.03	
**Stylosanthes hamata*	+	0.3 m	PI149.12	
Triodia epactia	20%	0.3 m	PI149.08	
Xerochloa laniflora	+	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
Acacia stellaticeps	+	0.2 m	PI065.01	
Acacia tumida var. *pilbarensis*	+	1-2 m	PI150.07	
Bonamia alatisemina	+	0.2 m	PI027.06	
Bulbostylis barbata	+	0.1 m	PI066.04	
Calandrinia pentavalvis	+	0.1 m	PI066.03	
Calandrinia pumila	1%	0.01 m	PI045.18	
Crotalaria ramosissima	+	0.1 m	PI027.05	
Eriachne mucronata	3%	0.3 m	PI150.02	
Evolvulus alsinoides var. *villosicalyx*	+	0.3 m	PI150.04	
Fimbristylis oxystachya	+	0.2 m	PI025.05	
Hybanthus aurantiacus	+	0.2 m	PI043.13	
Leptosema anomalum	+	0.2 m	PI150.03	
Mitrasacme connata	+	0.05 m	PI045.04	
Murdannia graminea	+	0.2 m	PI045.21	Range ext
Pluchea tetranthera	+	0.3 m	PI066.22	
Senna notabilis	+	0.3 m	PI051.12	
Sida sp. B Kimberley Flora (A.A. Mitchell 2745)	+	0.3 m	PI150.06	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.2 m	PI058.05	
Stackhousia intermedia	+	0.1 m	PI066.14	
Streptoglossa decurrens	+	0.2 m	PI150.05	
Trianthema pilosa	+	0.2 m	PI065.03	
Triodia epactia	5%	0.3 m	PI150.01	
Yakirra australiensis var. *australiensis*	+	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
Acacia ancistrocarpa	+	0.8 m	PI062.03	
Acacia colei var. *colei*	+	1 m	PI043.16	
Acacia inaequilatera	+	0.5-1.5 m	PI049.06	
Aristida holathera var. *holathera*	+	0.4 m	PI049.07	
Aristida inaequiglumis	+	0.2 m	PI152.02	
Bonamia alatisemina	+	prostrate	PI145.11	
Bonamia rosea	+	0.4 m	PI030.04	
Bulbostylis barbata	+	0.1 m	PI129.01	
Calandrinia stagnensis	+	0.2 m	PI145.04	
Cleome viscosa	+	0.4 m	PI101.04	
Corchorus tectus	+	0.4 m	PI030.02	
Corymbia hamersleyana	+	1.8 m	PI113.01	
Dentella asperata	+	prostrate	PI069.11	
Dysphania saxatilis	+	0.2 m	PI069.03	
Eriachne aristidea	+	0.2 m	PI136.03	
Eriachne pulchella subsp. *dominii*	+	0.2 m	PI140.06	
Goodenia microptera	+	0.4 m	PI060.02	
Goodenia stobbsiana	out	0.7 m	PI152.05	
Heliotropium muticum	+	0.2 m	PI152.01	
Indigofera monophylla	+	0.4 m	PI052.03	
Isotropis atropurpurea	+	0.4 m	PI145.10	
Mollugo molluginea	+	0.2 m	PI043.29	
Polycarpaea corymbosa var. *corymbosa*	+	0.2 m	PI043.06	
Polymeria calycina	+	0.4 m	PI140.02	
Ptilotus astrolasius	+	0.4 m	PI056.18	
Ptilotus calostachyus	+	0.6 m	PI140.03	
Sporobolus australasicus	+	0.1 m	PI145.03	
Tephrosia uniovulata	1%	0.4 m	PI100.01	
Triodia epactia	+	0.4 m	PI152.04	
Triodia lanigera	5%	0.4 m	PI152.03	
Yakirra australiensis var. *australiensis*	+	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
Acacia inaequilatera	+	1-2 m	PI049.06	
Acacia stellaticeps	2%	0.6 m	PI043.01	
Bulbostylis barbata	+	0.1 m	PI129.01	
Calandrinia stagnensis	+	prostrate	PI145.04	
Dentella asperata	+	prostrate	PI069.11	
Eragrostis dielsii	+	0.1 m	PI064.05	
Eriachne aristidea	+	0.2 m	PI136.03	
Pluchea rubelliflora	+	0.2 m	PI122.01	
Pluchea tetranthera	+	0.2 m	PI064.02	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI043.06	
Portulaca pilosa	+	0.2 m	PI030.01	
Ptilotus fusiformis	+	0.4 m	PI043.11	
Senna notabilis	+	0.2 m	PI043.09	
Sporobolus australasicus	+	0.2 m	PI145.03	
Triodia epactia	4%	0.4 m	PI153.01	
Triodia lanigera	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
Acacia colei var. *colei*	+	1 m	PI091.12	
Acacia sphaerostachya	2%	1-1.5 m	PI134.01	
Acacia stellaticeps	+	0.6 m	PI065.01	
Acacia trudgeniana	1%	1-2 m	PI065.31	
Acacia victoriae	1%	1 m	PI154.07	
Amaranthus undulatus	+	0.2 m	PI045.16	
Aristida holathera var. *holathera*	+	0.2 m	PI094.04	
Boerhavia coccinea	+	0.1 m	PI154.06	
Bulbostylis barbata	+	0.1 m	PI090.18	
Cleome viscosa	+	0.2 m	PI112.06	
Corchorus tectus	+	0.2 m	PI091.07	
Corymbia hamersleyana	1%	4 m	PI154.02	
**Cucumis melo subsp. agrestis*	+	cr	PI154.04	
Dysphania saxatilis	+	0.1 m	PI090.11	
Eragrostis cumingii	+	0.2 m	PI080.06	
Euphorbia alsiniflora	+	0.2 m	PI117.03	
Euphorbia australis	+	0.3 m	PI139.02	
Evolvulus alsinoides var. *decumbens*	+	0.2 m	PI094.10	
Gomphrena leptoclada subsp. *leptoclada*	+	0.1 m	PI154.11	
Grevillea wickhamii subsp. *hispidula*	1%	1-2 m	PI154.01	
Hybanthus aurantiacus	+	0.2 m	PI043.13	
Indigofera monophylla	+	0.3 m	PI065.13	
Isotropis atropurpurea	+	0.2 m	PI125.05	
Mollugo molluginea	+	0.1 m	PI132.04	
Paspalidium tabulatum	+	0.2 m	PI117.07	
Pluchea rubelliflora	+	0.2 m	PI154.10	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI058.10	
Polymeria calycina	+	0.1 m	PI125.06	

**Portulaca oleracea*	+	0.05 m	PI128.04
Ptilotus fusiformis	+	0.3 m	PI065.28
Senna notabilis	+	0.2 m	PI051.12
Sida rohlenae subsp. rohlenae	+	0.2 m	PI154.05
Sida sp. B Kimberley Flora (A.A. Mitchell 2745)	+	0.05 m	PI150.06
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.1 m	PI058.05
Sporobolus australasicus	+	0.1 m	PI066.02
Tephrosia supina	+	0.05 m	PI125.08
Tinospora smilacina	+	cr	PI103.08
Trachymene oleracea subsp. *oleracea*	+	0.8 m	PI154.09
Triodia epactia	13%	0.4 m	PI154.03
Triodia lanigera	9%	0.4 m	PI154.08
Yakirra australiensis var. *australiensis*	+	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
Abutilon lepidum	+	0.4 m	PI156.02	
Acacia ancistrocarpa	+	0.5 m	PI062.03	
Acacia colei var. *colei*	+	0.5 m	PI043.16	
Acacia inaequilatera	1%	2-3 m	PI049.06	
**Aerva javanica*	+	0.5 m	PI156.12	
Aristida contorta	+	0.3 m	PI156.04	
Aristida holathera var. *holathera*	+	0.3 m	PI049.07	
Boerhavia coccinea	+	0.2 m	PI067.15	
Bulbostylis barbata	+	0.1 m	PI129.01	
Calandrinia stagnensis	+	0.2 m	PI145.04	
Cleome viscosa	(+)	0.3 m	PI026.10	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.2 m	PI042.04	
**Cucumis melo subsp. agrestis*	+	cr	PI026.08	
Eriachne aristidea	+	0.2 m	PI136.03	
Eriachne mucronata	+	0.3 m	PI049.01	
Euphorbia alsiniflora	+	0.3 m	PI056.08	
Euphorbia australis	+	prostrate	PI104.02	
Gomphrena cunninghamii	+	0.1 m	PI156.01	
Gossypium australe	+	0.4 m	PI104.08	
Hybanthus aurantiacus	+	0.3 m	PI043.13	
Mollugo molluginea	+	0.2 m	PI043.29	
Paspalidium clementii	+	0.2 m	PI156.03	
Polycarpaea corymbosa var. *corymbosa*	+	0.1 m	PI043.06	
Ptilotus arthrolasius	+	0.3 m	PI156.05	
Ptilotus auriculifolius	+	0.3 m	PI140.08	
Rhynchosia minima	+	0.1 m	PI156.08	
Senna artemisioides subsp. *oligophylla*	+	0.6 m	PI156.07	
Senna notabilis	+	0.2 m	PI043.09	

Sida clementii	+	0.6 m	PI100.02	
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.3 m	PI043.14	
Solanum lasiophyllum	+	0.2 m	PI067.06	
Tephrosia simplicifolia	+	0.1 m	PI156.11	Range ext
Trachymene oleracea subsp. *oleracea*	+	0.2 m	PI156.10	
Triodia epactia	12%	0.3 m	PI156.09	
Triumfetta clementii	+	0.1 m	PI156.06	
Triumfetta ramosa	+	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
Acacia stellaticeps	+	0.4 m	PI043.01	
**Aerva javanica*	+	0.6 m	PI103.07	
Cajanus cinereus	+	0.4 m	PI157.04	
**Cenchrus ciliaris*	65%	0.4 m	PI052.06	
Crotalaria cunninghamii subsp. *sturtii*			PI157.03	
Spinifex longifolius	+	0.3 m	PI157.02	
Tephrosia rosea var. *glabrior*	1%	0.4 m	PI157.01	Photo; 697-701 BW, 12ind
Tricoryne corynothecoides	+	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
Acacia ancistrocarpa	+	1 m	PI160.16	
Acacia inaequilatera	1%	1-2 m	PI125.01	
Acacia orthocarpa	+	0.7 m	PI160.02	
Acacia stellaticeps	+	0.2 m	PI065.01	
Aristida contorta	+	0.2 m	PI160.11	
Aristida holathera var. *holathera*	+	0.3 m	PI160.12	
Bonamia alatisemina	+	0.1 m	PI117.11	
Bonamia media var. *villosa*	+	cr	PI160.07	
Bonamia rosea	+	0.2 m	PI090.02	
Bulbostylis barbata	+	0.05 m	PI090.18	
Cleome viscosa	+	0.3 m	PI065.17	
Corchorus tectus	+	0.2 m	PI091.07	
Digitaria brownii	+	0.2 m	PI160.09	
Eriachne pulchella subsp. *dominii*	+	0.1 m	PI160.03	
Euphorbia australis	+	0.05 m	PI160.10	
Hakea lorea subsp. *lorea*	+	0.6 m	PI160.06	
Hibiscus burtonii	+	0.2 m	PI160.17	
Hybanthus aurantiacus	+	0.2 m	PI043.13	
Indigofera monophylla	+	0.2 m	PI065.13	
Mollugo molluginea	+	0.1 m	PI132.04	
Pluchea tetranthera	+	0.2 m	PI066.22	
Polycarpaea corymbosa var. *corymbosa*	+	0.05 m	PI058.10	
Polycarpaea holtzei	+	0.02 m	PI160.05	
Polygala isingii	+	0.05 m	PI160.14	
**Portulaca oleracea*	+	0.05 m	PI128.04	
Ptilotus auriculifolius	+	0.5 m	PIOPLD03a	
Senna glutinosa subsp. *glutinosa*	+	1 m	PI160.15	
Senna notabilis	+	0.4 m	PI051.12	

Sida echinocarpa	+	0.7 m	PI160.13
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.3 m	PI058.05
Solanum diversiflorum	+	0.2 m	PI048.09
Solanum lasiophyllum	+	0.2 m	PI160.18
Sporobolus australasicus	+	0.1 m	PI066.02
Tephrosia supina	+	0.1 m	PI125.08
Triodia epactia	18%	0.3 m	PI160.01
Triodia lanigera	2%	0.2 m	PI160.08
Yakirra australiensis var. *australiensis*	+	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
Abutilon pritzelianum MS	+	1.3 m	PI161.05	
Acacia ancistrocarpa	+	3 m	PI131.04	
Acacia ancistrocarpa	1%	1 m	PI086.05	
Acacia colei var. *colei*	3%	3.2 m	PI070.38	
Acacia inaequilatera	2%	2.8 m	PI054.05	
Acacia sericophylla	+	2 m	PI099.13	
Acacia stellaticeps	+	0.4 m	PI070.01	
Acacia tumida var. *pilbarensis*	2%	3 m	PI070.30	
Aristida holathera var. *holathera*	+	0.4 m	PI070.10	
Aristida inaequiglumis	+	1.2 m	PI070.24	
Boerhavia coccinea	+	CR	PI072.12	
Bonamia alatisemina	+	cr	PI053.02	
Bonamia rosea	+	0.3 m	PI088.02	
Bulbostylis barbata	+	0.1 m	PI070.17	
Cassytha capillaris	+	cr	PI055.03	
Chrysopogon fallax	+	1 m	PI070.21	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.4 m	PI070.02	
Corymbia candida subsp. *dipsodes*	+	3.8 m	PI088.08	
Crotalaria ramosissima	+	0.2 m	PI089.02	
Cucumis maderaspatanus	+	CR	PI147.17	
Desmodium filiforme	+	cr	PI046.11	
Digitaria brownii	1%	0.3 m	PI161.04	
Dolichandrone heterophylla	+	2 m	PI061.05	
Eriachne mucronata	+	0.3 m	PI102.06	
Euphorbia alsiniflora	+	0.2 m	PI072.10	
Euphorbia australis	+	cr	PI108.12	
Evolvulus alsinoides var. *villosicalyx*	+	0.15 m	PI070.07	
Fimbristylis dichotoma	+	0.3 m	PI081.07	

Hibiscus brachychlaenus	+	0.5 m	PI161.03
Hybanthus aurantiacus	+	0.3 m	PI099.02
Indigofera monophylla	+	0.3 m	PI072.03
Paraneurachne muelleri	+	0.3 m	PI054.09
Pimelea ammocharis	+	0.6 m	PI070.23
Polycarpaea corymbosa var. *corymbosa*	+	0.15 m	PI072.02
Ptilotus astrolasius	+	0.3 m	PI089.05
Ptilotus calostachyus	+	0.3 m	PI032.04
Ptilotus fusiformis	+	0.3 m	PI070.22
Senna notabilis	+	0.2 m	PI070.14
Sida rohlenae subsp. *rohlenae*	+	0.3 m	PI105.08
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	0.4 m	PI070.03
Solanum lasiophyllum	+	0.4 m	PI070.37
Tinospora smilacina	+	cr	PI087.09
Triodia epactia	10%	0.5 m	PI161.01
Triodia lanigera	3%	0.4 m	PI161.02
Yakirra australiensis var. *australiensis*	+	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
Avicennia marina	+	0.5 m	PI015.02	
Eragrostis falcata	+	0.2 m	PI011.03	
Frankenia ambita	+	prostrate	PI162.01	
Muellerolimon salicorniaceum	+	0.2 m	PI011.04	
Tecticornia indica subsp. *bidens*	+	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
Acacia colei var. *colei*	35%	3.2 m	PI070.38	
Acacia inaequilatera	1%	1.8 m	PI054.05	
Acacia stellaticeps	+	1.5 m	PI070.01	
Bulbostylis barbata	+	0.15 m	PI070.17	
Carissa lanceolata	+	1.5 m	PI086.09	
Chrysopogon fallax	40%	1 m	PI070.21	
Corchorus lasiocarpus subsp. *lasiocarpus*	+	0.3 m	PI070.02	
Indigofera monophylla	+	0.4 m	PI072.03	
**Portulaca oleracea*	+	0.1 m	PI086.11	
Senna notabilis	+	0.2 m	PI070.14	
Sporobolus australasicus	+	0.1 m	PI037.07	
Triodia epactia	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
Acacia trudgeniana	+		PI065.31	
**Aerva javanica*	+		PI103.07	
Atalaya hemiglauca	+		PIR151.07	
**Cenchrus ciliaris*	40%		PI103.06	
Flueggea virosa subsp. *melanthesoides*	+		PIR151.02	
Operculina aequisepala	+		PIR151.01	
Senna artemisioides subsp. *oligophylla*	+		PIR151.03	
Sorghum plumosum	+		PIR151.05	
Swainsona formosa	+		PIR151.06	
Triodia epactia	+		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
Acacia ancistrocarpa	1%	1-2 m	PI123.13	
Acacia bivenosa	+	1.5 m	PI121.09	
Acacia colei var. *colei*	2%	1.5 m	PI076.14	
Acacia inaequilatera	+	1 m	PI123.15	
Acacia pyrifolia	2%	1.5 m	PI107.03	
Acacia trachycarpa	1%	1-2 m	PI107.02	
**Cenchrus ciliaris*	20%	0.3 m	PI103.06	
Chrysopogon fallax	3%	0.5 m	PI084.10	
Corymbia hamersleyana	4%	2-4 m	PIRE01.01	
Sporobolus australasicus	1%	0.2 m	PI121.01	
Triodia epactia	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

	Mangroves					Dune C		Dune D		Samphire B								Limestone H	Grassland A					Grassland B		MDLA				MDLB			MDLD	
Species	**PI004**	**PI015**	**PI016**	**PI017**	**PI162**	**PI001**	**PI003**	**PI006**	**PI157**	**PI002**	**PI005**	**PI011**	**PI012**	**PI013**	**PI018**	**PI038**	**PI039**	**PI040**	**PI007**	**PI014**	**PI019**	**PI037**	**PI121**	**PI064**	**PI066**	**PI022**	**PI041**	**PI068**	**PI107**	**PI098**	**PI115**	**PI122**	**PI119**	**PI120**
Abutilon lepidum																																		
Abutilon otocarpum																																		
Abutilon pritzelianum																																		
Abutilon trudgenii																																		
Acacia ampliceps																											+	1%						+
Acacia ancistrocarpa																										+								
Acacia bivenosa						+								1%				3%					+											
Acacia colei																																		
Acacia colei var. *colei*																			+		+					+				+	+	1%		+
Acacia dictyophleba																												+						
Acacia inaequilatera																																		
Acacia maitlandii																																		
Acacia orthocarpa																																		
Acacia pyrifolia																											+		out					
Acacia sericophylla																																		
Acacia sphaerostachya																																		
Acacia stellaticeps						20%	20%		+											+	2%						+			+	5%			
Acacia synchronicia																															+	+		
Acacia trachycarpa																										7%	1%	2%	out			3%	2%	+
Acacia trachycarpa x *tumida*																															+	1%		
Acacia trudgeniana																																		
Acacia tumida var. *pilbarensis*																										2%		+		+				
Acacia tumida var. *tumida*																																		
Acacia victoriae																																		
Achyranthes aspera																																+		
Adriana tomentosa								+																										
**Aerva javanica*						5%	+	1%	+					+	+			1-2%	+			+											+	+
Aeschynomene indica																																		
Alternanthera angustifolia																																		
Alternanthera nana																																		
Amaranthus undulatus							+												+							+						+	+
Ammannia multiflora																																	+	1%
Aristida contorta																																		
Aristida holathera var. *holathera*																				1%					+	+	+	+		+		+		
Aristida inaequiglumis																					+													
Atalaya hemiglauca																																		
Atriplex codonocarpa																						+												
Avicennia marina	90%	25%	+	80%	+								30%			+																		
Bergia pedicellaris																																		
Boerhavia coccinea														+				+																
Bonamia alatisemina								4%																										
Bonamia media var. *villosa*																			+							+								
Bonamia rosea																															+			
Bruguiera exaristata		1%														1%																		
Bulbostylis barbata															+			+	+	+	+		+		+	+				+		+		
Bulbostylis turbinata																																		
Cajanus cinereus									+																		+	+				+	+	
Calandrinia creethiae																								+										
Calandrinia pentavalvis																				+	+		+		+	+	+				+		+	+
Calandrinia pumila																			+											+				
Calandrinia stagnensis																																+		
Calandrinia quadrivalvis																												+						
Carissa lanceolata																														+	1%			
Cassytha capillaris																					+						+	+			+		+	+
**Cenchrus ciliaris*						10%	+	30%	65%		(+)				1%			15%	25%			+	+			1%	+	+				1%	15%	3%
Centipeda minima subsp. *macrocephala*																									+					+	+			
Chloris pectinata																										+							3%	(8%)
Chrysopogon fallax								+														+				+				5%	1%			+
Cleome viscosa						+	(+)	+						+	+			+	+	+						+				+	+	(+)	+	+
Codonocarpus cotinifolius								+																										
Commelina ensifolia																					(+)													
Corchorus lasiocarpus subsp. *lasiocarpus*							+											+	+	+						+		+		+	+	+	+	+
Corchorus tectus														+									+							+	+	+		
Corymbia candida subsp. *lautifolia*																														+		2%		
Corymbia hamersleyana														+																				
Corymbia zygophylla																																		
Crotalaria cunninghamii subsp. *sturtii*						+		+	nc																	+	+						+	+
Crotalaria medicaginea var. *neglecta*																																		
Crotalaria ramosissima																			+	+	+											+		
Cucumis maderaspatanus								+																									+	
**Cucumis melo* subsp. *agrestis*																																		
Cullen cinereum																																		
Cullen stipulaceum																														+				
Cynanchum floribundum																																	+	
Cyperus cunninghamii subsp. *cunninghamii*																					+													+
Cyperus dactylotes																																		
Cyperus difformis																																		
Cyperus ixiocarpus																										+								
Cyperus rigidellus										(1%)																								
Cyperus squarrosus																								(+)										
Cyperus vaginatus																											+	1%				+	+	+
Dactyloctenium radulans											(+)											+			+									
Dentella asperata							+																					+						
Desmodium filiforme																					+												+	
Dichanthium sericeum subsp. *humilius*																						+												
Digitaria brownii																																		

PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT
APPENDIX G
FLORA MATRIX

	Mangroves					Dune C		Dune D		Samphire B								Limestone H	Grassland A					Grassland B		MDLA				MDLB			MDLD	
Species	**PI004**	**PI015**	**PI016**	**PI017**	**PI162**	**PI001**	**PI003**	**PI006**	**PI157**	**PI002**	**PI005**	**PI011**	**PI012**	**PI013**	**PI018**	**PI038**	**PI039**	**PI040**	**PI007**	**PI014**	**PI019**	**PI037**	**PI121**	**PI064**	**PI066**	**PI022**	**PI041**	**PI068**	**PI107**	**PI098**	**PI115**	**PI122**	**PI119**	**PI120**
Digitaria sp.																																		
Dodonaea coriacea																																		
Dolichandrone heterophylla																																		
Drosera burmanni																																		
Drosera indica																				+	+													
Dysphania kalpari																										+								
Dysphania saxatilis																										+								
Ehretia saligna var. *saligna*																														+				
Enneapogon caerulescens																		+																
Enneapogon sp.																		+																
Eragrostis cumingii																+									+	+				+		+	+	+
**Eragrostis curvula*																																		+
Eragrostis dielsii																								+										
Eragrostis eriopoda																				2%						+								
Eragrostis falcata			+		+						+	1%					+					+												
Eragrostis pergracilis																									+									
Eragrostis speciosa																										+								
Eragrostis tenellula																														+		+		
Eriachne aristidea																									+	+	+							
Eriachne benthamii																			+											+				
Eriachne ciliata																																		
Eriachne glauca var. *glauca*																														+				
Eriachne helmsii																																		
Eriachne mucronata														+				+	+		10%			+		+		+						
Eriachne pulchella																																		
Eriachne pulchella subsp. *dominii*																																		
Eucalyptus camaldulensis subsp. *refulgens*																												1%		15%		1%	1%	
Eucalyptus victrix																										4%				11%				
Eulalia fulva																														+				
Euphorbia alsiniflora						+	+							+	+			+	+	+	+	+	+			+	+	+			+		+	
Euphorbia australis								+											+							+				+				
Euphorbia tannensis subsp. *eremophila*						+		+						+																				
Evolvulus alsinoides var. *decumbens*																																		
Evolvulus alsinoides var. *villosicalyx*																		+																
Fimbristylis dichotoma																				+	+		+		+							+		
Fimbristylis littoralis																																		+
Fimbristylis oxystachya																										+								
Fimbristylis rara																								(+)										
Fimbristylis simulans																				+					+									
**Flaveria trinervia*																																	+	+
Flueggea virosa subsp. *melanthesoides*																																		
Frankenia ambita					+					+																								
Glycine canescens																																		
Gomphrena cunninghamii																																		
Gomphrena leptoclada subsp. *leptoclada*																																		
Gomphrena pusilla																		+																
Gomphrena sordida																				+					+									
Goodenia forrestii																																		
Goodenia lamprosperma																															+	+		+	
Goodenia microptera														+				+																
Goodenia stobbsiana																																		
Goodenia triodiophila																															+	+		
Gossypium australe																																+		
Grevillea pyramidalis subsp. *leucadendron*																																		
Grevillea wickhamii subsp. *hispidula*																																		
Hakea lorea subsp. *lorea*																		+																
Heliotropium cunninghamii																			+															
Heliotropium inexplicitum																				+														
Heliotropium muticum																																		
Heliotropium ovalifolium														+																				
Heliotropium tenuifolium														+																				
Hibiscus austrinus var. *austrinus*																																+	+	+
Hibiscus brachychlaenus																																		
Hibiscus burtonii																																		
Hibiscus leptocladus																																		
Hibiscus sturtii var. *campylochlamys*																																		
Hybanthus aurantiacus																			+	+	+					+		+					+	
Indigofera colutea																		+														+		
Indigofera hirsuta																																+		
Indigofera linifolia																		+	+		+													
Indigofera monophylla														+				+														+	+	
**Indigofera oblongifolia*																																		
Indigofera sp.																					+													
Indigofera trita																		+				+												
Ipomoea coptica																									+						+	+		
Ipomoea muelleri																										+								
Ipomoea polymorpha																																		
Isotropis atropurpurea																																		
Kennedia prorepens																			+															
Keraudrenia velutina subsp. *elliptica*																																		
Leptosema anomalum																																		
Maireana tomentosa																						1%												
Marsilea hirsuta																									+									
Marsilea mutica																																		
Melaleuca argentea																											2%	2%	1%					1%
Melaleuca glomerata																												+						

PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT
APPENDIX G
FLORA MATRIX

	Mangroves					Dune C		Dune D		Samphire B								Limestone H	Grassland A					Grassland B		MDLA				MDLB			MDLD	
Species	**PI004**	**PI015**	**PI016**	**PI017**	**PI162**	**PI001**	**PI003**	**PI006**	**PI157**	**PI002**	**PI005**	**PI011**	**PI012**	**PI013**	**PI018**	**PI038**	**PI039**	**PI040**	**PI007**	**PI014**	**PI019**	**PI037**	**PI121**	**PI064**	**PI066**	**PI022**	**PI041**	**PI068**	**PI107**	**PI098**	**PI115**	**PI122**	**PI119**	**PI120**
Melaleuca lasiandra																																18%	10%
Melaleuca linophylla																												+					
Melhania oblongifolia								+										+															
Mimulus gracilis																														+				
Mimulus uvedaliae var. *uvedaliae*																																		
Mitrasacme connata																				+	+													
Mollugo molluginea																			+							+					+			
Muellerolimon salicorniaceum			8%		+							+				50%	10%																	
Murdannia graminea																				+	+													
Myoporum montanum																		+																
Neobassia astrocarpa											+				+																			
Neptunia dimorphantha																						+								+	+			
Operculina aequisepala																																		
Owenia reticulata																																		
Panicum decompositum															+						+	+									2%			
Paraneurachne muelleri																																		
Paspalidium clementii																																		
Paspalidium tabulatum																						+				+								
Perotis rara																																		
Phyllanthus erwinii																																		
Phyllanthus maderaspatensis																															+		+	
**Physalis angulata*																																		+
Pimelea ammocharis																												+						
Pluchea ferdinandi-muelleri																															+			
Pluchea rubelliflora																						+			+	+		+		+	+	+	+	+
Pluchea tetranthera														+									+	+	+	+						+		
Polycarpaea corymbosa var. *corymbosa*																					+					+						+		
Polycarpaea holtzei																																		
Polycarpaea longiflora																																	+	
Polygala isingii																																		
Polygala linariifolia																					+													
Polymeria ambigua																														+	+		+	
Polymeria calycina																																		
**Portulaca oleracea*																		+				+			+	+				+				
Portulaca pilosa											+								+	+		+	+			+						+		
Pterocaulon serrulatum																																		
Pterocaulon sphacelatum															1%																			
Pterocaulon sphaeranthoides																			+						+			+			+		+	
Ptilotus arthrolasius																																		
Ptilotus astrolasius																																		
Ptilotus auriculifolius																																		
Ptilotus axillaris														+				+																
Ptilotus calostachyus																																		
Ptilotus exaltatus						1%								+																				
Ptilotus fusiformis																										+	+				+			
Ptilotus murrayi																									+					+				
Ptilotus polystachyus																				+	+													
Rhagodia eremaea								+										+																
Rhizophora stylosa													25%																					
Rhynchosia minima						+	+	+										+																
Rotala diandra																																		
Salsola tragus subsp. *grandiflora*						1%																												
Santalum lanceolatum																																		
Sarcostemma viminale subsp. *australe*															+							+												
Scaevola amblyanthera var. *centralis*								1%						+				+																
Scaevola browniana subsp. *browniana*																																		
Scaevola parvifolia subsp. *pilbarae*																																		
Scaevola sericophylla																		+																
Scaevola spinescens														2%																				
Schizachyrium fragile																				2%	+					+								
Schoenoplectus laevis																												+						
Senna artemisioides subsp. *oligophylla*																																		
Senna artemisioides subsp. *oligophylla* x *glaucifolia*																															+			
Senna artemisioides subsp. *oligophylla* x *subsp. helmsii*																																		
Senna curvistyla																																		
Senna glaucifolia																																		
Senna glutinosa subsp. *glutinosa*																																		
Senna glutinosa subsp. x *luerssenii*																																		
Senna notabilis																				+					+	+						+		
Senna venusta																										+								
Sesbania cannabina																						+									+		+	+
Setaria dielsii																										+								
Sida clementii																																+		
Sida echinocarpa																																		
Sida fibulifera																						+												
Sida rohlenae subsp. *rohlenae*																										+		+				+		
Sida sp.																																		
Sida sp. B Kimberley Flora (A.A. Mitchell 2745)																																		
Sida sp. dark green fruits (S. van Leeuwen 2260)																																		
Sida sp. Pilbara (A.A. Mitchell PRP 1543)																														+		+		
Sida sp. verrucose glands (F.H. Mollemans 2423)														+						+														

PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT
APPENDIX G
FLORA MATRIX

	Mangroves					Dune C		Dune D		Samphire B								Limestone H	Grassland A					Grassland B		MDLA				MDLB			MDLD	
Species	**PI004**	**PI015**	**PI016**	**PI017**	**PI162**	**PI001**	**PI003**	**PI006**	**PI157**	**PI002**	**PI005**	**PI011**	**PI012**	**PI013**	**PI018**	**PI038**	**PI039**	**PI040**	**PI007**	**PI014**	**PI019**	**PI037**	**PI121**	**PI064**	**PI066**	**PI022**	**PI041**	**PI068**	**PI107**	**PI098**	**PI115**	**PI122**	**PI119**	**PI120**
Solanum diversiflorum																																		
Solanum ellipticum																									+									
Solanum lasiophyllum																		+																
Sorghum plumosum																																		
Sorghum sp.																										+								
Spinifex longifolius						4%			+																									
Sporobolus actinocladus																							1%											
Sporobolus australasicus											+											1%	20%		1%				+		+		
Sporobolus virginicus											+	+				+											+							
Stackhousia intermedia																				+	+				+				+					
Stackhousia muricata																																		
Stemodia grossa																										+								
Stemodia lathraia																																		
Stemodia viscosa																																		+
Streptoglossa decurrens																							+								+	+	+	+
Striga squamigera																										+						+	+	+
Stylidium desertorum																																		
**Stylosanthes hamata*																																		
Swainsona formosa																																		
Swainsona kingii																						+												
Swainsona pterostylis															+							+												
Synaptantha tillaeacea var. *tillaeacea*																									+	+								
Tecticornia auriculata										20%												2%												
Tecticornia halocnemoides subsp. *tenuis*												+				+	10%																	
Tecticornia indica subsp. *bidens*					+					2%	7%	+					20%																	
Tecticornia sp. Dennys Crossing (K.A. Shepherd & J. English KS 552)			10%							1%		+	1%			30%																		
Tephrosia leptoclada							+	+																										
Tephrosia rosea																																		
Tephrosia rosea var. *clementii*																											+							
Tephrosia rosea var. *glabrior*									1%																									
Tephrosia rosea var. *rosea*																			+															
Tephrosia rosea var. *venulosa*																																		
Tephrosia simplicifolia																			+															
Tephrosia sp. B Kimberley Flora (C.A. Gardner 7300)																			+														+	+
Tephrosia supina																																		
Tephrosia uniovulata																																		
Threlkeldia diffusa		1%		+		+																												
Tinospora smilacina																			+												+			
Trachymene oleracea subsp. *oleracea*																																		
Trianthema glossostigma						2%								+																				
Trianthema pilosa																		+														+		
Trianthema triquetra																						+	+		+					+				
Tribulopis angustifolia																																		
Tribulus hirsutus																																		
Tribulus macrocarpus						+								+																				
Tribulus occidentalis																																		
Trichodesma zeylanicum var. *zeylanicum*																												+						
Tricoryne corynothecoides						+			+										+															
Triodia epactia							5%	12%										30%	20%					35%	17%	5%		+		8%	45%	25%	2%	+
Triodia lanigera																												1%						
Triodia longiceps																															+			
Triodia schinzii														35%																				
Triodia secunda															90%					55%	70%	40%	50%											
Triumfetta chaetocarpa																			1%															
Triumfetta clementii																																		
Triumfetta ramosa																																		
Urochloa holosericea subsp. *velutina*																																		
**Vaccaria hispanica*																			+															
Vigna lanceolata var. *filiformis*																					+													
Vigna lanceolata var. *lanceolata*																																		
Wahlenbergia tumidifructa																										+							+	
Waltheria indica																														+		+		
Whiteochloa airoides						+									+			+	+		+													
Xerochloa laniflora												+													+									
Yakirra australiensis var. *australiensis*																				+	+					+						+		
Zornia muelleriana																			+	+														

PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT
APPENDIX G
FLORA MATRIX

	MDLE		Sandplain A					Sanplain B															Sandplain C										
Species	**PI069**	**PI146**	**PI008**	**PI008a**	**PI009**	**PI010**	**PI036**	**PI020**	**PI021**	**PI023**	**PI025**	**PI026**	**PI027**	**PI028**	**PI029**	**PI031**	**PI032**	**PI042**	**PI043**	**PI044**	**PI070**	**PI071**	**PI072**	**PI045**	**PI046**	**PI047**	**PI048**	**PI049**	**PI024**	**PI033**	**PI035**	**PI050**	**PI052**	**PI053**
Abutilon lepidum																																	
Abutilon otocarpum																																	
Abutilon pritzelianum																					+												
Abutilon trudgenii																																	
Acacia ampliceps																																	
Acacia ancistrocarpa																																	
Acacia bivenosa																																	
Acacia colei																																	
Acacia colei var. *colei*		15%			+		+								+				+	+	+	3%	+	+	+	1%	+			+	+		+	1%
Acacia dictyophleba																																	
Acacia inaequilatera																												+						+
Acacia maitlandii																																	
Acacia orthocarpa																																	
Acacia pyrifolia	1%	+				+																											
Acacia sericophylla																					+			+							+		+	
Acacia sphaerostachya																																	
Acacia stellaticeps		+	45%	2%	25%		1%	5%	1%	6%	4%	2%	1%	3%	4%	42%	35%	4%	2%		40%	4%	3%	3%	5%	+	1%	+	5%	10%	10%	10%	40%	15%
Acacia synchronicia																																	
Acacia trachycarpa						1%																											
Acacia trachycarpa x *tumida*						+																											
Acacia trudgeniana																																	
Acacia tumida var. *pilbarensis*	15%	+							+												+		1%					+				1%		
Acacia tumida var. *tumida*																								+			+							
Acacia victoriae																																	
Achyranthes aspera																																	
Adriana tomentosa																																	
**Aerva javanica*																																	
Aeschynomene indica																																	
Alternanthera angustifolia																																	
Alternanthera nana												+																					
Amaranthus undulatus																								+								+	
Ammannia multiflora																																	
Aristida contorta																																	
Aristida holathera var. *holathera*			+	+		+	+	+	+	+							+	+	+		+		+			+		+	+	+	+	+		+
Aristida inaequiglumis								+													+								+	+				+
Atalaya hemiglauca																																	
Atriplex codonocarpa																																	
Avicennia marina																																	
Bergia pedicellaris																				+													
Boerhavia coccinea																							+										
Bonamia alatisemina			+		+	+	+		+			+	+				+	+			+					+	+			+		+		+
Bonamia media var. *villosa*	+			+									+						+		+		+								+		
Bonamia rosea			1%	1%	+	+				+	+				1%	+	+						+						+	+				
Bruguiera exaristata																																	
Bulbostylis barbata			+	+	+	+	+	1%	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+	+	+	+
Bulbostylis turbinata																																+	
Cajanus cinereus	15%	+																															
Calandrinia creethiae																						+				+		+					
Calandrinia pentavalvis						+	+	+	+			+		+							+	+	+	+	+		+	+						+
Calandrinia pumila			+					+												+				+			+							
Calandrinia stagnensis															+																			+
Calandrinia quadrivalvis																																	
Carissa lanceolata												+						+							+							+		
Cassytha capillaris									+								+							+			+						
**Cenchrus ciliaris*				+																	+								+			0.5%	
Centipeda minima subsp. *macrocephala*																																	
Chloris pectinata																																	
Chrysopogon fallax	+	+	+		+		+	+	3%	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+			+	+	+	+	
Cleome viscosa			+	+					+			(+)					+														+	(+)		
Codonocarpus cotinifolius																													+			+		
Commelina ensifolia																																		
Corchorus lasiocarpus subsp. *lasiocarpus*	+		+	+		+							+			+		+	+		+		+	+	+	+		+				+		
Corchorus tectus				+																														
Corymbia candida subsp. *lautifolia*		1%														+								+								+	+	
Corymbia hamersleyana				+																														
Corymbia zygophylla																																		
Crotalaria cunninghamii subsp. *sturtii*	+																																	
Crotalaria medicaginea var. *neglecta*																																		
Crotalaria ramosissima						+				+		+	+		+		+							+										
Cucumis maderaspatanus													+			+						+		+				+		+				
**Cucumis melo* subsp. *agrestis*												+			+																			
Cullen cinereum																																		
Cullen stipulaceum																																		
Cynanchum floribundum																																		
Cyperus cunninghamii subsp. *cunninghamii*								1%	+																									
Cyperus dactylotes							+											+		+														
Cyperus difformis																																		
Cyperus ixiocarpus																																		
Cyperus rigidellus																																		
Cyperus squarrosus																																		
Cyperus vaginatus												+																						
Dactyloctenium radulans																																		
Dentella asperata	+	+																																
Desmodium filiforme											+								+		+			+	+									
Dichanthium sericeum subsp. *humilius*																																		
Digitaria brownii				1%			+				+			+	+																			

PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT
APPENDIX G
FLORA MATRIX

	MDLE		Sandplain A					Sanplain B															Sandplain C										
Species	**PI069**	**PI146**	**PI008**	**PI008a**	**PI009**	**PI010**	**PI036**	**PI020**	**PI021**	**PI023**	**PI025**	**PI026**	**PI027**	**PI028**	**PI029**	**PI031**	**PI032**	**PI042**	**PI043**	**PI044**	**PI070**	**PI071**	**PI072**	**PI045**	**PI046**	**PI047**	**PI048**	**PI049**	**PI024**	**PI033**	**PI035**	**PI050**	**PI052**	**PI053**
Digitaria sp.																																	
Dodonaea coriacea			+														+																
Dolichandrone heterophylla																																	
Drosera burmanni								+																+									
Drosera indica							+	2%			+	+		+					+	+		+		+	+		+	+						+
Dysphania kalpari																																	
Dysphania saxatilis	+														+														+	+		+		+
Ehretia saligna var. *saligna*																																	
Enneapogon caerulescens																																	
Enneapogon sp.																																	
Eragrostis cumingii																					+			+									
**Eragrostis curvula*																																	
Eragrostis dielsii																																	
Eragrostis eriopoda				+						+			+		+			nc			+		+			+	+					25%		+
Eragrostis falcata																																	
Eragrostis pergracilis																																	
Eragrostis speciosa									+																+								+
Eragrostis tenellula																																	
Eriachne aristidea				+						+									+		+				+						+	+	+
Eriachne benthamii																	+															+	
Eriachne ciliata																																	
Eriachne glauca var. *glauca*																																	
Eriachne helmsii											+		5%																				
Eriachne mucronata			1%	+	6%		10%	2%	20%			+		+	+					+	+	+		+	1%	+	+	+	+	+			+	
Eriachne pulchella																																	
Eriachne pulchella subsp. *dominii*																																	
Eucalyptus camaldulensis subsp. *refulgens*	4%											1%																					
Eucalyptus victrix		6%																		+													
Eulalia fulva																																	
Euphorbia alsiniflora					+	+			+	+	+		+			+	+						+					+	+			+	
Euphorbia australis															+						+										+	+	+
Euphorbia tannensis subsp. *eremophila*																																	
Evolvulus alsinoides var. *decumbens*					+				+																								
Evolvulus alsinoides var. *villosicalyx*			+			+					+		+						+		+			+			+				+		
Fimbristylis dichotoma			2%			+																+				+		+	+		+			
Fimbristylis littoralis																																	
Fimbristylis oxystachya					+						+													+				+					
Fimbristylis rara																																	
Fimbristylis simulans							+	+						+						+			+	+	+				+					+
**Flaveria trinervia*																																	
Flueggea virosa subsp. *melanthesoides*																																	
Frankenia ambita																																	
Glycine canescens												+	+																					
Gomphrena cunninghamii																																	
Gomphrena leptoclada subsp. *leptoclada*																																	
Gomphrena pusilla																																	
Gomphrena sordida																																	
Goodenia forrestii	+				+											+															+		
Goodenia lamprosperma		+																	+														
Goodenia microptera			+			+																							+				
Goodenia stobbsiana								+																					+				
Goodenia triodiophila	+						+											+	+														
Gossypium australe																																	
Grevillea pyramidalis subsp. *leucadendron*																																	
Grevillea wickhamii subsp. *hispidula*																																	
Hakea lorea subsp. *lorea*						+	+								+		+		+		+					+				+			+
Heliotropium cunninghamii																									+								
Heliotropium inexplicitum																	+																
Heliotropium muticum																																	
Heliotropium ovalifolium																																	
Heliotropium tenuifolium																																	
Hibiscus austrinus var. *austrinus*																																	
Hibiscus brachychlaenus			+																														
Hibiscus burtonii				+			+														+		+		+	+	+	+				+	
Hibiscus leptocladus																								+									+
Hibiscus sturtii var. *campylochlamys*																					+					+							
Hybanthus aurantiacus	+		+	+	+	+	+		+		+	+	+			+	+	+	+			+	+		+	+		+	+			+	+
Indigofera colutea																																	
Indigofera hirsuta																																	
Indigofera linifolia																																	
Indigofera monophylla		+	+	+	+	+				+				+	+	+	+						+	+					+		+	+	+
**Indigofera oblongifolia*																																	
Indigofera sp.																																	
Indigofera trita																																	
Ipomoea coptica																																	
Ipomoea muelleri									+													+									+		
Ipomoea polymorpha																																	
Isotropis atropurpurea																																	
Kennedia prorepens											+																						
Keraudrenia velutina subsp. *elliptica*																	+																
Leptosema anomalum							+																					+					
Maireana tomentosa																																	
Marsilea hirsuta																																	
Marsilea mutica																				+													
Melaleuca argentea																																	
Melaleuca glomerata																																	

PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT
APPENDIX G
FLORA MATRIX

	MDLE		Sandplain A					Sanplain B															Sandplain C										
Species	**PI069**	**PI146**	**PI008**	**PI008a**	**PI009**	**PI010**	**PI036**	**PI020**	**PI021**	**PI023**	**PI025**	**PI026**	**PI027**	**PI028**	**PI029**	**PI031**	**PI032**	**PI042**	**PI043**	**PI044**	**PI070**	**PI071**	**PI072**	**PI045**	**PI046**	**PI047**	**PI048**	**PI049**	**PI024**	**PI033**	**PI035**	**PI050**	**PI052**	**PI053**
Melaleuca lasiandra																																	
Melaleuca linophylla																																	
Melhania oblongifolia																																	
Mimulus gracilis								+												+				+									
Mimulus uvedaliae var. *uvedaliae*																				+					+								
Mitrasacme connata						+	+	1%	+		+	+		+						+		+	+	+	+	+		+	+				+
Mollugo molluginea	+		+	+	+		+			+	+		+			(+)	+		+	+	+		+		+	+	+	+	+		+		
Muellerolimon salicorniaceum																																	
Murdannia graminea							(+)	+												+				+	+		+						
Myoporum montanum																																	
Neobassia astrocarpa																																	
Neptunia dimorphantha																																	
Operculina aequisepala																																	
Owenia reticulata																																	
Panicum decompositum																																	
Paraneurachne muelleri	+							+								+		+	+		+		nc							+	+	+		+
Paspalidium clementii																																	
Paspalidium tabulatum																						+											
Perotis rara																																	
Phyllanthus erwinii																																	
Phyllanthus maderaspatensis																																	
**Physalis angulata*																																	
Pimelea ammocharis																					+								+				
Pluchea ferdinandi-muelleri		+																	+			+		+		+	+						
Pluchea rubelliflora								+																									
Pluchea tetranthera		+				+	+		1%									+		+					+	+	+	+				+		
Polycarpaea corymbosa var. *corymbosa*				+	+	+	+	+	+	+				+		+	+	+	+		+	+	+			+			+	+	+			+
Polycarpaea holtzei																																	
Polycarpaea longiflora																																	
Polygala isingii																																	
Polygala linariifolia						+		+									+		+	+				+	+		+			+				
Polymeria ambigua														+		+	+		+														
Polymeria calycina																																	
**Portulaca oleracea*																					+			+	+				+		+			+
Portulaca pilosa				+									+		+	+																	
Pterocaulon serrulatum																																	
Pterocaulon sphacelatum								+	+																								
Pterocaulon sphaeranthoides																																	
Ptilotus arthrolasius																																	
Ptilotus astrolasius			+	+	+					+						+	+							+							+		
Ptilotus auriculifolius																																	
Ptilotus axillaris																																	
Ptilotus calostachyus					+					+							+												+	+	+			
Ptilotus exaltatus																																	
Ptilotus fusiformis					+	+		+	+	+	+	+	+	+	+	+			+	+	+		+	+	+	+	+	+		+	+			+
Ptilotus murrayi																																	
Ptilotus polystachyus			+	+	+				+	+	+		+		+															+	+			
Rhagodia eremaea																																	
Rhizophora stylosa																																	
Rhynchosia minima																																	
Rotala diandra																				+													
Salsola tragus subsp. *grandiflora*									+																								
Santalum lanceolatum															+																		
Sarcostemma viminale subsp. *australe*																																	
Scaevola amblyanthera var. *centralis*																																	
Scaevola browniana subsp. *browniana*																																	
Scaevola parvifolia subsp. *pilbarae*																																	
Scaevola sericophylla																																	
Scaevola spinescens																																	
Schizachyrium fragile					+	+	+	+	+			+												+	+				+	+	+			
Schoenoplectus laevis																																	
Senna artemisioides subsp. *oligophylla*																																	
Senna artemisioides subsp. *oligophylla* x *glaucifolia*																																	
Senna artemisioides subsp. *oligophylla* x *subsp. helmsii*																													+				
Senna curvistyla																																	
Senna glaucifolia																																	
Senna glutinosa subsp. *glutinosa*																																	
Senna glutinosa subsp. x *luerssenii*																																	
Senna notabilis	+		+				+				+	+	+			+	+		+		+	+	+		+	+	+	+				+		+
Senna venusta																																	
Sesbania cannabina																																	
Setaria dielsii																																	
Sida clementii	+																																
Sida echinocarpa																																	
Sida fibulifera																			+				+										
Sida rohlenae subsp. *rohlenae*	+																					+											
Sida sp.																																	
Sida sp. B Kimberley Flora (A.A. Mitchell 2745)													+													+		+						
Sida sp. dark green fruits (S. van Leeuwen 2260)																								+									
Sida sp. Pilbara (A.A. Mitchell PRP 1543)				+			+				+								+		+				+	1%	+	+			+		+
Sida sp. verrucose glands (F.H. Mollemans 2423)											+																						

PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT
APPENDIX G
FLORA MATRIX

	MDLE		Sandplain A					Sanplain B															Sandplain C										
Species	**PI069**	**PI146**	**PI008**	**PI008a**	**PI009**	**PI010**	**PI036**	**PI020**	**PI021**	**PI023**	**PI025**	**PI026**	**PI027**	**PI028**	**PI029**	**PI031**	**PI032**	**PI042**	**PI043**	**PI044**	**PI070**	**PI071**	**PI072**	**PI045**	**PI046**	**PI047**	**PI048**	**PI049**	**PI024**	**PI033**	**PI035**	**PI050**	**PI052**	**PI053**
Solanum diversiflorum				+							+																+	+						
Solanum ellipticum											+	+	+											+			+			+				
Solanum lasiophyllum																					+		+		+						+	1%		+
Sorghum plumosum																																		
Sorghum sp.																																		
Spinifex longifolius																																		
Sporobolus actinocladus																																		
Sporobolus australasicus																																		
Sporobolus virginicus																																		
Stackhousia intermedia							+																	+	+		+							
Stackhousia muricata																			+									+						
Stemodia grossa																																		
Stemodia lathraia																																		
Stemodia viscosa																																		
Streptoglossa decurrens								+																										
Striga squamigera																																		
Stylidium desertorum																				+		+		+	+									
**Stylosanthes hamata*																																		
Swainsona formosa																																		
Swainsona kingii																																		
Swainsona pterostylis																																		
Synaptantha tillaeacea var. *tillaeacea*								+																										
Tecticornia auriculata																																		
Tecticornia halocnemoides subsp. *tenuis*																																		
Tecticornia indica subsp. *bidens*																																		
Tecticornia sp. Dennys Crossing (K.A. Shepherd & J. English KS 552)																																		
Tephrosia leptoclada							+																											
Tephrosia rosea				+																														
Tephrosia rosea var. *clementii*																																		
Tephrosia rosea var. *glabrior*																																		
Tephrosia rosea var. *rosea*																																		
Tephrosia rosea var. *venulosa*																																		
Tephrosia simplicifolia																	+																	
Tephrosia sp. B Kimberley Flora (C.A. Gardner 7300)			+																															
Tephrosia supina																																		
Tephrosia uniovulata																																		
Threlkeldia diffusa																																		
Tinospora smilacina																																		
Trachymene oleracea subsp. *oleracea*																																		
Trianthema glossostigma																																		
Trianthema pilosa				+	+	+										+							+										+	
Trianthema triquetra																																		
Tribulopis angustifolia													+				+				+													
Tribulus hirsutus																																		
Tribulus macrocarpus																																		
Tribulus occidentalis																					+													
Trichodesma zeylanicum var. *zeylanicum*																																		
Tricoryne corynothecoides																																		
Triodia epactia	6%	20%	5%			30%			28%		9%			10%	8%			+	25%	4%	20%	25%	40%	25%	30%	16%	8%	16%		10%	45%	10%	15%	20%
Triodia lanigera						5%													+										2%	40%	2%			
Triodia longiceps																																		
Triodia schinzii			5%	3%	8%		30%	5%		4%	15%	40%	6%	4%		16%	40%	22%							10%				45%					
Triodia secunda								25%												5%							12%							
Triumfetta chaetocarpa																																		
Triumfetta clementii																																		
Triumfetta ramosa						+																			+									
Urochloa holosericea subsp. *velutina*																			+															
**Vaccaria hispanica*																																		
Vigna lanceolata var. *filiformis*								+																										
Vigna lanceolata var. *lanceolata*																																		
Wahlenbergia tumidifructa																																		
Waltheria indica											+								+		+	+		+	+		+					+		+
Whiteochloa airoides																																		
Xerochloa laniflora																																		
Yakirra australiensis var. *australiensis*			+		+	+	+		+		+	+	+	+	+	+	+	+	+	+			+	+	+	+	+	+	+	+	+	+		+
Zornia muelleriana							+					+																						

PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT
APPENDIX G
FLORA MATRIX

	Sandplain H							Sandplain I																Sandplain K									
Species	**PI056**	**PI065**	**PI073**	**PI108**	**PI147**	**PI148**	**PI150**	**PI051**	**PI054**	**PI055**	**PI057**	**PI058**	**PI061**	**PI105**	**PI109**	**PI110**	**PI111**	**PI131**	**PI132**	**PI133**	**PI134**	**PI136**	**PI143**	**PI156**	**PI060**	**PI062**	**PI063**	**PI067**	**PI102**	**PI103**	**PI104**	**PI106**	**PI079**	**PI081**
Abutilon lepidum															+									+									
Abutilon otocarpum				+	+									+						+									+				
Abutilon pritzelianum				+																														
Abutilon trudgenii																																		
Acacia ampliceps																																		
Acacia ancistrocarpa											+					+	+	3%				1%		+		+					+			
Acacia bivenosa																																		
Acacia colei																																		
Acacia colei var. *colei*	1%					+			+		+						+	+		+		+		+		+		2%	2%		+		1%	+
Acacia dictyophleba																																		
Acacia inaequilatera	+			1%					+	1%	3%		+	+		+	+	1%		2%		1%		1%	+	1%			+		1%			OUT
Acacia maitlandii																																		
Acacia orthocarpa																																		
Acacia pyrifolia									+																									
Acacia sericophylla								+	+	+			+	+				+		+		+									+		+	
Acacia sphaerostachya						+										+	+	+	+		1%	+											2%	
Acacia stellaticeps	1%	1%	+	10%	5%	20%	+	12%	40%	20%	+	2%	2%	10%	3%	5%	10%	5%	5%	+	6%	8%	7%		2%	3%	2%	1%	50%	2%	+ (6%)	3%	+	8%
Acacia synchronicia																																		
Acacia trachycarpa																																		
Acacia trachycarpa x *tumida*																																		
Acacia trudgeniana		+						+				1%			+				+		+									+		+	+	
Acacia tumida var. *pilbarensis*		+	6%	5%		+	+		+	+	1%		+	1%	+	+		1%	1%		+						+		+	+		+		
Acacia tumida var. *tumida*												+																						
Acacia victoriae																																		
Achyranthes aspera					+									+																				
Adriana tomentosa																																		
**Aerva javanica*				+	+																			+					+		+		
Aeschynomene indica																																		
Alternanthera angustifolia																																		
Alternanthera nana																																	+	
Amaranthus undulatus	+			+	+									+	+					+										+			+	
Ammannia multiflora																																		
Aristida contorta																								+										
Aristida holathera var. *holathera*	2%	1%	+	50%	+	+			+	+	+	+	1%	+	+	+		+	+	1%	+		+	+	+		+	+	+	5%	+	2%		
Aristida inaequiglumis						+				+		+			+	1%			+								+		+			+	+	
Atalaya hemiglauca																																		
Atriplex codonocarpa																																		
Avicennia marina																																		
Bergia pedicellaris																																		
Boerhavia coccinea	+	+		+	+						+		+				+			+		+		+				+		+	+	+	+	
Bonamia alatisemina		+					+				+	+	+	+	+			+															+	
Bonamia media var. *villosa*		+		+	+										+												+							
Bonamia rosea										+	+						+	1%													+	+	+	
Bruguiera exaristata																																		
Bulbostylis barbata	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Bulbostylis turbinata									+					+																				
Cajanus cinereus																																		
Calandrinia creethiae																																		
Calandrinia pentavalvis	+						+																		+								+	
Calandrinia pumila							1%												+														+	
Calandrinia stagnensis																																		
Calandrinia quadrivalvis																								+										
Carissa lanceolata	+																																+	
Cassytha capillaris								+		+					+	+	+	+	+		+													
**Cenchrus ciliaris*						+																								1%			+	
Centipeda minima subsp. *macrocephala*																																		
Chloris pectinata																																		
Chrysopogon fallax			+		+			+	+	+	+	+		+	+	+	+	+	+	+	+	+	+			+	+		+	+		+	1%	
Cleome viscosa	+	+		+		+			+		+		+				+	+		+	+	+		(+)						+			+	
Codonocarpus cotinifolius								+																										
Commelina ensifolia																																		
Corchorus lasiocarpus subsp. *lasiocarpus*	+	+	+	+	+	+		+		+	+		+	+		+		+		+		+		+				+	+		+	+		
Corchorus tectus																																		
Corymbia candida subsp. *lautifolia*						+		+							3%		out									+								
Corymbia hamersleyana																																		
Corymbia zygophylla														+																			2%	
Crotalaria cunninghamii subsp. *sturtii*																																		
Crotalaria medicaginea var. *neglecta*																									+									
Crotalaria ramosissima				+	+		+				+		+	+						+														
Cucumis maderaspatanus				+	+	+		+	+	+	+	+		+	+	+		+			+							+		+		+		
**Cucumis melo* subsp. *agrestis*																						+		+		+							+	
Cullen cinereum																																		
Cullen stipulaceum																																		
Cynanchum floribundum																																		
Cyperus cunninghamii subsp. *cunninghamii*																																		
Cyperus dactylotes																																		
Cyperus difformis																																		
Cyperus ixiocarpus																																		
Cyperus rigidellus																																		
Cyperus squarrosus																																		
Cyperus vaginatus																																		
Dactyloctenium radulans																																		1%
Dentella asperata																						+									+			
Desmodium filiforme																												+						
Dichanthium sericeum subsp. *humilius*																																		
Digitaria brownii																				+					+	+	+							

PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT
APPENDIX G
FLORA MATRIX

	Sandplain H							Sandplain I																	Sandplain K									
Species	**PI056**	**PI065**	**PI073**	**PI108**	**PI147**	**PI148**	**PI150**	**PI051**	**PI054**	**PI055**	**PI057**	**PI058**	**PI061**	**PI105**	**PI109**	**PI110**	**PI111**	**PI131**	**PI132**	**PI133**	**PI134**	**PI136**	**PI143**	**PI156**	**PI060**	**PI062**	**PI063**	**PI067**	**PI102**	**PI103**	**PI104**	**PI106**	**PI079**	**PI081**
Digitaria sp.																																		
Dodonaea coriacea																																		
Dolichandrone heterophylla			1%	+	+	+							+	+																				
Drosera burmanni																																		
Drosera indica																			+				+					+	+					
Dysphania kalpari																																		
Dysphania saxatilis	+					+				+	+	+	+	+	+	+	+		+	+	+	+			+				+		+		+	
Ehretia saligna var. *saligna*																																		
Enneapogon caerulescens																																		
Enneapogon sp.																																		
Eragrostis cumingii																												+					+	+
**Eragrostis curvula*																																		
Eragrostis dielsii																																		
Eragrostis eriopoda	+	+	20%	+	40%	+				+				1%	+	+	+	+		10%	+								+	3%	+	+	+	
Eragrostis falcata																																		
Eragrostis pergracilis																																		
Eragrostis speciosa																																		
Eragrostis tenellula																																		
Eriachne aristidea				+	+				+	+	+		+		+	+	+		+			+	+	+		+	+		+	+	+	+	
Eriachne benthamii																+			+													1%		
Eriachne ciliata																																		
Eriachne glauca var. *glauca*																																	+	+
Eriachne helmsii												+																						
Eriachne mucronata		+		5%	+	+	3%		+	+				2%	+	1%		+		1%		+	+	+		+	+		+				1%
Eriachne pulchella																																		
Eriachne pulchella subsp. *dominii*																+		+																
Eucalyptus camaldulensis subsp. *refulgens*																																	4%	
Eucalyptus victrix																																		
Eulalia fulva																																		
Euphorbia alsiniflora	+	+	+	+		+			+									+		+		+	+	+	+		+							
Euphorbia australis	+	+		+		+			+		+		+	+	+	+		+	+				+	+		+				+	+	+		
Euphorbia tannensis subsp. *eremophila*																																		
Evolvulus alsinoides var. *decumbens*																																		
Evolvulus alsinoides var. *villosicalyx*		+	+	+	+	+	+				+	+	+	+	+	+			+	+	+					+	+	+		+	+	+		
Fimbristylis dichotoma	+										+		1%										+		+	+								(1%)
Fimbristylis littoralis																																		
Fimbristylis oxystachya							+					+									+						+	+				+		
Fimbristylis rara																																		
Fimbristylis simulans	+	+											+							+		+	+		+	+					+			
**Flaveria trinervia*																																		
Flueggea virosa subsp. *melanthesoides*																																		
Frankenia ambita																																		
Glycine canescens																																		
Gomphrena cunninghamii																								+										
Gomphrena leptoclada subsp. *leptoclada*																																		
Gomphrena pusilla																																		
Gomphrena sordida																																		
Goodenia forrestii														+		+		+																
Goodenia lamprosperma																																	+	+
Goodenia microptera						+					+		+	+		+	+			+		+	+		+	+	+				+			
Goodenia stobbsiana																																		
Goodenia triodiophila																																	+	
Gossypium australe					+								+	+				+						+						+				
Grevillea pyramidalis subsp. *leucadendron*		+	+												+					+									+		+			
Grevillea wickhamii subsp. *hispidula*																																		
Hakea lorea subsp. *lorea*	+	+								+						+	+						+					+						
Heliotropium cunninghamii																																		
Heliotropium inexplicitum														+					+															
Heliotropium muticum																																		
Heliotropium ovalifolium																																		
Heliotropium tenuifolium																																		
Hibiscus austrinus var. *austrinus*																																		
Hibiscus brachychlaenus													+	+	+	+					+	+					+							
Hibiscus burtonii	+																																	
Hibiscus leptocladus	+																																	
Hibiscus sturtii var. *campylochlamys*		+	+												+																			
Hybanthus aurantiacus		+	+		1%		+				+	+	+	+	+	+		+	+	+			+	+	+	+	+			+	+	+		
Indigofera colutea				+	+																									+		+		
Indigofera hirsuta																																		
Indigofera linifolia				+																+											+			
Indigofera monophylla	+	+		+	1%				+	+	+	+	+	+	+	+	+	+	+			+		+		+	+	+		+	+		+	
**Indigofera oblongifolia*																																		
Indigofera sp.																																		
Indigofera trita																																		
Ipomoea coptica																																		
Ipomoea muelleri				+																+										+		+		
Ipomoea polymorpha			+		+									+	+													+		+		+		
Isotropis atropurpurea																																		
Kennedia prorepens																																		
Keraudrenia velutina subsp. *elliptica*									+										+		+													
Leptosema anomalum							+												+															
Maireana tomentosa																																		
Marsilea hirsuta																																		
Marsilea mutica																																	+	
Melaleuca argentea																																		
Melaleuca glomerata																																		

PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT
APPENDIX G
FLORA MATRIX

	Sandplain H							Sandplain I																Sandplain K									
Species	**PI056**	**PI065**	**PI073**	**PI108**	**PI147**	**PI148**	**PI150**	**PI051**	**PI054**	**PI055**	**PI057**	**PI058**	**PI061**	**PI105**	**PI109**	**PI110**	**PI111**	**PI131**	**PI132**	**PI133**	**PI134**	**PI136**	**PI143**	**PI156**	**PI060**	**PI062**	**PI063**	**PI067**	**PI102**	**PI103**	**PI104**	**PI106**	**PI079**	**PI081**
Melaleuca lasiandra																																		
Melaleuca linophylla																																		
Melhania oblongifolia																																		
Mimulus gracilis																					+												+	
Mimulus uvedaliae var. *uvedaliae*																						+												
Mitrasacme connata							+																						+					
Mollugo molluginea	+	+	+	+		+					+			+	+	+	+	+	+		+		+	+	+					+		+		
Muellerolimon salicorniaceum																																		
Murdannia graminea							+																											
Myoporum montanum																																		
Neobassia astrocarpa																																		
Neptunia dimorphantha																																		
Operculina aequisepala																																		
Owenia reticulata	1%				1%																							1%		1%		++		
Panicum decompositum																																		
Paraneurachne muelleri	+					+			+	+		+				+			+		+					+			+			+		
Paspalidium clementii																								+										
Paspalidium tabulatum																																		
Perotis rara																																+		
Phyllanthus erwinii																																		
Phyllanthus maderaspatensis																																		
**Physalis angulata*																																		
Pimelea ammocharis				+					+																									
Pluchea ferdinandi-muelleri																												+						
Pluchea rubelliflora																																		+
Pluchea tetranthera							+	+											+										+					
Polycarpaea corymbosa var. *corymbosa*	+	+	+	+	+	+			+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		+	+	+	+	+	+
Polycarpaea holtzei																																		
Polycarpaea longiflora																																		
Polygala isingii																																		
Polygala linariifolia																												+						
Polymeria ambigua										+	+		+																					
Polymeria calycina	+																								+	+	+					+		
**Portulaca oleracea*	+					+					+					+					+				+								+	+
Portulaca pilosa		+	+	+	+	+			+					+		+		+			+						+			+				
Pterocaulon serrulatum																																		+
Pterocaulon sphacelatum																																		
Pterocaulon sphaeranthoides																																		
Ptilotus arthrolasius																								+										
Ptilotus astrolasius	+									+		+	+		+	+		+	+		+		+		+	+	+			+				
Ptilotus auriculifolius																								+										
Ptilotus axillaris											+																							
Ptilotus calostachyus															+																			
Ptilotus exaltatus																																		
Ptilotus fusiformis	+	+				+				+	+	+	+	+	+	+		+	+		+	+	+		+		+				+	+	+
Ptilotus murrayi																																		
Ptilotus polystachyus					+	+							+					+			+						+						
Rhagodia eremaea																																		
Rhizophora stylosa																																		
Rhynchosia minima																								+										
Rotala diandra																																		
Salsola tragus subsp. *grandiflora*																																		
Santalum lanceolatum																																		
Sarcostemma viminale subsp. *australe*																																		
Scaevola amblyanthera var. *centralis*																																		
Scaevola browniana subsp. *browniana*																																		
Scaevola parvifolia subsp. *pilbarae*												+				+	+		+			+										+		
Scaevola sericophylla																																		
Scaevola spinescens																																		
Schizachyrium fragile								+					+	+		+							+											
Schoenoplectus laevis																																		
Senna artemisioides subsp. *oligophylla*																								+										
Senna artemisioides subsp. *oligophylla* x *glaucifolia*																														+				
Senna artemisioides subsp. *oligophylla* x *subsp. helmsii*																																		
Senna curvistyla																																		
Senna glaucifolia											+							+																
Senna glutinosa subsp. *glutinosa*													+																					
Senna glutinosa subsp. x *luerssenii*																																		
Senna notabilis	+	+	+	+	+	+	+	+	+	+	+	+	+		+	+	+				+	+	+	+	+	+	+	+	+	+	+	+	+	+
Senna venusta																																		
Sesbania cannabina																																		
Setaria dielsii																																		
Sida clementii		+										+										+		+		+								
Sida echinocarpa																	+																	
Sida fibulifera			+	+	+																								+					
Sida rohlenae subsp. *rohlenae*				+	+						+			+	+					+					+		+		+			+		
Sida sp.										+																								
Sida sp. B Kimberley Flora (A.A. Mitchell 2745)	+		+				+					+									+													
Sida sp. dark green fruits (S. van Leeuwen 2260)		+												+																				
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+					+	+	+		+	+	+			+	+		+	+		+			+	+	+						+	+
Sida sp. verrucose glands (F.H. Mollemans 2423)									+																							+		

PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT
APPENDIX G
FLORA MATRIX

	Sandplain H							Sandplain I																	Sandplain K									
Species	**PI056**	**PI065**	**PI073**	**PI108**	**PI147**	**PI148**	**PI150**	**PI051**	**PI054**	**PI055**	**PI057**	**PI058**	**PI061**	**PI105**	**PI109**	**PI110**	**PI111**	**PI131**	**PI132**	**PI133**	**PI134**	**PI136**	**PI143**	**PI156**	**PI060**	**PI062**	**PI063**	**PI067**	**PI102**	**PI103**	**PI104**	**PI106**	**PI079**	**PI081**
Solanum diversiflorum																										+								
Solanum ellipticum		+	+	+	+							+		+	+	+		+											+		+			
Solanum lasiophyllum			+	+	+	+					+		+	+		+				+				+				+	+					
Sorghum plumosum																																		
Sorghum sp.																																		
Spinifex longifolius																																		
Sporobolus actinocladus																																		
Sporobolus australasicus						+																											+	+
Sporobolus virginicus																																		
Stackhousia intermedia							+	+																										
Stackhousia muricata																												+						
Stemodia grossa																																		
Stemodia lathraia																																		
Stemodia viscosa																																		
Streptoglossa decurrens							+																											
Striga squamigera																																		
Stylidium desertorum																																		
**Stylosanthes hamata*																																		
Swainsona formosa																																		
Swainsona kingii																																		
Swainsona pterostylis																																		
Synaptantha tillaeacea var. *tillaeacea*																			+									+	+					
Tecticornia auriculata																																		
Tecticornia halocnemoides subsp. *tenuis*																																		
Tecticornia indica subsp. *bidens*																																		
Tecticornia sp. Dennys Crossing (K.A. Shepherd & J. English KS 552)																																		
Tephrosia leptoclada																																		
Tephrosia rosea																																		
Tephrosia rosea var. *clementii*																																		
Tephrosia rosea var. *glabrior*																																		
Tephrosia rosea var. *rosea*																																		
Tephrosia rosea var. *venulosa*																																		
Tephrosia simplicifolia											+													+										
Tephrosia sp. B Kimberley Flora (C.A. Gardner 7300)																																		
Tephrosia supina																																		
Tephrosia uniovulata																																		
Threlkeldia diffusa																																		
Tinospora smilacina					+	+					+				+			+												+				
Trachymene oleracea subsp. *oleracea*																								+										
Trianthema glossostigma																																		
Trianthema pilosa	+	+	+		+		+						+	+	+			+			+						+			+				
Trianthema triquetra																																		+
Tribulopis angustifolia	+		+																				+											
Tribulus hirsutus																+									+							+		
Tribulus macrocarpus																																		
Tribulus occidentalis														+																				
Trichodesma zeylanicum var. *zeylanicum*																																		
Tricoryne corynothecoides																																		
Triodia epactia	5%	20%	15%	15%	+	15%	5%	20%	50%	60%	40%	13%	5%	15%	11%	+			11%	1%	3%	4%	2%	12%				25%	30%	2%		4%	20%	35%
Triodia lanigera	1%	6%				20%						6%	30%	10%	6%	40%	9%	40%	9%		4%	8%	7%		15%	15%	6%			+	12%		8%	+
Triodia longiceps																																		
Triodia schinzii																											11%							
Triodia secunda																																		
Triumfetta chaetocarpa				+															+	+		+									+	+		
Triumfetta clementii																								+										
Triumfetta ramosa											+		+											+			+			+		+		
Urochloa holosericea subsp. *velutina*															+	+																+		
**Vaccaria hispanica*																																		
Vigna lanceolata var. *filiformis*																																		
Vigna lanceolata var. *lanceolata*																																		
Wahlenbergia tumidifructa																																		
Waltheria indica	+	+	+	+	+				+			+			+			+	+		+	+					+			+	+	+		
Whiteochloa airoides																																		
Xerochloa laniflora																																		
Yakirra australiensis var. *australiensis*	+	+	+	+		+	+		+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		+	+	+	+		+	+	+	+	+
Zornia muelleriana																																	+	

PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT
APPENDIX G
FLORA MATRIX

	Sandplain N															Sanplain O							Sanplain P							Sandplain Q			
Species	**PI083**	**PI084**	**PI085**	**PI096**	**PI100**	**PI101**	**PI112**	**PI117**	**PI118**	**PI129**	**PI130**	**PI135**	**PI137**	**PI153**	**PI154**	**PI161**	**PI059**	**PI092**	**PI093**	**PI094**	**PI095**	**PI113**	**PI114**	**PI127**	**PI128**	**PI138**	**PI080**	**PI097**	**PI086**	**PI087**	**PI099**	**PI116**	**PI124**	**PI126**
Abutilon lepidum											+																							
Abutilon otocarpum																																		
Abutilon pritzelianum											+		+			+																		
Abutilon trudgenii																																		
Acacia ampliceps																																		
Acacia ancistrocarpa			+			+				+						+							+	1%		+			+	+			
Acacia bivenosa								+																									2%	
Acacia colei																																		
Acacia colei var. *colei*				+					5%	1%	+	1%	2%		+	3%	+	+	+	+	+	15%	+	1%	+	+	+	+	+					
Acacia dictyophleba																																		
Acacia inaequilatera		2%	+	1%	1%	2%			+	1%		1%	1%	+		2%							+	+		1%			+		+			
Acacia maitlandii																															+			
Acacia orthocarpa																																		
Acacia pyrifolia																														1%				
Acacia sericophylla						+	+	2%			+	+	+			+	+			+			+					+			+			
Acacia sphaerostachya							3%	+			+				2%										1%						+		+	2%
Acacia stellaticeps	30%		+	+	1%	2%	3%			1%	1%	1%	+	2%	+	+	+				1%	+	+	10%	1%			1%	2%	+	+	4%		
Acacia synchronicia			1%																															
Acacia trachycarpa																															2%			
Acacia trachycarpa x *tumida*																															+			
Acacia trudgeniana							+	+			+				1%										3%		+					+	1%	+
Acacia tumida var. *pilbarensis*		2%									4%		+			2%				+			+	1%	+		3%	1%					+
Acacia tumida var. *tumida*																																		
Acacia victoriae															1%																			
Achyranthes aspera																																		
Adriana tomentosa																																		
**Aerva javanica*																																		
Aeschynomene indica																												+						
Alternanthera angustifolia																		+								+								
Alternanthera nana				+				+									+			+							+	+						
Amaranthus undulatus						+		+			+				+		+				+													
Ammannia multiflora																		+																
Aristida contorta		+																	+									+						
Aristida holathera var. *holathera*	+	+	+	8%	+		+	+		+	+	+	+		+	+	+			+	+	+	2%	+	+	+	+		+	1%	+	+	(+)	+
Aristida inaequiglumis											+					+											+	+						
Atalaya hemiglauca																												+						
Atriplex codonocarpa																																		
Avicennia marina																																		
Bergia pedicellaris																		+								+								
Boerhavia coccinea						+	+	+			+	+	(+)		+	+													+	+				
Bonamia alatisemina	+	+			+		+	+	+	+	+					+					+		+	+	+				+	+	+	+		+
Bonamia media var. *villosa*				+			+																											
Bonamia rosea					+		+	+		+						+	+													1%	+		+	+
Bruguiera exaristata																																		
Bulbostylis barbata	+	1%	+	+	+	+	+	+	+	+	+	+	+	+	+	+					+	+	+	+	+	+	+		+	+	+	+	+	+
Bulbostylis turbinata																																		
Cajanus cinereus									+																									
Calandrinia creethiae																																		
Calandrinia pentavalvis		+		+					+												+			+		+	+		+	+			
Calandrinia pumila								+	+								+	+	+	+			+	+			+		1%					
Calandrinia stagnensis	+	1%	+		+	+											+		+							+								
Calandrinia quadrivalvis														+																				
Carissa lanceolata				+													+	+	+	+	+							+	+	+				
Cassytha capillaris											+					+					+				+		+							
**Cenchrus ciliaris*																	+									+				+				
Centipeda minima subsp. *macrocephala*																																		
Chloris pectinata																										+								
Chrysopogon fallax		1%					+		1%	+	+					+	1%	+	1%	11%	+	+	+	+		+	32%	3%	+	+	+			
Cleome viscosa		+	+		+	+	+	+	+						+		(+)				+		+	+	+	+	+	+	+	+	+		+	+
Codonocarpus cotinifolius																																		
Commelina ensifolia																																		
Corchorus lasiocarpus subsp. *lasiocarpus*		+		+		+	+		5%	+	+	+	+			+	+			+	+							+		+				
Corchorus tectus		10%		+	+			+	+	+					+		+			+		4%	+	+	+	+	2%	+		2%	1%	+	+	+	1%
Corymbia candida subsp. *lautifolia*				+		1%							+			+	1%			+	+			+				+	+		+	1%			
Corymbia hamersleyana															1%							2%												
Corymbia zygophylla							2%				7%																							
Crotalaria cunninghamii subsp. *sturtii*																																		
Crotalaria medicaginea var. *neglecta*						+																												
Crotalaria ramosissima									+							+											+						
Cucumis maderaspatanus						+	+				+					+																		
**Cucumis melo* subsp. *agrestis*						+						+	+		+																		
Cullen cinereum																										+							+	
Cullen stipulaceum																																		
Cynanchum floribundum																																		
Cyperus cunninghamii subsp. *cunninghamii*																							+											
Cyperus dactylotes																	+																	
Cyperus difformis																																		
Cyperus ixiocarpus																																		
Cyperus rigidellus																																		
Cyperus squarrosus																																		
Cyperus vaginatus																																		
Dactyloctenium radulans									+																									
Dentella asperata			+											+																				
Desmodium filiforme									+							+	+														+			
Dichanthium sericeum subsp. *humilius*																										+								
Digitaria brownii																1%		1%																

PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT
APPENDIX G
FLORA MATRIX

	Sandplain N																Sanplain O						Sanplain P						Sandplain Q			
Species	**PI083**	**PI084**	**PI085**	**PI096**	**PI100**	**PI101**	**PI112**	**PI117**	**PI118**	**PI129**	**PI130**	**PI135**	**PI137**	**PI153**	**PI154**	**PI161**	**PI059**	**PI092**	**PI093**	**PI094**	**PI095**	**PI113**	**PI114**	**PI127**	**PI128**	**PI138**	**PI080**	**PI097**	**PI086**	**PI087**	**PI099**	**PI116**	**PI124**	**PI126**
Digitaria sp.																																
Dodonaea coriacea																																
Dolichandrone heterophylla											+	+				+																
Drosera burmanni																																
Drosera indica																	+							+					+			
Dysphania kalpari																																
Dysphania saxatilis	+	+	+	+	+	+	+	+	+	+	+				+				+						+	+			+	1%	+			+
Ehretia saligna var. *saligna*																											+	+						
Enneapogon caerulescens																																		
Enneapogon sp.																																		
Eragrostis cumingii									2%						+							+					+						
**Eragrostis curvula*																																		
Eragrostis dielsii														+																				
Eragrostis eriopoda		1%			+	+	+			+	+	+	+									+	+			+				+				
Eragrostis falcata																																		
Eragrostis pergracilis																																+		
Eragrostis speciosa																										+								
Eragrostis tenellula																																		
Eriachne aristidea				2%	+		+	+	1%	+	+	+		+							+				+		+		+				
Eriachne benthamii											+						+	4%	8%	+														
Eriachne ciliata																																		
Eriachne glauca var. *glauca*		+																						+			+	+	1%					
Eriachne helmsii																																		
Eriachne mucronata						+	+	+				+	+			+	+						+						+				
Eriachne pulchella																					(+)													
Eriachne pulchella subsp. *dominii*	+		+																					+	(+)						(+)		(+)	+
Eucalyptus camaldulensis subsp. *refulgens*								1%															4%	+										
Eucalyptus victrix																	4%	5%	6%	4%	1%	2%					5%	2%						
Eulalia fulva																																		
Euphorbia alsiniflora								+	+				+		+	+	+										+					+	+	
Euphorbia australis		+	+	+			+		+	+	+	+	+		+	+										+	+		+	+		+	+	
Euphorbia tannensis subsp. *eremophila*																																		
Evolvulus alsinoides var. *decumbens*															+					+														
Evolvulus alsinoides var. *villosicalyx*						+	+	+	+		+	+				+										+				+				
Fimbristylis dichotoma	+	1%	+						1%							+										+								
Fimbristylis littoralis																																		
Fimbristylis oxystachya							+				+																	+						
Fimbristylis rara																																		
Fimbristylis simulans																							+											
**Flaveria trinervia*																																		
Flueggea virosa subsp. *melanthesoides*																																		
Frankenia ambita																																		
Glycine canescens																																		
Gomphrena cunninghamii																																		
Gomphrena leptoclada subsp. *leptoclada*			+												+																			
Gomphrena pusilla																																		
Gomphrena sordida																																		
Goodenia forrestii																									+									
Goodenia lamprosperma		+							+								+	+	+	+	+	+	+	+		+	+	+	+					
Goodenia microptera		+	+	1%	+	+	+	+	+														+	+		+			+	+	+	+		+
Goodenia stobbsiana																																		
Goodenia triodiophila																	+				+			+			+					+		
Gossypium australe						+						+																					+	
Grevillea pyramidalis subsp. *leucadendron*																				+														
Grevillea wickhamii subsp. *hispidula*															1%																			
Hakea lorea subsp. *lorea*										1%							+						+	+					+	+	+			
Heliotropium cunninghamii																																		
Heliotropium inexplicitum																																		
Heliotropium muticum			+		+			+	1%														+		+					+	+	+	+
Heliotropium ovalifolium									+																									
Heliotropium tenuifolium																																		
Hibiscus austrinus var. *austrinus*						+																												
Hibiscus brachychlaenus							+									+																+	+
Hibiscus burtonii		+		+					+												+								+	+				
Hibiscus leptocladus					+																													
Hibiscus sturtii var. *campylochlamys*																																		
Hybanthus aurantiacus				+		+	+	+	+		+				+	+	+				+	+	+	+	+		+				+	+	+	
Indigofera colutea		+																									+							
Indigofera hirsuta																																		
Indigofera linifolia																	+										+							
Indigofera monophylla	+		+	+	+	+	+	1%	1%	+	+	+			+	+	+		1%	+		+	1%	+		+			2%	+	2%	+	+	2%
**Indigofera oblongifolia*																																		
Indigofera sp.																																		
Indigofera trita																																		
Ipomoea coptica																					+													
Ipomoea muelleri																																		
Ipomoea polymorpha																																		
Isotropis atropurpurea			+		+	+									+								+	2%	+						+		8%
Kennedia prorepens																																		
Keraudrenia velutina subsp. *elliptica*																																		
Leptosema anomalum																																		
Maireana tomentosa																																		
Marsilea hirsuta																																		
Marsilea mutica																		+		+														
Melaleuca argentea																																		
Melaleuca glomerata																																		

PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT
APPENDIX G
FLORA MATRIX

	Sandplain N																Sanplain O					Sanplain P							Sandplain Q				
Species	**PI083**	**PI084**	**PI085**	**PI096**	**PI100**	**PI101**	**PI112**	**PI117**	**PI118**	**PI129**	**PI130**	**PI135**	**PI137**	**PI153**	**PI154**	**PI161**	**PI059**	**PI092**	**PI093**	**PI094**	**PI095**	**PI113**	**PI114**	**PI127**	**PI128**	**PI138**	**PI080**	**PI097**	**PI086**	**PI087**	**PI099**	**PI116**	**PI124**	**PI126**
Melaleuca lasiandra																																	
Melaleuca linophylla																																	
Melhania oblongifolia																																	
Mimulus gracilis																		+	+	+	+	+	+				+	+	+					
Mimulus uvedaliae var. *uvedaliae*																																	
Mitrasacme connata		+																			+												
Mollugo molluginea	+	+	+	+	+	+	+	+	+	+	+				+		+				+	+	+	+	+	+	+		+	+	+	+	+	+
Muellerolimon salicorniaceum																																	
Murdannia graminea																																	
Myoporum montanum																																	
Neobassia astrocarpa																																	
Neptunia dimorphantha																										+							
Operculina aequisepala																																	
Owenia reticulata											+																						
Panicum decompositum																																	
Paraneurachne muelleri		+		+			+	+			+					+				+										+	+			+
Paspalidium clementii																																	
Paspalidium tabulatum								1%							+																			
Perotis rara																											+						
Phyllanthus erwinii				+																													
Phyllanthus maderaspatensis																																	
**Physalis angulata*																																	
Pimelea ammocharis																+																	
Pluchea ferdinandi-muelleri																										+							
Pluchea rubelliflora	+	+	+						+					+	+						+			+		+	+	+	+			+		
Pluchea tetranthera	+	+							+					+			+			+	+		+			+	+		+					
Polycarpaea corymbosa var. *corymbosa*	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+					+			+	+					+	+	+	+	+
Polycarpaea holtzei			+					+																									+	
Polycarpaea longiflora																																	
Polygala isingii																					+												
Polygala linariifolia																																	
Polymeria ambigua			+	+				+														+	+	+	+	+		+	+	+		+	+	+
Polymeria calycina								+	+				+		+								+			+				+		+	+	+
**Portulaca oleracea*				+					+		+				+					+	+		+	+	+		+	+	+	1%	+	+	+	+
Portulaca pilosa		+												+												+								
Pterocaulon serrulatum																										+								
Pterocaulon sphacelatum																																		
Pterocaulon sphaeranthoides																																		
Ptilotus arthrolasius																																		
Ptilotus astrolasius						+	+			+						+														+	+		+	+
Ptilotus auriculifolius																																		
Ptilotus axillaris																														ASS				
Ptilotus calostachyus	+							+								+															+			+
Ptilotus exaltatus																																		
Ptilotus fusiformis	+		+	+	+	+		+	+	+				+	+	+							+	+					+	+		+	+	+
Ptilotus murrayi																																		
Ptilotus polystachyus																														+				
Rhagodia eremaea																																		
Rhizophora stylosa																																		
Rhynchosia minima																	+			+		+						+						
Rotala diandra																																		
Salsola tragus subsp. *grandiflora*																																	+	
Santalum lanceolatum																																		
Sarcostemma viminale subsp. *australe*																																		
Scaevola amblyanthera var. *centralis*																																		
Scaevola browniana subsp. *browniana*																																+		
Scaevola parvifolia subsp. *pilbarae*											+																							
Scaevola sericophylla																																		
Scaevola spinescens																																		
Schizachyrium fragile													+																			+		
Schoenoplectus laevis																																		
Senna artemisioides subsp. *oligophylla*							+																											
Senna artemisioides subsp. *oligophylla* x *glaucifolia*																																		
Senna artemisioides subsp. *oligophylla* x *subsp. helmsii*							+																											
Senna curvistyla																																		+
Senna glaucifolia																																		
Senna glutinosa subsp. *glutinosa*																																		
Senna glutinosa subsp. x *luerssenii*																																		
Senna notabilis	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+					+	+	+	+	+	+			+	+	+	+	+	+
Senna venusta																																		
Sesbania cannabina																																		
Setaria dielsii																																		
Sida clementii		2%			+					+																+								
Sida echinocarpa																									+									
Sida fibulifera																																		
Sida rohlenae subsp. *rohlenae*		+				+			+		+				+	+				+											+			
Sida sp.																																		
Sida sp. B Kimberley Flora (A.A. Mitchell 2745)								+							+																		+	
Sida sp. dark green fruits (S. van Leeuwen 2260)																																		
Sida sp. Pilbara (A.A. Mitchell PRP 1543)		10%	+	+	+	+		+	2%	+	+	+	+		+	+	+			+	+	+	+	+	+		+		+	1%	+			+
Sida sp. verrucose glands (F.H. Mollemans 2423)																																		

PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT
APPENDIX G
FLORA MATRIX

	Sandplain N																Sanplain O								Sanplain P						Sandplain Q			
Species	**PI083**	**PI084**	**PI085**	**PI096**	**PI100**	**PI101**	**PI112**	**PI117**	**PI118**	**PI129**	**PI130**	**PI135**	**PI137**	**PI153**	**PI154**	**PI161**	**PI059**	**PI092**	**PI093**	**PI094**	**PI095**	**PI113**	**PI114**	**PI127**	**PI128**	**PI138**	**PI080**	**PI097**	**PI086**	**PI087**	**PI099**	**PI116**	**PI124**	**PI126**
Solanum diversiflorum		+															+								+									+
Solanum ellipticum		+						+												+					+		+							
Solanum lasiophyllum									+	+			+			+								+										
Sorghum plumosum																																		
Sorghum sp.																																		
Spinifex longifolius																																		
Sporobolus actinocladus																																		
Sporobolus australasicus	+	+	+	+				+	+					+	+						+					1%		+				+		
Sporobolus virginicus																																		
Stackhousia intermedia																																		
Stackhousia muricata																							+	+										
Stemodia grossa																				+						+								
Stemodia lathraia																	+																	
Stemodia viscosa																																		
Streptoglossa decurrens	+	+							+												+					+			+	+		+		
Striga squamigera																																		
Stylidium desertorum																	+							+			+							
**Stylosanthes hamata*																																		
Swainsona formosa								+																									+	
Swainsona kingii																																		
Swainsona pterostylis																																		
Synaptantha tillaeacea var. *tillaeacea*		+		+																														
Tecticornia auriculata																																		
Tecticornia halocnemoides subsp. *tenuis*																																		
Tecticornia indica subsp. *bidens*																																		
Tecticornia sp. Dennys Crossing (K.A. Shepherd & J. English KS 552)																																		
Tephrosia leptoclada																	+																	
Tephrosia rosea																																		
Tephrosia rosea var. *clementii*																																		
Tephrosia rosea var. *glabrior*																																		
Tephrosia rosea var. *rosea*																																		
Tephrosia rosea var. *venulosa*																																		
Tephrosia simplicifolia									+																									
Tephrosia sp. B Kimberley Flora (C.A. Gardner 7300)																																		
Tephrosia supina			+					+							+																+	+		
Tephrosia uniovulata					+			+	+												+				+						1%	+		1%
Threlkeldia diffusa																																		
Tinospora smilacina											+				+	+													+	+				
Trachymene oleracea subsp. *oleracea*															+																			
Trianthema glossostigma																																		
Trianthema pilosa				+		+	+			+	+	+																		+				+
Trianthema triquetra																																		
Tribulopis angustifolia																																		
Tribulus hirsutus					+	+					+																						+	+
Tribulus macrocarpus		+																																
Tribulus occidentalis																													+	+				
Trichodesma zeylanicum var. *zeylanicum*																																		
Tricoryne corynothecoides																																		
Triodia epactia	35%	1%	1%	20%	2%		30%		3%	8%	20%	1%	1%	4%	13%	10%	7%	1%	4%	2%	25%	15%	30%	40%	3%	40%	8%	2%	30%	30%			2%	
Triodia lanigera	25%		15%	+	1%	12%	4%	+		+	12%	10%	35%	8%	9%	3%					1%		2%		12%				+	2%	8%	3%	18%	4%
Triodia longiceps																																		
Triodia schinzii																																		
Triodia secunda																																		
Triumfetta chaetocarpa																																		
Triumfetta clementii											+																							
Triumfetta ramosa												+																			+			
Urochloa holosericea subsp. *velutina*																																		
**Vaccaria hispanica*																																		
Vigna lanceolata var. *filiformis*																																		
Vigna lanceolata var. *lanceolata*																											1%							
Wahlenbergia tumidifructa																																		
Waltheria indica							+		+		+																							
Whiteochloa airoides																																		
Xerochloa laniflora																																		
Yakirra australiensis var. *australiensis*	+	1%	+	1%	+	+	+	+			+	+	+		+	+	+			+	+	+	+	+	+	+	+		+	+	+	+	+	+
Zornia muelleriana																											+							

PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT
APPENDIX G
FLORA MATRIX

		Sandplain R														Sandplain S									
Species	**PI145**	**PI030**	**PI034**	**PI074**	**PI075**	**PI076**	**PI077**	**PI078**	**PI082**	**PI088**	**PI089**	**PI090**	**PI091**	**PI141**	**PI149**	**PI123**	**PI125**	**PI139**	**PI140**	**PI142**	**PIR151**	**PI152**	**PI160**	**PIRE01**	**PIHAR01**
Abutilon lepidum								+								+									
Abutilon otocarpum													+												
Abutilon pritzelianum																									
Abutilon trudgenii																				+					
Acacia ampliceps																									
Acacia ancistrocarpa	1%							+		+	+					+			1%	1%		+	+	1%	
Acacia bivenosa				1%																				+	
Acacia colei														3%											
Acacia colei var. *colei*			1%	+	1%	2%	5%	3%	+				+		2%							+		2%	35%
Acacia dictyophleba																									
Acacia inaequilatera	1%								2%							1%	2%	1%	1%	1%		+	1%	+	1%
Acacia maitlandii																+									
Acacia orthocarpa																1%							+		
Acacia pyrifolia						+																		2%	
Acacia sericophylla			+	+	1%	1%	+	+			+	+		+											
Acacia sphaerostachya				1%						1%							+	+							
Acacia stellaticeps	+	+	5%	4%	2%	2%		+		30%	5%		2%	+			+		+				+		+
Acacia synchronicia																			+						
Acacia trachycarpa	+																							1%	
Acacia trachycarpa x *tumida*																									
Acacia trudgeniana				+									+								+				
Acacia tumida var. *pilbarensis*			2%			3%	6%									3%									
Acacia tumida var. *tumida*																									
Acacia victoriae																									
Achyranthes aspera																									
Adriana tomentosa																									
**Aerva javanica*						+															+				
Aeschynomene indica																									
Alternanthera angustifolia																									
Alternanthera nana							+							+	+										
Amaranthus undulatus								(+)	+					+		+									
Ammannia multiflora																									
Aristida contorta	+					+														15%			+		
Aristida holathera var. *holathera*	+	+	+	+	+	8%	+	+		+	+	+	+	+		10%				1%		+	+		
Aristida inaequiglumis			+		+				+													+			
Atalaya hemiglauca							+														+				
Atriplex codonocarpa																									
Avicennia marina																									
Bergia pedicellaris																									
Boerhavia coccinea						+			+				+			+		+							
Bonamia alatisemina	+		+	+		+	+		+	+		+	+	+			+					+	+		
Bonamia media var. *villosa*														+									+		
Bonamia rosea	+	1%		+	+					+	+	1%	1%			1%	+					+	+		
Bruguiera exaristata																									
Bulbostylis barbata		+	+	+	+	+	+		+	+	+	+	+	+			+	+	+	+		+	+		+
Bulbostylis turbinata																									
Cajanus cinereus																									
Calandrinia creethiae																									
Calandrinia pentavalvis																+									
Calandrinia pumila				+					+																
Calandrinia stagnensis	+	+						+																	
Calandrinia quadrivalvis	+													+								+			
Carissa lanceolata		+	+	+			+		+																+
Cassytha capillaris													+						+						
**Cenchrus ciliaris*			+	1%	+	+	+	+	+			+	+	+		1%					40%			20%	
Centipeda minima subsp. *macrocephala*																									
Chloris pectinata																									
Chrysopogon fallax		+		+	2%	+	12%	1%	5%	+	+		+	1%	1%									3%	40%
Cleome viscosa	+	+	+				+		+	+		+	+			+	+	+	+	+		+	+		
Codonocarpus cotinifolius																									
Commelina ensifolia																									
Corchorus lasiocarpus subsp. *lasiocarpus*	+	+	+	+	+	+	+	+	1%	+		+	+							+					+
Corchorus tectus	+	+							+				+			+	+	+	+	1%		+	+		
Corymbia candida subsp. *lautifolia*	1%	1%	+	3%	1%	1%	2%		3%	+	+	+	1%	3%	1%										
Corymbia hamersleyana							10%	3%				+										+		4%	
Corymbia zygophylla																									
Crotalaria cunninghamii subsp. *sturtii*																									
Crotalaria medicaginea var. *neglecta*																									
Crotalaria ramosissima					+						+														
Cucumis maderaspatanus			+			+	+			+				+											
**Cucumis melo* subsp. *agrestis*				+				+																	
Cullen cinereum																									
Cullen stipulaceum																									
Cynanchum floribundum																									
Cyperus cunninghamii subsp. *cunninghamii*			+																						
Cyperus dactylotes																									
Cyperus difformis															+										
Cyperus ixiocarpus																									
Cyperus rigidellus																									
Cyperus squarrosus																									
Cyperus vaginatus																									
Dactyloctenium radulans																									
Dentella asperata	+																					+			
Desmodium filiforme											+														
Dichanthium sericeum subsp. *humilius*																									
Digitaria brownii					+																		+		

PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT
APPENDIX G
FLORA MATRIX

		Sandplain R													Sandplain S									
Species	**PI145**	**PI030**	**PI034**	**PI074**	**PI075**	**PI076**	**PI077**	**PI078**	**PI082**	**PI088**	**PI089**	**PI090**	**PI091**	**PI141**	**PI149**	**PI123**	**PI125**	**PI139**	**PI140**	**PI142**	**PIR151**	**PI152**	**PI160**	**PIRE01**	**PIHAR01**
Digitaria sp.							+																		
Dodonaea coriacea																									
Dolichandrone heterophylla						1%																			
Drosera burmanni																									
Drosera indica											+														
Dysphania kalpari																									
Dysphania saxatilis	+			+	+		+		+	+	+	+	+					+		+		+			
Ehretia saligna var. *saligna*													+	+											
Enneapogon caerulescens																									
Enneapogon sp.																									
Eragrostis cumingii							+								+										
**Eragrostis curvula*																									
Eragrostis dielsii																									
Eragrostis eriopoda		+	+			+				+	+	+		1%	+					+					
Eragrostis falcata																									
Eragrostis pergracilis																									
Eragrostis speciosa																									
Eragrostis tenellula																									
Eriachne aristidea	+			+			+			+	1%		+		+							+			
Eriachne benthamii													+												
Eriachne ciliata																1%									
Eriachne glauca var. *glauca*																									
Eriachne helmsii							+																		
Eriachne mucronata		6%	+	+	+	+																			
Eriachne pulchella																									
Eriachne pulchella subsp. *dominii*																	(+)	(+)	1%	15%		+	+		
Eucalyptus camaldulensis subsp. *refulgens*				+																					
Eucalyptus victrix																									
Eulalia fulva															40%										
Euphorbia alsiniflora			+	+	+	+	+	+		+	+			+		+				+					
Euphorbia australis		+	+			+		+		+		+	+		+	+	+	+		+			+		
Euphorbia tannensis subsp. *eremophila*													+												
Evolvulus alsinoides var. *decumbens*																									
Evolvulus alsinoides var. *villosicalyx*			+				+		+				+	+		+									
Fimbristylis dichotoma									+						+										
Fimbristylis littoralis																									
Fimbristylis oxystachya				(+)																					
Fimbristylis rara																									
Fimbristylis simulans																									
**Flaveria trinervia*																									
Flueggea virosa subsp. *melanthesoides*																					+				
Frankenia ambita																									
Glycine canescens																									
Gomphrena cunninghamii																+	+			+					
Gomphrena leptoclada subsp. *leptoclada*																									
Gomphrena pusilla																									
Gomphrena sordida																									
Goodenia forrestii						+						+													
Goodenia lamprosperma				+			+							+	+										
Goodenia microptera	+	+	+									+	+		+	+	+	+	+	+		+			
Goodenia stobbsiana																+						out			
Goodenia triodiophila			+				+		+				+	+											
Gossypium australe		+									+	+				+	+			+					
Grevillea pyramidalis subsp. *leucadendron*						+						+				+									
Grevillea wickhamii subsp. *hispidula*																									
Hakea lorea subsp. *lorea*									+				+										+		
Heliotropium cunninghamii									+																
Heliotropium inexplicitum											+														
Heliotropium muticum		+	+														+		+	+		+			
Heliotropium ovalifolium																									
Heliotropium tenuifolium																									
Hibiscus austrinus var. *austrinus*																									
Hibiscus brachychlaenus																									
Hibiscus burtonii													+										+		
Hibiscus leptocladus	+		+									+													
Hibiscus sturtii var. *campylochlamys*						+										+									
Hybanthus aurantiacus	+	+	+	+	+		+		+		+	+	+	+		1%	+	+					+		
Indigofera colutea																									
Indigofera hirsuta																									
Indigofera linifolia						+						+	+												
Indigofera monophylla	+	+	+		+	+		+			+		+		+	+	+	+	+	2%		+	+		+
**Indigofera oblongifolia*															+										
Indigofera sp.																									
Indigofera trita																									
Ipomoea coptica																									
Ipomoea muelleri															+										
Ipomoea polymorpha													+												
Isotropis atropurpurea	+																+					+			
Kennedia prorepens											+														
Keraudrenia velutina subsp. *elliptica*																	+								
Leptosema anomalum																									
Maireana tomentosa																									
Marsilea hirsuta							+																		
Marsilea mutica															+										
Melaleuca argentea																									
Melaleuca glomerata																									

PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT
APPENDIX G
FLORA MATRIX

		Sandplain R														Sandplain S									
Species	**PI145**	**PI030**	**PI034**	**PI074**	**PI075**	**PI076**	**PI077**	**PI078**	**PI082**	**PI088**	**PI089**	**PI090**	**PI091**	**PI141**	**PI149**	**PI123**	**PI125**	**PI139**	**PI140**	**PI142**	**PIR151**	**PI152**	**PI160**	**PIRE01**	**PIHAR01**
Melaleuca lasiandra																									
Melaleuca linophylla																									
Melhania oblongifolia																									
Mimulus gracilis																									
Mimulus uvedaliae var. *uvedaliae*																									
Mitrasacme connata		+									+														
Mollugo molluginea	+	+	+	+	+	+		+	+	+	+	+	+	+		+	+	+	+	+		+	+		
Muellerolimon salicorniaceum																									
Murdannia graminea																									
Myoporum montanum																									
Neobassia astrocarpa																									
Neptunia dimorphantha																									
Operculina aequisepala																					+				
Owenia reticulata																									
Panicum decompositum																									
Paraneurachne muelleri		+	+						+		+	+	+												
Paspalidium clementii																									
Paspalidium tabulatum				+			+							+											
Perotis rara																									
Phyllanthus erwinii																									
Phyllanthus maderaspatensis																									
**Physalis angulata*																									
Pimelea ammocharis				+		+						+													
Pluchea ferdinandi-muelleri																									
Pluchea rubelliflora							+		+						+										
Pluchea tetranthera		+	+		+	+				+				+	+								+		
Polycarpaea corymbosa var. *corymbosa*		+		+	+	+		+	+	+	+	+	+	+			+	+	+	+		+	+		
Polycarpaea holtzei																+			+	+			+		
Polycarpaea longiflora																									
Polygala isingii																+							+		
Polygala linariifolia														+											
Polymeria ambigua	+										+									+					
Polymeria calycina	+								+								+	+	+	+		+			
**Portulaca oleracea*				+			+		+			+	+				+	+		+			+		+
Portulaca pilosa		+	+		+	+			+	+	+	+	+	+	+	+				+					
Pterocaulon serrulatum																									
Pterocaulon sphacelatum																									
Pterocaulon sphaeranthoides																									
Ptilotus arthrolasius																									
Ptilotus astrolasius		+	+								+	+	+						+			+			
Ptilotus auriculifolius																			+	+			+		
Ptilotus axillaris																	+		+						
Ptilotus calostachyus														+		+			+			+			
Ptilotus exaltatus																									
Ptilotus fusiformis	+	+		+	+	+			+	+	+			+			+		+	+					
Ptilotus murrayi															+										
Ptilotus polystachyus		+	+		+	+					+	+	+												
Rhagodia eremaea																									
Rhizophora stylosa																									
Rhynchosia minima						+	+	+																	
Rotala diandra																									
Salsola tragus subsp. *grandiflora*													+							+					
Santalum lanceolatum																									
Sarcostemma viminale subsp. *australe*																									
Scaevola amblyanthera var. *centralis*																			+						
Scaevola browniana subsp. *browniana*																									
Scaevola parvifolia subsp. *pilbarae*												+													
Scaevola sericophylla																									
Scaevola spinescens																									
Schizachyrium fragile			+		+	+	+				+									+					
Schoenoplectus laevis																									
Senna artemisioides subsp. *oligophylla*																					+				
Senna artemisioides subsp. *oligophylla* x *glaucifolia*																									
Senna artemisioides subsp. *oligophylla* x *subsp. helmsii*																									
Senna curvistyla																									
Senna glaucifolia													+												
Senna glutinosa subsp. *glutinosa*																+							+		
Senna glutinosa subsp. x *luerssenii*																				+					
Senna notabilis	+	+	+	+					+	+	+		+	+		+		+	+	+			+		+
Senna venusta																									
Sesbania cannabina																									
Setaria dielsii																									
Sida clementii		+																		+					
Sida echinocarpa																		+					+		
Sida fibulifera													+												
Sida rohlenae subsp. *rohlenae*			+	+						+				+		+									
Sida sp.																									
Sida sp. B Kimberley Flora (A.A. Mitchell 2745)																									
Sida sp. dark green fruits (S. van Leeuwen 2260)																									
Sida sp. Pilbara (A.A. Mitchell PRP 1543)	+	+	+	+		+	+		1%	+		+	1%	+		+		+	+	+			+		
Sida sp. verrucose glands (F.H. Mollemans 2423)																									

PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT
APPENDIX G
FLORA MATRIX

		Sandplain R													Sandplain S									
Species	**PI145**	**PI030**	**PI034**	**PI074**	**PI075**	**PI076**	**PI077**	**PI078**	**PI082**	**PI088**	**PI089**	**PI090**	**PI091**	**PI141**	**PI149**	**PI123**	**PI125**	**PI139**	**PI140**	**PI142**	**PIR151**	**PI152**	**PI160**	**PIRE01**	**PIHAR01**
Solanum diversiflorum				+									+			+				+			+		
*Solanum elliptic*um			+	+		+										+									
Solanum lasiophyllum									+		+	+											+		
Sorghum plumosum																					+				
Sorghum sp.																									
Spinifex longifolius																									
Sporobolus actinocladus																									
Sporobolus australasicus	+			+			+							+			+	+	+			+	+	1%	+
Sporobolus virginicus																									
Stackhousia intermedia																									
Stackhousia muricata																									
Stemodia grossa																									
Stemodia lathraia							+							+											
Stemodia viscosa																									
Streptoglossa decurrens							+																		
Striga squamigera																									
Stylidium desertorum														+											
**Stylosanthes hamata*															+										
Swainsona formosa																					+				
Swainsona kingii																									
Swainsona pterostylis																									
Synaptantha tillaeacea var. *tillaeacea*									+									+							
Tecticornia auriculata																									
Tecticornia halocnemoides subsp. *tenuis*																									
Tecticornia indica subsp. *bidens*																									
Tecticornia sp. Dennys Crossing (K.A. Shepherd & J. English KS 552)																									
Tephrosia leptoclada																									
Tephrosia rosea																									
Tephrosia rosea var. *clementii*											+														
Tephrosia rosea var. *glabrior*																									
Tephrosia rosea var. *rosea*																									
Tephrosia rosea var. *venulosa*																									
Tephrosia simplicifolia											+					+									
Tephrosia sp. B Kimberley Flora (C.A. Gardner 7300)																									
Tephrosia supina																+	+	+					+		
Tephrosia uniovulata																	+	+				1%			
Threlkeldia diffusa																									
Tinospora smilacina						+						+	+			+									
Trachymene oleracea subsp. *oleracea*																+									
Trianthema glossostigma																									
Trianthema pilosa		+								+		+	+												
Trianthema triquetra																									
Tribulopis angustifolia																									
Tribulus hirsutus	+											+	+					+							
Tribulus macrocarpus																				+					
Tribulus occidentalis																									
Trichodesma zeylanicum var. *zeylanicum*																									
Tricoryne corynothecoides																									
Triodia epactia	4%	2%	55%	20%		5%	30%	60%	+	20%	10%		4%	40%	20%	10%	8%	5%	5%	5%	+	+	18%	5%	5%
Triodia lanigera	4%		2%	28%	20%	15%				20%							6%	3%				5%	2%		
Triodia longiceps																									
Triodia schinzii											60%	12%													
Triodia secunda																									
Triumfetta chaetocarpa																									
Triumfetta clementii																									
Triumfetta ramosa																									
Urochloa holosericea subsp. *velutina*																									
**Vaccaria hispanica*																									
Vigna lanceolata var. *filiformis*																									
Vigna lanceolata var. *lanceolata*																									
Wahlenbergia tumidifructa																									
Waltheria indica		+														+									
Whiteochloa airoides																									
Xerochloa laniflora															+										
Yakirra australiensis var. *australiensis*	+	+	+	+	+	+		+	+	+	+	+	+	+			+	+	+	+		+	+		
Zornia muelleriana																									

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 2006	Biota 2008a	Biota 2008b	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	Woodman 2011
Acanthaceae	*Avicennia marina*		√			√		√	√								√		√					√
Aizoaceae	*Sesuvium portulacastrum*							√																
Aizoaceae	*Trianthema glossostigma*		√				√																	
Aizoaceae	*Trianthema oxycalyptra* var. *oxycalyptra*							√														√		
Aizoaceae	*Trianthema pilosa*		√	√				√						√			√					√		√
Aizoaceae	*Trianthema triquetra*		√			√		√														√		
Aizoaceae	*Trianthema turgidifolia*			√	√	√		√	√	√			√			√	√		√					√
Amaranthaceae	*Achyranthes aspera*		√					√														√		
Amaranthaceae	**Aerva javanica*		√	√	√	√		√	√	√			√	√	√	√	√		√	√		√		√
Amaranthaceae	*Alternanthera angustifolia*		√				√	√		√						√								
Amaranthaceae	*Alternanthera nana*		√					√		√												√		
Amaranthaceae	*Amaranthus clementii*																			√				
Amaranthaceae	*Amaranthus mitchellii*							√																
Amaranthaceae	*Amaranthus* sp. indet.							√																
Amaranthaceae	*Amaranthus undulatus*		√	√				√														√		
Amaranthaceae	*Gomphrena affinis* subsp. *pilbarensis*							√																
Amaranthaceae	*Gomphrena canescens*							√																
Amaranthaceae	*Gomphrena canescens* subsp. *canescens*					√		√		√			√							√				√
Amaranthaceae	*Gomphrena cunninghamii*		√					√																
Amaranthaceae	*Gomphrena leptoclada* subsp. *leptoclada*		√					√														√		
Amaranthaceae	*Gomphrena leptophylla*	P3																						√
Amaranthaceae	*Gomphrena pusilla*	P2	√																					√
Amaranthaceae	*Gomphrena sordida*		√					√																
Amaranthaceae	*Gomphrena* sp. indet.							√																√
Amaranthaceae	*Gomphrena tenella*																							√
Amaranthaceae	*Hemichroa diandra*					√		√	√							√			√					√
Amaranthaceae	*Ptilotus aervoides*												√											
Amaranthaceae	*Ptilotus arthrolasius*		√					√		√				√										√
Amaranthaceae	*Ptilotus astrolasius*		√	√										√	√	√		√	√			√		
Amaranthaceae	*Ptilotus auriculifolius*		√	√																				
Amaranthaceae	*Ptilotus axillaris*		√	√				√							√				√			√		√
Amaranthaceae	*Ptilotus calostachyus*		√	√				√		√						√			√			√		
Amaranthaceae	*Ptilotus exaltatus*		√	√																				
Amaranthaceae	*Ptilotus exaltatus* var. *exaltatus*							√		√						√	√			√				√
Amaranthaceae	*Ptilotus fusiformis*		√	√				√		√				√			√					√		√
Amaranthaceae	*Ptilotus gaudichaudii* var. *gaudichaudii*							√					√											
Amaranthaceae	*Ptilotus gomphrenoides*																					√		
Amaranthaceae	*Ptilotus incanus*																					√		
Amaranthaceae	*Ptilotus murrayi*		√																					
Amaranthaceae	*Ptilotus petiolatus*																					√		
Amaranthaceae	*Ptilotus polystachyus*		√	√		√	√	√	√	√				√	√	√	√	√	√					√
Apocynaceae	*Carissa lanceolata*		√	√				√		√				√	√	√						√		√
Apocynaceae	*Cynanchum floribundum*		√	√																		√		
Apocynaceae	*Cynanchum* sp.							√		√														
Apocynaceae	*Gymnanthera cunninghamii*	P3						√																
Apocynaceae	*Sarcostemma viminale* subsp. *australe*		√		√			√	√									√	√					
Araliaceae	*Trachymene oleracea* subsp. *oleracea*		√	√																		√		
Arecaceae	**Washingtonia filifera*				√																			
Asparagaceae	**Yucca aloifolia*																			√				
Asphodelaceae	**Aloe vera*																			√				
Asteraceae	*Blumea tenella*		√																					
Asteraceae	*Centipeda minima* subsp. *macrocephala*		√					√		√												√		
Asteraceae	**Flaveria trinervia*		√			√		√																
Asteraceae	*Peripleura arida*			√																				
Asteraceae	*Pluchea dentex*																					√		
Asteraceae	*Pluchea ferdinandi-mueller*		√			√		√		√				√				√				√	√	√
Asteraceae	*Pluchea rubelliflora*		√	√				√	√	√												√		√
Asteraceae	*Pluchea* sp. B Kimberley Flora (K.F. Kenneally 9526A)							√		√			√											
Asteraceae	*Pluchea tetranthera*		√	√	√	√	√	√	√	√				√	√	√	√	√	√	√		√		√
Asteraceae	*Pterocaulon ? serrulatum*		√																					
Asteraceae	*Pterocaulon serrulatum*		√					√		√							√							
Asteraceae	*Pterocaulon* sp. A Kimberley Flora (B.J. Carter 599)	P3						√			√					√								
Asteraceae	*Pterocaulon* sp. indet.							√																
Asteraceae	*Pterocaulon sphacelatum*		√	√				√														√		
Asteraceae	*Pterocaulon sphaeranthoides*		√	√	√	√	√	√	√	√			√	√										

PORT HEDLAND FLORA AND VEGETATION ASSESSMENT

APPENDIX H

FLORA INVENTORY FROM ALL SURVEYS

Family	Species Name	Conservation Status	Current Survey	Biota 2006	Biota 2008a	Biota 2008b	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	Woodman 2011
Asteraceae	*Streptoglossa bubakii*			√				√																
Asteraceae	*Streptoglossa decurrens*		√	√				√		√							√	√						√
Asteraceae	*Streptoglossa odorc*							√								√	√							
Bignoniaceae	*Dolichandrone heterophylla*		√	√				√		√				√		√	√	√				√			
Boraginaceae	*Ehretia saligna* var. *saligna*		√			√		√		√												√			
Boraginaceae	*Heliotropium chrysocarpum*							√								√									
Boraginaceae	*Heliotropium conocarpum*			√																					
Boraginaceae	*Heliotropium crispatum*		√	√																		√			
Boraginaceae	*Heliotropium cunninghamii*		√	√				√								√		√							
Boraginaceae	*Heliotropium foliatum*							√														√			
Boraginaceae	*Heliotropium heteranthum*			√																					
Boraginaceae	*Heliotropium inexplicitum*		√																						
Boraginaceae	*Heliotropium muticum*	P1	√					√				√										√			
Boraginaceae	*Heliotropium ovalifolium*		√											√											
Boraginaceae	*Heliotropium pachyphyllum*			√																		√			
Boraginaceae	*Heliotropium* sp. indet.							√																	
Boraginaceae	*Heliotropium tenuifolium*		√	√																					
Boraginaceae	*Trichodesma zeylanicum* var. *grandiflorum*							√																	
Boraginaceae	*Trichodesma zeylanicum* var. *zeylanicum*		√	√																					
Byblidaceae	*Byblis filifolia*					√								√											
Byblidaceae	*Byblis liniflora*							√																	√
Cactaceae	**Opuntia stricta*																			√					
Campanulaceae	*Wahlenbergia tumidifructa*		√	√				√														√			
Caryophyllaceae	*Polycarpaea corymbosa* var. *corymbosa*		√	√				√														√			√
Caryophyllaceae	*Polycarpaea holtzei*		√																						
Caryophyllaceae	*Polycarpaea longiflora*		√					√																	
Caryophyllaceae	**Vaccaria hispanica*		√																						
Casuarinaceae	*Casuarina obesa*																			√					
Celastraceae	*Stackhousia intermedia*		√					√																	√
Celastraceae	*Stackhousia muricata*		√																						
Centrolepidaceae	*Centrolepis banksii*																								√
Chenopodiaceae	*Atriplex codonocarpa*		√	√																					
Chenopodiaceae	*Atriplex* sp. indet.																								√
Chenopodiaceae	*Dysphania kalpari*		√							√												√			
Chenopodiaceae	*Dysphania plantaginella*			√				√																	√
Chenopodiaceae	*Dysphania rhadinostachya* subsp. *rhadinostachya*			√				√		√				√					√			√			
Chenopodiaceae	*Dysphania saxatilis*		√																						
Chenopodiaceae	*Dysphania* sp. indet.																								√
Chenopodiaceae	*Dysphania sphaerosperma*							√																	
Chenopodiaceae	*Enchylaena tomentosa* var. *tomentosa*			√		√	√	√		√			√												√
Chenopodiaceae	*Maireana* sp. indet.							√																	
Chenopodiaceae	*Maireana tomentosa*		√																						
Chenopodiaceae	*Neobassia astrocarpa*		√	√	√	√	√	√		√			√				√								√
Chenopodiaceae	*Rhagodia eremaea*		√	√				√												√					√
Chenopodiaceae	*Salsola australis*																					√			√
Chenopodiaceae	*Salsola tragus* subsp. *grandiflora*		√	√		√		√		√			√	√			√		√	√					
Chenopodiaceae	*Sclerolaena densiflora*																√		√						
Chenopodiaceae	*Sclerolaena hostilis*							√																	
Chenopodiaceae	*Sclerolaena* sp. indet.							√																	
Chenopodiaceae	*Suaeda arbusculoides*					√		√	√								√								√
Chenopodiaceae	*Tecticornia auriculata*		√					√											√				√		
Chenopodiaceae	*Tecticornia halocnemoides*							√															√		
Chenopodiaceae	*Tecticornia halocnemoides* subsp. *catenulata*							√	√																
Chenopodiaceae	*Tecticornia halocnemoides* subsp. *tenuis*		√	√	√	√		√	√	√			√			√									√
Chenopodiaceae	*Tecticornia indica* subsp. *bidens*		√																						√
Chenopodiaceae	*Tecticornia indica* subsp. *leiostachya*			√	√	√	√	√	√	√			√			√	√	√	√						√
Chenopodiaceae	*Tecticornia pergranulata*															√									
Chenopodiaceae	*Tecticornia pergranulata* subsp. *elongata*			√																					√
Chenopodiaceae	*Tecticornia pruinosa*								√																
Chenopodiaceae	*Tecticornia pterygosperma* subsp. *denticulata*							√											√						
Chenopodiaceae	*Tecticornia* sp. Dennys Crossing (K.A. Shepherd & J. English		√																						
Chenopodiaceae	*Tecticornia* sp. indet.							√									√	√	√				√	√	
Chenopodiaceae	*Threlkeldia diffusa*		√					√												√					
Cleomaceae	*Cleome uncifera* subsp. *uncifera*							√						√								√			
Cleomaceae	*Cleome viscosa*		√	√				√		√				√		√	√		√	√		√			√

PORT HEDLAND FLORA AND VEGETATION ASSESSMENT

APPENDIX H

FLORA INVENTORY FROM ALL SURVEYS

Family	Species Name	Conservation Status	Current Survey	Biota 2006	Biota 2008a	Biota 2008b	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	Woodman 2011
Commelinaceae	*Commelina ensifolia*		√	√	√	√		√	√								√	√						√
Commelinaceae	*Murdannia graminea*		√					√						√										√
Convolvulaceae	**Merremia dissecta*				√			√																
Convolvulaceae	*Bonamia alatisemina*		√																					
Convolvulaceae	*Bonamia linearis*		√	√			√	√		√			√	√	√	√	√					√		√
Convolvulaceae	*Bonamia media*							√																√
Convolvulaceae	*Bonamia media* var. *villosa*		√			√		√	√	√								√				√		√
Convolvulaceae	*Bonamia pannosa*							√																
Convolvulaceae	*Bonamia rosea*		√	√		√		√		√				√	√		√	√	√			√		√
Convolvulaceae	*Bonamia* sp. indet.							√																
Convolvulaceae	*Convolvulus ? clementii*			√																				
Convolvulaceae	*Davenportia davenportii*							√																
Convolvulaceae	*Evolvulus alsinoides* var. *decumbens*		√		√	√		√		√				√										
Convolvulaceae	*Evolvulus alsinoides* var. *villosicalyx*		√	√	√	√		√		√				√				√				√		√
Convolvulaceae	*Ipomoea coptica*		√					√																
Convolvulaceae	*Ipomoea costata*							√								√								
Convolvulaceae	*Ipomoea muelleri*		√	√	√	√	√	√		√			√	√	√	√	√	√				√		√
Convolvulaceae	*Ipomoea pes-caprae*				√	√		√	√								√		√	√		√		
Convolvulaceae	*Ipomoea polymorpha*		√	√				√																√
Convolvulaceae	*Operculina aequisepala*		√																					
Convolvulaceae	*Polymeria ambigua*		√	√		√								√	√							√		√
Convolvulaceae	*Polymeria calycina*		√					√		√														
Convolvulaceae	*Polymeria* sp. indet.							√																
Cucurbitaceae	**Citrullus colocynthis*		√					√		√				√		√						√		
Cucurbitaceae	*Cucumis maderaspatanus*		√	√	√	√	√	√	√	√						√		√		√		√		√
Cucurbitaceae	**Cucumis melo* subsp. *agrestis*		√					√																
Cyperaceae	*Bulbostylis barbata*		√	√		√		√						√										√
Cyperaceae	*Bulbostylis burbidgeae*	P4	√			√																		
Cyperaceae	*Cyperus ?carinatus*																							√
Cyperaceae	*Cyperus blakeanus*			√				√		√			√	√	√	√								√
Cyperaceae	*Cyperus bulbosus*				√	√																		√
Cyperaceae	*Cyperus castaneus* var. *brevimucronatus*																							√
Cyperaceae	*Cyperus concinnus*			√				√														√		
Cyperaceae	*Cyperus cunninghamii* subsp. *cunninghamii*		√		√	√												√						
Cyperaceae	*Cyperus dactylotes*		√																					
Cyperaceae	*Cyperus difformis*		√																					
Cyperaceae	*Cyperus iria*							√																√
Cyperaceae	*Cyperus ixiocarpus*		√					√																
Cyperaceae	*Cyperus pulchellus*							√																
Cyperaceae	*Cyperus rigidellus*		√																					
Cyperaceae	*Cyperus* sp. indet.																					√		
Cyperaceae	*Cyperus squarrosus*		√	√		√		√																√
Cyperaceae	*Cyperus vaginatus*		√	√																		√		
Cyperaceae	*Fimbristylis dichotoma*		√	√				√											√			√		√
Cyperaceae	*Fimbristylis littoralis*		√																					
Cyperaceae	*Fimbristylis microcarya*				√	√		√																
Cyperaceae	*Fimbristylis neilsonii*																							√
Cyperaceae	*Fimbristylis oxystachya*		√	√				√																√
Cyperaceae	*Fimbristylis rara*		√					√																√
Cyperaceae	*Fimbristylis simulans*		√					√																
Cyperaceae	*Fimbristylis* sp. indet.							√																
Cyperaceae	*Lipocarpha microcephala*							√																√
Cyperaceae	*Schoenoplectus laevis*		√																					
Cyperaceae	*Schoenoplectus lateriflorus*							√																
Droseraceae	*Drosera burmanni*		√																					
Droseraceae	*Drosera indica*		√					√																
Elatinaceae	*Bergia ammannioides*																							√
Elatinaceae	*Bergia henshallii*							√																√
Elatinaceae	*Bergia pedicellaris*		√					√																√
Elatinaceae	*Bergia ? pusilla*		√																					
Elatinaceae	*Bergia trimera*							√		√														
Euphorbiaceae	*Adriana tomentosa*		√																					
Euphorbiaceae	*Adriana tomentosa* var. *tomentosa*		√	√				√												√				√
Euphorbiaceae	*Euphorbia alsiniflora*		√	√		√		√		√												√		√
Euphorbiaceae	*Euphorbia australis*		√		√	√		√		√				√	√	√						√		√

PORT HEDLAND FLORA AND VEGETATION ASSESSMENT

APPENDIX H

FLORA INVENTORY FROM ALL SURVEYS

Family	Species Name	Conservation Status	Current Survey	Biota 2006	Biota 2008a	Biota 2008b	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	Woodman 2011
Euphorbiaceae	*Euphorbia* sp. indet.							√																
Euphorbiaceae	*Euphorbia tannensis* subsp. *eremophila*		√	√		√		√		√								√		√				√
Euphorbiaceae	*Euphorbia wheeleri*														√		√								
Fabaceae	*Acacia ampliceps*		√	√			√	√	√	√			√			√	√	√	√	√		√			
Fabaceae	*Acacia ancistrocarpa*		√		√	√		√		√			√		√	√						√			
Fabaceae	*Acacia ancistrocarpa* x *stellaticeps*							√		√					√	√									
Fabaceae	*Acacia ancistrocarpa* x *tumida* var. *pilbarensis*							√																	
Fabaceae	*Acacia arida*																					√			
Fabaceae	*Acacia bivenosa*		√	√	√			√		√			√				√		√	√		√			√
Fabaceae	*Acacia colei*		√																						
Fabaceae	*Acacia colei* var. *colei*		√	√	√	√	√	√	√	√			√	√	√	√	√	√	√			√			√
Fabaceae	*Acacia coriacea* subsp. *coriacea*							√		√				√	√	√	√								
Fabaceae	*Acacia dictyophleba*		√																						
Fabaceae	*Acacia elachantha*					√																			
Fabaceae	*Acacia inaequilatera*		√	√	√	√		√		√				√								√			
Fabaceae	*Acacia maitlandii*		√					√														√			
Fabaceae	*Acacia orthocarpa*		√	√																		√			
Fabaceae	*Acacia pyrifolia*		√					√	√	√								√		√					
Fabaceae	*Acacia sabulosa*							√																	
Fabaceae	*Acacia sericophylla*		√					√		√				√											√
Fabaceae	*Acacia* sp. indet.							√																	
Fabaceae	*Acacia sphaerostachya*		√																			√			
Fabaceae	*Acacia stellaticeps*		√	√	√	√		√	√	√			√	√	√	√	√	√	√	√		√			√
Fabaceae	*Acacia synchronicia*		√					√																	
Fabaceae	*Acacia trachycarpa*		√	√	√	√		√	√	√			√		√			√				√			
Fabaceae	*Acacia trachycarpa* x *tumida*		√																						
Fabaceae	*Acacia trachycarpa* x *tumida* var. *pilbarensis*							√							√	√						√			
Fabaceae	*Acacia trudgeniana*		√					√																	
Fabaceae	*Acacia tumida* var. *pilbarensis*		√					√	√	√				√	√	√	√					√			√
Fabaceae	*Acacia tumida* var. *tumida*		√							√								√							
Fabaceae	*Acacia victoriae*		√																						
Fabaceae	*Aeschynomene indica*		√					√																	
Fabaceae	*Albizia lebbeck*																√								
Fabaceae	*Alysicarpus muelleri*							√																	
Fabaceae	*Cajanus cinereus*		√		√	√		√		√				√			√								
Fabaceae	*Cajanus marmoratus*							√																	√
Fabaceae	*Canavalia rosea*									√															
Fabaceae	**Clitoria ternatea*			√																					
Fabaceae	*Crotalaria cunninghamii*			√		√		√												√		√			
Fabaceae	*Crotalaria cunninghamii* subsp. *sturtii*		√																						
Fabaceae	*Crotalaria medicaginea*							√														√			
Fabaceae	*Crotalaria medicaginea* var. *neglecta*		√	√																					
Fabaceae	*Crotalaria ramosissima*		√	√				√	√	√				√		√			√						√
Fabaceae	*Cullen cinereum*		√					√																	
Fabaceae	*Cullen graveolens*							√																	
Fabaceae	*Cullen lachnostachys*							√														√			
Fabaceae	*Cullen leucanthum*			√																					
Fabaceae	*Cullen martinii*							√		√				√											
Fabaceae	*Cullen pogonocarpum*							√		√															
Fabaceae	*Cullen stipulaceum*		√					√		√				√											
Fabaceae	*Desmodium filiforme*		√	√				√														√			√
Fabaceae	*Desmodium muelleri*							√																	
Fabaceae	*Glycine canescens*		√					√																	
Fabaceae	*Glycine* sp. indet.									√															
Fabaceae	*Glycine tomentella*					√		√																	√
Fabaceae	*Indigofera colutea*		√	√		√		√	√					√								√			√
Fabaceae	*Indigofera hirsuta*		√	√				√														√			
Fabaceae	*Indigofera linifolia*		√	√				√	√					√											√
Fabaceae	*Indigofera linnaei*				√	√		√	√	√			√	√											
Fabaceae	*Indigofera monophylla*		√	√		√		√		√				√	√	√		√				√			√
Fabaceae	**Indigofera oblongifolia*		√	√																					
Fabaceae	**Indigofera sessiliflora*			√																√					
Fabaceae	*Indigofera* sp.		√																						
Fabaceae	*Indigofera trita*		√	√		√		√																	√
Fabaceae	*Isotropis atropurpurea*		√					√														√			

PORT HEDLAND FLORA AND VEGETATION ASSESSMENT

APPENDIX H

FLORA INVENTORY FROM ALL SURVEYS

Family	Species Name	Conservation Status	Current Survey	Biota 2006	Biota 2008a	Biota 2008b	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	Woodman 2011
Fabaceae	*Kennedia prorepens*		√					√						√	√	√								
Fabaceae	*Leptosema anomalum*		√					√								√								
Fabaceae	*Lotus cruentus*			√																				
Fabaceae	*Neptunia dimorphantha*		√	√		√		√		√												√		
Fabaceae	*Neptunia monosperma*							√																
Fabaceae	*Petalostylis labicheoides*								√					√		√								
Fabaceae	*Rhynchosia minima*		√	√	√	√		√	√	√			√				√			√		√		√
Fabaceae	*Senna artemisioides* subsp. *oligophylla*		√												√							√		
Fabaceae	*Senna artemisioides* subsp. *oligophylla* x *Senna glaucifolia*		√																					
Fabaceae	*Senna artemisioides* subsp. *oligophylla x Senna glutinosa*																					√		
Fabaceae	*Senna artemisioides* subsp. *oligophylla* x *Senna* subsp. *helmsii*		√	√				√		√			√			√								
Fabaceae	*Senna curvistyla*		√																					
Fabaceae	*Senna glaucifolia*		√																					
Fabaceae	*Senna glutinosa*			√																				
Fabaceae	*Senna glutinosa* subsp. *glutinosa*		√					√														√		√
Fabaceae	*Senna glutinosa* subsp. *pruinosa*							√														√		
Fabaceae	*Senna glutinosa* subsp. x *luerssenii*		√					√																
Fabaceae	*Senna helmsii* x (hybrid)			√																				
Fabaceae	*Senna notabilis*		√	√		√		√		√			√	√	√	√	√					√		√
Fabaceae	*Senna symonii*							√														√		
Fabaceae	*Senna venusta*		√	√				√						√								√		
Fabaceae	*Sesbania cannabina*		√	√	√	√	√	√		√			√	√		√	√	√				√		
Fabaceae	**Stylosanthes hamata*		√		√	√		√		√			√	√			√	√				√		
Fabaceae	*Swainsona formosa*		√																					
Fabaceae	*Swainsona kingii*		√	√																				
Fabaceae	*Swainsona pterostylis*		√					√																
Fabaceae	*Swainsona stenodonta*																							√
Fabaceae	*Tephrosia* aff. *bidwillii*			√	√	√																		
Fabaceae	*Tephrosia densa*														√	√								
Fabaceae	*Tephrosia leptoclada*		√	√		√		√		√														√
Fabaceae	*Tephrosia phaeosperma*					√																		
Fabaceae	*Tephrosia rosea*		√																					
Fabaceae	*Tephrosia rosea* var. *clementii*		√		√																			
Fabaceae	*Tephrosia rosea* var. *glabrior*		√																					
Fabaceae	*Tephrosia rosea* var. *rosea*		√													√	√							
Fabaceae	*Tephrosia rosea* var. *? venulosa* MS	P1	√																					
Fabaceae	*Tephrosia rosea* var. *venulosa* MS	P1	√	√			√	√	√		√	√	√			√	√	√	√	√	√			√
Fabaceae	*Tephrosia simplicifolia*		√					√								√								
Fabaceae	*Tephrosia* sp. B Kimberley Flora (C.A. Gardner 7300)		√	√				√																
Fabaceae	*Tephrosia* sp. Bungaroo Creek (M.E. Trudgen 11601)		√					√														√		
Fabaceae	*Tephrosia* sp. indet.							√		√														
Fabaceae	*Tephrosia supina*		√					√														√		
Fabaceae	*Tephrosia uniovulata*		√					√																
Fabaceae	**Vachellia farnesiana*		√																					
Fabaceae	*Vigna lanceolata* var. *filiformis*		√																					
Fabaceae	*Vigna lanceolata* var. *lanceolata*		√	√		√		√																
Fabaceae	*Vigna* sp. indet.								√															
Fabaceae	*Zornia chaetophora*							√																
Fabaceae	*Zornia muelleriana*		√																					
Fabaceae	*Zornia muelleriana* subsp. *congesta*			√				√						√										
Frankeniaceae	*Frankenia ambita*		√	√	√	√											√		√					√
Frankeniaceae	*Frankenia pauciflora*							√	√															
Gentianaceae	*Centaurium spicatum*							√																
Goodeniaceae	*Goodenia armitiana*							√																
Goodeniaceae	*Goodenia forrestii*		√	√	√	√		√		√			√					√	√			√		
Goodeniaceae	*Goodenia lamprosperma*		√	√	√			√		√				√		√						√		√
Goodeniaceae	*Goodenia micropterа*		√	√				√		√			√	√								√		
Goodeniaceae	*Goodenia muelleriana*							√														√		
Goodeniaceae	*Goodenia nuda*	P4						√				√												√
Goodeniaceae	*Goodenia* sp. indet.							√																
Goodeniaceae	*Goodenia stobbsiana*		√					√														√		
Goodeniaceae	*Goodenia ? triodiophila*		√																					
Goodeniaceae	*Goodenia triodiophila*		√	√																				√
Goodeniaceae	*Scaevola amblyanthera* var. *centralis*		√	√				√												√		√		√

PORT HEDLAND FLORA AND VEGETATION ASSESSMENT

APPENDIX H

FLORA INVENTORY FROM ALL SURVEYS

Family	Species Name	Conservation Status	Current Survey	Biota 2006	Biota 2008a	Biota 2008b	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	Woodman 2011
Goodeniaceae	*Scaevola browniana* subsp. *browniana*		√																			√		
Goodeniaceae	*Scaevola cunninghamii*							√																
Goodeniaceae	*Scaevola parvifolia* subsp. *pilbarae*		√					√																
Goodeniaceae	*Scaevola sericophylla*		√																					
Goodeniaceae	*Scaevola* sp. indet.							√																
Goodeniaceae	*Scaevola spinescens*		√	√	√	√		√										√						√
Gyrostemonaceae	*Codonocarpus cotinifolius*		√	√											√									
Haloragaceae	*Haloragis goessei*			√																				
Hemerocallidaceae	*Corynotheca pungens*															√	√							√
Hemerocallidaceae	*Tricoryne corynothecoides*		√			√		√						√					√					
Lamiaceae	*Clerodendrum floribundum*			√												√								
Lamiaceae	*Clerodendrum floribundum* var. *angustifolium*		√																					
Lamiaceae	*Clerodendrum tomentosum* var. *lanceolatum*							√																
Lamiaceae	**Vitex trifolia* var. *subtrisecta*																√	√						
Lauraceae	*Cassytha capillaris*		√	√	√	√	√	√	√	√			√	√	√	√	√	√	√	√				√
Lauraceae	*Cassytha filiformis*			√																				
Loganiaceae	*Mitrasacme connata*		√					√						√										√
Loganiaceae	*Mitrasacme exserta*													√										
Lythraceae	*Ammannia baccifera*							√																
Lythraceae	*Ammannia multiflora*		√																					√
Lythraceae	*Nesaea muelleri*																							√
Lythraceae	*Rotala diandra*		√					√																√
Malvaceae	*Abutilon dioicum*							√														√		
Malvaceae	*Abutilon lepidum*		√	√		√		√		√			√				√					√		
Malvaceae	*Abutilon otocarpum*		√	√		√		√								√								
Malvaceae	*Abutilon ? pritzelianum* MS	P1	√																					
Malvaceae	*Abutilon pritzelianum* MS	P1	√											√										
Malvaceae	*Abutilon* sp. indet.							√																
Malvaceae	*Abutilon trudgenii* MS		√	√				√														√		
Malvaceae	*Corchorus elachocarpus*							√							√	√	√					√		√
Malvaceae	*Corchorus incanus* subsp. *incanus*			√	√	√		√	√	√			√	√	√	√	√	√	√	√		√		√
Malvaceae	*Corchorus laniflorus*																					√		
Malvaceae	*Corchorus lasiocarpus* subsp. *lasiocarpus*		√																					
Malvaceae	*Corchorus sidoides*			√																				
Malvaceae	*Corchorus sidoides* subsp. *sidoides*									√														
Malvaceae	*Corchorus tectus*		√																					
Malvaceae	*Corchorus trilocularis*																							√
Malvaceae	*Gossypium australe*		√					√														√		
Malvaceae	*Hibiscus austrinus* var. *austrinus*		√	√				√														√		
Malvaceae	*Hibiscus brachychlaenus*		√					√								√		√						
Malvaceae	*Hibiscus burtonii*		√																					
Malvaceae	*Hibiscus coatesii*														√									
Malvaceae	*Hibiscus leptocladus*		√	√		√		√		√				√			√					√		√
Malvaceae	*Hibiscus sturtii* var. *campylochlamys*		√					√																√
Malvaceae	*Hibiscus sturtii* var. *platychlamys*		√																					
Malvaceae	*Keraudrenia nephrosperma*							√																
Malvaceae	*Keraudrenia velutina* subsp. *elliptica*		√																					
Malvaceae	*Lawrencia viridigrisea*					√				√			√											
Malvaceae	**Malvastrum americanum*			√				√														√		
Malvaceae	*Melhania oblongifolia*		√	√	√	√		√																√
Malvaceae	*Sida arenicola*							√		√														
Malvaceae	*Sida cardiophylla*			√																				√
Malvaceae	*Sida clementii*		√	√				√								√		√				√		
Malvaceae	*Sida echinocarpa*		√																			√		
Malvaceae	*Sida ectogama*															√								
Malvaceae	*Sida fibulifera*		√	√	√	√		√	√	√					√				√			√		√
Malvaceae	*Sida rohlenae* subsp. *rohlenae*		√	√			√	√	√	√				√	√		√					√		√
Malvaceae	*Sida* sp. B Kimberley Flora (A.A. Mitchell 2745)		√					√		√						√		√						
Malvaceae	*Sida* sp. dark green fruits (S. van Leeuwen 2260)		√																					
Malvaceae	*Sida* sp. indet.		√			√		√																√
Malvaceae	*Sida* sp. Pilbara (A.A. Mitchell PRP 1543)		√			√		√		√			√	√	√	√	√	√				√		√
Malvaceae	*Sida* sp. verrucose glands (F.H. Mollemans 2423)		√																					

PORT HEDLAND FLORA AND VEGETATION ASSESSMENT

APPENDIX H

FLORA INVENTORY FROM ALL SURVEYS

Family	Species Name	Conservation Status	Current Survey	Biota 2006	Biota 2008a	Biota 2008b	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	Woodman 2011
Malvaceae	*Triumfetta chaetocarpa*		√	√		√		√		√			√									√		
Malvaceae	*Triumfetta clementii*		√																					
Malvaceae	*Triumfetta ramosa*		√	√																		√		
Malvaceae	*Waltheria indica*		√	√		√		√		√				√								√		√
Marsileaceae	*Marsilea drummondii*																							√
Marsileaceae	*Marsilea hirsuta*		√					√														√		
Marsileaceae	*Marsilea mutica*		√																					
Meliaceae	*Owenia reticulata*		√					√							√							√		
Menispermaceae	*Tinospora smilacina*		√	√				√		√					√	√								
Molluginaceae	*Glinus lotoides*							√														√		
Molluginaceae	*Mollugo cerviana*													√										
Molluginaceae	*Mollugo molluginea*		√	√	√	√		√		√			√	√	√	√			√			√		√
Moraceae	*Ficus brachypoda*							√														√		
Moraceae	*Ficus aculeata*			√																				
Myrtaceae	*Corymbia candida* subsp. *dipsodes*		√							√						√						√		
Myrtaceae	*Corymbia flavescens*							√		√														
Myrtaceae	*Corymbia hamersleyana*		√	√				√		√						√						√		
Myrtaceae	*Corymbia* sp. indet.							√																
Myrtaceae	*Corymbia zygophylla*		√					√														√		
Myrtaceae	*Eucalyptus camaldulensis* subsp. *refulgens*		√		√				√					√			√			√					
Myrtaceae	*Eucalyptus victrix*		√	√				√							√			√	√					
Myrtaceae	*Eucalyptus xerothermica*		√																					
Myrtaceae	*Melaleuca argentea*		√	√				√							√									
Myrtaceae	*Melaleuca glomerata*		√	√				√										√						
Myrtaceae	*Melaleuca lasiandra*		√					√		√														
Myrtaceae	*Melaleuca linophylla*		√											√										
Nyctaginaceae	*Boerhavia coccinea*		√	√		√		√									√					√		√
Nyctaginaceae	*Boerhavia gardneri*				√																			√
Nyctaginaceae	*Boerhavia repleta*					√								√										√
Nyctaginaceae	*Boerhavia* sp. indet.							√									√							√
Orobanchaceae	*Striga squamigera*		√																					
Phrymaceae	*Mimulus gracilis*		√					√						√										√
Phrymaceae	*Mimulus uvedaliae* var. *uvedaliae*		√																					
Phrymaceae	*Peplidium ? muelleri*		√																					
Phrymaceae	*Peplidium* sp. indet.																							√
Phyllanthaceae	*Flueggea virosa* subsp. *melanthesoides*		√																					
Phyllanthaceae	*Notoleptopus decaisnei*			√																				
Phyllanthaceae	*Notoleptopus decaisnei* var. *orbicularis*							√																
Phyllanthaceae	*Phyllanthus erwinii*		√																			√		
Phyllanthaceae	*Phyllanthus exilis*							√																
Phyllanthaceae	*Phyllanthus maderaspatensis*		√	√			√	√		√												√		√
Plantaginaceae	*Stemodia grossa*		√	√	√	√		√						√		√						√		
Plantaginaceae	*Stemodia lathraia*		√					√																√
Plantaginaceae	*Stemodia viscosa*		√							√														
Plumbaginaceae	*Muellerolimon salicorniaceum*		√		√	√		√	√								√		√					√
Poaceae	*Aristida contorta*		√					√		√			√	√								√		
Poaceae	*Aristida holathera* var. *holathera*		√	√		√		√		√			√	√		√	√	√				√		√
Poaceae	*Aristida holathera* var. *latifolia*							√						√										
Poaceae	*Aristida hygrometrica*													√										√
Poaceae	*Aristida inaequiglumis*		√					√														√		
Poaceae	*Aristida ingrata*							√		√														
Poaceae	*Aristida* sp. indet.						√	√																
Poaceae	**Cenchrus ciliaris*		√	√	√	√	√	√	√	√			√	√	√	√	√	√	√	√		√		√
Poaceae	**Cenchrus setiger*			√	√	√																√		√
Poaceae	**Chloris barbata*			√																√				
Poaceae	*Chloris pectinata*		√																					
Poaceae	*Chloris pumilio*			√				√														√		
Poaceae	**Chloris virgata*				√	√	√	√		√			√				√							
Poaceae	*Chrysopogon fallax*		√	√			√	√		√					√	√	√	√				√		√
Poaceae	**Cynodon dactylon*				√																			
Poaceae	*Cymbopogon ambiguus*									√												√		

PORT HEDLAND FLORA AND VEGETATION ASSESSMENT

APPENDIX H

FLORA INVENTORY FROM ALL SURVEYS

Family	Species Name	Conservation Status	Current Survey	Biota 2006	Biota 2008a	Biota 2008b	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	Woodman 2011
Poaceae	*Dactyloctenium radulans*		√	√	√	√		√		√			√	√						√		√		√
Poaceae	*Dichanthium sericeum* subsp. *? humilius*			√																				
Poaceae	*Dichanthium sericeum* subsp. *humilius*		√							√												√		
Poaceae	*Digitaria brownii*		√			√		√							√	√								√
Poaceae	**Digitaria ciliaris*							√																
Poaceae	*Digitaria ctenantha*			√																				
Poaceae	*Digitaria* sp.		√																					
Poaceae	**Echinochloa colona*																					√		
Poaceae	*Elytrophorus spicatus*							√																√
Poaceae	*Enneapogon caerulescens*		√	√																				
Poaceae	*Enneapogon lindleyanus*																							√
Poaceae	*Enneapogon polyphyllus*							√																
Poaceae	*Enneapogon purpurascens*			√																				
Poaceae	*Enneapogon* sp.		√																					
Poaceae	*Eragrostis crateriformis*	P3																						√
Poaceae	*Eragrostis cumingii*		√	√				√							√	√								√
Poaceae	**Eragrostis curvula*		√																					
Poaceae	*Eragrostis dielsii*		√	√				√																
Poaceae	*Eragrostis elongata*							√																
Poaceae	*Eragrostis eriopoda*		√	√	√			√		√				√				√				√		√
Poaceae	*Eragrostis falcata*		√	√		√		√		√			√			√		√	√					√
Poaceae	*Eragrostis pergracilis*		√																					
Poaceae	*Eragrostis setifolia*					√											√	√						
Poaceae	*Eragrostis* sp. indet.							√																
Poaceae	*Eragrostis speciosa*		√					√		√				√								√		√
Poaceae	*Eragrostis tenellula*		√					√														√		
Poaceae	*Eragrostis xerophila*							√							√	√			√	√				
Poaceae	*Eriachne aristidea*		√	√				√		√				√		√								√
Poaceae	*Eriachne benthamii*		√					√														√		
Poaceae	*Eriachne ciliata*		√																					
Poaceae	*Eriachne glauca* var. *glauca*		√																					
Poaceae	*Eriachne helmsii*		√	√				√							√	√	√	√						
Poaceae	*Eriachne mucronata*		√					√		√					√	√						√		√
Poaceae	*Eriachne obtusa*			√	√	√	√	√	√	√			√	√					√			√		√
Poaceae	*Eriachne pulchella*		√																					
Poaceae	*Eriachne pulchella* subsp. *dominii*		√					√														√		
Poaceae	*Eriachne* sp. indet.							√																
Poaceae	*Eriachne sulcata*							√																
Poaceae	*Eulalia aurea*		√	√				√		√												√		√
Poaceae	*Iseilema dolichotrichum*									√														
Poaceae	*Leptochloa fusca* subsp. *fusca*							√																
Poaceae	*Panicum decompositum*		√	√	√	√		√	√										√			√		√
Poaceae	*Paraneurachne muelleri*		√	√				√		√					√	√		√				√		
Poaceae	*Paspalidium clementii*		√							√														
Poaceae	*Paspalidium rarum*			√		√		√														√		√
Poaceae	*Paspalidium tabulatum*		√																					
Poaceae	*Perotis rara*		√	√				√														√		
Poaceae	*Schizachyrium fragile*		√	√				√																√
Poaceae	*Setaria dielsii*		√																					
Poaceae	**Setaria verticillata*							√																
Poaceae	*Sorghum plumosum*		√			√		√																√
Poaceae	*Sorghum* sp.		√																					
Poaceae	*Spinifex longifolius*		√					√									√			√				
Poaceae	*Sporobolus actinocladus*		√					√																
Poaceae	*Sporobolus australasicus*		√					√														√		
Poaceae	*Sporobolus mitchellii*					√																		√
Poaceae	*Sporobolus virginicus*		√	√	√			√	√	√			√			√		√						√
Poaceae	*Themeda triandra*							√																
Poaceae	*Triodia ? basedowii*			√																				
Poaceae	*Triodia basedowii*									√														
Poaceae	*Triodia epactia*		√	√	√	√	√	√	√	√			√	√	√	√	√	√	√			√		√

PORT HEDLAND FLORA AND VEGETATION ASSESSMENT

APPENDIX H

FLORA INVENTORY FROM ALL SURVEYS

Family	Species Name	Conservation Status	Current Survey	Biota 2006	Biota 2008a	Biota 2008b	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	Woodman 2011
Poaceae	*Triodia lanigera*		√			√		√														√		√
Poaceae	*Triodia longiceps*		√					√														√		
Poaceae	*Triodia pungens*				√			√																
Poaceae	*Triodia schinzii*		√	√				√		√			√		√	√	√	√	√					√
Poaceae	*Triodia secunda*		√	√	√	√	√	√		√			√		√	√	√		√			√		√
Poaceae	*Triodia* sp. indet.							√														√		
Poaceae	*Urochloa holosericea* subsp. *holosericea*			√																				
Poaceae	*Urochloa holosericea* subsp. *velutina*		√					√		√												√		√
Poaceae	*Whiteochloa airoides*		√					√						√			√		√					
Poaceae	*Whiteochloa cymbiformis*			√																				√
Poaceae	*Xerochloa laniflora*		√																					
Poaceae	*Yakirra australiensis*			√				√														√		√
Poaceae	*Yakirra australiensis* var. *australiensis*		√											√										
Polygalaceae	*Polygala isingii*		√																					
Polygalaceae	*Polygala linariifolia*		√	√		√		√														√		√
Portulacaceae	*Calandrinia creethiae*		√																					
Portulacaceae	*Calandrinia eremaea*		√																					
Portulacaceae	*Calandrinia pentavalvis*		√																					
Portulacaceae	*Calandrinia polyandra*			√																				
Portulacaceae	*Calandrinia ptychosperma*		√	√																		√		
Portulacaceae	*Calandrinia pumila*		√					√																√
Portulacaceae	*Calandrinia ? quadrivalvis*			√																				
Portulacaceae	*Calandrinia quadrivalvis*		√	√		√		√						√					√			√		√
Portulacaceae	*Calandrinia* sp. indet.							√																√
Portulacaceae	*Calandrinia ? stagnensis*																							√
Portulacaceae	*Calandrinia stagnensis*		√	√										√										
Portulacaceae	*Portulaca conspicua*							√																
Portulacaceae	*Portulaca cyclophylla*		√																					
Portulacaceae	**Portulaca oleracea*		√	√	√			√		√				√					√	√		√		√
Portulacaceae	*Portulaca pilosa*		√	√		√		√						√										√
Portulacaceae	*Portulaca* sp.																							√
Proteaceae	*Grevillea pyramidalis* subsp. *leucadendron*		√	√				√		√				√		√			√			√		√
Proteaceae	*Grevillea wickhamii*			√																				
Proteaceae	*Grevillea wickhamii* subsp. *hispidula*		√					√														√		
Proteaceae	*Hakea chordophylla*			√																				
Proteaceae	*Hakea lorea* subsp. *lorea*		√					√	√				√		√	√	√	√	√			√		√
Rhizophoraceae	*Bruguiera exaristata*		√																					
Rhizophoraceae	*Rhizophora stylosa*		√			√			√															√
Rubiaceae	*Dentella asperata*		√																					
Rubiaceae	*Dentella minutissima*							√		√						√						√		
Rubiaceae	*Oldenlandia crouchiana*			√																				
Rubiaceae	*Oldenlandia galioides*			√				√																
Rubiaceae	*Synaptantha tillaeacea* var. *tillaeacea*		√					√						√										
Santalaceae	*Santalum lanceolatum*		√	√		√		√												√				
Sapindaceae	*Atalaya hemiglauca*		√					√														√		
Sapindaceae	*Diplopeltis eriocarpa*			√																				
Sapindaceae	*Dodonaea coriacea*		√	√				√	√	√					√	√		√	√					√
Scrophulariaceae	*Myoporum montanum*		√	√	√	√		√																√
Solanaceae	*Nicotiana occidentalis* subsp. *obliqua*																					√		
Solanaceae	*Nicotiana occidentalis* subsp. *occidentalis*													√										
Solanaceae	**Physalis angulata*		√																					
Solanaceae	*Solanum cunninghamii*							√																
Solanaceae	*Solanum diversiflorum*		√	√	√	√	√	√	√	√				√	√							√		√
Solanaceae	*Solanum ellipticum*		√	√	√	√	√	√	√	√														√
Solanaceae	*Solanum horridum*			√																				
Solanaceae	*Solanum lasiophyllum*		√	√				√						√										
Solanaceae	*Solanum phlomoides*			√		√		√		√				√	√							√		√
Solanaceae	*Solanum* sp. indet.							√																
Stylidiaceae	*Stylidium desertorum*		√					√						√										√
Surianaceae	*Stylobasium spathulatum*			√																				
Tamaricaceae	**Tamarix aphylla*									√														

PORT HEDLAND FLORA AND VEGETATION ASSESSMENT

APPENDIX H

FLORA INVENTORY FROM ALL SURVEYS

Family	Species Name	Conservation Status	Current Survey	Biota 2006	Biota 2008a	Biota 2008b	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	Woodman 2011
Thymelaeaceae	*Pimelea ammocharis*		√			√		√		√						√						√		
Violaceae	*Hybanthus aurantiacus*		√	√	√	√	√	√		√			√	√	√	√		√	√			√		√
Zygophyllaceae	*Tribulopis angustifolia*		√	√				√																√
Zygophyllaceae	*Tribulus hirsutus*		√	√															√	√				√
Zygophyllaceae	*Tribulus hystrix*			√																				
Zygophyllaceae	*Tribulus macrocarpus*		√																					
Zygophyllaceae	*Tribulus occidentalis*		√				√	√		√												√		
Zygophyllaceae	*Tribulus* sp. indet.							√																

APPENDIX I
FLORA INVENTORY – NATURE MAP DATABASE SEARCH

PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT

APPENDIX I

FLORA INVENTORY FROM NATUREMAP DATABASE SEARCH

Species
Abutilon dioicum
Abutilon lepidum
Abutilon macrum
Abutilon otocarpum
Abutilon pritzelianum (Priority 1)
Acacia acradenia
Acacia ancistrocarpa
Acacia arida
Acacia bivenosa
Acacia bivenosa x *sclerosperma* subsp. *sclerosperma*
Acacia colei var. *colei*
Acacia coriacea subsp. *pendens*
Acacia dictyophleba
Acacia inaequilatera
Acacia maitlandii
Acacia melleodora
Acacia orthocarpa
Acacia proxima
Acacia pyrifolia var. *morrisonii*
Acacia pyrifolia var. *pyrifolia*
Acacia robeorum
Acacia sabulosa
Acacia sclerosperma subsp. *sclerosperma*
Acacia sericophylla
Acacia sphaerostachya
Acacia stellaticeps
Acacia synchronicia
Acacia trachycarpa
Acacia tumida var. *pilbarensis*
Achyranthes aspera
Actinobole uliginosum
Adriana tomentosa
Adriana tomentosa var. *tomentosa*
Aegiceras
**Aerva javanica*
Albizia lebbeck
Alysicarpus muelleri

Species
Amaranthus pallidiflorus
Amaranthus sp.
Amyema preissii
Andropogon gayanus
**Argemone ochroleuca* subsp. *ochroleuca*
Aristida holathera
Aristida holathera var. *holathera*
Aristida hygrometrica
Aristida inaequiglumis
Asparagopsis taxiformis
Atalaya hemiglauca
Atriplex semilunaris
Avicennia marina
Avicennia marina subsp. *marina*
Boerhavia coccinea
Bonamia alatisemina
Bonamia erecta
Bonamia linearis
Bonamia media
Bonamia rosea
Bonamia sp.
Bothriochloa ewartiana
Bruguiera exaristata
Bulbostylis barbata
Cajanus acutifolius
Cajanus cinereus
Cajanus marmoratus
Cajanus pubescens
Calandrinia quadrivalvis
Calandrinia sp. Pinga (T.R. Lally TRL 722)
Calandrinia stagnensis
Calotis hispidula
Canavalia rosea
Capparis spinosa var. *nummularia*
Carissa lanceolata
Cassytha capillaris
Cassytha filiformis
Caulerpa brachypus
Caulerpa lentillifera
Caulerpa peltata
Caulerpa racemosa var. *lamourouxii*
Caulerpa sertularioides
**Cenchrus ciliaris*
Ceriops tagal
Chamaecrista symonii

Species
**Chloris barbata*
**Chloris virgata*
Chrysocephalum apiculatum
Chrysopogon fallax
Cleome uncifera
Cleome uncifera subsp. *uncifera*
Cleome viscosa
**Coccinia grandis*
Codonocarpus cotinifolius
Commelina ensifolia
Convolvulus sp.
Corchorus carnarvonensis
Corchorus elachocarpus
Corchorus incanus
Corchorus incanus subsp. *incanus*
Corchorus walcottii
Corymbia aspera
Corymbia candida
Corymbia candida / flavescens
Corymbia candida subsp. *lautifolia*
Corymbia flavescens
Corymbia hamersleyana
Corymbia opaca
Corymbia zygophylla
Corynotheca micrantha
Corynotheca pungens
Corynotheca sp.
Crotalaria cunninghamii
Crotalaria cunninghamii subsp. *sturtii*
Crotalaria dissitiflora subsp. *benthamiana*
Crotalaria medicaginea var. *neglecta*
Crotalaria ramosissima
Cucumis maderaspatanus
Cullen lachnostachys
Cullen leucanthum
Cullen leucochaites
Cullen martinii
Cullen stipulaceum
Cymbopogon bombycinus
Cyperus blakeanus
Cyperus bulbosus
Cyperus sp.
Cyperus squarrosus
Dactyloctenium radulans
Davenportia davenportii

Species
Dentella asperata
Desmodium filiforme
**Desmodium scorpiurus*
Digitaria ciliaris
Digitaria sp.
Dissocarpus paradoxus
Dodonaea coriacea
Dolichandrone heterophylla
Dysphania plantaginella
Dysphania rhadinostachya subsp. *rhadinostachya*
Enchylaena tomentosa var. *tomentosa*
Enneapogon lindleyanus
Enneapogon polyphyllus
Enneapogon purpurascens
Enteropogon ramosus
Eragrostis cumingii
Eragrostis dielsii
Eragrostis eriopoda
Eragrostis falcata
Eragrostis sp.
Eragrostis speciosa
Eremophila cuneifolia
Eriachne aristidea
Eriachne ciliata
Eriachne gardneri
Eriachne glauca
Eriachne helmsii
Eriachne mucronata
Eriachne obtusa
Eriachne pulchella
Eriachne sp.
Eucalyptus camaldulensis subsp. *refulgens*
Eucalyptus victrix
Eulalia aurea
Euphorbia australis
Euphorbia australis var. *subtomentosa*
Euphorbia biconvexa
Euphorbia coghlanii
Euphorbia mitchelliana
Euphorbia myrtoides
Euphorbia tannensis subsp. *eremophila*
**Euphorbia tirucalli*
Evolvulus alsinoides var. *villosicalyx*
Ficus aculeata var. *indecora*
Ficus brachypoda

Species
Fimbristylis neilsonii
**Flaveria trinervia*
Frankenia ambita
Frankenia sp.
Glinus oppositifolius
Glycine sp.
Gomphrena canescens subsp. *canescens*
**Gomphrena celosioides*
Gomphrena cucullata (Priority 2)
Gomphrena cunninghamii
Gomphrena leptoclada
Gomphrena pusilla (Priority 2)
Goodenia armitiana
Goodenia forrestii
Goodenia lamprosperma
Goodenia microptera
Goodenia nuda (Priority 4)
Goodenia scaevolina
Goodenia sepalosa var. *sepalosa*
Goodenia stobbsiana
Gossypium australe
Gossypium hirsutum
Grevillea pyramidalis
Gymnanthera cunninghamii (Priority 3)
Haloragis gossei
Helichrysum luteoalbum
Heliotropium crispatum
Heliotropium cunninghamii
Heliotropium foliatum
Heliotropium inexplicitum
Heliotropium muticum (Priority 1)
Heliotropium pachyphyllum
Heliotropium transforme
Hemichroa diandra
Hibiscus austrinus var. *austrinus*
Hibiscus brachychlaenus
Hibiscus goldsworthii
Hibiscus leptocladus
Hibiscus sturtii var. *campylochlamys*
Hybanthus aurantiacus
Indigastrum parviflorum
Indigofera colutea
Indigofera hirsuta
Indigofera hochstetteri
Indigofera linifolia

Species
Indigofera linnaei
Indigofera monophylla
**Indigofera oblongifolia*
**Indigofera sessiliflora*
Indigofera trita
Ipomoea muelleri
Ipomoea pes-caprae subsp. *brasiliensis*
Ipomoea polymorpha
Iseilema membranaceum
Isotropis atropurpurea
**Jatropha gossypiifolia*
Keraudrenia nephrosperma
Keraudrenia velutina subsp. *elliptica*
Lamarckia aurea
Leptosema anomalum
Leucaena leucocephala
Melaleuca argentea
Melaleuca lasiandra
Melhania oblongifolia
Mollugo molluginea
Muellerolimon salicorniaceum
Myoporum montanum
Neobassia astrocarpa
Neptunia dimorphantha
Nicotiana benthamiana
Nicotiana occidentalis subsp. *occidentalis*
Operculina aequisepala
Osbornia octodonta
Owenia reticulata
Panicum decompositum
Parkinsonia aculeata
Paspalidium basicladum
Paspalidium clementii
**Paspalum fasciculatum*
**Pennisetum setaceum*
Perotis rara
Petalostylis labicheoides
Phyllanthus maderaspatensis
Pimelea ammocharis
Pittosporum angustifolium
Pluchea ferdinandi-muelleri
Pluchea rubelliflora
Pluchea tetranthera
Polycarpaea corymbosa
Polycarpaea corymbosa var. *corymbosa*

Species
Polycarpaea involucrata
Polycarpaea longiflora
Polycarpaea sp.
Polymeria ambigua
Polymeria distigma (Priority 3)
Polymeria lanata
Portulaca australis
**Portulaca oleracea*
Portulaca pilosa
Portulaca pilosa subsp. *decipiens*
Pterocaulon sphacelatum
Ptilotus appendiculatus var. *minor* (Priority 1)
Ptilotus arthrolasius
Ptilotus astrolasius
Ptilotus axillaris
Ptilotus calostachyus
Ptilotus clementii
Ptilotus divaricatus var. *divaricatus*
Ptilotus exaltatus
Ptilotus fusiformis
Ptilotus incanus
Ptilotus villosiflorus
**Pupalia lappacea*
Rhagodia eremaea
Rhizophora stylosa
Rhynchosia minima
Riccia crystallina
**Ricinus communis*
Salsola tragus subsp. *grandiflora*
Scaevola amblyanthera var. *centralis*
Scaevola browniana
Scaevola crassifolia
Scaevola amblyanthera
Scaevola parvifolia subsp. *parvifolia*
Scaevola parvifolia subsp. *pilbarae*
Sclerolaena bicornis var. *bicornis*
Sclerolaena glabra
Sclerolaena hostilis
Sclerolaena sp.
Senna bicapsularis
Senna glutinosa subsp. *glutinosa*
Senna glutinosa subsp. *pruinosa*
Senna glutinosa subsp. x *luerssenii*
Senna notabilis
**Senna occidentalis*

Species
Senna stricta
Senna venusta
Sesbania cannabina
Sesbania formosa
Sesuvium portulacastrum
Setaria dielsii
**Setaria sphacelata*
Sida arenicola
Sida clementii
Sida echinocarpa
Sida rohlenae subsp. *rohlenae*
Sida sp. B Kimberley Flora (A.A. Mitchell 2745)
Sida sp. Pilbara (A.A. Mitchell PRP 1543)
Solanum diversiflorum
Solanum lucani
Solanum phlomoides
Sorghum plumosum
Sorghum stipoideum
Spinifex longifolius
Sporobolus actinocladus
Stemodia viscosa
Streptoglossa adscendens
Streptoglossa decurrens
Streptoglossa liatroides
Streptoglossa macrocephala
Streptoglossa odora
Streptoglossa sp.
Stylidium adenophorum
**Stylosanthes guianensis*
Suaeda arbusculoides
Swainsona decurrens
Swainsona pterostylis
Synaptantha tillaeacea var. *tillaeacea*
Tecticornia auriculata
Tecticornia halocnemoides
Tecticornia halocnemoides subsp. *tenuis*
Tecticornia indica
Tecticornia indica subsp. *bidens*
Tecticornia indica subsp. *leiostachya*
Tecticornia pterygosperma subsp. *denticulata*
Tephrosia clementii
Tephrosia rosea
Tephrosia rosea var. *clementii*
Tephrosia rosea var. *glabrior*
Tephrosia rosea var. *rosea*

Species
Tephrosia rosea var. *venulosa* (Priority 1)
Tephrosia sp. B Kimberley Flora (C.A. Gardner 7300)
Tephrosia sp. Bungaroo Creek (M.E. Trudgen 11601)
Themeda avenacea
Threlkeldia diffusa
Tinospora smilacina
Trianthema cussackiana
Trianthema pilosa
**Trianthema portulacastrum*
Trianthema sp.
Trianthema triquetra
Trianthema turgidifolia
Tribulopis angustifolia
Tribulus macrocarpus
Tribulus occidentalis
Trichodesma zeylanicum
Trichosanthes cucumerina var. *cucumerina*
Trigonella suavissima
Triodia basedowii
Triodia epactia
Triodia lanigera
Triodia longiceps
Triodia plurinervata
Triodia pungens
Triodia schinzii
Triodia secunda
Triraphis mollis
Triumfetta chaetocarpa
Triumfetta propinqua
Triumfetta ramosa
Triumfetta sp.
Udotea argentea
Velleia panduriformis
Vigna lanceolata
Vigna lanceolata var. *lanceolata*
Wahlenbergia tumidifructa
Waltheria indica
Whiteochloa cymbiformis
Xerochloa imberbis
Yakirra australiensis
Yakirra majuscula
Zornia muelleriana

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 J

LOCATIONS OF CONSERVATION SIGNIFICANT FLORA – ALL SURVEYS

PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT

APPENDIX J

LOCATION OF CONSERVATION SIGNIFICANT SPECIES – ALL SURVEYS

Species	Survey	Number of Individuals	# Easting	# Northing
Abutilon ? pritzelianum (Priority 1)	Current Survey (ENV 2011)	3	655849	7730367
Abutilon pritzelianum (Priority 1)	Port Hedland Transmission Lines Flora and Fauna Assessment (ENV 2009g)	~10	654950	7730050
		~40	653750	7729700
	Current Survey (ENV 2011)	1	655858	7730355
		1	665000	7723753
		2	654754	7730120
		13	655898	7730265
		2	655899	7730256
		2	655877	7730244
		1	655926	7730196
		1	655911	7730245
		1	653434	7740914
		1	657268	7727390
		1	665717	7726029
		1	665388	7721440
		1	665337	7721795

Bulbostylis burbidgeae (Priority 4)	A Biodiversity Assessment of the Utah Point Berth Development Port Hedland (Biota 2008b)	~20	663972	7746352
		~20	662761	7747121
Eragrostis crateriformis (Priority 3)	North West Iron Ore Alliance Port Project Flora, Vegetation and Mangal Studies (Woodman 2011)	1	657238	7747399
		0.10%	655984	7745321
Gomphrena leptophylla (Priority 3)	North West Iron Ore Alliance Port Project Flora, Vegetation and Mangal Studies (Woodman 2011)		656131	7746683
Gomphrena pusilla (Priority 2)	Current Survey (ENV 2011)	1	652988	7749119
	North West Iron Ore Alliance Port Project Flora, Vegetation and Mangal Studies (Woodman 2011)	30	659132	7749715
		5000	659386	7749844
		5000	659312	7749855
Goodenia nuda (Priority 4)	North West Iron Ore Alliance Port Project Flora, Vegetation and Mangal Studies (Woodman 2011)		655780	7745123
	Outer Harbour Development Flora and Vegetation Assessment (ENV 2009a)	1	656269	7744987
	Port Hedland Area Targeted Flora Survey (ENV 2009e)	3	660425	7747784
		15	660601	7747490
		2	660648	7747481
		10	659621	7747374
		2	659465	7747349
		3	659162	7749455
		1	668562	7733828
		3	668653	7733816
		4	668905	7733815
		1	660205	7746876
		4	660230	7746887
		2	660138	7746993
		2	660093	7747002
		2	660389	7747337

		1	659347	7747618
		3	661171	7747491
		2	661599	7747058
		20	668205	7733862
		40	668357	7733846
		20	668564	7733847
		40	668618	7733852
		40	668776	7733837
		3	658932	7747045
		2	659764	7746955
		2	659501	7746901
		2	659336	7746879
		1	659155	7746872
		1	658524	7746946
		1	658386	7746957
		1	658344	7746960
		1	658291	7746955
		1	661699	7746934
		1	661603	7746935
Gymnanthera cunninghamii (Priority 3)	North West Iron Ore Alliance Port Project Flora, Vegetation and Mangal Studies (Woodman 2011)		659840	7750379
			659840	7750378
			658667	7749916
	Outer Harbour Development Flora and Vegetation Assessment (ENV 2009a)		661712	7744111
			662031	7741025
			661993	7741089
			661760	7744159
	Vegetation and Flora Survey of the Proposed FMG Stage A Rail Corridor (Biota 2004)		661669	7743175

Heliotropium muticum (Priority 1)	Current Survey (ENV 2011)	1	670506	7734785
		1	670556	7734654
		2	669782	7735229
		2	668783	7731786
		6	668875	7731787
		1	669728	7731644
		3	669888	7731587
		8	669961	7731593
		16	670012	7731634
		4	670009	7731708
		1	669971	7731730
		8	671226	7731303
		1	672172	7727677
		5	672219	7727895
		1	672086	7727865
		12	670232	7728053
		4	670188	7728006
		3	673050	7724475
		2	672997	7724328
		25	668255	7731721
		11	666746	7733296
		17	666492	7734980
		24	666523	7734950
		19	666554	7735011
		15	666505	7735062
		18	666475	7735036
		1	666048	7741050
		2	675808	7721621

		2	675858	7721637
		2	675880	7721649
		1	675891	7721649
		2	675899	7721583
		1	675959	7721577
		1	675845	7721587
		5	675895	7721598
		1	673004	7726547
		1	673039	7726622
		1	673022	7726615
		2	673014	7726609
		1	672923	7726544
		14	674238	7727913
		7	674238	7727910
		34	674236	7727906
		1	674284	7727844
		6	674234	7727860
		65	674227	7727879
		20	675285	7727540
		41	675285	7727540
		6	675462	7727456
		2	675445	7727448
		18	676208	7730144
		5	676207	7730158
		9	676209	7730177
		20	676222	7730190
		5	676237	7730206
		12	676330	7730300

		1	675797	7721608
		9	675759	7721601
		2	675735	7721589
		1	675728	7721582
		1	675695	7721563
		1	675735	7721555
		1	675474	7723597
		3	673514	7721680
		1	673526	7721675
		1	672956	7726524
		4	672970	7726526
		1	673013	7726536
		1	673006	7726581
		2	673014	7726618
		5	673014	7726620
		4	672930	7726619
		3	672918	7726607
		1	672912	7726560
		1	673184	7728706
		2	674238	7727966
		3	674241	7727970
		2	674248	7727980
		5	674258	7727984
		6	674258	7727985
		6	674263	7728046
		12	674239	7728047
		7	674218	7728032
		1	674213	7728012

		3	674216	7727982
		2	674213	7727968
		3	674217	7727947
		1	674228	7727937
		1	674232	7727924
		3	675252	7727593
		37	675248	7727647
		211	675312	7727690
		4	674292	7739193
		10	676815	7726282
		17	676795	7726294
		15	676795	7726310
		52	676738	7726413
		47	676738	7726413
		2	676023	7730049
		5	676011	7730037
		17	676076	7730063
		1	670962	7729475
		1	674104	7722864
		1	674287	7722497
		1	674344	7722429
		1	674554	7721837
		1	675581	7722194
		1	675766	7722326
		1	673516	7724240
		1	671516	7732552
		1	671380	7733255
		1	672952	7724710

		1	670962	7729507
		1	672767	7724782
		1	672694	7724792
		1	672373	7725213
		1	672760	7725080
		1	670974	7729585
		1	671024	7729657
		1	670997	7729675
		1	675523	7722519
		1	675265	7722575
		1	674368	7722858
		1	674271	7722904
		12	666006	7741507
		1	673314	7741068
		12	671954	7731060
		4	669678	7732575
		26	667351	7732436
		15	669656	7728731
		15	671022	7729465
		15	671022	7729465
		1	673576	7728683
		7	673576	7728683
		100	675787	7727948
		1	673739	7724279
		1	674039	7722945
		12	672219	7725250
		6	668756	7726818
		6	676917	7721539

		10	672209	7724203
		5	673594	7725321
	Level One Flora and Vegetation Assessment of Mooka Siding (Maia 2010)	2	672950	7720014
		1	673030	7720056
		1	673269	7723374
		2	673836	7723219
		1	673860	7723013
		1	673790	7722857
		1	673811	7720466
		1	672946	7720009
		1	674225	7720463
		1	674182	7720346
		1	671559	7729953
		1	672984	7726412
		1	673938	7721974
	Outer Harbour Development Flora and Vegetation Assessment (ENV 2009a)		666239	7731941
			670540	7734720
			670754	7726092
			665991	7734232
			671332	7727799
			669238	7727489
			667095	7727671
	Port Hedland Area Targeted Flora Survey (ENV 2009e)	1	670513	7734694
		10	670566	7733739
Phyllanthus aridus (Priority 3)	Hope Downs Iron Ore Project Rail and Port Public Environmental Review (Hope Downs Management Services 2002)		663982	7741346
			664026	7741350
			665514	7739412

Pterocaulon sp. A Kimberley Flora (B.J. Carter 599) (Priority 3)	Port Hedland Nelson Point Dredging Approvals Targeted Species Assessment of DMMA H (ENV 2009d)	2	666309	7747612
	Goldsworthy Rail Development Supplemental Flora and Vegetation Assessment (ENV 2010b)	2	671376	7743934
	Outer Harbour Development Flora and Vegetation Assessment (ENV 2009a)	1	661379	7747365
		1	658168	7747045
Tephrosia rosea ? var. *venulosa*	Current Survey (ENV 2011)	7	662232	7754444
		2	662623	7754783
		4	662223	7754479
	North West Iron Ore Alliance Port Project Flora, Vegetation and Mangal Studies (Woodman 2011)	8	657900	7747872
		5	656814	7746836
		20	656914	7746786
		100	656869	7746608
		2	656826	7746585
		100	656827	7746570
Tephrosia rosea var. aff. *venulosa*	Finucane Island to Wedgefield Flora and Vegetation Assessment (ENV 2010c)	20	665125	7746077
		8	665152	7746011
		15	665119	7745999
		20	665198	7745614
		10	664793	7745844
		15	663472	7746602
		1	665174	7745886
		3	665185	7746171
		3	665135	7746170
	Great Northern Highway Road Bridge Flora and Vegetation Assessment (ENV 2010d)	13	665863	7745246
		1	665545	7745370
		8	665362	7745486
		3	665223	7745489

		2	665345	7745499
		1	664848	7745399
		2	665846	7745198
Tephrosia rosea var. *rosea/venulosa*	Goldsworthy Rail Development Supplemental Flora and Vegetation Assessment (ENV 2010b)	55	663483	7746511
		25	665189	7745497
		12	665196	7745532
		1	663577	7746466
	Targeted Regional *Tephrosia rosea* var. *venulosa* Survey (ENV 2011)	30	665199	7745492
		1	667965	7747207
		45	665655	7745491
		100	664542	7744483
		1	672194	7746004
		20	667060	7741809
Tephrosia rosea var. *venulosa* (Priority 1)	Current Survey (ENV 2011)	1	662634	7754751
		3	662231	7754631
		3	662228	7754519
		5	662215	7754459
	Boodarie Depot Flora and Vegetation Assessment (ENV 2009f)	-	662678	7746974
		15	663390	7746532
		20	663402	7746539
		10	663411	7746548
		5	663415	7746551
		1	663332	7746564
		20	663415	7746521
		40	663427	7746511
		15	663439	7746523
		20	663429	7746543

		30	663434	7746532
		12	663455	7746534
		15	663434	7746523
		50	663462	7746496
		1	663303	7746622
		6	663324	7746615
		4	663340	7746596
		1	663220	7746653
		1	663224	7746659
		2	663315	7746572
		8	663220	7446678
		1	663382	7746540
		1	663199	7746695
		1	663002	7746796
		1	663345	7746579
		1	663358	7746583
		1	663373	7746569
		1	663020	7746785
		2	663355	7746554
		1	663334	7746563
		9	663369	7746539
		2	663211	7746630
		30	663465	7746509
		10	663499	7746598
		5	663509	7746589
		10	663524	7746582
		1	663519	7746568
		3	663472	7746612

		20	663463	7746617
		30	663480	7746504
		10	663474	7746484
		2	663488	7746602
		40	663472	7746490
		1	663382	7746657
		2	663423	7746633
		5	663433	7746634
		6	663438	7746634
		8	663453	7746624
	Boodarie Drive Intersection Vegetation Clearing Permit (ENV 2010g)	-	662678	7746974
		15	663390	7746532
		20	663402	7746539
		10	663411	7746548
		5	663415	7746551
		1	663332	7746564
		20	663415	7746521
		40	663427	7746511
		15	663439	7746523
		20	663429	7746543
		30	663434	7746532
		12	663455	7746534
		15	663434	7746523
		50	663462	7746496
		1	663303	7746622
		6	663324	7746615
		4	663340	7746596
		1	663220	7746653

		1	663224	7746659
		2	663315	7746572
		8	663220	7446678
		1	663382	7746540
		1	663199	7746695
		1	663002	7746796
		1	663345	7746579
		1	663358	7746583
		1	663373	7746569
		1	663020	7746785
		2	663355	7746554
		1	663334	7746563
		9	663369	7746539
		2	663211	7746630
		30	663465	7746509
		10	663499	7746598
		5	663509	7746589
		10	663524	7746582
		1	663519	7746568
		3	663472	7746612
		20	663463	7746617
		30	663480	7746504
		10	663474	7746484
		2	663488	7746602
		40	663472	7746490
		1	663382	7746657
		2	663423	7746633
		5	663433	7746634

		6	663438	7746634
		8	663453	7746624
	Finucane Island to Wedgefield Flora and Vegetation Assessment (ENV 2010c)	150	665120	7746238
		10	665129	7746143
			670752	7742100
			671028	7743096
			666693	7744720
			665795	7745205
			665528	7745418
			666342	7744952
			668417	7744459
			670437	7744148
			670068	7739413
			670463	7735374
	Hunt Point Beach Flora, Vegetation and Fauna Assessment (ENV 2010f)	3	663926	7754474
		4	663916	7754407
		2	663959	7754474
		15	663967	7754475
		1	663947	7754469
		1	663941	7754457
		2	663920	7754439
		1	664062	7754472
		5	664061	7754455
		20	664063	7754432
		4	664087	7754429
		12	664106	7754437
		36	664141	7754575
		40	664157	7754603

		15	664160	7754637
		22	663856	7754979
		25	663821	7754984
		15	663796	7754988
		1	663768	7754976
		6	663712	7754969
		100	663661	7754955
		100	663536	7754959
		100	663464	7754955
		1	663982	7754550
		6	663775	7754306
		2	663697	7754153
		2	663731	7754242
		3	663635	7754467
		350	664138	7754473
		350	664161	7754434
		350	664230	7754460
		1	663441	7754997
	Outer Harbour Development Flora and Vegetation Assessment (ENV 2009a)		662281	7754469
			662134	7754698
			661938	7754476
			662180	7747426
			654497	7746751
			654692	7745578
			662575	7754784
			661708	7754401
			661343	7754341
			660982	7754227

			659462	7744955
			662918	7740138
	Port Hedland Area Targeted Flora Survey (ENV 2009e)	3	670583	7744091
		2	670440	7744115
		8	669728	7744216
		10	669669	7744235
		5	669601	7744239
		5	668232	7744459
		1	668015	7744497
		1	667927	7744507
		2	668123	7744499
		16	668170	7744493
		14	668236	7744485
		18	668319	7744471
		1	668384	7744462
		1	668418	7744458
		1	668504	7744444
		6	668566	7744436
		25	668615	7744424
		5	668674	7744413
		9	668724	7744407
		9	668780	7744399
		5	668832	7744391
		5	668870	7744383
		10	668934	7744373
		18	669004	7744365
		4	669073	7744352
		2	669570	7744273

		4	670406	7744150
		7	670533	7744130
		3	666650	7744774
		3	666604	7744798
		20	666578	7744813
		21	666536	7744838
		18	666493	7744860
		13	666455	7744883
		2	666370	7744931
		22	666306	7744969
		10	666244	7745003
		45-50	666213	7745020
		5	666147	7745059
		2	666351	7744958
		8	666474	7744860
		30	666448	7744862
		15	666424	7744877
		4	666413	7744883
		30	666384	7744902
		41	666344	7744923
		8	666318	7744936
		18	662484	7754545
		3	662477	7754602
		7	662455	7754619
		11	662406	7754636
		3	662403	7754673
		12	662372	7754695
		6	662372	7754655

		2	662368	7754610
		15	662380	7754588
		3	662407	7754525
		5	662424	7754494
		8	662485	7754523
		8	662468	7754486
		29	662453	7754471
		8	662426	7754460
		12	662111	7754364
		50	666445	7747476
		21	665849	7745198
		4	665690	7745300
		3	665620	7745336
		16	665539	7745381
		9	665749	7745290
		1	665425	7745445
		1	665398	7745467
		2	668943	7744335
		1	668779	7744365
		4	668667	7744390
		2	668633	7744386
		1	667816	7744547
		9	667961	7744543
		26	668006	77445330
		20	668040	7744514
		5	668081	7744506
		1	668093	7744506
		5	670843	7744102

		5	666246	7744974
		31	666199	7745001
		3	666162	7745017
		5	666141	7745031
		6	666070	7745061
		10	666595	7745141
		80	665663	7745348
		7	665623	7745370
		15	665594	7745389
		5	665513	7745437
		40	665231	7745598
		50	665169	7745623
		5	665073	7745677
		2	664826	7745823
		5	664812	7745873
		1	663688	7746488
		6	663655	7746502
		3	663611	7746523
		25	663580	7746537
		23	663529	7746567
		10	663498	7746585
		30	663457	7746608
		1	663382	7746653
		1	661332	7748461
		4	661349	7748371
		5	661361	7748267
		50	661706	7747655
		70	661964	7747447

		10	662645	7747061
		20	662283	7754443
		10	662348	7754685
		5	662349	7754661
		10	662346	7754623
		10	662350	7754576
		15	662375	7754521
		20	662393	7754458
		20	662287	7754406
		30	662117	7754386
	Port Hedland Nelson Point DMMA A Area Flora and Vegetation Assessment (ENV 2008a)	10+	661152	7748630
	Port Hedland Nelson Point DMMA H Area Flora and Vegetation Assessment (ENV 2009b)		666147	7747631
			666304	7747557
	Port Hedland Nelson Point Dredging Approvals Targeted Species Assessment of DMMA H (ENV 2009d)	~50	666445	7747476
		2	666332	7747677
	Port Hedland Nelson Point Dredging Approvals Targeted Species Assessment of DMMA H (ENV 2009d)	200+	666235	7747662
		~100	666304	7747560
	Targeted Regional *Tephrosia rosea* var. *venulosa* Survey (ENV 2011)	300	659939	7753987
		10	665717	7745091
	Tug Harbour (Wedgefield) Flora and Vegetation Survey and Fauna Assessment (ENV 2010e)	20	665218	7746826
		5	665227	7745961
		5	665264	7745710
		20	665250	7745741
		20	665209	7745750
		40	665194	7745800
		6	665209	7745841
		2	665248	7745829

		12	665270	7745771
		1	665192	7745981
		1	665185	7746024
		1	665185	7746024
		8	665180	7746044
		5	665162	7746099
		1	665178	7746316
		5	665167	7746894
		7	665188	7746852
		2	665432	7745637
		20	665261	7745600
		8	665245	7745657
		100+	665220	7745621
		3	665315	7745495
		40+	665203	7745524

World Geodetic System 1984 (WGS84), Zone 50K

APPENDIX K

LOCATION OF SPECIES OF INTEREST – CURRENT SURVEY

PORT HEDLAND REGIONAL FLORA AND VEGETATION ASSESSMENT

APPENDIX K

LOCATION OF SPECIES OF INTEREST – CURRENT SURVEY

Species	Easting	Northing
Bergia pedicellaris	655687	7744480
	665205	7740510
	672266	7721638
Drosera burmanni	666950	7746092
	660672	7741644
	662004	7744983
Murdannia graminea	671068	7746304
	668251	7747759
	666950	7746092
	656373	7746513
	655687	7744480
	660672	7741644
	661418	7742589
	659481	7741044
	663294	7738814
Tephrosia simplicifolia	676635	7746825
	669913	7743388
	660453	7722568
	668991	7740119
	675787	7727948
	674494	7726093
	659967	7724453
Vigna lanceolata var. *filiformis*	668251	7747759
	666950	7746092

World Geodetic System 1984 (WGS84), Zone 50K

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
**Aerva javanica*	*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
	A Flora and Fauna Assessment of RGP5 Spoil Areas A and H, Port Hedland Harbour (Biota 2008a)	661179	7749709
		661280	7749430
		661160	7749180
		660660	7748850
		661390	7749930
		661300	7749190
		666608	7747398
		665309	7748359
		665426	7747552
		665655	7747473
	A Biodiversity Assessment of the Utah Point Berth Development Port Hedland. (Biota 2008b)	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
	Outer Harbour Development Flora and Vegetation Assessment (ENV 2009a)	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
	Port Hedland Nelson Point Dredging Approvals Flora and Vegetation Assessment of DMMA H (ENV 2009b)	665336	7747650
	Goldsworthy Rail Duplication Flora and Vegetation Assessment (ENV 2009c)	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
	Boodarie Depot Flora and Vegetation Assessment (ENV 2009f)	663483	7746511
		664355	7745911
		663840	7746310
		663944	7746252
	Port Hedland Transmission Lines Flora & Fauna Assessment (ENV 2009g)	662250	7740360
		654935	7730087
		654956	7730025
		653725	7729675
		653775	7729775
	Wallwork Road Bridge Flora and Vegetation Assessment (ENV 2010a)	667070	7745200
		667070	7744862
		667240	7744698
		667039	7744504
		665997	7744281
	Goldsworthy Rail Development Supplemental Flora and Vegetation Assessment (ENV 2010b);	671077	7743285
		671086	7743142

Species	Survey	# Easting	# Northing
		671486	7744160
		671464	7744180
	Finucane Island to Wedgefield Flora and Vegetation Assessment (ENV 2010c)	665174	7745886
		662160	7747364
		665135	7746170
	Tug Harbour (Wedgefield) Flora and Vegetation Survey and Fauna Assessment (ENV 2010e)	665174	7746329
		665218	7746826
		665331	7746221
		665227	7745961
		665463	7745803
		665269	7745722
		665209	7745841
		665333	7746865
		665167	7746895
		665260	7746718
	Hunt Point Beach Flora, Vegetation and Fauna Assessment (ENV 2010f)	664111	7754660
	Level One Flora and Vegetation Assessment of Mooka Siding (Maia 2010)	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
	North West Iron Ore Alliance Port Project Flora, Vegetation and Mangal Studies (Woodman 2011)	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	*Hunt Point Beach Flora, Vegetation and Fauna Assessment* (ENV 2010f)	663916	7754960
*Cenchrus ciliaris	*Current Survey* (ENV 2011)	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
	A Flora and Fauna Assessment of RGP5 Spoil Areas A and H, Port Hedland Harbour (Biota 2008a)	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
	A Biodiversity Assessment of the Utah Point Berth Development Port Hedland. (Biota 2008b)	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
	Port Hedland Nelson Point Dredging Approvals - Flora and Vegetation Assessment of an area Located within DMMA A (ENV 2008a)	661152	7748630
	Outer Harbour Development Flora and Vegetation Assessment (ENV 2009a)	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
	Port Hedland Nelson Point Dredging Approvals Flora and Vegetation Assessment of DMMA H (ENV 2009b)	665336	7747650
		666443	7747713
		665520	7748001
	Goldsworthy Rail Duplication Flora and Vegetation Assessment (ENV 2009c)	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
	Boodarie Depot Flora and Vegetation Assessment (ENV 2009f)	664254	7744775
		663483	7746511
		664189	7746093
		664355	7745911
		665189	7745497
	Port Hedland Transmission Lines Flora & Fauna Assessment (ENV 2009g)	662250	7740360
		654935	7730087
		654956	7730025
		653725	7729675
		653775	7729775
	Wallwork Road Bridge Flora and Vegetation Assessment (ENV 2010a)	667252	7744954
		667240	7744698
		667232	7744408
		666991	7744849

Species	Survey	# Easting	# Northing
	Goldsworthy Rail Development Supplemental Flora and Vegetation Assessment (ENV 2010b);	671233	7743831
		671598	7744330
		671486	7744160
		671376	7743934
		671464	7744180
	Finucane Island to Wedgefield Flora and Vegetation Assessment (ENV 2010c)	665606	7746046
		665174	7745886
		664584	7746196
		664837	7745981
		661756	7750268
		661367	7748763
		661796	7747588
		662160	7747364
		662769	7747048
		665135	7746170
	Great Northern Highway Road Bridge Flora and Vegetation Assessment (ENV 2010d)	666165	7745227
		665654	7744969
		665886	7745268
		666172	7745539
		665484	7745260
		665253	7745119
		665236	7745190

Species	Survey	# Easting	# Northing
	Tug Harbour (Wedgefield) Flora and Vegetation Survey and Fauna Assessment (ENV 2010e)	665174	7746329
		665218	7746826
		665307	7747278
		665227	7745961
		665331	7746221
		665363	7745859
		665463	7745803
		665269	7745722
		665209	7745841
		665320	7747216
		665134	7747034
		665167	7746895
	Level One Flora and Vegetation Assessment of Mooka Siding (Maia 2010)	673111	7720362
		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
	North West Iron Ore Alliance Port Project Flora, Vegetation and Mangal Studies (Woodman 2011)	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	*A Flora and Fauna Assessment of RGP5 Spoil Areas A and H, Port Hedland Harbour* (Biota 2008a)	665706	7747481
	A Biodiversity Assessment of the Utah Point Berth Development Port Hedland. (Biota 2008b)	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
	Level One Flora and Vegetation Assessment of Mooka Siding (Maia 2010)	673013	7724213
		673646	7721450
	North West Iron Ore Alliance Port Project Flora, Vegetation and Mangal Studies (Woodman 2011)	655982	7742775
**Chloris barbata*	*Hunt Point Beach Flora, Vegetation and Fauna Assessment* (ENV 2010f)	663574	7754801

Species	Survey	# Easting	# Northing
**Chloris virgata*	*A Flora and Fauna Assessment of RGP5 Spoil Areas A and H, Port Hedland Harbour* (Biota 2008a)	666588	7748089
	A Biodiversity Assessment of the Utah Point Berth Development Port Hedland. (Biota 2008b)	663195	7752899
		662016	7751276
		661349	7748707
		661331	7748518
		661332	7743579
		661365	7748779
		661414	7748941
		662582	7747103
		661999	7747434
	Port Hedland Nelson Point Dredging Approvals - Flora and Vegetation Assessment of an area Located within DMMA A (ENV 2008a)	661152	7748630
	Outer Harbour Development Flora and Vegetation Assessment (ENV 2009a)	658128	7746364
	Goldsworthy Rail Duplication Flora and Vegetation Assessment (ENV 2009c)	670162	7739936
		670476	7741101
		663681	7746492
		671755	7744640
	Finucane Island to Wedgefield Flora and Vegetation Assessment (ENV 2010c)	662160	7747364
**Citrullus colocynthis*	*Current Survey* (ENV 2011)	654709	7730209

Species	Survey	# Easting	# Northing
	Outer Harbour Development Flora and Vegetation Assessment (ENV 2009a)	673310	7720297
	Goldsworthy Rail Duplication Flora and Vegetation Assessment (ENV 2009c)	669797	7737903
		669893	7738944
		670162	7739936
		670476	7741101
		668417	7744459
		670384	7740543
		669849	7738329
		670184	7736382
		670620	7734780
	Port Hedland Transmission Lines Flora & Fauna Assessment (ENV 2009g)	653775	7729690
	Goldsworthy Rail Development Supplemental Flora and Vegetation Assessment (ENV 2010b);	671111	7743152
		671117	7743112
		671054	7743792
	Level One Flora and Vegetation Assessment of Mooka Siding (Maia 2010)	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
**Cucumis melo* subsp. *agrestis*	*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
**Cynodon dactylon*	*A Flora and Fauna Assessment of RGP5 Spoil Areas A and H, Port Hedland Harbour* (Biota 2008a)	666436	7747330
**Digitaria ciliaris*	*Outer Harbour Development Flora and Vegetation Assessment* (ENV 2009a)	655017	7745785
		664057	7734589
**Echinochloa colona*	*Level One Flora and Vegetation Assessment of Mooka Siding* (Maia 2010)	673060	7722857
**Eragrostis curvula*	*Current Survey* (ENV 2011)	677694	7726952
**Flaveria trinervia*	*Current Survey* (ENV 2011)	676737	7730289
		677694	7726952
**Indigofera oblongifolia*	*Current Survey* (ENV 2011)	676242	7742485
**Indigofera sessiliflora*	*Hunt Point Beach Flora, Vegetation and Fauna Assessment* (ENV 2010f)	664111	7754660
**Malvastrum americanum*	*Level One Flora and Vegetation Assessment of Mooka Siding* (Maia 2010)	673306	7720319
		673189	7720136
		673252	7720543

Species	Survey	# Easting	# Northing
**Merremia dissecta*	*A Flora and Fauna Assessment of RGP5 Spoil Areas A and H, Port Hedland Harbour* (Biota 2008a)	666608	7747398
	Outer Harbour Development Flora and Vegetation Assessment (ENV 2009a)	663418	7755032
**Opuntia stricta*	*Hunt Point Beach Flora, Vegetation and Fauna Assessment* (ENV 2010f)	663916	7754960
**Physalis angulata*	*Current Survey* (ENV 2011)	677694	7726952
**Portulaca oleracea*	*Current Survey* (ENV 2011)	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
	A Flora and Fauna Assessment of RGP5 Spoil Areas A and H, Port Hedland Harbour (Biota 2008a)	666493	7747356
	Outer Harbour Development Flora and Vegetation Assessment (ENV 2009a)	654690	7746973
		659073	7742818
		673310	7720297
		669393	7725988
		668915	7726269
		670970	7727612
	Goldsworthy Rail Duplication Flora and Vegetation Assessment (ENV 2009c)	670881	7744020
		668785	7744375
		668417	7744459
		670384	7740543
		670068	7739413
	Tug Harbour (Wedgefield) Flora and Vegetation Survey and Fauna Assessment (ENV 2010e)	665331	7746221
	Hunt Point Beach Flora, Vegetation and Fauna Assessment (ENV	663441	7754997

Species	Survey	# Easting	# Northing
	2010f)	663641	7754269
		664025	7754517
		664066	7754801
	Level One Flora and Vegetation Assessment of Mooka Siding (Maia 2010)	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
	North West Iron Ore Alliance Port Project Flora, Vegetation and Mangal Studies (Woodman 2011)	658581	7748787
		660682	7749870
		656149	7743591
**Setaria verticillata*	*Outer Harbour Development Flora and Vegetation Assessment* (ENV 2009a)	673066	7723588
		673119	7722137
**Stylosanthes hamata*	*Current Survey* (ENV 2011)	676242	7742485
	A Flora and Fauna Assessment of RGP5 Spoil Areas A and H, Port Hedland Harbour (Biota 2008a)	666493	7747356
	A Biodiversity Assessment of the Utah Point Berth Development	666100	7745485

Species	Survey	# Easting	# Northing
	Port Hedland. (Biota 2008b)	666191	7745527
		665819	7745442
	Outer Harbour Development Flora and Vegetation Assessment (ENV 2009a)	660982	7754227
	Goldsworthy Rail Duplication Flora and Vegetation Assessment (ENV 2009c)	664536	7745995
		669849	7738329
	Port Hedland Transmission Lines Flora & Fauna Assessment (ENV 2009g)	662250	7740360
	Finucane Island to Wedgefield Flora and Vegetation Assessment (ENV 2010c)	662160	7747364
	Great Northern Highway Road Bridge Flora and Vegetation Assessment (ENV 2010d)	666172	7745539
	Level One Flora and Vegetation Assessment of Mooka Siding (Maia 2010)	671893	7729246
**Tamarix aphylla*	*Goldsworthy Rail Duplication Flora and Vegetation Assessment* (ENV 2009c)	671755	7744640
**Vaccaria hispanica*	*Current Survey* (ENV 2011)	676635	7746825
**Vachellia farnesiana*	*Current Survey* (ENV 2011)	675596	7742420
**Vitex trifolia* var. *subtrisecta*	*Finucane Island to Wedgefield Flora and Vegetation Assessment* (ENV 2010c)	665174	7745886
**Washingtonia filifera*	*A Flora and Fauna Assessment of RGP5 Spoil Areas A and H, Port Hedland Harbour* (Biota 2008a)	666436	7747330
**Yucca aloifolia*	*Hunt Point Beach Flora, Vegetation and Fauna Assessment* (ENV 2010f)	663916	7754960

World Geodetic System 1984 (WGS84), Zone 50K