GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 4207/1
Permit Holder:	Graeme Rogers and Judith Rogers
Duration of Permit:	22 August 2011 to 22 August 2013

The Permit Holder is authorised to clear native vegetation subject to the following conditions of this Permit.

PART I – CLEARING AUTHORISED

1. **Purpose for which clearing may be done**
   Clearing for the purpose of pastoral diversification (pivot irrigation) and associated infrastructure.

2. **Land on which clearing is to be done**
   Lot 43 on Plan 238433 (Pardoo 6721)

3. **Area of Clearing**
   The Permit Holder must not clear more than 90 hectares of native vegetation within the area hatched yellow on attached Plan 4207/1.

4. **Application**
   This Permit allows the Permit Holder to authorise persons, including employees, contractors and agents of the Permit Holder, to clear native vegetation for the purposes of this Permit subject to compliance with the conditions of this Permit and approval from the Permit Holder.

5. **Type of clearing authorised**
   This Permit authorises the Permit Holder to clear native vegetation for activities to the extent that the Permit Holder has the power to clear native vegetation for those activities under the *Land Administration Act 1997* or any other written law.

6. **Compliance with Assessment Sequence and Management Procedures**
   Prior to clearing any native vegetation under conditions 1, 2 and 3 of this Permit, the Permit Holder must comply with the Assessment Sequence and the Management Procedures set out in Part II of this Permit.

PART II – ASSESSMENT SEQUENCE AND MANAGEMENT PROCEDURES

7. **Avoid, minimise etc clearing**
   In determining the amount of native vegetation to be cleared authorised under this Permit, the Permit Holder must have regard to the following principles, set out in order of preference:
   (a) avoid the clearing of native vegetation;
   (b) minimise the amount of native vegetation to be cleared; and
   (c) reduce the impact of clearing on any environmental value.

8. Weed control

(a) When undertaking any clearing or other activity authorised under this Permit, the Permit Holder must take the following steps to minimise the risk of the introduction and spread of *weeds*:

(i) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;

(ii) ensure that no *weed*-affected soil, *mulch*, *fill* or other material is brought into the area to be cleared; and

(iii) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

(b) At least once in each 12 month period for the term of this Permit, the Permit Holder must remove or kill any *weeds* or species permitted for planting under a Pastoral Diversification Permit which are growing within the 100 metre buffer of each pivot area.

PART III - RECORD KEEPING AND REPORTING

9. Records must be kept

The Permit Holder must maintain the following records for activities done pursuant to this Permit in relation to the clearing of native vegetation authorised under this Permit:

(a) the species composition, structure and density of the cleared area;

(b) the location where the clearing occurred, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings;

(c) the date that the area was cleared; and

(d) the size of the area cleared (in hectares).

10. Reporting

(a) The Permit Holder must provide to the CEO on or before 30 June of each year, a written report:

(i) of records required under condition 9 of this Permit; and

(ii) concerning activities done by the Permit Holder under this Permit between 1 January and 31 December of the preceding year.

(b) Prior to 22 May 2013, the Permit Holder must provide to the CEO a written report of records required under condition 9 of this Permit where these records have not already been provided under condition 10(a) of this Permit.

DEFINITIONS

The following meanings are given to terms used in this Permit:

fill means material used to increase the ground level, or fill a hollow;

mulch means the use of organic matter, wood chips or rocks to slow the movement of water across the soil surface and to reduce evaporation;

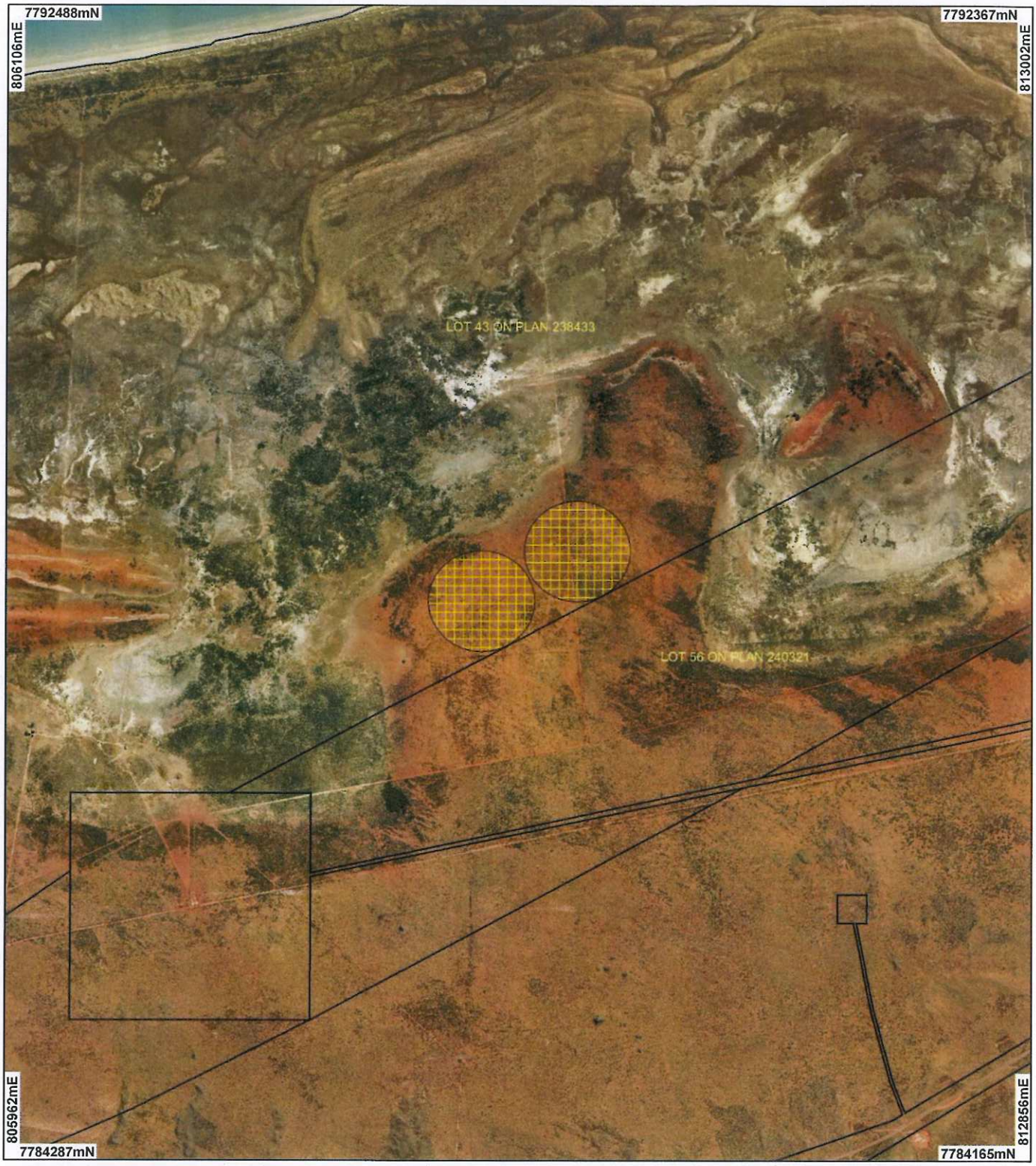
weed/s, for the purpose of this permit, means a species listed in Appendix 3 of the *Environmental Weed Strategy* published by the Department of Conservation and Land Management (1999), and plants declared under section 37 of the *Agriculture and Related Resources Protection Act 1976,* including those species permitted for planting under a Pastoral Diversification Permit, issued by the Department of Regional Development and Lands

M Warnock
A/MANAGER
NATIVE VEGETATION CONSERVATION BRANCH

Officer delegated under Section 20
of the Environmental Protection Act 1986

28 July 2011

Plan 4207/1



LEGEND

Clearing Instruments

Areas Approved to Clear

Pardoo Keraudren 50cm Orthomosaic - Landgate 2004

Cadastre for labelling

N

0 ~1 km

Scale 1:36176
(Approximate when reproduced at A4)

Geocentric Datum Australia 1994

Note: the data in this map have not been projected. This may result in geometric distortion or measurement inaccuracies.

M. Warnock Date 28/7/11

Officer with delegated authority under Section 20 of the Environmental Protection Act 1986

Information derived from this map should be confirmed with the data custodian acknowleged by the agency acronym in the legend.

Department of **Environment and Conservation**

Our environment, our future

** Project Data. This data has not been quality assured. Please contact map author for details.*

Department of Environment and Conservation

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 4207/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Graeme Edward and Judith Anne Rogers

1.3. Property details

Property: LOT 43 ON PLAN 238433 (Lot No. 86 GREAT NORTHERN PARDOO 6721)
Local Government Area: East Pilbara
Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
90		Mechanical Removal	Pastoral Diversification

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 28 July 2011

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
Beard Vegetation Association - 32: Shrublands, pindan; acacia shrubland with scattered low trees over Triodia spp. Beard Vegetation Association - 73: Grasslands, short bunch grass savanna, grass; salt water grassland (Sporobolus virginicus).	The weed, buffel grass (Cenchrus ciliarus), is present and covers a wide area (DEC, 2011b). Approximately 30ha of the upper left pivots occur in Beard Vegetation Association 73 the reminder is within Vegetation Association 32.	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	Vegetation condition determined from aerial imagery and DEC Regional advice.

3. Assessment of application against clearing principles

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

Comments

Proposal is not likely to be at variance to this Principle

The area of proposed clearing is unlikely to comprise a high level of biodiversity compared to any other area in the Dampierland Bioregion or the local area (20-40km).

Historically, the majority of the vegetation within the area under application once comprised a single, relatively uniform community represented by Beard Vegetation Association 32. Typically, this vegetation is described as 'Pindan shrubland' and comprises acacia species over Spinifex grasses (Shepherd, 2009). A smaller section of the proposed clearing (ca. 30ha) is described as the Mandora Coastal Plain with "grasslands, short bunch grass savanna, grass; salt water grassland (Sporobolus virginicus)" (Shepherd, 2009).

Historical and current grazing has seen the introduction and spread of the weed, buffel grass (Cenchrus ciliarus) into the area (DEC, 2011b).

Two priority three flora species have been recorded in the vicinity - Keraudrenia katatona and Phyllanthus aridus. These occur on the same soil type and within the same Beard Vegetation Association No. 32.

Each of these vegetation associations are sufficiently represented in the Bioregion (between 99-100% of the vegetation type remains). Given the presence of buffel grass, the clearing of 90ha (and a further 210ha as the project develops) is unlikely to have any impact on the biodiversity of the Bioregion or local area.

Methodology References:

- DEC (2011b)
- Shepherd (2009)

GIS Data:
- SAC Biodata set accessed February 2011

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

Comments

Proposal is not likely to be at variance to this Principle

There are two records of threatened (Wildlife Conservation Act 1950) species, being Macrotis lagotis (Bilby) and Notoryctes caurinus (Northern Marsupial Mole), one other specially protected fanua, Falco peregrinus (Peregrine Falcon) and four Priority 4 species, Ardeotis australis (Australian Bustard), Burhinus grallarius (Bush Stone-curlew), Macroderma gigas (Ghost Bat) and Numenius madagascariensis (Eastern Curlew) within the local area (20-40km radius) (DEC 2007).

The vegetation under application has been altered by previous landuse, as demonstrated by the presence of buffel grass (DEC 2011b), although the native vegetation is well represented in the surrounding Bioregion (close to 100% remaining). It can be surmised then the vegetation under application is not likely to be of significant habitat for these fauna species.

Methodology

References:

- DEC (2007)
- DEC (2011b)
- Shepherd (2009)

GIS data:
- SAC Biodata set accessed February 2011

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

Comments

Proposal is not likely to be at variance to this Principle

There are no recorded occurrences of declared rare flora within the area under application, or within the local area (20-40km radius).

Methodology

GIS data:
- SAC Biodata set accessed February 2011

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

Comments

Proposal is not likely to be at variance to this Principle

There are no recorded occurrences of threatened or priority ecological communities within the area under application, or within the local area (20-40km radius).

Methodology

GIS data:
- SAC Biodata set accessed February 2011

(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

Comments

Proposal is not at variance to this Principle

The area under application is within Pardoo Station Pastoral Lease which is approximately 210, 000 ha in size. The lease is comprised mostly of grazed rangelands and Beard Vegetation Association 32 (Shepherd, 2009). Much of the vegetation appears to be dominated by buffel grass (*Cenchrus ciliarus) (DEC, 2011b).

Approximately 270ha of the proposed 300ha under application is represented by vegetation association 32 and buffel grass. The remaining ca. 30ha is vegetation association 73, described as Mandora Coastal Plain; grasslands, short bunch grass savanna, salt water grassland (Sporobolus virginicus).

Close to 99% of vegetation association 32 and vegetation association 73 remain in the Dampierland Bioregion / Shire of East Pilbara region (Shepherd, 2009). The local area (20-40km radius) appears to be relatively undisturbed.

The clearing of initially 90ha (and a further 210ha as the project develops) is not likely to be at variance to this principle as the area under application is not considered a significant remnant in a well vegetated local area.

Methodology

References:

- DEC (2011b)
- Shepherd (2009)

GIS data:
- Biodata set accessed February 2011

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

Comments

Proposal may be at variance to this Principle

The application area is surrounded to the north, west and east by the Eighty Mile Beach RAMSAR Wetland. The area under application is within 50-200m of this feature.

The Eighty Mile Beach RAMSAR Wetland is 175,487ha in size and consists of a 220km section of coastline and adjacent mudflats, together with two large ephemeral lakes and a series of springs occurring in marshland 120km to the east (Sandfire Roadhouse). More than 472,000 migratory waders have been counted on the mudflats during the September to November period. The site is one of the three most important for migratory shorebirds in Australia. It is considered to be one of the major arrival and departure areas for migratory shorebirds visiting Australia (DEC, 2011a).

The nature of the RAMSAR's topography and close proximity to the coastline makes it subject to inundation particularly following cyclonic events. However no rivers, creeks or other defined water courses occur within the area under application, or within the local area (20-40km). The vegetation under application is not riparian, however it is in close proximitly to the RAMSAR Wetland and may provide a buffer to that section of the wetland and therefore the vegetation under application may be associated with a wetland.

Methodology

GIS data:
-Biodata set accessed February 2011

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

Comments

Proposal may be at variance to this Principle

The soil of the area under application is described as 'Pindan country'. The soils are typically red deep sands that have low salinity levels and reasonably low cation exchange capacities, are well drained and probably have moderate water holding capacity. Away from the margins of the surrounding (Nita) land systems, the soils could be expected to be reasonably uniform (Commissioner of Soil and Land Conservation, 2011).

There is no defined surface drainage on the areas proposed to be cleared, although the land tends to fall towards the northwest and north. It is possible surface runoff and soil erosion could occur under intense rainfall conditions that the region experiences with some frequency (Commissioner of Soil and Land Conservation, 2011)

Rainfall for Pardoo Station (Pardoo is a Bureau of Meteorology recording station) averages 315mm; evaporation exceeds rainfall (Groundwater Consulting Services Pty Ltd, 2008). Cyclonic rainfall episodes do occur yearly and would increase the rainfall figure.

Ground water salinity is 500-1000mg/L with the risk of salinity being moderate given the application area is near the coast. The proposal to clear the areas of Nita land system could potentially expose the disturbed areas to significant soil erosion if the land is left bare, particularly over the wet season. This is due to a combination of sandy soil texture of the soils and the gentle slopes encountered on the site. [With the adoption of minimum cultivation and retention of stubbles, the soil erosion risk will be manageable] (Commissioner of Soil and Land Conservation, 2011).

Given these characteristics, the proposed clearing may cause land degradation.

Methodology

References:
- Commissioner of Soil and Land Conservation (2011)
- Northcote et al. (1960-68)
- Groundwater Consulting Services Pty Ltd, 2008

GIS data:
- Biodata set accessed February 2011

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

Comments

Proposal may be at variance to this Principle

The area of the proposed clearing is surrounded to the north, west and east of the Eighty Mile Beach RAMSAR

wetland. All the pivots proposed to be cleared are within 100-200m of this feature.

Given this close proximity of the proposed clearing, the vegetation within the area under application may provide a physical buffer to the RAMSAR.

Methodology GIS data:
- Biodata set accessed February 2011

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

Comments

Proposal may be at variance to this Principle

The area under application is within the Canning-Kimberley Groundwater sub area, proclaimed under the Rights in Water and Irrigation (RIWI) Act 1914.

The removal of the existing shallow-rooted, coastal vegetation, combined with the fact the application area lies over sandstone aquifers, and the small northern area of the area under application occurs over shallow (sediment) aquifers and that there is clay sub soil present, the proposed clearing is unlikely to cause deterioration in groundwater quality.

The removal of the shallow-rooted vegetation is also unlikely to have any influence on the hydrology of the RAMSAR itself.

The proposal to clear could potentially expose the disturbed areas to soil erosion, and hence surface water quality, if the land is left bare, particularly over the wet season. This is due to a combination of sandy texture of the soils and the gentle slopes encountered on the site. [With the adoption of minimum cultivation and retention of stubbles, the soil erosion risk will be manageable] (Commissioner of Soil and Land Conservation, 2011).

Given the above the proposed clearing may be at variance to this principle.

Methodology References:
- Commisioner of Soil and Land Conservation (2011)

GIS data:
- Biodata set accessed February 2011

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

Comments

Proposal is not likely to be at variance to this Principle

The RAMSAR adjacent to the proposed clearing may be subject to natural inundation given its low relief and proximity to the coast. The area under application is elevated above the RAMSAR, and so the removal of this native vegetation is unlikely to cause an increase in flood peak height or flood peak duration. The red sandy earth soil type of the area under application is well drained and may have good water holding characteristics and is unlikely to have flooding characteristics (Commissioner of Soil and Land Conservation, 2011).

Methodology References:
- Commisioner of Soil and Land Conservation (2011)

GIS data:
- Biodata set accessed February 2011

Planning instrument, Native Title, Previous EPA decision or other matter.

Comments

The proposed clearing is for the purpose of diversification (pivot irrigation). Positioning of 7 pivots (Pivot 1 and 2 the subject of this assessment) has been determined by the location of the bore. The bore's location was determined by the much lower salinity levels and higher aquifer pressure. Sufficient pressure exists in the aquifer/bore to negate the need to use a diesel powered pump to irrigate the pivots (Groundwater Consulting, 2008).

Department of Water has advised that the bore (PB1) to be used in this project passes through (and isolates) the overlaying (shallower) aquifers and taps into the deeper Wallal Sandstone artesian aquifer. As such the abstraction of groundwater from this aquifer poses minimal risk to the surface hydrology of the RAMSAR area (Department of Water, 2011a).

The Commissioner of Soil and Land Conservation advised that it is unlikely sorghum will spread beyond the pivot area as it can't persist without regular water and fertiliser. Given the soil type and soil structure, and if a grassland buffer exists between the pivots and the RAMSAR, the spread of nitrogen and phosphate fertilisers either by surface or the watertable should be negligible. The proposed cleaing could potentially expose the

disturbed areas to significant soil erosion if the land is left bare, particularly over the wet season. This is due to a combination of the sandy texture of the soils and the gentle slopes encountered on the site. With the adoption of minimum cultivation and retention of stubbles, the soil erosion risk could be manageable. (Commissioner of Soil and Land Conservation, 2011).

A permit for agricultural use of land under a pastoral lease was issued under s.120 of the Land Administration Act 1997 to the registered lessees of Pardoo Station on 12 June 2011 (DRDL, 2011)

A licence to take water on Pastoral Lease 3116/446 (Pardoo Station) for Stage 1a pivot irrigation was issued by the Department of Water on 27 July 2011 (DoW, 2011b)

An Indigenous Land Use Agreement is in place for the project. Permission has also been received from the traditional owners, the Nalga People.

No public submissions have been received.

Methodology

CSLC (2011)
DoW (2011a)
DoW (2011b)
DRDL (2011)

4. References

Commissioner of Soil and Land Conservation (2011); Land Degradation Advice Report for clearing permit application CPS 4207/1 received 25/03/2011; Department of Agriculture and Food Western Australia (DEC Ref. A378908).

DEC (2007), NatureMap: Mapping Western Australia's Biodiversity. Department of Environment and Conservation. URL: http://naturemap.dec.wa.gov.au/. Accessed 28 February 2011

DEC (2011a), Information Sheet on RAMSAR Wetlands (RIS) n.d. Retrieved 1 March 2011, from http://www.dec.wa.gov.au/pdf/national_parks/wetlands/fact_sheets/eighty_mile_beach1.doc

DEC (2011b), Regional advice received 14 April 2011 (DEC Ref: A388355).

Department of Regional Development and Land (2011) Permit for agricultural use 3114/446 and Crown Lease 694-1967

Department of Water (2011); water extraction from bore advice report for clearing permit application CPS 4207/1 received 22/03/2011; (DEC Ref. A382498).

Department of Water (2011b); Licence to Take Water, Instrument Number GWL158616(5).

Groundwater Consulting Services Pty Ltd (2008), Pardoo Station, Project number PARDOO1 (TRIM Ref DOC 73849).

Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Northcote, K. H. with Beckmann G G, Bettenay E., Churchward H. M., van Dijk D. C., Dimmock G. M., Hubble G. D., Isbell R. F., McArthur W. M., Murtha G. G., Nicolls K. D., Paton T. R., Thompson C. H., Webb A. A. and Wright M. J. (1960-68): 'Atlas of Australian Soils, Sheets 1 to 10, with explanatory data'. CSIRO and Melbourne University Press: Melbourne.

Shepherd, D.P. (2009) Adapted from: Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth.

5. Glossary

Term	Meaning
BCS	Biodiversity Coordination Section of DEC
CALM	Department of Conservation and Land Management (now BCS)
DAFWA	Department of Agriculture and Food
DEC	Department of Environment and Conservation
DEP	Department of Environmental Protection (now DEC)
DoE	Department of Environment
DoIR	Department of Industry and Resources
DRF	Declared Rare Flora
EPP	Environmental Protection Policy
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
TEC	Threatened Ecological Community
WRC	Water and Rivers Commission (now DEC)