Government of **Western Australia**
Department of **Mines and Petroleum**

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 6127/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Dampier Salt Limited**

1.3. Property details

Property: *Dampier Solar Salt Industry Agreement Act 1967*, Mineral Lease 253SA (AML 70/253)
Local Government Area: Shire of Roebourne
Colloquial name: Dampier Operations

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
10		Mechanical Removal	Borrow Pit

1.5. Decision on application

Decision on Permit Application:
Decision Date:

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. Two Beard vegetation associations have been mapped within the application area (GIS Database).

117: Hummock grasslands, grass steppe; soft Spinifex; and

127: Bare areas; mud flats.

Biota Environmental Sciences (Biota) conducted a flora and vegetation survey over the application area in April 2014. One vegetation type was identified: *Acacia bivenosa* tall open shrubland to tall shrubland over *Triodia epactia* hummock grassland with **Cenchrus ciliaris* very open tussock grassland (Biota, 2014).

*denotes weed species.

Clearing Description
Dampier Operations. Dampier Salt Limited proposes to clear up to 10 hectares of native vegetation within a total boundary of approximately 86 hectares for the purpose of a borrow pit. The project is located approximately 11 kilometres north-west of Karratha, in the Shire of Roebourne.
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Vegetation Condition
Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994);

To:

Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994).

Comment
The vegetation condition was assessed by botanists from Biota Environmental Sciences (Biota, 2014).

Clearing will be performed by a dozer with blade down. Vegetation and topsoil will be pushed up and stockpiled for re-spreading over the area once earthworks are complete. Grader will then do a final pass of the area before removal of borrow material.

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 area occurs within the Roebourne Plains subregion of the Pilbara Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). This subregion is generally described as quaternary alluvial and older colluvial coastal and sub-coastal plains with a grass savannah of mixed bunch and hummock grasses, and dwarf shrub steppe of *Acacia stellaticeps* or *A. inaequilatera* (CALM, 2002). Uplands are dominated by *Triodia hummock* grasslands. Ephemeral drainage lines support Eucalyptus victrix or *Corymbia hamersleyana* woodlands. Samphire, *Sporobolus* and mangal occur on marine alluvial flats and river deltas (CALM, 2002).

A flora and vegetation survey of the application area conducted in April 2014 recorded a total of 104 native vascular plant taxa from 73 genera belonging to 33 families (Biota, 2014). When compared to other study areas that have been surveyed in the broader locality, the total number of native flora taxa recorded from the study area is in the range that would be expected for a study area of this size (Biota, 2014).

No Declared Rare Flora, Priority Flora, Threatened Ecological Communities or Priority Ecological Communities have been identified within the application area (Biota, 2014; GIS Database).

Four introduced flora species were recorded within the survey area; *Aerva javanica* (Kapok); *Cenchrus ciliaris* (Buffel Grass); *Flaveria trinervia* (Speedy Weed); and *Vachellia farnesiana* (Mimosa Bush) (Biota, 2014). The presence of weed species lowers the biodiversity value of the application area. Care must be taken to ensure that the proposed clearing activities do not spread or introduce weed species to non-infested areas. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

A search of Naturemap (DPaW, 2014) revealed records of one amphibian, 44 bird, three mammal and 23 reptile species within a 5 kilometre radius. The high number of bird species for a search area of this size reflects the application area's proximity to the coastline, while the high number of reptile species is typical of the Pilbara.

The application area is adjacent to major infrastructure facilities and there are existing tracks and previously disturbed areas within the application area (Biota, 2014; GIS Database). Considering the amount of disturbance already present and the wide availability of the vegetation associations, the application area is not likely to comprise a greater diversity than similar areas either locally or at a bioregional scale.

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

Methodology

Biota (2014)
CALM (2002)
DPaW (2014)
GIS Database:
- Dampier and Extensions 50 cm Orthomosaic - Landgate 2008
- IBRA WA (Regions - Sub Regions)
- Pre-European Vegetation
- Threatened and Priority Flora
- 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

Biota (2014) identified five fauna habitats within the study area (sandy plains and pediment slopes, rock outcrops (rockpiles), samphire and hypersaline flats, salt pond, and disturbed areas). All of these are widespread in, and typical of, the locality (Biota, 2014).

The vegetation within the application area may be utilised by a variety of fauna but the lack of specialised fauna habitats means it is unlikely to provide core habitat for any fauna species. All habitat types present are typical of the study area's coastal setting in low-lying areas on the southern margin of the Burrup Peninsula (Biota, 2014; GIS Database).

A desktop survey of NatureMap was conducted by Biota (2014) (DPaW, 2014). One Threatened terrestrial fauna species, the Pilbara Olive Python (*Liasis olivaceus subsp. barroni*), has been recorded within 5 kilometres of the application area (DPaW, 2014). The Pilbara Olive Python is a mobile species that usually inhabits rock piles and crevices near water sources and the application area does not include any core habitat on which this species would be dependent (Biota, 2014).

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

Methodology

Biota (2014)
DPaW (2014)
GIS Database:
- Dampier and Extensions 50 cm Orthomosaic - Landgate 2008

(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

According to available databases there are no known records of Threatened Flora species within the application area (GIS Database).

A Threatened Flora and vegetation survey of the application area was conducted by Biota botanists in April 2014. No Threatened Flora species were recorded during the survey (Biota, 2014).

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

Methodology Biota (2014)
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 revealed there are no known Threatened Ecological Communities (TECs) within the application area (GIS Database). The nearest recorded TEC, Themeda grasslands on cracking clays, is located approximately 182 kilometres south-southeast of the application area (GIS Database).

No TECs were identified during the flora and vegetation survey conducted by the Biota botanists (Biota, 2014).

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

Methodology Biota (2014)
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 IBRA bioregion (GIS Database). The vegetation within the application area is recorded as:

Beard vegetation association 117: Hummock grasslands, grass steppe; soft spinifex; and

Beard vegetation association 127: Bare areas; mud flats (Government of Western Australia, 2013; GIS Database).

According to the Government of Western Australia (2013), Beard vegetation association 117 retains approximately 96**%** of its pre-European extent and Beard vegetation association 127 retains approximately 94% of its pre-European extent. The local area has been extensively cleared, however the area proposed to be cleared is not a significant remnant of native vegetation.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in DPaW Managed Land
IBRA Bioregion - Pilbara	17,808,657	17,733,584	~99.58	Least Concern	6.34
Beard vegetation associations - State					
117	919,517	886,005	~96.36	Least Concern	13.02
127	737,724	697,871	~94.60	Least Concern	7.90
Beard vegetation associations - Bioregion					
117	82,706	78,097	~94.43	Least Concern	14.20
127	177,750	159,595	~89.79	Least Concern	0.01

* 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:
- IBRA WA (Regions - Sub Regions)
- Pre-European Vegetation

(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

There are several minor seasonal watercourses passing through the application area (GIS Database). These drainage lines would only flow for short periods following heavy rainfall. The application area is adjacent to and partly overlapped by saline mudflats, which are subject to seasonal inundation (GIS Database). Salt evaporation ponds sit adjacent to the application area.

The application area is located near the coast but it is not part of a contiguous coastal vegetation strip (Biota, 2014). No clearing of samphire or mangrove habitat is proposed and the proposed works are unlikely to have any significant impact on any significant saltwater wetland features (Biota, 2014).

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

Methodology

Biota (2014)
GIS Database:
- Geodata, Lakes
- Hydrography, Linear

(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

According to available datasets the application area intersects the Cheerawarra and Littoral Land Systems (GIS Database).

The Cheerawarra Land System is characterised by sandy coastal plains and saline clay plains supporting soft and hard spinifex grasslands and minor tussock grasslands (Van Vreeswyk et al., 2004). The vegetation type described for the application area occurred on sandy alluvial plains and very gentle south-facing pediment slopes in the east of the study area (Biota, 2014), which is likely to correspond to the 'sandplains' landform unit (Biota, 2014). Most of the landform units within the system are highly susceptible to wind erosion if vegetation cover is depleted (Van Vreeswyk et al., 2004). Revegetation of the cleared areas should occur as soon as practicable after clearing to aid in stabilising the soil and minimise the risk of erosion developing (Biota, 2014).

The Littoral Land System is characterised by bare coastal mudflats with mangroves on seaward fringes, samphire flats, sandy islands, coastal dunes and beaches. (Van Vreeswyk et al., 2004). This land system is not susceptible to soil erosion however is highly susceptible to wind erosion if vegetative cover is depleted (Biota, 2014; Van Vreeswyk et al., 2004).

A broad scale map of acid sulfate soil (ASS) risk for the Pilbara coast indicates a large part of the application area is located within an ASS risk area (GIS Database). Dampier Salt has advised that they are aware of the area potentially containing ASS, but investigations and comparisons to the surrounding area indicate the risk is very low (Rio Tinto, 2014).

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

Methodology

Biota (2014)
Van Vreeswyk et al. (2004)
GIS Database:
- Acid Sulfate Soil Risk Map, Pilbara Coastline
- 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 proposed clearing is not located within a conservation reserve (GIS Database). The nearest known conservation area is Murujuga National Park, which is located approximately 430 metres north-east of the application area (GIS Database). Murujuga National Park covers a total of 4,913 ha and is split into three sections. Given the small scale of the proposed clearing, there should be no impact on the adjacent Murujuga National Park, provided standard weed hygiene measures are followed (Biota, 2014).

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

Methodology

GIS Database:
- DEC Tenure
- Register of National Estate (Status)

(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

According to available databases the application area is not located within a Public Drinking Water Source Area (PDWSA). The nearest PDWSA is Roebourne Water Reserve, which is approximately 41 kilometres east-southeast of the application area (GIS Database). The small area of the proposed clearing is unlikely to cause deterioration in the quality of underground water.

The application area is adjacent to and partly overlapped by saline mudflats, which are subject to seasonal inundation (GIS Database). Salt evaporation ponds sit adjacent to the application area and there are also several minor ephemeral drainage lines in the vicinity (GIS Database). The drainage lines would only flow for short periods following heavy rainfall. The proposed clearing is unlikely to cause deterioration in the quality of surface water in the local area.

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

Methodology

Biota (2014)
GIS Database:
- Dampier and Extensions 50 cm Orthomosaic - Landgate 2008
- Hydrography, Linear
- Public Drinking Water Source 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 application area experiences variable annual rainfall with most precipitation occurring during the summer cyclone season (CALM, 2002). The average annual rainfall is 248.7 millimetres, recorded from the weather station at nearby Dampier Salt (BOM, 2014). Local flooding occurs after large seasonal rainfall events, however, clearing within the application area is not likely to exacerbate or increase the incidence or intensity of flooding (Biota, 2014).

The application area is located within the Coastal catchment area of the Port Hedland Coast basin (GIS Database). Given the size of the area to be cleared (10 hectares) in relation to the size of the catchment area (744,301 hectares) (GIS Database), the proposed clearing is not likely to increase the potential of flooding on a catchment scale.

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

Methodology

Biota (2014)
BOM (2014)
CALM (2002)
GIS Database:
- Hydrographic Catchments - Catchments

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

Comments

There is one Native Title Claim (WC99/14) over the area under application. This claim has been registered with the National Native Title Tribunal on behalf of the claimant group. 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 are several registered Aboriginal sites of significance within the application area (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal sites of significance are damaged through the clearing process.

It is the proponent's responsibility to liaise with the Department of Environment Regulation, 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 2 June 2014 by the Department of Mines and Petroleum inviting submissions from the public. One submission was received raising no objection to the proposed clearing.

Methodology

- Aboriginal Sites of Significance
- Native Title Claims - Registered with the NNTT

- Native Title Claims - Filed at the Federal Court
- Native Title Claims - Determined by the Federal Court

4. References

Biota (2014) Dampier Salt Eastern Lease Native Vegetation Clearing Permit Report. Report prepared by Biota Environmental Sciences Limited for Dampier Salt Limited, May 2014.

BOM (2014) Bureau of Meteorology Website - Climate Statistics for Australian Locations, Summary Statistics DAMPIER SALT. http://www.bom.gov.au/ (Accessed 11 July 2014).

CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Pilbara 4 (PIL4 - Roebourne Synopsis). Department of Conservation and Land Management, Western Australia.

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.

Department of Parks and Wildlife (DPaW) (2014) NatureMap Department of Parks and Wildlife, viewed 15 July 2014 <http://naturemap.dec.wa.gov.au>.

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.

Rio Tinto (2014). Email response to assessing officer, relating to clearing permit application 6127/1, received on 14 July 2014.

Van Vreeswyk A.M.E., Payne A.L., Leighton K.A. and Hennig P. (2004) Technical Bulletin - An Inventory and Condition Survey of the Pilbara Region, Western Australia, No. 92. Department of Agriculture, Perth, Western Australia.

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	*Environmental Protection Act 1986*, Western Australia
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (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	*Rights in Water and Irrigation Act 1914*, Western Australia
s.17	Section 17 of *the Environment Protection Act 1986*, 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 *Wildlife Conservation Act 1950,* 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 the Department according to their level of threat using IUCN Red List criteria. For example Carnaby's Cockatoo *Calyptorynchus latirostris* is specially protected under the *Wildlife Conservation Act 1950* as a threatened species with a ranking of Endangered.

Rankings:
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 *Wildlife Conservation Act 1950,* 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 *Wildlife Conservation Act 1950,* 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 *Wildlife Conservation Act 1950,* 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.