



CLEARING PERMIT

Granted under section 51E of the Environmental Protection Act 1986

Purpose Permit number:	CPS 3746/1
Permit Holder:	BHP Billiton Iron Ore Pty Ltd
Duration of Permit:	8 August 2010 – 8 August 2015

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 railway construction, maintenance and associated works, installation and relocation of power lines and installation of fibre optic cable.

2. Land on which clearing is to be done

Special Lease I154279

Special Lease J998591

Miscellaneous Licence L45/130

Miscellaneous Licence L45/131

Great Northern Highway road reserve, Boodarie (PIN 11311604)

Wallwork Road reserve, Port Hedland (PIN 11310031)

3. Area of Clearing

The Permit Holder must not clear more than 120 hectares of native vegetation within the area hatched yellow on attached Plan 3746/1.

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. 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:

- avoid the clearing of native vegetation;
- minimise the amount of native vegetation to be cleared; and
- reduce the impact of clearing on any environmental value.

7. 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.

8. 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) at an *optimal time* 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 Permit 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 8(a) on the cleared area(s) that are no longer required for the purpose for which they were cleared under this Permit.
- (c) within 24 months of laying the vegetative material and topsoil on the cleared area in accordance with condition 8(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 8(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.

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:

- (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;
 - (iii) the date that the area was cleared;
 - (iv) the size of the area cleared (in hectares); and
- (b) in relation to the *revegetation* and *rehabilitation* of areas pursuant to condition 8 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;
 - (ii) a description of the *revegetation* and *rehabilitation* activities undertaken;
 - (ii) the size of the area *revegetated* and *rehabilitated* (in hectares); and
 - (iii) the species composition, structure and density of *revegetation* and *rehabilitation*.

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 8 May 2015, 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;

term means the duration of this Permit, including as amended or renewed;

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*;

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;

local provenance means native vegetation seeds and propagating material from natural sources within 10 kilometres of the area cleared;

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 *revegetation* that can be established from in situ seed banks 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 *regeneration*, *direct seeding* and/or *planting*, so that the species composition, structure and density is similar to pre-clearing vegetation types in that area.

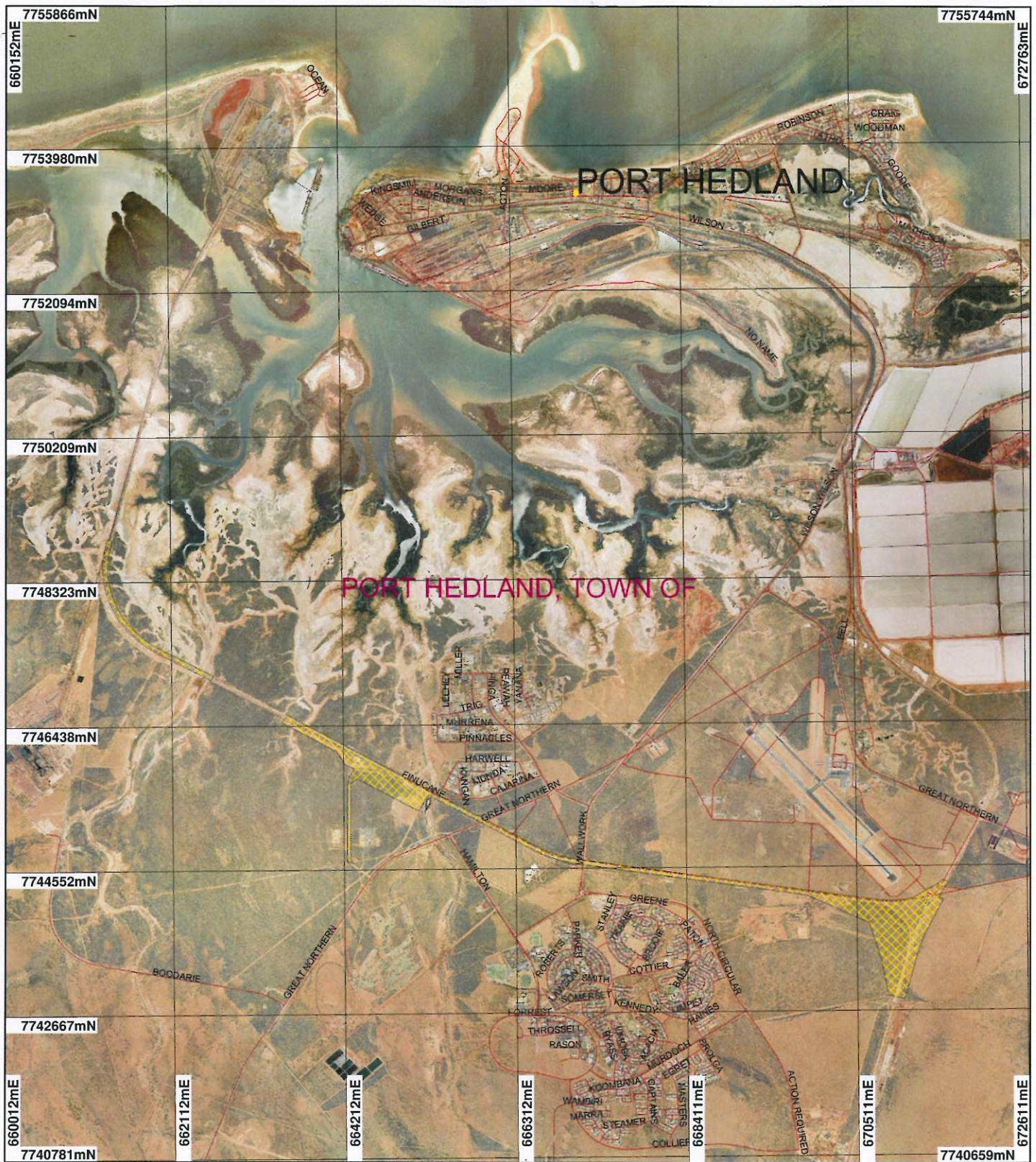


Kelly Faulkner
MANAGER
NATIVE VEGETATION CONSERVATION BRANCH

*Officer delegated under Section 20
of the Environmental Protection Act 1986*

8 July 2010

Plan 3746/1



LEGEND

- ☐ Cadastre
- ☐ Local Government Authorities
- ☒ Road Centrelines
- ☐ Mining Tenements

Clearing Instruments

- ☐ Areas Approved to Clear
- Towns**
- Port Hedland 50cm**
- Orthomosaic - Landgate**
- 2004**



0 2 km

Scale 1:69390

(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.

[Signature] 8/7/10
K. Faulkner Date

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

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1. Application details

1.1. Permit application details

Permit application No.: 3746/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: BHP Billiton Iron Ore Ptd Ltd

1.3. Property details

Property: SPECIAL LEASE J998591
SPECIAL LEASE I154279
MISCELLANEOUS LICENCE L45/130
MISCELLANEOUS LICENCE L45/131
GREAT NORTHERN HIGHWAY ROAD RESERVE (PORT HEDLAND 6721)
WALLWORK ROAD RESERVE (PORT HEDLAND 6721)
Local Government Area: Town of Port Hedland
Colloquial name: Goldsworthy Rail Duplication Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
120		Mechanical Removal	Railway 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 Vegetation Association: 127: Bare areas; mud flats 647: Hummock grasslands, dwarf-shrub steppe; Acacia translucens over soft Spinifex (Shepherd, 2007)	The area under application contains the existing Goldsworthy rail line and Newman to Port Hedland rail line and has been previously disturbed by, and largely cleared for, the construction and operation of these railways. BHP Billiton Iron Ore Pty Ltd (BHP) has applied to clear up to 120 hectares of native vegetation for the purposes of duplicating these rail lines. The condition of vegetation within the majority of the area under application ranges from good to poor (Trudgen, 2002 cited in ENV, 2009a), with one site surveyed as being in very good and one in completely degraded condition (ENV, 2009a). The main source of disturbance is the construction and operation of the existing railways and associated infrastructure such as roads and fences (ENV, 2009a). Additional causes of disturbance include grazing by cattle, dumping of waste and the presence of introduced species (ENV, 2009a). Much of the applied area is surrounded by a fence, which has reduced disturbance beyond this area and vegetation adjacent to the area under application is in very good to excellent condition (Trudgen, 2002 cited in ENV, 2009a).	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994) Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994) Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994)	Vegetation condition was determined from aerial photography, photographs and supporting information provided by the applicant (ENV, 2009a; ENV, 2009b).

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 proposal is to clear 120 hectares of native vegetation for the purpose of constructing a duplicate railway, associated works and utilities installation, within the Town of Port Hedland. The area under application is in a relatively built-up area adjacent to residential and industrial precincts of South Hedland and Wedgefield (BHP, 2010). The applied area contains the existing Goldsworthy rail line and Newman to Port Hedland rail line and

has been largely cleared for the construction and operation of this, and associated, infrastructure.

The applied area is within the Roebourne subregion of the Pilbara Interim Biogeographic Regionalisation of Australia bioregion. The Beard vegetation associations mapped within the applied area (Beard 127 and 647) are common and widespread locally and regionally (Shepherd, 2007). One hundred and fortyone flora taxa from 36 families were recorded during a flora and vegetation survey undertaken in October 2008 (ENV, 2009a). The vegetation communities identified during this survey are reported to be typical of the area, are represented outside the applied area and are not likely to be regionally affected by the proposed clearing (ENV, 2009a).

One priority flora species was identified in the area under application during flora surveying conducted by ENV.Australia (ENV) in October 2008. *Tephrosia rosea* var. *venulosa* (Priority 1 flora) was recorded from 10 locations and will be impacted by the proposed clearing (ENV, 2009a). The applicant advised that the identification of the specimens vouchered to the WA Herbarium is presently in question and the herbarium suspects they are likely to be a more common *Tephrosia* species (BHP, 2010).

The applied area is impacted by several introduced weed species, is reported to have limited habitat quality and diversity and has been subjected to significant levels of disturbance (ENV, 2009a; ENV, 2009b).

Given the above, the area under application is not considered likely to comprise a high level of biological diversity and, therefore, is not likely to be at variance to this Principle.

Methodology **References:**

BHP, 2010

ENV, 2009a

GIS Databases:

- DEC Managed Lands & Waters - DEC 28/10/09
- Evapotranspiration, Area Actual - BOM 30/09/01
- Groundwater Salinity, statewide - DoW 13/07/06
- Hydrogeographic Catchments, Catchments - DoW 01/06/07
- Hydrogeology, statewide - DoW 13/07/06
- Hydrography, linear - DoW 13/7/06
- Rainfall, Mean Annual - BOM 30/09/01
- Port Hedland 50cm Orthomosaic - Landgate 2004
- Pre-European vegetation - DA 01/01
- SAC Biodatasets - 09/06/10
- Soils, Statewide - 30/11/99

(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 faunal species of conservation significance have been recorded in the local area (20km radius of the area under application). The endangered Northern Quoll (*Dasyurus hallucatus*) has been recorded within the area under application. While this species prefers rocky areas or eucalyptus forest, which are not reported to be present within the applied area, it may also exist around areas of human development. The Priority 1 species Little North-western Mastiff Bat (*Moropterus loriae cobourgiana*) has been recorded 1.9km north-northeast of the area under application. This species is assumed to rely, at least partly, on mangrove habitat for prey foraging and roosting (Churchill, 1998 cited in Biota, 2008). This species has a strong preference for mangal habitat but can be found in adjacent areas as well. While restricted to mangroves, *M. loriae cobourgiana* is relatively widespread and well represented along the Pilbara coast (Churchill, 1998; Biota and Halpern Glick Maunsel, 2000 cited in Biota, 2008). Mangal habitat type is not found within the area under application.

The sandplain was identified as the sole fauna habitat type within the area under application during fauna surveying undertaken by ENV Australia in 2008 (ENV, 2009b). As the sandplain habitat type is widespread across the region (ENV, 2009b), it is not considered to represent a unique habitat type. The sandplain habitat present within the applied area is reported to be in a disturbed condition as it is immediately adjacent to the existing railways and infrastructure, is subject to impacts from high levels of traffic, introduced species and feral fauna damage (ENV, 2009b).

Given the above, the vegetation under application is not considered to be significant as a habitat for native fauna, with the majority of species within the area expected to utilise it as foraging grounds or as part of larger home territories (ENV, 2009b).

Whilst there is potential for the proposed clearing to impact on the movement of fauna in the short term, this is expected to be minimal, considering the lack of significant habitat along the railway corridor and the disturbed nature of the area under application.

Given the above, the proposed clearing is considered not likely to be at variance to this Principle.

Methodology References:
 BHP, 2010
 Biota, 2008
 ENV, 2009b
 GIS Databases:
 - Port Hedland 50cm Orthomosaic - Landgate 2004
 - Pre-European vegetation - DA 01/01
 - SAC Biodatasets - 09/06/10
 - Soils, Statewide - 30/11/99

(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 mapped as occurring within a 20km radius of the area under application. Vegetation within the area under application is considered to be in very good to degraded condition (Keighery, 1994) and has been subjected to previous and ongoing disturbance largely related to the construction and operation of the existing Goldsworthy and Newman to Port Hedland rail lines.

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

Methodology References:
 Keighery, 1994
 GIS Databases:
 - Port Hedland 50cm Orthomosaic - Landgate 2004
 - Pre-European vegetation - DA 01/01
 - SAC Biodatasets - 09/06/10
 - Soils, Statewide - 30/11/99

(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 or Priority Ecological Communities within the local area (20km radius) and therefore, the proposed clearing is not likely to be at variance to this clearing principle.

Methodology GIS Databases:
 - Port Hedland 50cm Orthomosaic - Landgate 2004
 - Pre-European vegetation - DA 01/01
 - SAC Biodatasets - 09/06/10
 - Soils, Statewide - 30/11/99

(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**
 The vegetation proposed to be cleared is well represented in the surrounding area and the Town of Port Hedland retains approximately 99.78% of its pre-European vegetation extent (Shepherd, 2007). The area under application is mapped as containing vegetation of Beard Vegetation Association 127 and 647, of which approximately 98.09% and ~100% of the pre-European extent remain, respectively, within the shire (Shepherd, 2007).

Given the above, the local area is not considered to be highly cleared and the applied area is not significant as a remnant of native vegetation, therefore the proposed clearing is not likely to be at variance to this principle.

Methodology References:
 Shepherd, 2007
 GIS Databases:
 - Port Hedland 50cm Orthomosaic - Landgate 2004
 - Pre-European vegetation - DA 01/01
 - SAC Biodatasets - 09/06/10

(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 area under application is within an area proclaimed under the Rights in Water and Irrigation Act 1914 (RIWI Act) and part of the area proposed to be cleared within Lot 47 on Plan 241374 intersects South West Creek, which is a major tributary. Any interference with the bed or banks of a watercourse in this proclaimed area may require a permit from the Department of Water (DoW, 2010).

According to a survey conducted in 2008 by ENV.Australia, vegetation growing in association with it is disturbed due to existing infrastructure and no distinct vegetation units were present within the South West Creek area (ENV, 2009a). Drainage structures are in place as part of the existing rail line infrastructure but alterations or the construction of additional structures may be required to maintain the existing flow regime (BHP, 2010).

There are no records of nationally significant wetlands mapped as occurring in the local area (20km radius), however there are mangroves in the local area and saline coastal flats extend to within 120m of the area under application.

Given the above, the proposed clearing is considered not likely to be at variance to this principle

- Methodology**
- References:
- BHP, 2010
 - DoW, 2010
 - ENV, 2009a
- GIS Databases:
- ANCA, Wetlands - 26/03/99
 - Hydrogeology, statewide - DoW 13/07/06
 - Hydrography, linear - DoW 13/7/06
 - Port Hedland 50cm Orthomosaic - Landgate 2004
 - RAMSAR, Wetlands - 15/10/09

(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 northern extent of the area under application is mapped as being in the moderate to high category of acid sulphate soil (ASS) risk. The applicant has supplied risk minimisation and management procedures that it considers adequate to abate this risk, including the identification of potential ASS materials prior to construction and the minimisation of disturbance of these materials where possible (BHP, 2010).

The applied area consists of two soil types, with the predominant type being extensive sandy plains with chief soils of red earthy sands with some hard red soils along creek lines. The second type is coastal plains, mainly beyond marine flooding influence, with bare saline mud and calcareous dunes commonly occurring on the seaward edge of the plains. The area under application does not include coastal dunes and is considered not to be overly susceptible to erosion.

The applicant advised that, while the majority of the cleared area will be required for permanent infrastructure, areas not required permanently will be rehabilitated and that management standards will be implemented to minimise the land degradation impact of clearing in the areas to be used for permanent infrastructure (BHP, 2010). As there may be some loss of soil structure and organic matter, should a permit be granted, it is recommended that a condition be placed on the permit for the purpose of retaining topsoil and vegetative matter.

One weed of national significance, *Tamarix aphylla*, was identified from a disturbed drainage trench within the area under application (ENV, 2009a). This species had not previously been recorded in the Port Hedland area. *T. aphylla* is considered to be a potentially serious weed of arid zone watercourses (ENV, 2009a) and is regarded as one of the worst weeds in Australia because of its invasiveness, potential for spread, and economic and environmental impacts (DEH and CRC, 2003). The applicant has supplied details of management measures to be implemented in order to limit the spread of weed species and avoid the introduction of further species (BHP, 2010).

Given the above, the proposed clearing may be at variance to this clearing principle and it is recommended that, if granted, weed management and topsoil and vegetative matter retention conditions be placed on the clearing permit.

- Methodology**
- References:
- BHP, 2010
 - DEH and CRC, 2003
 - ENV, 2009a
- GIS Databases:
- Acid Sulfate Soils Risk Map, Pilbara Coastline - DEC 06/09/06
 - Evapotranspiration, Area Actual - BOM 30/09/01
 - Groundwater Salinity, statewide - DoW 13/07/06
 - Hydrogeology, statewide - DoW 13/07/06
 - Rainfall, Mean Annual - BOM 30/09/01
 - Soils, Statewide - 30/11/99
 - Topographic Contours, Statewide - DOLA 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 no registered areas of conservation significance mapped within the local area (20km radius), therefore the proposed clearing is not likely to be at variance to this principle.

Methodology GIS Databases:
- DEC Managed Lands & Waters - DEC 28/10/09
- Pre-European vegetation - DA 01/01
- Soils, Statewide - 30/11/99

(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 proposed clearing is within the Port Hedland Coast catchment area. It is not within a Public Drinking Water Source Area or an area proclaimed under the Country Areas Water Supply Act (Part II) 1947.

The applicant has advised that a range of management measures will be implemented to minimise impacts to surface water quality and to minimise the risk of ground water contamination by hydrocarbons (BHP, 2010). The applicant advised that water will be sourced from a metered Water Corporation supply. The Department of Water is satisfied that the proposed clearing is unlikely to have a significant impact on the quality or quantity of groundwater, noting that all clearing activities should adhere to established codes of practice and best management practices should be implemented to prevent impacts to water quality (DoW, 2010).

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

Methodology References:
BHP, 2010
DoW, 2010
GIS Databases:
- Country Area Water Supply Act (Part IIA) Clearing Control Catchments - DoW 29/06/06
- Hydrogeographic Catchments, Catchments - DoW 01/06/07
- Hydrogeology, statewide - DoW 13/07/06
- Public Drinking Water Source Areas (PDWSAs) - DoW 07/02/06
- Rainfall, Mean Annual - BOM 30/09/01
- RIWI Act, Areas - DoW 05/04/02
- RIWI Act, Groundwater Areas - DoW 13/07/06
- RIWI Act, Irrigation Districts - DoW 13/07/06
- Soils, Statewide - 30/11/99
- Topographic Contours, Statewide - DOLA 12/09/02

(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 clearing of up to 120ha of native vegetation is proposed to occur within the larger application area of approximately 200ha. The area is linear, spanning a distance of approximately 12km, and is surrounded by vegetation in very good to excellent (Keighery, 1994) condition.

Considering the above, the proposal is considered not likely to cause or exacerbate the incidence or intensity of flooding and is, therefore, not likely to be at variance to this Principle.

Methodology References:
BHP, 2010
Keighery, 1994
GIS Databases:
- Evapotranspiration, Area Actual - BOM 30/09/01
- Hydrogeology, statewide - DoW 13/07/06
- Pre-European vegetation - DA 01/01
- Rainfall, Mean Annual - BOM 30/09/01
- Soils, Statewide - 30/11/99
- Topographic Contours, Statewide - DOLA 12/09/02

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

Comments

No submissions from the public have been received.

The Town of Port Hedland has no objection to this clearing permit application (DEC Ref: A310845) and provided written support of the proposed clearing within the Wallwork Road reserve area (DEC Ref: A303731). Written documentation of Main Roads Western Australia's support for the proposed clearing within the Great Northern Highway road reserve was provided (DEC Ref: A303731). The proponent has legal access to the remainder of the applied area, as it is the holder of Special Lease I154279 and J998591 and Miscellaneous Licences L45/130 and L45/131, which cover the land on which clearing is proposed to be done (DEC Ref: A304812). The purpose of the clearing is consistent with the uses permitted under these leases / licences.

The applied area is within the boundaries of the Kariyarra People's registered native title claim. The claimants and their representatives have been notified of this proposal (DEC Ref: A307366, A307367). No comments have been received.

The area proposed to be cleared is within the *Rights in Water and Irrigation Act 1914* proclaimed Pilbara surface and ground water areas. The abstraction of groundwater and the taking or diversion of surface water in this proclaimed area for purposes other than domestic and / or stock watering is subject to licence by the Department of Water (DoW, 2010). The applicant should contact DoW to ensure that sustainable groundwater allocation limits have not been reached for the area (DoW, 2010). The DoW does not guarantee the supply of water and where the groundwater area is found to be fully allocated, the proponent will be required to attain water from an alternative source and make prospective purchasers aware of any such restriction (DoW, 2010). Any interference with the bed or banks of a watercourse in a proclaimed area may require a permit from DoW, with the impact of clearing riparian vegetation upon the quality of surface water assessed during the bed and banks application process (DoW, 2010). In the event that new bores need to be drilled, the applicant advised it will ensure appropriate licences are held under the RIWI Act and that it will comply with all licence conditions (BHP, 2010).

There is one registered permanent aboriginal site of significance mapped as occurring within the area under application, with numerous sites located in the surrounding area. The applicant advised that, prior to the commencement of any ground disturbing activities, an internal Aboriginal heritage review will be conducted to ensure all heritage sites are identified and avoided where possible (BHP, 2010). If this is not practical, the applicant advised that approval to disturb an Aboriginal heritage site will be undertaken in accordance with the provisions of the *Aboriginal Heritage Act 1972* (BHP, 2010).

Methodology

References:

BHP, 2010

DoW, 2010

GIS Databases:

- Aboriginal Sites of Significance - DIA 02/10
- Cadastre - Landgate 12/09
- Country Area Water Supply Act (Part IIA) Clearing Control Catchments - DoW 29/06/06
- Environmental Impact Assessments - EPA 08/03/05
- Native Title Claims - LA 02/5/07
- Public Drinking Water Source Areas (PDWSAs) - DoW 07/02/06
- RIWI Act, Areas - DoW 05/04/02
- RIWI Act, Groundwater Areas - DoW 13/07/06
- RIWI Act, Irrigation Districts - DoW 13/07/06
- Town Planning Scheme Zones - MFP 31/08/98

4. References

- BHP (2010) Clearing permit application - supporting information. BHP Billiton Iron Ore Pty Ltd. DEC Ref: A303743
- Biota (2008) A Flora and Fauna Assessment of RGP5 DMMA A, Port Hedland Harbour. Unpublished report for Sinclair Knight Merz. Available from <http://www.bhpbilliton.com/bbContentRepository/docs/floraAndFaunaReport.pdf> Accessed 22/06/2010
- DEH and CRC (2003) Weeds of National Significance - Athel pine or tamarisk (*Tamarix aphylla*) weed management guide. Department of the Environment and Heritage and the CRC for Australian Weed Management. Available from: <http://www.weeds.gov.au/publications/guidelines/wons/t-aphylla.html> Accessed 2010-06-23.
- ENV.Australia (2009a) Goldsworthy Rail Duplication Flora and Vegetation Assessment. Unpublished report for BHP Billiton Iron Ore. DEC Ref: A303743
- ENV.Australia (2009b) Goldsworthy Rail Duplication Fauna Assessment. Unpublished report for BHP Billiton Iron Ore. DEC Ref: A303743
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- 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.

5. Glossary

Term	Meaning
CALM	Department of Conservation and Land Management (now DEC)
DAFWA	Department of Agriculture and Food
DEC	Department of Environment and Conservation
DEP	Department of Environmental Protection (now DEC)
DoE	Department of Environment (now DEC)
DoW	Department of Water
DMP	Department of Mines and Petroleum (ex DoIR)
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)