GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 2262/3
Permit Holder:	Apache Northwest Pty Ltd
Duration of Permit:	12 April 2008 – 12 April 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 accommodation, access tracks and installation of services.

2. **Land on which clearing is to be done**
   PART LOT 263 ON PLAN 220164 (MARDIE 6714)
   NORTH WEST COASTAL HIGHWAY (ROAD RESERVE MARDIE 6714)
   LOT 660 ON PLAN 30489 (MARDIE 6714)
   LOT 531 ON PLAN 221145 (MARDIE 6714)
   LOT 662 ON PLAN 30490 (MARDIE 6714)

3. **Area of Clearing**
   The Permit Holder must not clear more than 26.16 hectares of native vegetation within the area hatched yellow on attached Plan 2262/3.

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. **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

6. 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.

7. Weed control

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

(a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared;
(b) ensure that no *weed*-affected *road building materials*, *mulches, fill* or other material is brought into areas to be cleared; and
(c) restrict the movement of machines and other vehicles to the limits of the areas to be cleared.

8. Watercourse Buffer

The Permit holder shall ensure that an area of at least 20 metres in width of native vegetation is retained around the *watercourses* within the area hatched yellow on attached Plan 2262/3.

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 of records required under condition 9 of this Permit and activities done by the Permit Holder under this Permit between 1 January and 31 December of the preceding year.

(b) Prior to 12 January 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

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;

road building materials means rock, gravel, soil, stone, timber, boulders and water;

weed 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 Agricultural and Related Resources Protection Act 1976; and

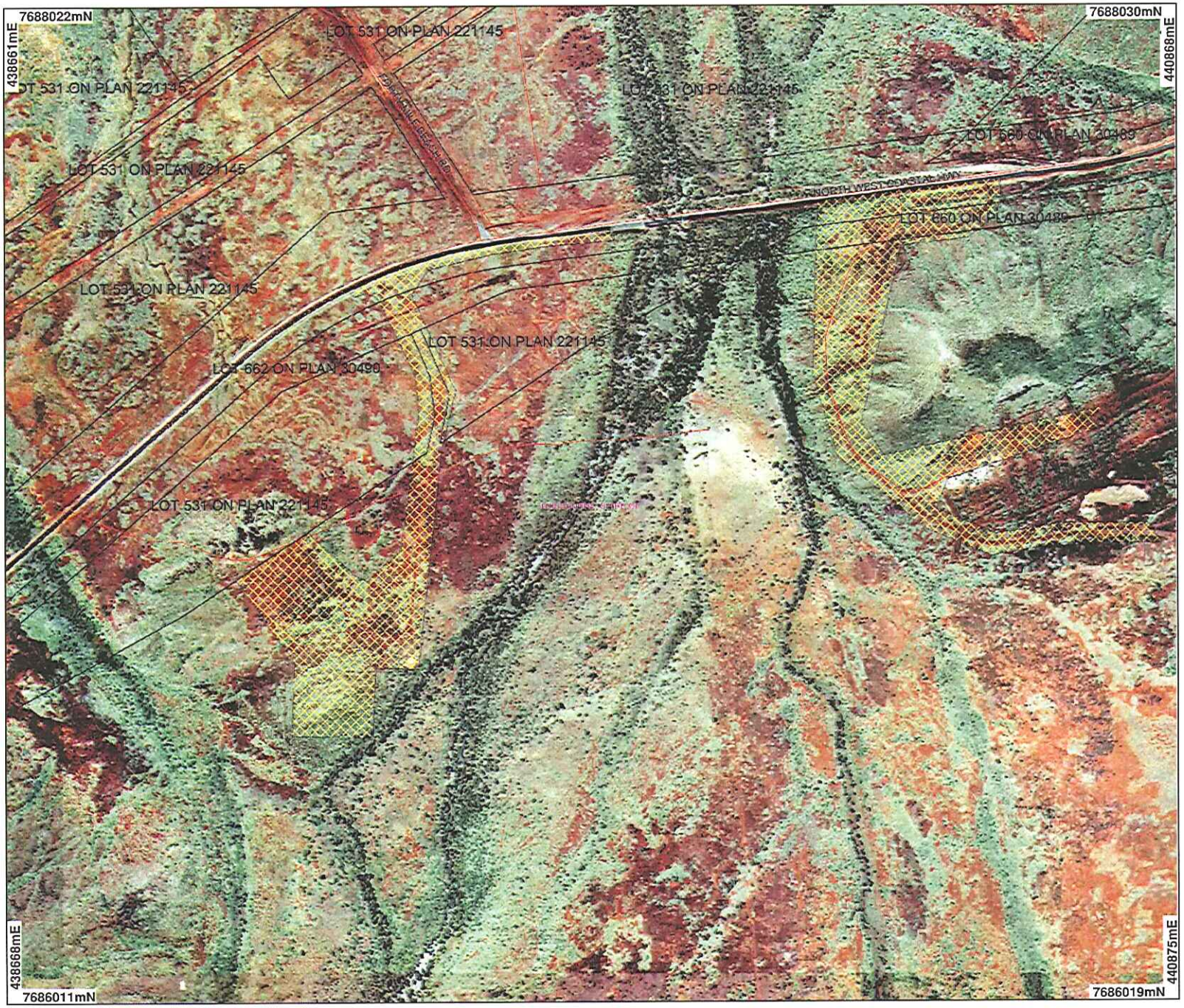
watercourse has the meaning given to it in section 3 of the *Rights in Water and Irrigation Act 1914*.

Kelly Faulkner
MANAGER
NATIVE VEGETATION CONSERVATION BRANCH

Officer delegated under Section 20
of the Environmental Protection Act 1986

19 March 2009

Plan 2262/3



LEGEND

Clearing Instruments

- Areas Applied to Clear
- Areas Subject to Conditions
- Areas Approved to Clear

Road Centrelines

Cadastre

Local Government Authorities

Dampier Preston 1.4m Orthomosaic - Landgate 2000

N

0 ~300 m

Scale 1:10172
(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.

K Faulkner Date 19/3/09

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

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Department of Environment and Conservation

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 2262/3

Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Apache Northwest Pty Ltd**

1.3. Property details

Property: LOT 662 ON PLAN 30490 (MARDIE 6714)
LOT 531 ON PLAN 221145 (MARDIE 6714)
PART LOT 263 ON PLAN 220164 (MARDIE 6714)
PART LOT 263 ON PLAN 220164 (MARDIE 6714)
LOT 5006 ON PLAN 53412 (MARDIE 6714)

Local Government Area: Shire Of Roebourne

Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
26.16		Mechanical Removal	Building or Structure
		Mechanical Removal	Building or Structure
		Mechanical Removal	Road construction or maintenance

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 Association: 175 - Short bunch grassland - savanna/grass plain (Pilbara) 587 - Mosaic: Hummock grasslands, open low tree-steppe; snappy gum over Triodia wiseana / Hummock grasslands, shrub-steppe; kanji over Triodia pungens	5% of the proposed clearing area is of a degraded nature with between 20% and 40% native flora composition apparent and more than 50% weed species including Cenchrus ciliaris (buffel grass). The vegetation structure has been impacted by disturbance and requires intensive management (AES, Flora Survey 2007).	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	Vegetation condition was determined from a flora survey conducted by Astron Environmental Services (2007).
As above	85% of the proposed clearing area is of a good nature with between 60% and 80% native flora composition apparent and less than 20% weed species including Cenchrus ciliaris (buffel grass). The vegetation structure is altered in places and shows signs of disturbance (AES, Flora Survey 2007).	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994)	As above
As above	10% of the proposed clearing area is of an excellent nature with more then 80% native flora composition apparent and less then 5% non-aggressive weed species. The vegetation structure shows signs of minimal disturbance (AES, Flora Survey 2007).	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery 1994)	As above

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 application is to clear 26.16 hectares of vegetation for upgrades of North West Coastal Highway and Forty Mile Beach Road. The area to be cleared consists of Beard vegetation associations 175 of which there is approximately 100% of the Pre-European extent remaining (Shepherd et al., 2001). The vegetation on site has obvious signs of disturbance and the condition of the vegetation is classified as degraded (Keighery, 1994). The dominant grass species is an Eragrostis species with scattered shrubs of Sclerolaena and Neobossia. Weed species Cenchrus ciliaris (buffel grass) is abundant in the application area (AES Flora Survey A, 2007).

There are a number of weeds (including buffel grass) common to the Pilbara region which could be introduced to site and surrounding areas as a result of this proposal. Strategies to reduce the risk of introduction and spread of weeds should be undertaken. Stockpiling of topsoil will also require management for weeds until it is required for rehabilitation activities.

Given the high extent of vegetation remaining, the application area is unlikely to represent an area of higher biodiversity value when compared to representative vegetation in a local and regional context.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology

AES Flora Survey A (2007)
Keighery (1994)
Shepherd et al. (2001)

(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

The fauna habitats within the proposed area to be cleared are well represented elsewhere within the local and regional area. The area to be cleared does not represent a fauna corridor and therefore the clearing will not remove an ecological linkage that is necessary for the maintenance of fauna.

Based on the above, the proposed clearing is not likely to be at variance to this Principle.

Methodology

AES Fauna survey A (2007)
AMO (2007)
Ingleby (2003)
GIS Layers:
- Sac Bio Datasets 220108

(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

One known record of priority flora is located within a 20km radius of the application area. Goodenia pallida was recorded 11.3km north east of the application area on loamy and sandy soils and within annual grasslands consisting of acacia scrub-steppe. There are no known threatening processes, as not much is known about the species (Pilbara 2, 2001, pg562). The application area consists of shallow stoney earth loams, vastly different to the soils where the G. pallida was recorded.

Given that the closest recorded priority flora is over 10kms from the application area it is unlikely that the application is at variance to this principle.

Methodology

BoM (2007)
Pilbara 2 (2001)
GIS Layer:
Sac Bio datasets 220108

(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 threatened ecological communities within a 20km radius of the application area.

Given this, it is unlikely that the application is at variance to this principle.

Methodology

GIS Layers:
Sac Bio datasets 220108

(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**

Pre-European	Current extent (ha)	Remaining (ha)	% Extent (%)	in IUCN 1 - 4
IBRA Bioregions**				
Pilbara	17,804,193	17,794,650	99.9	6.3
Subbioregion				
Roebourne	1,844,158	1,834,869	99.5	3.1
Shire*				
Roebourne	1,513,581	1,501,974	99.2	0.2
Beard Vegetation Complex**				
175	526,204	524,859	99.7	4.2

* (Shepherd et al. 2006)
** (Shepherd et al. 2001)

Approximately 99.9% and 99.5% of the Pre-European vegetation remains in the IBRA Pilbara bioregion and Roebourne IBRA sub-region respectively, within which this proposal is located (Shepherd et al., 2001).

The vegetation applied to be cleared is part of Beard Vegetation association's 175 and 587, which has approximately 99.7% of the Pre-European extent remaining and therefore the 26.16 ha area proposed to be cleared is not considered to be a significant remnant of native vegetation within an extensively cleared area.

Based on the above, the proposed clearing is not at variance to this Principle.

Methodology
Shepherd et al. (2006)
Shepherd et al. (2001)
GIS Layers:
- Pre European
- Interim Biogeographic Regionalisation of Australia (subregions) - EA 18/10/00.
- Interim Biogeographic Regionalisation of Australia - EA 18/10/00.

(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 application area is 200m west of Devils Creek (an ephemeral), and within vegetation associated with Horseflat Landform Systems (AES Flora Survey A, 2007). The area is contained in the road reserves of roads that already exist.

The south east corner of the proposed permanent accommodation is located close to Devil Creek and may consist of riparian vegetation. A watercourse buffer condition will be placed on the permit to ensure riparian vegetation is not removed.

Due to the degraded vegetation under application being contained in the road reserves and no watercourses cut through the area, the proposal is unlikely to be at variance to this principle.

Methodology
AES Flora Survey A (2007)
GIS Layer:
Hydrology linear

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

Comments **Proposal is not likely to be at variance to this Principle**

The topography of the proposed clearing area is of low relief (20-30 AHD), and situated on rocks with low permeability. The upper extent of Devils Creek, south of the application area, reaches heights of approx 120 AHD, dropping to 10-30 AHD closer to the application area. The proposed Temporary Accommodation Area is to be situated on floodplains, which may be affected by high flows after a rain event and increase water load due to loss of vegetation by clearing. Apache have proposed to install 'drainage controls, including humus interceptors and/or oil water separators, on all sealed surfaces in the Temporary Accommodation Area to

ensure that runoff does not impact on Devils Creek' (Apache, 2007).

Rainfall and evapotranspiration rate for the local area (20km radius) are both 400mm, suggesting that there is a low risk of waterlogging through rainfall within the proposed clearing area.

Methodology
Apache (2007)
GIS Layers:
Evapotranspiration rate
Hydrogeology (statewide)
Rainfall - mean annual
Topography

(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 likely to be at variance to this Principle

There is one conservation area within a 20km radius of the application area. It is an island off the coast (north of the application area) and is registered as a conservation reserve on the Register of National Estate.

Given the proximity of the conservation reserve to the application area, it is unlikely that the clearing of 26.16 ha of native vegetation will have an impact on the environmental values of any nature conservation areas.

Methodology
GIS Layer:
- Register of National Estate

(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

Clearing of 26.16 hectares of vegetation is unlikely to have a significant impact on groundwater in the proposed area given the average annual rainfall of the site is 400mm, with most rainfall occurring over the summer months (BoM, 2008), and an evapotranspiration rate of 400mm per annum. Groundwater salinity is rated as low being 1000-3000mg/L.

Furthermore, the existing vegetation is shallow rooted grass and shrub species and thus the proposed clearing is unlikely to have a significantly impact the level or quality of the groundwater table.

Devils Creek is an ephemeral creek, meaning that it only has water in it for a day or so after a large rain event. Therefore, deterioration in the quality of surface water would be dependant on the amount of sediment that remains in the creek when dry. As the topography of the area is of low relief it is unlikely that sediment will build up on the creek bed from the clearing of native vegetation.

Additionally, if clearing were to take place while Devils Creek contained surface water, it is likely that the water quality would be degraded. To alleviate the possibility of surface water deterioration, if the permit is granted, clearing should be done after the main summers rains (EPA, 2004) and when Devil Creek is dry. A watercourse buffer condition will be placed on the permit to ensure riparian vegetation is not removed.

Methodology
BoM (2008)
EPA (2004)
GIS Layers:
Evapotranspiration rate
Graoundwater salinity
Hydrology - linear
RIWI Act - Groundwater
Topography

(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 limited amount of clearing proposed (26.16 hectares) in comparison with the extent of the Port Hedland coastal catchment area (which is approximately 744,300 hectares) is unlikely to result in an increase in peak flood height or flood peak duration.

Clearing of 26.16ha is unlikely to have a significant impact on quality or quantity of groundwater given the mean annual rainfall for the site is 400 millimetres with most rainfall occurring around the summer months (BoM, 2008), and an evapotranspiration rate of 400 millimetres per annum.

Given the above, it is unlikely that the proposed clearing will cause or exacerbate the incidence or intensity of

flooding.

Methodology BoM (2008)
GIS Layers:
Groundwater salinity
Evapotranspiration
Hydrographic Catchments
Rainfall - mean annual

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

Comments

The proposed area lies within The Pilbara Groundwater Area as proclaimed under the Rights in Water and Irrigation Act 1914. Any groundwater extraction and/or taking or diversion of surface water for the purposes other than domestic and/or stock watering is subject to licence by the Department of Water. Apache are in the process of applying for a Construct or Alter a Well (CAW) licence from the Department of Water.

A submission was received stating that the grant and use of the permit to clear...will destroy ...dreaming and/or archaeological Aboriginal sites and areas of environmental significance. The assessment of the application did not raise any environmental issues. Aboriginal heritage sites are protected under the Aboriginal Heritage Act 1972 and the proponent must comply with its obligations under this Act.

There are two Native Title claims over the area under application. Section 24MD of the Native Title Act provides that any registered native title claimants have the same procedural rights as they would have in relation to the granting of a purpose permit as they would if they held ordinary title to the land concerned.

DEC considers that an owner has a direct interest in the subject matter of the application and accordingly has invited the native title claimants under section 51E(4) to comment on the application and by section 51E(5) to take those comments into account when deciding whether to grant or refuse Apache's purpose permit. Notification was made to the representatives of the claimants (Yamatji Land and Sea Council). No response was received from the representative body. However, letters have been received from the claimants stating that they have no objection to the proposed clearing.

Methodology GIS Layers:
Native Title
RIWI Act - Groundwater

4. Assessor's comments

Comment

The application has been assessed against the clearing principles, planning instruments and other matters in accordance with s51O of the Environmental Protection Act 1986, and the proposed clearing is not likely to be at variance to all the clearing Principles.

5. References

AES Fauna, 2007. Astron Environmental Services. Reindeer Gas Project Fauna Baseline Survey April 2007.

AES Flora, 2007. Astron Environmental Services. Temporary and Permanent Accommodation Areas - Devil Creek Well and Mining Lease vegetation and Flora Survey, Addendum - August 2007

AMO, 2008. Ghost Bat, Australian Museum Online, site on 1/1/08 at http://www.austmus.gov.au/bats/records/bat14.htm.

Apache 2007. Devil Creek Development Project. Supporting Documentation for a Native Vegetation Clearing Permit (Purpose Permit), Temporary Accommodation and Access Tracks. Apache Energy, November 2007

BoM 2008. Bureau of Meteorology - Rainfall of Karratha 2007. Sited on 1/1/2008 at http://www.bom.gov.au/climate/dwo/IDCJDW6064.latest.shtml

EPA (2004) Guidance for the Assessment of Environmental Factors - terrestrial flora and vegetation surveys for Environmental Impact Assessment in Western Australia. Report by the EPA under the Environmental Protection Act 1986. No 51 WA

Ingleby, S. 2008. Rare and Endangered - Spectacled Hare-wallaby. Nature Australia, Volume 25, number 1:22. Site on 1/1/2008 at http://www.amonline.net.au/mammals/rare/spectacled_wallaby.htm

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

Kendrick, P., 2001. Pilbara 2 (PIL2 - Fortescue Plains subregion). A biodiversity Audit of Western Australia's 53 Biogeographical Subregions in 2002, pg 562.

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., Beeston, G.R. and Hopkins, A.J.M. (2001) Native Vegetation in Western Australia, Extent, Type and Status. Resource Management Technical Report 249. Department of Agriculture, Western Australia.Shepherd, D.P., Beeston, G.R. and Hopkins, A.J.M. (2001a) Native Vegetation in Western Australia, Extent, Type and Status. Resource Management Technical Report 249. Department of Agriculture, Western Australia (updated 2005).

6. 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)