GOVERNMENT OF
WESTERN AUSTRALIA

CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

PERMIT DETAILS

Purpose Permit Number: 2491/2
File Number: DEC7722
Duration of Permit: From 19 July 2008 to 19 July 2013

PERMIT HOLDER

Woodside Energy Limited

LAND ON WHICH CLEARING IS TO BE DONE

LOT 471 ON PLAN 220595 (Lot No. 471 KING BAY BURRUP 6714)
LOT 151 ON PLAN 218588 (Lot No. 151 KING BAY BURRUP 6714)
LOT 454 ON PLAN 194584 (DAMPIER ARCHIPELAGO 6713)
LOT 646 ON PLAN 28839 (Lot No. 646 KING BAY BURRUP 6714)
STATE WATERS

PURPOSE FOR WHICH THE CLEARING MAY BE DONE

Clearing for the purpose of building infrastructure for the Pluto LNG project.

CONDITIONS

1. The Permit Holder must not clear more than 4.54 hectares of native vegetation, within the areas hatched yellow on attached Plan 2491/2.

2. Avoid, minimise etc clearing
   In determining the amount of native vegetation to be cleared for the purpose of road upgrades, 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.

3. Records must be kept
   The Permit Holder must maintain the following records for activities done pursuant to this Permit, as relevant in relation to the clearing of native vegetation undertaken pursuant to the purpose of clearing:
   (a) The species composition, structure and density of the cleared area;
   (b) The location where the clearing occurred, recorded using Geocentric Datum Australia 1994;
   (c) The date that the area was cleared; and
   (d) The size of the area cleared (in hectares).

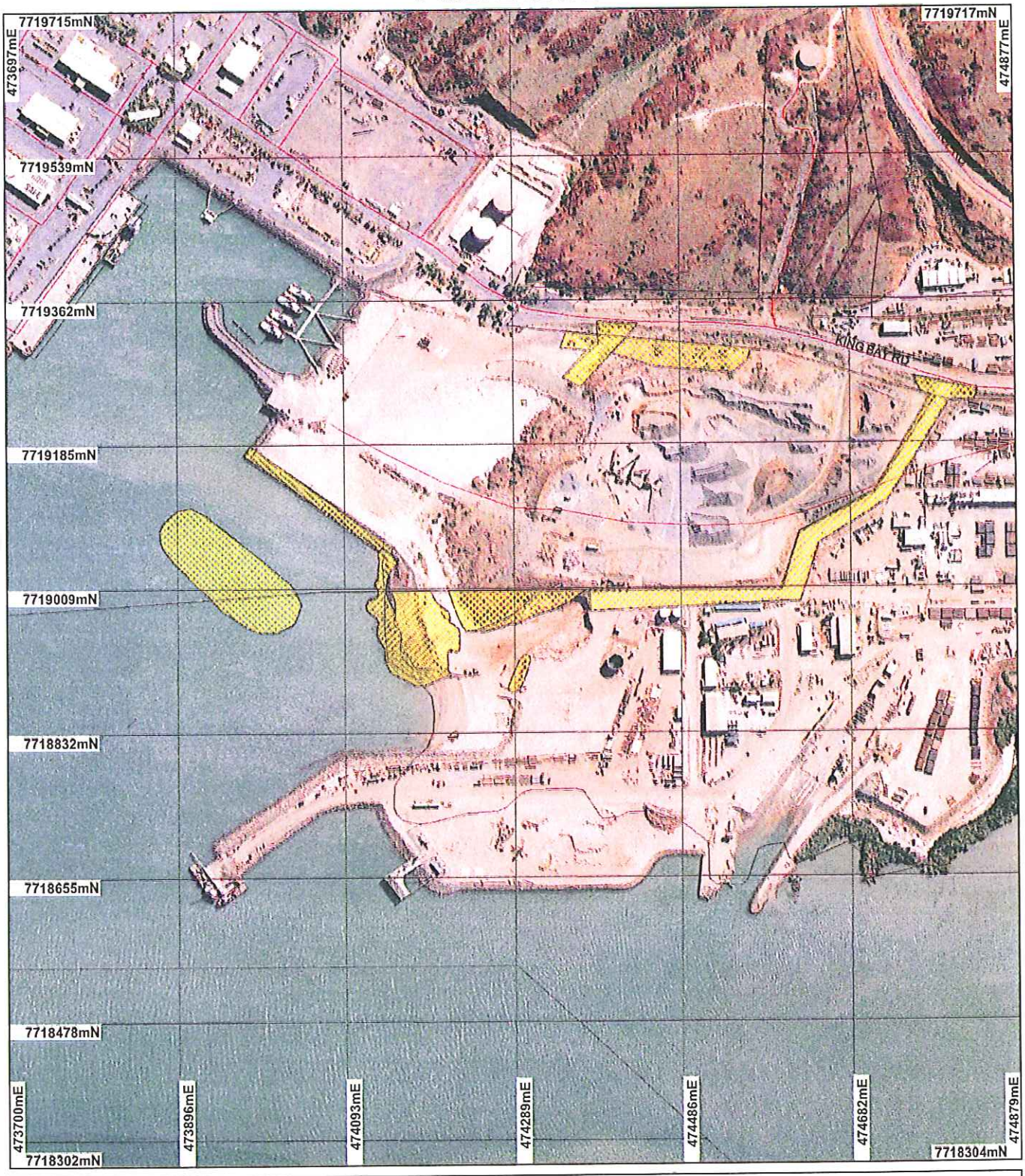
4. Reporting
   (a) The Permit Holder must provide to the CEO, on or before 30 June of each year, a written report of records required under condition 3 and activities done by the Permit Holder under this Permit between 1 January and 31 December of the preceding year.
   (b) Before the expiry of the permit, the permit holder must provide to the CEO a written report of records required under condition 3 where these records have not already been provided under condition 4(a).

Kelly Faulkner
MANAGER
NATIVE VEGETATION CONSERVATION BRANCH

Officer delegated under Section 20
of the Environmental Protection Act 1986

8 September 2009

Plan 2491/2



LEGEND

Clearing Instruments

- Areas Approved to Clear
- Road Centrelines
- Cadastre

Dampier Legendre 50cm Orthomosaic - Landgate 2004

N

0 ~150 m

Scale 1:6500
(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 of measurement inaccuracies.

K Faulkner Date 10/9/09

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

Our environment, our future

Department of Environment and Conservation

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 2491/2
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Woodside Energy Limited**

1.3. Property details

Property: LOT 471 ON PLAN 220595 (Lot No. 471 KING BAY BURRUP 6714)
LOT 151 ON PLAN 218588 (Lot No. 151 KING BAY BURRUP 6714)
LOT 454 ON PLAN 194584 (DAMPIER ARCHIPELAGO 6713)
LOT 646 ON PLAN 28839 (BURRUP 6714)
LOT 454 ON PLAN 194584 (DAMPIER ARCHIPELAGO 6713)

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
4.54		Mechanical Removal	Building or Structure

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 117: Hummock grasslands, grass steppe; soft spinifex It consists of Avicennia marina, Brachychiton acuminatus, Flueggea virosa subs. melanthesoides, rhagodia eremacea and Triodia epactia.	The terrestrial vegetation of 2.54 ha has been severely degraded due to high industrial traffic within the lot. There are two weed species occuring throughout the site Aevra javanica and Cenchrus cilliaris (SKM, 2008).	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994)	The terrestrial vegetation of 2.54 ha has been severely degraded due to high industrial traffic within the lot. There are two weed species occuring throughout the site Aevra javanica and Cenchrus cilliaris (SKM, 2008).
Marine vegetation consists of Halophila (seagrass).	The application is for the clearing of 2 ha marine vegetation consists of sparse and patchy Halophila (seagrass).	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994)	Vegetation condition was assessed through a site description by SKM (2008).

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 4.54 hectares of vegetation to construct a purpose-built materials facility to support the construction phase of the Pluto Project. The area proposed to be cleared consists of beard vegetation association 117 which there is approximately 96% of the Pre-European extent remaining (Shepherd et al., 2001). A site visit (SKM, 2008) confirmed that more than 90% of the vegetation on site shows signs of disturbance with weed species such as Cenchrus ciliaris (Buffel grass) and Aerva javanica (Kapok). The majority of the application site has been previously used for industrial traffic. The terrestrial site is surrounded by light industry and contains many accessed tracks.

Additionally, the application area consisting of seagrasses within King Bay may have low sea grass values, given the amount of shipping activity and dredging in the area, and therefore marine vegetation would be of a degraded condition (Keighery, 1994).

Given that the majority of the vegetation is of a degraded condition, it is unlikely the application area represents an area of higher biodiversity value when compared to representative vegetation in a local and regional context.

Methodology

Keighery (1994)
Shepherd et al. (2001)
SKM (2008)

(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

Several species of conservation significance have been previously recorded within a 10km radius of the application area. The fauna recorded include:

* Mormopterus loriae cobourgiana (Little North-western Mastiff Bat) - Priority 1;
* Macroderma gigas (Ghost Bat) - Priority 4;
* Falco peregrinus (Peregrine Falcon) - Other Specially Protected Fauna;
* Burhinus grallarius (Bush Stonecurlew) - Priority 4; and
* Liasis olivaceus barroni (Pilbara Olive Python) - Vulnerable

The Little North-western Mastiff Bat is likely to occur in mangroves mudflats etc. close to the coast (DEWR, 2008). There are white mangroves within the application but given the landform is rocky outcrops and rocky intertidal zones with other areas predominately degraded, the vegetation within the habitat is not highly representative of mangrove flats, and therefore it is unlikely that the Little North-western Mastiff Bat would require the use of vegetation within the application area.

The Ghost bat is likely to occur in the region, but as there are no known caves or abandoned mines within the application areas, the likelihood of them roosting within the proposed clearing area is very low (AMO, 2007).

Peregrine Falcon is known to predominately live and nest on cliffs (Peregrine Falcon, 2008) and the Bush Stonecurlew's most threatening process is degradation of habitat (Bush Stonecurlew, 2008). Given the area is of low topography (10-20 AHD) with no cliffs and the application area is already 90% degraded it is unlikely that both species would rely on the area for food and habitat.

Pilbara Olive Python prefers deep gorges and water holes, none of which are within the application area (Olive Python, 2008).

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. Given, the degraded condition of the majority of the application area, it is unlikely to be necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

Methodology

AMO (2008)
Bush Stonecurlew (2008)
DEWR (2008)
Olive Python (2008)
Peregrine Falcon (2008)
GIS Layer:
- Sac Bio datasets 050608
- Topography

(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 four known records of priority flora located within a 10km radius of, and within the same vegetation and soil type (Northcote et al., 1960 - 1968) as the application area. They are:

* Terminalia supranitifolia - Priority 3
* Stackhousia clementii - Priority 1
* Drummondita ericoides - DRF
* Acacia glaucocaesia - Priority 3

T. supranitifolia are found on sand amongst basalt rocks (WA Herbarium, 2008). Rocky outcrops are scattered throughout the eastern portion of the application area, though are relatively insignificant in size compared to occurrences on the wider Burrup Peninsula (SKM, 2008). D. ericoides and S. clementii are known to be found on or near rocky outcrops also (WA Herbarium, 2008).

Acacia glaucocaesia prefer red loam, sandy loam and clay soils and are know to found on flood plains (WA Herbarium, 2008). The marine vegetation is predominately seagrasses which occur all throughout the Burrup Peninsula (SKM, 2008).

Additionally, the application area consisting of seagrasses within King Bay may have low sea grass values, given the amount of shipping activity and dredging in the area, and therefore marine vegetation would be of a degraded condition (Keighery, 1994).

Given that the majority of the vegetation is of a degraded condition, it is unlikely that the application area is necessary for the continued existence of rare flora.

Methodology WA Herbarium (2007)
Keighery (1994)
Northcote et al., (1960 -1968)
SKM (2008)
GIS Layer:
- Sac Bio Datasets 050608

(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 records of threatened ecological communities within a 10km radius of the application area.

Given that the majority of the vegetation is of a degraded condition, it is unlikely that the vegetation within the application area is necessary for the maintenance of threatened ecological communities.

Methodology GIS Layer:
- Sac Bio datasets 050608

(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**

	Pre-European (ha)	Current extent (ha)	Remaining (%)	% Extent in IUCN 1 - 4
IBRA Bioregions**				
Pilbara	17,804,193	17,794,650	99.9	6.3
Sub bioregion**				
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**				
117	919,161	886,203	96.4	13.1

* (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 117, which has approximately 96.4% of the Pre-European extent remaining and therefore the 2.54 ha area of terrestrial vegetation proposed to be cleared is not considered to be a significant remnant of native vegetation within an extensively cleared area.

The marine vegetation is predominately seagrasses which occur all throughout the Burrup Peninsula (SKM, 2008).

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

Methodology Shepherd et al. (2006)
Shepherd et al. (2001)
SKM (2008)
GIS Layer:
- Interim Biogeographic Regionalisation of Australia - EA 18/10/00
- Pre European Vegetation - DA 01/01

(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 topography of the application area is graded towards the south-west, with a gentle elevation rising from the sea to approximately 15m AHD at the north-eastern site boundary (SKM, 2008). The land immediately east of the application area is flat due to previous earthworks (SKM, 2008). All drainage lines and watercourses within the application area are ephemeral (only have water in them for a few days after rain).

Given the above, clearing of terrestrial vegetation within the application area may be likely to impact on drainage lines or watercourses. Though as the majority of the vegetation is of a degraded condition, the impact would be low.

Methodology

SKM (2008)
GIS Layers:
- Topography
- Hydrography, linear_3 (Hyd_Type)
- Hydrography, linear (medium scale, 250K GA)

(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

Topography of the proposed clearing area is of low relief (10-20 AHD), situated on rocks with low permeability. Given that the rainfall and evapotranspiration rates for the local area (10km radius) are both 300mm, there is a low risk of water logging through rainfall within the proposed clearing area.

Groundwater salinity is brackish with low lying coastal soils characterised by a tidal influence aquifer of salty water (Water Corp, 2000). The proposed clearing of 4.54 ha is unlikely to exacerbate salinity levels.

Given the sandy nature of the soils, erosion through wind mechanisms may occur during earth works. Management measures to minimise erosion include watering of unsealed roads, access routes, exposed ground surfaces and stockpiles be implemented (SKM, 2008).

Given that the majority of the vegetation is of a degraded condition, it is unlikely that the clearing of native vegetation within the application area will cause appreciated land degradation.

Methodology

SKM (2008)
Water Corp (2000)
GIS Layers:
- Mean Annual Rainfall Isohytes (1975 - 2003) - DEC 02/08/05
- Evapotranspiration - Area Actual - 12/99
- Hydrogeology, statewide - 13/07/06
- Topographic contours, statewide - DOLA and ARMY 12/09/02

(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 are two conservation areas within 10km radius of the application area. They consist of:
* Burrup Peninsula - North Area - 8km north east
* Dampier Archipelago - 7.2km

Given the proximity of the conservation reserve to the applications area, it is unlikely that the clearing of 4.54 ha of native vegetation will have an impact on the environmental values of any nature conservation areas.

Methodology

GIS Layer:
- Register of National Estate - Environment Australia, Australian and world heritage division 12 Mar 02

(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 at variance to this Principle

The topography of the application area is of low relief it is unlikely that sediment will build up in any surrounding watercourses.

Clearing of 4.54 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 300mm, with most rainfall occurring over the summer months (BoM, 2008), and an evapotranspiration rate of 300mm per annum. Groundwater salinity is 1000-3000mg/L which is brackish.

Given the above, the application is not at variance to this principle.

Methodology BoM (2008)
GIS Layer:
- Average Annual Rainfall Isohyets - WRC 29/09/98
- Groundwater salinity Statewide - DoW 13/07/06
- Evapotranspiration - Area Actual - 12/99

(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 (4.54 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 4.54 ha is unlikely to have a significant impact on quality or quantity of groundwater given the mean annual rainfall for the site is 300mm with most rainfall occurring around the summer months, and an evapotranspiration rate of 300mm per annum (BoM, 2008).

Given the above, and the degraded condition of the terrestrial vegetation it is unlikely that the proposed clearing will cause or exacerbate the incidence or intensity of flooding.

Methodology BoM (2008)
GIS Layers:
Average Annual Rainfall Isohyets - WRC 29/09/98
Evapotranspiration rate - Actual area 12/99

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

Comments

The area applied to be cleared does not occur within a Public Drinking Water Source Area under the Country Areas Water Supply Act 1947.

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. Woodside does not require the use of groundwater or surface water.

The proponent has received permission from the Dampier Port Authority (DPA) to undertake road construction work within DPA land, including the application to DEC for clearing of native vegetation within DPA land. Woodside have applied to lease DPA land (Lot 471).

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 is one Native Title claim over the area under application. DEC considers that Traditional Owners have 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 Woodside's purpose permit.

This amendment to clearing permit CPS 2491/1 was made to increase the applied area from 4ha to 4.54ha for the purpose of clearing solitary trees (30m from native vegetation therefore not exempt) and to create a laydown area associated with the proposed activities under CPS 2491/1. No variance changes have been made to this assessment from that done under clearing permit CPS 2491/1.

Methodology GIS Layers:
- Native Title Claims - LA 2/5/07
- RIWI Act - Groundwater - DoW 13/07/06
- PDWSA

4. Assessor's comments

Comment
The application may be at variance to principle f and not likely to be at variance to all other principles.

5. References

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

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

Bush Stonecurlew (2008). Recovery Plan for the Bush Stonecurlew (Burhinus grallarius). Department of Environment and Conservation NSW, February 2006. Sited on 14/02/08 at www.environment.nsw.gov.au.

Department of Environment and Conservation information received from the proponent (DEC Trim Refs: DOC55622, DOC52938)

DEWR (2008). Numenius madagascariensis (Eastern Curlew) and Mormopterus loriae cobourgiana (Little North-western Mastiff Bat). Department of the Environment and Water Resources. Australian Government. Sited on 15/2/08 at www.environment.gov.au.

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.

Olive Python (2008). Liasis olivaceus barroni - Olive Python (Pilbara subspecies). Department of the Environment and Water Resources. Australian Government sited on 14/2/08 at www.environment.gov.au

Peregrine Falcon (2008). The Peregrine Falcon (Falco peregrinus). Department of the Environment and Water Resources. Australian Government. Sited on 14/2/08 at www.environment.gov.au.

Shepherd, D.P. (2007). 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. Includes subsequent updates for 2006 from Vegetation Extent dataset ANZWA1050000124.

SKM (2008). Pluto LNG Project Burrup Material Facility and Road Modification. Clearing purpose permit application supporting information. Sinclair Knight Merz, 07 May 2008

WA Herbarium (2008). Department of Environment and Conservation. 2008. Sited on 05/06/08 at http://florabase.dec.wa.gov.au/

Water Corp (2000). Water Corporation. Environmental Information for Burrup Peninsula Desalinated and Seawater Supplies Projects.

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)
Water Corp	Water Corporation