GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 4887/1
Permit Holder:	Roy Hill Infrastructure Pty Ltd
Duration of Permit:	25 May 2012 – 20 December 2019

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 port construction support including temporary lay down, equipment storage, buildings, roads, car parks, communications tower, accommodation camp and other support facilities.

2. **Land on which clearing is to be done**
   Licence number Lic 00756_2011_A1450086, located within the following properties:
   LOT 203 ON DEPOSITED PLAN 220594 (BOODARIE 6722)
   LOT 324 ON DEPOSITED PLAN 220768 (BOODARIE 6722)
   LOT 1282 ON DEPOSITED PLAN 70562 (BOODARIE 6722)

3. **Area of Clearing**
   The Permit Holder must not clear more than 406.54 hectares of native vegetation within the area hatched yellow on attached Plan 4887/1.

4. **Period in which clearing is authorised**
   The Permit Holder shall not clear any native vegetation after 20 December 2014

5. **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.

6. **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 right to access land under the *Land Administration Act 1997* or any other written law.

7. **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

8. 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.

9. 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* growing within areas cleared under this Permit.

10. Fauna management

The Permit Holder must implement and adhere to the Roy Hill Project Vertebrate Fauna Management Plan for the Roy Hill Railway Corridor 100RH-3000-EN-REP-2009 December 2011.

11. Retain vegetative material and topsoil, revegetation and rehabilitation

The Permit Holder shall:

(a) Retain the vegetative material and topsoil removed by clearing authorised under this Permit and stockpile the vegetative material and topsoil in an area that has already been cleared.
(b) Within six months following clearing authorised under this permit, *revegetate* and *rehabilitate* the area(s) that are no longer required for the purpose for which they were cleared under this by:
  (i) re-shaping the surface of the land so that it is consistent with the surrounding 5 metres of uncleared land; and
  (ii) ripping the ground on the contour to remove soil compaction; and
  (iii) laying the vegetative material and topsoil retained under condition 11(a) on the cleared area(s).
(c) Within 24 months of laying the vegetative material and topsoil on the cleared area in accordance with condition 11(b) of this Permit:
  (i) engage an *environmental specialist* to determine the species composition, structure and density of the area *revegetated* and *rehabilitated*; and
  (ii) where, in the opinion of an *environmental specialist*, the composition structure and density determined under condition 11(c)(i) of this Permit will not result in a similar species composition, structure and density to that of pre-clearing vegetation types in that area, *revegetate* the area by deliberately *planting* and/or *direct seeding* native vegetation that will result in a similar species composition, structure and density of native vegetation to pre-clearing vegetation types in that area and ensuring only *local provenance* seeds and propagating material are used.
(d) Where additional *planting* or *direct seeding* of native vegetation is undertaken in accordance with condition 11(c)(ii) of this permit, the Permit Holder shall repeat condition 11(c)(i) and 11(c)(ii) within 24 months of undertaking the additional *planting* or *direct seeding* of native vegetation.
(e) Where a determination by an *environmental specialist* that the composition, structure and density within areas *revegetated* and *rehabilitated* will result in a similar species composition, structure and density to that of pre-clearing vegetation types in that area, as determined in condition 11(c)(i) and (ii) of this permit, that determination shall be submitted for the CEO's consideration. If the CEO does not agree with the determination made under condition 11(c)(ii),

the CEO may require the Permit Holder to undertake additional *planting* and *direct seeding* in accordance with the requirements under condition 11(c)(ii).

PART III - RECORD KEEPING AND REPORTING

12. Records must be kept

The Permit Holder must maintain the following records for activities done pursuant to this Permit:

(a) In relation to the clearing of native vegetation authorised under this Permit:
   (i) the species composition, structure and density of the cleared area;
   (ii) 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 or decimal degrees;
   (iii) the date that the area was cleared; and
   (iv) the size of the area cleared (in hectares).

(b) In relation to the *revegetation* and *rehabilitation* of areas pursuant to condition 11 of this Permit:
   (i) the location of any areas *revegetated* and *rehabilitated*, recorded using a Global Positioning System (GPS) unit set to Geocentric Datum Australia 1994 (GDA94), expressing the geographical coordinates in Eastings and Northings or decimal degrees;
   (ii) a description of the *revegetation* and *rehabilitation* activities undertaken;
   (iii) the size of the area *revegetated* and *rehabilitated* (in hectares); and
   (iv) the species composition, structure and density of *revegetation* and *rehabilitation*.

13. 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 12 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 20 September 2019, the Permit Holder must provide to the CEO a written report of records required under condition 12 of this Permit where these records have not already been provided under condition 13(a) of this Permit.

DEFINITIONS

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

direct seeding means a method of re-establishing vegetation through the establishment of a seed bed and the introduction of seeds of the desired plant species;

environmental specialist means a person who is engaged by the Permit Holder for the purpose of providing environmental advice, who holds a tertiary qualification in environmental science or equivalent, and has experience relevant to the type of environmental advice that an environmental specialist is required to provide under this Permit;

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

local provenance means native vegetation seeds and propagating material from natural sources within 50 kilometres of the area cleared;

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;

optimal time means the period from November to December for undertaking *direct seeding;*

planting means the re-establishment of vegetation by creating favourable soil conditions and planting seedlings of the desired species;

regenerate/ed/ion means re-establishment of vegetation from in situ seed banks and propagating material (such as lignotubers, bulbs, rhizomes) contained either within the topsoil or seed-bearing *mulch*;

rehabilitate/ed/ion means actively managing an area containing native vegetation in order to improve the ecological function of that area;

revegetate/ed/ion means the re-establishment of a cover of *local provenance* native vegetation in an area using methods such as natural *regeneration*, *direct seeding* and/or *planting*, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area;

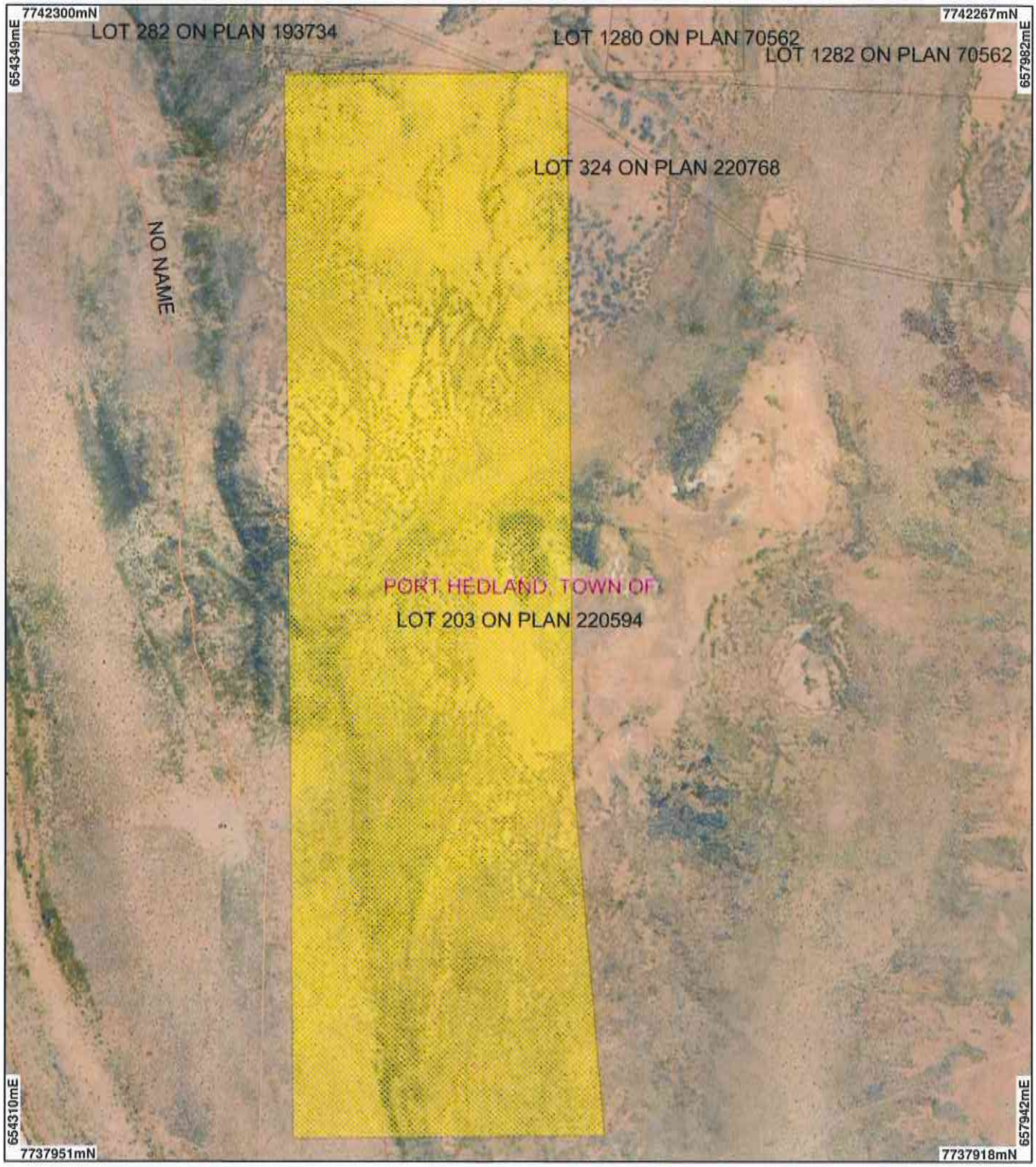
weed/s means a species listed in Appendix 3 of the "Environmental Weed Strategy" published by the Department of Conservation and Land Management (1999), and plants declared under section 37 of the *Agriculture and Related Resources Protection Act 1976*.

Kelly Faulkner
MANAGER
NATIVE VEGETATION CONSERVATION BRANCH

Officer delegated under Section 20
of the Environmental Protection Act 1986

3 May 2012

Plan 4887/1



LEGEND

- Road Centrelines
- Cadastre
- Clearing Instruments
- Areas Approved to Clear
- Local Government Authorities

Port Hedland 50cm Orthomosaic - Landgate 2004

Thouin 50cm Orthomosaic - Landgate 2004

N

0 ~800 m

Scale 1:20001
(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.

Date 3/5/12

K. Faulkner

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 acknowledged by the agency acronym in the legend.

Department of Environment and Conservation

Our environment, our future

Department of Environment and Conservation

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 4887/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Roy Hill Infrastructure Pty Ltd

1.3. Property details

Property: LOT 203 ON PLAN 220594 (BOODARIE 6722)
LOT 324 ON PLAN 220768 (BOODARIE 6722)
LOT 1282 ON PLAN 70562 (BOODARIE 6722)
Local Government Area: Town of Port Hedland
Colloquial name: Roy Hill Infrastructure Temporary Port Laydown Area

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
406.54		Mechanical Removal	Miscellaneous

1.5. Decision on application

Decision on Permit Application: GRANT
Decision Date: 3 May 2012

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: 647 eastern 2/3 - Hummock grasslands, dwarf-shrub steppe; Acacia translucens over soft spinifex (Shepherd, 2009) 589 western 1/3 - Mosaic: Short bunch grassland - savanna / grass plain (Pilbara) / Hummock grasslands, grass steppe; soft spinifex (Shepherd, 2009) FCT 6a: occasional mid isolated shrubs of Acacia tumida var. pilbarensis over low isolated shrubs of Acacia stellaticeps over low hummock grassland dominated by Triodia epactia with other dominant species including Aristida spp., Chrysopogon fallax, Eriachne obtusa, Eragrostis eriopoda, red sand to sandy loam on dunes, and midslope - plain areas (Woodman, 2011). Nearly all of the application area was mapped as this vegetation type (Woodman, 2011). FCT 4: occasional mid isolated shrubs of Acacia tumida var. pilbarensis over occasional low isolated shrubs of Acacia stellaticeps over low hummock grassland of Triodia epactia on red sandy clay in closed depressions and flats (Woodman, 2011). Two small areas, near the northern and eastern edges of the application area were described as this vegetation type (Woodman, 2011).	The application is to clear 406.54 hectares of native vegetation within Lot 203 on Deposited Plan 220594, Lot 324 on Deposited Plan 220768 and Lot 1282 on Deposited Plan 70562, Boodarie, for a temporary lay down area for port construction including equipment storage, buildings, roads, car parks, communications tower and other support facilities (Roy Hill, 2012) The application area is approximately 4 kilometres long and 1 kilometre wide and is located within the approved corridor of the Roy Hill Infrastructure Pty Railway, to the west of the final rail alignment. The majority of the application area is described as FCT 6a, which was recorded to support a total of 115 flora species during a survey of the railway corridor that included the application area (Woodman, 2011). A fence line is reported to run across the application area which indicates it was once used for grazing stock but there is no evidence of stock in the area now (Terrestrial Ecosystems, 2012). Vegetation condition mapping indicates that the application area ranges from excellent to very good (Keighery, 1994) condition, with some weed presence (Woodman, 2011).	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994) To Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994)	Vegetation description and condition was determined through aerial imagery, photographs and description in survey reports provided by the applicant (Roy Hill, 2012; Woodman, 2011; Terrestrial Ecosystems, 2012).

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 may be at variance to this Principle

The application is to clear 406.54 hectares of native vegetation in excellent to very good (Keighery, 1994) condition approximately 16 kilometres southwest of the Port Hedland town site.

The application area is located approximately 4.5 kilometres south of the coastal inundation system.

Aerial photography indicates the local area (15 kilometre radius) is approximately 95 per cent vegetated and the vegetation associations mapped over the application area retain approximately 100 per cent of the pre-European extents within the Pilbara bioregion (Shepherd, 2009). However, the Port Hedland area is undergoing significant development and remaining vegetation is becoming increasingly fragmented. Therefore calculations of remaining vegetation and percentages may not be an accurate reflection of the current vegetation extents. Fragmentation of native vegetation degrades the ecological function of the remaining habitat and linkages through the landscape, reducing viability and long term sustainability.

Flora and vegetation surveying of the 2 kilometre wide rail corridor conducted in March and April 2011 included two survey quadrats, one in the northwest corner and one near the centre of the application area, and approximately 2 kilometres of survey transect through the northwest and southwest corners of the application area (Woodman, 2011). Six additional quadrats were surveyed within one kilometre of the application area. The vegetation in both quadrats was described as vegetation type FTC6a which, across the entire survey area, was recorded to support 115 taxa in total (Woodman, 2011). No weed species were recorded in the two quadrats, however the vegetation condition map created for the report indicated some weed occurrence within the application area (Woodman, 2011).

The Woodman (2011) survey did not identify flora of conservation significance within the vegetation under application, however it did record Goodenia nuda (Priority 3) approximately 40 metres and 210 metres east of the application area, on the same mapped vegetation and soil types as the application area. Goodenia nuda is an erect shrub of the Pilbara and Gascoyne IBRA bioregions that grows to 0.5 metres high and flowers from April to August (Western Australian Herbarium, 1998-). While the vegetation under application may comprise suitable habitat for this species, considering the amount of vegetation in the surrounding area, the proposed clearing is considered unlikely to impact upon its conservation status.

An area of approximately 160 hectares located immediately east of the application area was searched for flora of conservation significance in March 2011 (Pilbara Flora, 2011). This survey identified four Abutilon pritzelianum (Priority 1) plants approximately 40 metres east of the application area, near the southeast corner (Pilbara Flora, 2011). Abutilon pritzelianum is a shrub to 1 - 1.5 metres high that occurs on red sand dunes and flowers in August (Western Australian Herbarium, 1998-). Woodman (2011) identified this taxon in other locations in the same FCT 6a vegetation type as the application area. While the vegetation under application may comprise suitable habitat for this species, considering the amount of vegetation in the surrounding area, the proposed clearing is considered unlikely to impact upon its conservation status.

Tephrosia rosea var. venulosa (Priority 1) occurs on red sandy soil (Western Australian Herbarium, 1998-) and has been recorded on the same mapped vegetation type as the application area. Tephrosia rosea var. venulosa is an erect shrub to 1.7 metres high which flowers in August to September (Western Australian Herbarium, 1998-). Woodman (2011) recorded 333 individuals of this taxon, all of which were within the FCT 6a vegetation type and within the northern section of the railway corridor survey, which includes the application area. While the vegetation under application may comprise suitable habitat for this species, considering the amount of vegetation in the surrounding area, the proposed clearing is considered unlikely to impact upon its conservation status.

Approximately 55 hectares (13 per cent) of the vegetation under application has a moderate-high probability of supporting the mulgara (Terrestrial Ecosystems, 2012), which is a state and federally listed fauna of conservation significance. The applicant has advised that in all areas of potential significant fauna habitat a fauna trapping and translocation program will be undertaken in accordance with the Vertebrate Fauna Management Plan for the Roy Hill Railway Corridor (100RF-3000-EN-REP-2009) and the Fauna Trapping and Translocation Guideline (100RH-3000-EN-GUI-2001) prior to clearing.

Removal of native vegetation and soil disturbance associated with clearing increases the risk of weeds being spread or introduced into new areas.

Considering the above, the proposed clearing of 406.54 hectares of native vegetation may be at variance to this principle. Fauna and weed management and the rehabilitation of temporarily cleared areas would minimise the impacts to biodiversity.

Methodology

References:

Keighery, 1994
Pilbara Flora, 2011
Shepherd, 2009
Terrestrial Ecosystems, 2012
Western Australian Herbarium, 1998-

Woodman, 2011
GIS Databases:
- Hydrography, linear - DoW 07/06
- Port Hedland 50cm Orthomosaic - Landgate 2004
- Pre-European vegetation - DA 01/01
- SAC Biodatasets - 04/12
- Soils, Statewide - 11/99
- Thouin 50cm Orthomosaic - Landgate 2004

(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 may be at variance to this Principle

The application is to clear 406.54 hectares of excellent to very good (Keighery, 1994) condition hummock grassland type vegetation (Woodman, 2011).

The Port Hedland area is undergoing significant development and large areas of vegetation have been cleared to facilitate this development. Vegetation remaining in proximity to the townships and harbour is becoming increasingly fragmented and the proposed large scale clearing may have a cumulative impact upon the habitat available for indigenous and conservation significant fauna.

There are mapped records of two threatened fauna species within the local area (15 kilometre radius), not including marine species. These are the:
- crest-tailed mulgara (Dasycercus cristicauda) which is listed as vulnerable under the state Wildlife Conservation Act 1950 (WC Act) and the federal Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act); and
- bilby (Dasyurus lagotis) which is listed as endangered under both the WC Act and EPBC Act.

A habitat survey of the entire railway corridor, which included the application area, identified the southern half of the application area to be a moderate-high, or higher, rating of supporting mulgara and bilby (Terrestrial Ecosystems, 2011). An additional rapid fauna habitat assessment of the application area was conducted in February 2012 by walking around the application area and visiting all major fauna habitats (Terrestrial Ecosystems, 2012). The assessment of the potential for species of conservation significance fauna to occur within application area was based on previous field investigation of this and other areas, previous fauna surveys in the general area, the available fauna habitat types in the application area, soil types of the application area, time since last fire, landform and knowledge of the biological and ecological traits of each species (Terrestrial Ecosystems, 2012).

The rapid fauna habitat assessment identified a mulgara burrow and a possible mulgara scat within the application area (Terrestrial Ecosystems, 2012). Based on the fauna habitat present and that 50 mulgara were caught and relocated from a railway loop area approximately 8.5 kilometres east of the application area, this assessment identified there to be a moderate-high (50 - 75 per cent) and above probability that the application area supports mulgara in areas of mature dense spinifex and dense shrubs (Terrestrial Ecosystems, 2012). There are two areas considered to have this probability of supporting mulgara: approximately 50 hectares in the southeast corner and approximately 5 hectares at the northern boundary (Terrestrial Ecosystems, 2012). This equates to approximately 13 per cent of the application area. The proposed clearing in these areas could result in the loss of some individual mulgara and mulgara habitat unless action is taken to minimise this impact (Terrestrial Ecosystems, 2012).

The rapid fauna habitat assessment considered it unlikely that bilby would occur within the application area (Terrestrial Ecosystems, 2012).

Considering the above and the large amount of clearing under application (406.54 hectares), the proposed clearing may be at variance to this principle. Fauna management and the rehabilitation of temporarily cleared areas will minimise impacts to this species. The applicant has advised that in all areas of potential significant fauna habitat a fauna trapping and translocation program will be undertaken in accordance with the Vertebrate Fauna Management Plan for the Roy Hill Railway Corridor (100RF-3000-EN-REP-2009) and the Fauna Trapping and Translocation Guideline (100RH-3000-EN-GUI-2001) prior to clearing.

Methodology

References:
Keighery, 1994
Shepherd, 2009
Terrestrial Ecosystems, 2012
GIS Databases:
- Port Hedland 50cm Orthomosaic - Landgate 2004
- SAC Biodatasets - 04/12
- Thouin 50cm Orthomosaic - Landgate 2004

(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 known records of declared rare flora within 15 kilometres of the application area and the proposed clearing is therefore not likely to be at variance to this principle.

Methodology

GIS databases:
- SAC Biodatasets - 04/12

(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 known records of threatened ecological communities within 15 kilometres of the application area and the proposed clearing is not likely to be at variance to this principle.

Methodology

GIS databases:
- SAC Biodatasets - 04/12

(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 likely to be at variance to this Principle

Aerial photography indicates the local area (15 kilometre radius) is approximately 95 per cent vegetated.

The vegetation associations mapped over the application area retain approximately 100 per cent of the pre-European extents within the Pilbara bioregion (Shepherd, 2009), however the Port Hedland area is undergoing significant development and the remaining vegetation is becoming increasingly fragmented. Therefore calculations of remaining vegetation and percentages may not be an accurate reflection of the current vegetation extents.

The proposed clearing is large in scale and located in a concentrated, discreet footprint area (406.54 hectares). The vegetation under application is in excellent to very good (Keighery, 1994) condition (Woodman, 2011), supports suitable habitat for flora and fauna of conservation significance and extends to within 4.5 kilometres of the coastal system of inundation.

Considering the above, while the vegetation under application may be significant, it is not located within an extensively cleared area and therefore the proposed clearing is not likely to be at variance to this principle.

	Pre-European (ha)	Current Extent (ha)	Remaining (%)	Extent in DEC Managed Lands (%)
IBRA Bioregion*				
Pilbara	17,804,193	17,785,001	100	8
Shire*				
Town of Port Hedland	1,850,070	1,846,056	100	0
Beard Vegetation Association in Bioregion*				
647	196,371	196,371	100	0
589	730,718	730,683	100	2 (12,946ha)

* Shepherd, 2009

Methodology

References:
Keighery, 1994
Shepherd, 2009
Woodman, 2011
GIS Databases:
- Hydrography, linear - DoW 07/06
- Pre-European vegetation - DA 01/01
- Port Hedland 50cm Orthomosaic - Landgate 2004
- SAC Biodatasets - 04/12
- Thouin 50cm Orthomosaic - Landgate 2004

(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 is not likely to be at variance to this Principle

The nearest mapped watercourse is the eastern branch of the Turner River, approximately 1 kilometre west of the application area.

The coastal mangrove system subject to inundation is approximately 4.5 kilometres north of the application area.

Considering the above, the application area is unlikely to support vegetation growing in association with a water course or wetland and the proposed clearing is not likely to be at variance to this principle.

Methodology

GIS Databases:
- Hydrography, linear - DoW 07/06
- Port Hedland 50cm Orthomosaic - Landgate 2004
- Thouin 50cm Orthomosaic - Landgate 2004

(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 soils mapped over the application area are described as loams and sands in areas close to rivers and red earth soils and light clays in more eroded areas (Northcote et al 1960 - 1968). Biological surveys conducted over the application area described the soils as red sand to sandy loam (Woodman, 2011) and sandy clay, with some low longitudinal dunes mostly in the northern section (Terrestrial Ecosystems, 2012).

The Turner River is approximately 1 kilometre west of the application area, the coastline is approximately 7 kilometres to the north and the coastal mangrove system extends to within approximately 4.5 kilometres of the application area.

The application is within an area of periodic heavy rainfall associated with cyclonic events during summer and the low lying areas in the northern section of the application area reported to become inundated after a major rainfall event (Terrestrial Ecosystems, 2012).

Considering the large amount of clearing proposed, it may result in appreciable land degradation by erosion. Staged clearing and the rehabilitation of temporarily cleared areas will reduce the risk of appreciable land degradation as a result of the proposed clearing.

Methodology

References:
Northcote et al., 1960-68
Terrestrial Ecosystems, 2012
Woodman, 2011
GIS Databases:
- Hydrography, linear - DoW 07/06
- Soils, Statewide - 11/99
- WA Coastline - DoW 07/06

(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 is not at variance to this Principle

There are no designated conservation reserve areas within the local area (15 kilometre radius) and the proposed clearing is not at variance to this principle.

Methodology

GIS Databases:
- DEC Managed Lands & Waters - DEC 10/09

(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 is not likely to be at variance to this Principle

The Department of Water (DoW) is satisfied that proposed clearing is unlikely to have a significant impact upon the quality or quantity of groundwater, provided activities are carried out in accordance with DoW advice (DoW, 2012).

The nearest mapped watercourse is the eastern branch of the Turner River, approximately 1 kilometre west of the application area. Considering this distance, the proposed clearing is unlikely to result in appreciable degradation of the Turner River.

Considering the above, the proposed clearing is not likely to be at variance to this principle.

Methodology

References:
DoW, 2012
GIS Databases:
- Hydrography, linear - DoW 07/06
- Port Hedland 50cm Orthomosaic - Landgate 2004
- Public Drinking Water Source Areas - DoW 08/11
- Thouin 50cm Orthomosaic - Landgate 2004

(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 may be at variance to this Principle

The soils mapped within the application area are loams and sands in areas close to rivers and red earth soils and light clays in more eroded areas (Northcote et al., 1960 - 1968). Biological surveys conducted over the application area described the soils as red sand to sandy loam (Woodman, 2011) and sandy clay, with some low longitudinal dunes mostly in the northern section (Terrestrial Ecosystems, 2012).

The eastern branch of the Turner River is approximately 1 kilometre west of the application area.

The application is within an area of periodic heavy rainfall associated with cyclonic events during summer and the low lying areas in the northern section of the application area reported to become inundated after a major rainfall event (Terrestrial Ecosystems, 2012).

Considering the above and the large scale of the proposed clearing (406.54 hectares), it may lead to an increase in the intensity of flooding during heavy rainfall events. Therefore the proposed clearing may be at variance with this principle. Staged clearing and rehabilitation of temporarily cleared areas will minimise this risk.

Methodology

References:
Northcote et al., 1960-68
Terrestrial Ecosystems, 2012
Woodman, 2011
GIS Databases:
- Soils, Statewide - 11/99

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

Comments

The application is to clear an area of 406.54 hectares for a temporary lay down area including equipment storage, buildings, roads, car parks, communications tower, accommodation camp and other facilities to support the construction of a port at South West Creek, Port Hedland. The related Roy Hill Iron Ore Port Infrastructure project was assessed by the Environmental Protection Authority (EPA) (Report 1377) and approved by Ministerial Statement 858 on 11 March 2011. The approval does not include this lay down area.

The application area is within the footprint of the Roy Hill Infrastructure Railway corridor which was assessed by the EPA (Report 1370) and approved by Ministerial Statement 847 on 29 November 2010, however the approval did not include this lay down area to facilitate the port construction project. The approval conditions required the applicant conduct surveys of flora and vegetation; short range endemics; significant fauna habitat and; indigenous heritage within the two kilometre approval corridor prior to determining the final rail alignment and that the final alignment should avoid all sensitive areas identified by the surveys. The applicant advised the final rail alignment has been determined.

The applicant holds a licence over the application area under section 91 of the Land Administration Act 1997 (Lic 00756_2011_A1450086), which is valid until 20 December 2014.

The application area is within the Pilbara ground water and surface water areas proclaimed under the rights in Water and Irrigation Act 1914. The Department of Water (DoW) advised that where the clearing intersect a waterway not within the applicant's tenement, the normal regulatory instruments may apply and that the taking or diversion of surface water for purposes other than stock watering and domestic use is subject to licence (DoW, 2012). Any groundwater abstraction is also subject to licensing by the DoW (DoW, 2012).

The southern portion of the application area falls within the Turner River Water Reserve public drinking water sources area. The DoW has recently arranged for the abolition of the Turner River Water Reserve under the Country Areas Water Supply Act 1947, with the abolition completed with the publication of the Abolition Order within the Government Gazette on 18 October 2011 (DoW, 2012). The DoW confirmed that the CAWS Act no longer applies to land use activities within the former boundaries of the water reserve.

The application is within the Karriyarra People's native title claim area. Notification was made under the Native

Title Act 1993 by letters to the claimant and representative body dated 27 February 2012. No comment has been received.

There are no Aboriginal Sites of Significance mapped within the application area.

Methodology

References:
DoW, 2012
GIS Databases:
- Aboriginal Sites of Significance - DIA 02/12
- Native Title Claims Registered with the NNTT - Landgate 07/11
- Public Drinking Water Source Areas - DoW 08/11
- RIWI Act, Groundwater areas - DoW 04/02
- RIWI Act, Surface water areas - DoW 04/02

4. References

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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)