



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 6284/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Donald Kimberley North

1.3. Property details

Property: Mining Lease 45/1195
Local Government Area: Town of Port Hedland
Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
120.9		Mechanical Removal	Sand mining

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 13 October 2014

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description Beard vegetation associations have been mapped for the whole of Western Australia and are useful to look at vegetation in a regional context. Two Beard vegetation associations have been mapped within the application area:

589: Mosaic: Short bunch grassland - savannah / grass plain (Pilbara) / Hummock grasslands, grass steppe; soft spinifex; and
619: Medium woodland; river gum (*Eucalyptus camaldulensis*).

A flora and vegetation survey was conducted over the application area by West Ecology in September 2011 (West Ecology, 2011). Five vegetation types were identified within the application area;

- 21: Open shrubland of *Acacia colei* var *colei* and *Acacia inaequilatera* over hummock grassland on plains;
- 22: scattered low trees of *Eucalyptus camaldulensis* var *obtusa* over high open shrubland of *Acacia* species and open hummock grassland in riverbanks of the Turner River;
- 23: woodland of *Eucalyptus camaldulensis* var *obtusa* and *Melaleuca argentea* over open tussock grassland on riverbanks of the Turner River;
- 24: Low open woodland of *Eucalyptus camaldulensis* var *obtusa* and *Melaleuca argentea* over high shrubland of *Acacia ampliceps* in riverbeds of the Turner River; and
- 25: low open woodland of *Melaleuca argentea* in riverbeds of the Turner River.

Clearing Description Mr Donald Kimberley North proposes to clear up to 120.9 hectares of native vegetation within a total boundary of 120.9 hectares for the purpose of sand mining. The project is located approximately 24.7 kilometres south-west of Port Hedland, in the Town of Port Hedland.

Vegetation Condition Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994).

Comment The flora and vegetation survey was conducted over the whole of Mining Lease M47/1195. The application area covers almost one third of this tenement. Vegetation condition has been converted to the Keighery scale (1994) by the assessing officer based on the flora and vegetation survey conducted by West Ecology (2011).

Vegetation is degraded outside the application boundary, where three tracks have been partially cleared for recreational use and a power line (West Ecology, 2011). The proponent has advised that these existing tracks are not suitable for use during mining operations given the proximity to active power lines and the potential for interference with recreational vehicles.

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 located in the Turner River, within the Pilbara (PIL) Interim Biogeographic Regionalisation of Australia (IBRA) region and the Roebourne (PIL4) subregion (GIS Database). The Pilbara region represents a transitional zone between semi-arid and tropical climates (Kendrick, 2001). The Roebourne subregion is comprised of coastal and sub-coastal plains which support grass savannah and a dwarf shrub steppe of *Acacia stellaticeps* or *A. pyrifolia* and *A. inaequilatera* (Kendrick and Stanley, 2001).

A flora and vegetation survey was conducted over the application area and surrounds in 2011 by West Ecology (2011). A total of five vegetation types were identified within the application area. Vegetation type 25 'low open woodland of *Melaleuca argentea* in riverbeds of the Turner River' was the most widespread vegetation type within the area, accounting for 50.19% on Mining Lease M45/1195 (West Ecology, 2011). None of the identified vegetation types represented a Threatened Ecological Community (TEC) or Priority Ecological Community (PEC), which is consistent with available databases (GIS Database).

A total of 103 taxa from 32 families and 73 genera were recorded within Mining Lease 45/1195 (West Ecology, 2011). No Threatened or Priority flora were recorded in the application area or surrounds (West Ecology, 2011). A search of the Naturemap database returned records for six Priority flora within 20 kilometres of the application area (DPaW, 2014). Of these, the habitat within the application area is only suitable for *Abutilon* sp. Pritzelianum (Priority 1) and *Gymnanthera cunninghamii* (Priority 3), which have been recorded within creek or river bed habitat (Western Australian Herbarium, 2014). However, the timing of the flora and vegetation survey conducted by West Ecology (2011) was optimal, and as both species are large shrubs over one metre in height (Western Australian Herbarium, 2014), they are unlikely to have been undetected if present.

The application area is restricted to sparsely vegetated areas within the Turner River, avoiding more vegetated areas. It is therefore highly unlikely that the proposed clearing comprises an area of high floristic diversity.

No fauna survey has been conducted over the application area. Using a 20 kilometre search radius, Naturemap (DPaW, 2014) returned records for 124 birds, 33 mammals, 10 amphibians, two fish and 72 reptile species. These include four Schedule 1 species listed under the *Wildlife Conservation Act 1950* (WC Act), two Schedule 4 species, five Priority species, and 16 Migratory bird species (DPaW, 2014). However, given that the application area targets mostly un-vegetated areas, a majority of the fauna species recorded in Naturemap are unlikely to occur within the application boundary.

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

Methodology

DPaW (2014)
Kendrick (2001)
Kendrick and Stanley (2001)
West Ecology (2011)
Western Australian Herbarium (2014)
GIS Database:
- IBRA WA (regions - subregions)
- Threatened Ecological Sites Buffered

(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 application area comprises riverine fauna habitat within the Turner River (GIS Database). Based on aerial imagery, habitat within the application area appears to be in very good condition, and is well represented on both a local and regional scale (GIS Database). NatureMap (DPaW, 2014), reported 27 conservation significant species as having been recorded within a 20 kilometre radius of the proposed clearing.

The Airlie Island Ctenotus (*Ctenotus angusticeps*; Threatened) has been recently recorded near the application area (DPaW, 2014). However, this species is strongly associated with samphire species *Tecticornia halocnemoides* subsp. *tenuis* and *Suaeda arbusculoides* (DoE, 2014), which were not recorded within the application area. This species may therefore occur near the application area during foraging or dispersal activity, but is unlikely to be specifically reliant on habitat within the proposed clearing.

A majority of records were birds which are protected under an international agreement, such as the JAMBA, CAMBA or ROKAMBA, and listed as Migratory (DPaW, 2014). Suitable habitat for these species has been avoided by the proponent. Similarly, the application area mostly comprises sparse vegetation and sandy areas (West Ecology, 2011; GIS Database), which is not likely to be significant habitat for other conservation significant fauna. These fauna are more likely to utilise the densely vegetated areas which have been avoided by the proponent.

While a number of fauna may occur in the area surrounding the proposed clearing, the availability of this habitat elsewhere is not limited, and the application area is therefore unlikely to represent critical fauna habitat.

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

Methodology DPaW (2014)
DoE (2014)
West Ecology (2011)
GIS Database:
- Hydrography, linear
- Yule 1.4m Orthomosaic - Landgate 2002

(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

No Threatened flora species were recorded within the application area during the flora and vegetation survey conducted in 2011 (West Ecology, 2011). Findings are consistent with available databases, which show no records for any Threatened fauna within 20 kilometres of the application area (DPaW, 2014; GIS Database).

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

Methodology DPaW (2014)
West Ecology (2011)
GIS Database:
- Threatened and Priority Flora

(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

A search of available databases indicates that the application area is not likely to occur within a Threatened Ecological Community (TEC) (GIS Database). The nearest TEC occurs approximately 307 kilometres north-east of the application area (GIS Database).

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

Methodology GIS Database:
- Threatened Ecological Sites Buffered

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

Comments Proposal is not at variance to this Principle

The application area falls within the Pilbara Interim Biogeographic Regionalisation of Australia (IBRA) bioregion, in which approximately 99.6% of the pre-European vegetation remains (see table) (Government of Western Australia, 2013; GIS Database).

The vegetation within the application area has been mapped as Beard vegetation associations 589 and 619 (GIS Database). Over 90% of these Beard vegetation association remains at both a state and bioregional level (Government of Western Australia, 2013). Based on aerial imagery, the vegetation within the application area is neither a remnant itself nor does it form part of any remnants within the local area (GIS Database). Therefore, the application area does not represent a significant remnant of native vegetation in an area that has been extensively cleared.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in DPaW Managed Lands
IBRA Bioregion – Pilbara	17,808,657	17,733,584	~99.6	Least Concern	8.37
Beard veg assoc. - State					
589	807,699	802,713	~99.38	Least Concern	1.59
619	119,374	118,239	~99.05	Least Concern	0.20
Beard veg assoc. - Bioregion					
589	728,768	724,696	~99.44	Least Concern	1.77
619	118,920	118,117	~99.32	Least Concern	0.20

* Government of Western Australia (2013)

** Department of Natural Resources and Environment (2002)

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

Methodology Department of Natural Resources and Environment (2002)
Government of Western Australia (2013)
GIS Database:
- Pre-European Vegetation
- Yule 1.4m Orthomosaic - Landgate 2002

(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 proposed clearing is for the purpose of sand mining within a two kilometre section of the Turner River, and will impact riparian vegetation (West Ecology, 2011; GIS Database). However, the vegetation proposed to be cleared is limited to sparse and ephemeral flora that are naturally removed during flooding events (Austwide, 2014). A very small amount of riparian vegetation will be cleared for access tracks into the sand mining area, however this is not likely to impact the conservation of this riparian vegetation type. Further impacts to riparian vegetation outside the application area may be minimised by the implementation of a watercourse management condition.

Based on the above, the proposed clearing may be at variance to this Principle.

Methodology Austwide (2014)
West Ecology (2011)
GIS Database:
- Yule 1.4m Orthomosaic - Landgate 2002

(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

A majority of the application area occurs on a river bed within the River land system, with approximately 11.4 hectares adjacent to the river bed (GIS Database). This land system comprises active flood plains and major rivers supporting grassy eucalypt woodlands, tussock grasslands and soft spinifex grasslands (Van Vreeswyk et al., 2004). As this land system is stabilised by buffel grass and spinifex cover, the removal of vegetation greatly increases the potential for erosion (Van Vreeswyk et al., 2004). Only a very small amount of vegetation exists within the application area, and it is highly unlikely that its removal will significantly increase land degradation via soil erosion.

The flora and vegetation survey recorded seven weed species within Mining Lease M45/1195, including *Aerva javanica* (Kapok Bush), *Cenchrus ciliaris* (Buffel Grass), *Citrullus lanatus* (Pie Melon), *Eragrostic minor* (Smaller Stinkgrass), *Passiflora foetida* var *hispida* (Mossy Passion Flower), *Physalis angulata* and *Portulaca oleracea* (Pursland) (West Ecology, 2011). With the exception of Buffel Grass, these species occurred at a low density (West Ecology, 2011). Weeds have the potential to significantly change the dynamics of a natural ecosystem and lower the biodiversity of an area (DEC, 2011). Potential land degradation and impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

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

Methodology DEC (2011)
Van Vreeswyk et al. (2004)
West Ecology (2011)
GIS Database:
Rangeland Land System Mapping

(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

The application area does not lie within any conservation areas (GIS Database). The nearest conservation area is the Mungaroo Range Nature Reserve, which is located approximately 92 kilometres south, south-west of the application area (GIS Database). From this distance, the proposed clearing is not likely to impact the environmental values of the Mungaroo Range Nature Reserve.

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

Methodology GIS Database:
- DEC Tenure

(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 application area does not occur within a Public Drinking Water Source Area (PDWSA), however it is located within the Pilbara groundwater area under the *Rights in Water and Irrigation Act 1914* (GIS Database). Any groundwater extraction and/or taking or diversion of surface water for purposes other than domestic and/or stock watering is subject to licence by the Department of Water.

The proposed clearing is situated over a section of the Turner River, which is a major seasonal watercourse (GIS Database). The application area has excluded large or established river bed vegetation, which reduces the potential for increased soil instability within the watercourse. Using this approach, it is unlikely that the proposed clearing will result in any significant impacts to water quality.

Groundwater salinity in the local area is 1,000 - 3,000 milligrams/Litre Total Dissolved Solids (TDS), which is considered brackish (GIS Database). The proposed clearing activity is not likely to cause deterioration of groundwater within the project area.

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

Methodology GIS Database:
- Groundwater Salinity, Statewide
- Hydrography, linear
- Public Drinking Water Source Areas (PDWSAs)
- RIWI Act, Groundwater Areas

(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 area under application is located within and adjacent to the Turner River, which is a large watercourse that flows during periods of heavy rainfall into the Indian Ocean (GIS Database).

Local flooding occurs seasonally in the Pilbara region. The application area experiences an average annual rainfall of 319.2 millimetres (BoM, 2014). While it is likely that the Turner River may experience high levels of inundation and adjacent areas may be subject to occasional flooding, it is not likely that the proposed clearing will increase the incidence or intensity of flooding events.

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

Methodology BoM (2014)
GIS Database:
- Hydrography, linear
- Yule 1.4m Orthomosaic - Landgate 2002

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

Comments

There is one native title claim over the application area (GIS Database). This claim (WC1999/003) has been registered with the Native Title Tribunal on behalf of the claimant group (GIS Database). However, the mining tenure has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore, the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

There is one registered Site of Aboriginal Significance located in the area applied to clear (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Sites of Aboriginal Significance are damaged through the clearing process.

It is the proponent's responsibility to liaise with the Department of Environment Regulation, the Department of Parks and Wildlife and the Department of Water, to determine whether a Works Approval, Water Licence, Bed and Banks Permit, or any other licences or approvals are required for the proposed works.

The clearing permit application was advertised on 13 October 2014 by the Department of Mines and Petroleum inviting submissions from the public. There were two submissions received advising of no objections.

Methodology GIS Database:
- Aboriginal Sites of Significance
- Native Title Claims - Registered with the NNTT

4. References

- Austwide (2014) Information provided by the proponent on 22 September 2014. Austwide Mining Title Management Pty Ltd.
- BoM (2014) Climate Statistics for Australian Locations. Climate Statistics for Australian Locations. A Search for Climate Statistics for Newman Aero, Australian Government Bureau of Meteorology.
http://www.bom.gov.au/climate/averages/tables/cw_007176.shtml (Accessed November 2014).
- DEC (2011) Invasive Plant Prioritisation, Department of Environment and Conservation, Perth.
- Department of Natural Resources and Environment (2002) Biodiversity Action Planning. Action planning for native biodiversity at multiple scales; catchment bioregional, landscape, local. Department of Natural Resources and Environment, Victoria.
- DPaW (2014) NatureMap: Mapping Western Australia's Biodiversity. Department of Parks and Wildlife.
<http://naturemap.dpaw.wa.gov.au/default.aspx> (Accessed November 2014).
- Government of Western Australia (2013) 2012 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of October 2012. WA Department of Environment and Conservation, Perth.
- 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 3 (PIL3 – Hamersley Subregion). In A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions in 2002 (eds J. E. May & N. L. McKenzie). Department of Conservation and Land Management, WA.
- Kendrick, P. and Stanley, F (2001) Pilbara 4 (PIL4 – Roebourne Subregion). In A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions in 2002 (eds J. E. May & N. L. McKenzie). Department of Conservation and Land Management, WA.
- Van Vreeswyk, A.M.E., Payne, A.L., Leighton, K.A., Hennig, P (2004) An inventory and condition survey of the Pilbara Region, Western Australia, Technical Bulletin No. 92 Department of Agriculture Western Australia, South Perth.
- West Ecology (2011) Flora and Vegetation Survey of Welcome Exploration Tenements M47/411, M47/524, M47/556, M47/442 and M45/1195. Prepared for Welcome Exploration Pty Ltd by West Ecology, September 2011.
- Western Australian Herbarium (2014) FloraBase - The Western Australian Flora. Department of Parks and Wildlife.
<http://florabase.dpaw.wa.gov.au/> (Accessed November 2014).

5. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government
DAA	Department of Aboriginal Affairs, Western Australia
DAFWA	Department of Agriculture and Food, Western Australia
DEC	Department of Environment and Conservation, Western Australia (now DPaW and DER)
DER	Department of Environment Regulation, Western Australia
DMP	Department of Mines and Petroleum, Western Australia
DRF	Declared Rare Flora
DotE	Department of the Environment, Australian Government
DoW	Department of Water, Western Australia
DPaW	Department of Parks and Wildlife, Western Australia
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities (now DotE)
EPA	Environmental Protection Authority, Western Australia
EP Act	<i>Environmental Protection Act 1986</i> , Western Australia
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Federal Act)
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
IBRA	Interim Biogeographic Regionalisation for Australia
IUCN	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
PEC	Priority Ecological Community, Western Australia
RIWI Act	<i>Rights in Water and Irrigation Act 1914</i> , Western Australia
s.17	Section 17 of the <i>Environment Protection Act 1986</i> , Western Australia
TEC	Threatened Ecological Community

Definitions:

{DPaW (2013) Conservation Codes for Western Australian Flora and Fauna. Department of Parks and Wildlife, Western Australia}:-

T	Threatened species: Specially protected under the <i>Wildlife Conservation Act 1950</i> , listed under Schedule 1 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna or the Wildlife Conservation (Rare Flora) Notice for Threatened Flora (which may also be referred to as Declared Rare Flora). Threatened Fauna and Flora are further recognised by DPaW according to their level of threat using IUCN Red List criteria. For example Carnaby's Cockatoo <i>Calyptorhynchus latirostris</i> is specially protected under the <i>Wildlife Conservation Act 1950</i> as a threatened species with a ranking of Endangered. <u>Rankings:</u> CR: Critically Endangered - considered to be facing an extremely high risk of extinction in the wild. EN: Endangered - considered to be facing a very high risk of extinction in the wild. VU: Vulnerable - considered to be facing a high risk of extinction in the wild.
X	Presumed Extinct species: Specially protected under the <i>Wildlife Conservation Act 1950</i> , listed under Schedule 2 of the Wildlife Conservation (Specially Protected Fauna) Notice for Presumed Extinct Fauna and Wildlife Conservation (Rare Flora) Notice for Presumed Extinct Flora (which may also be referred to as Declared Rare Flora).
IA	Migratory birds protected under an international agreement: Specially protected under the <i>Wildlife Conservation Act 1950</i> , listed under Schedule 3 of the Wildlife Conservation (Specially Protected Fauna) Notice. Birds that are subject to an agreement between governments of Australia and Japan, China and The Republic of Korea relating to the protection of migratory birds and birds in danger of extinction.
S	Other specially protected fauna: Specially protected under the <i>Wildlife Conservation Act 1950</i> , listed under Schedule 4 of the Wildlife Conservation (Specially Protected Fauna) Notice.
P1	Priority One - Poorly-known species: Species that are known from one or a few collections or sight records (generally less than five), all on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, Shire, rail reserves and Main Roads WA road, gravel and soil reserves, and active mineral leases and under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes.
P2	Priority Two - Poorly-known species: Species that are known from one or a few collections or sight records, some of which are on lands not under imminent threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, unallocated Crown land, water reserves, etc. Species may be included if they are comparatively well known from one or more localities but do not meet adequacy of survey requirements and

appear to be under threat from known threatening processes.

P3

Priority Three - Poorly-known species:

Species that are known from collections or sight records from several localities not under imminent threat, or from few but widespread localities with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several localities but do not meet adequacy of survey requirements and known threatening processes exist that could affect them.

P4

Priority Four - Rare, Near Threatened and other species in need of monitoring:

- (a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These species are usually represented on conservation lands.
- (b) Near Threatened. Species that are considered to have been adequately surveyed and that do not qualify for Conservation Dependent, but that are close to qualifying for Vulnerable.
- (c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

P5

Priority Five - Conservation Dependent species:

Species that are not threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.