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

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.:	6331/1
Permit type:	Purpose Permit

1.2. Proponent details

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

1.3. Property details

Property:	*Leslie Solar Salt Industry Agreement Act 1966, Mineral Lease 242SA* (AML 70/242)
Local Government Area:	Town of Port Hedland
Colloquial name:	Borrow Pits Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
47.96		Mechanical Removal	Borrow Pits and Associated Activities

1.5. Decision on application

Decision on Permit Application:	Grant
Decision Date:	27 November 2014

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
The clearing permit application area has been broadly mapped as Beard vegetation association: 647: Hummock grasslands, dwarf-shrub steppe; *Acacia translucens* over soft spinifex. A flora and vegetation survey conducted by Biota Environmental Sciences (Biota, 2014) over the application area identified the following four vegetation types: P1: *Triodia epactia* closed hummock grassland with *Chrysopogon fallax* very open tussock grassland. D1: Acacia ampliceps tall open shrubland over *Stemodia grossa* low open shrubland over *Triodia epactia*, T. secunda hummock grassland with *Eriachne obtusa* very open tussock grassland. S1: *Tecticornia indica* subsp. *leiostachya*, *Neobassia astrocarpa* low open shrubland over *Eragrostis falcata* very open tussock grassland. S2: *Tecticornia indica* subsp. *leiostachya* scattered low shrubs. Vegetation type S2 is a highly modified unit occurring on the disturbed margin of an excavated depression that holds open water.	Borrow Pits Project. Dampier Salt Limited proposes to clear up to 47.96 hectares of native vegetation within an application area of approximately 47.96 hectares, for the purpose of constructing borrow pits. The project is located approximately 37 kilometres east of the Town of Port Hedland.	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994). to Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994).	Vegetation condition was classified by Biota (2014) using the Trudgen scale and has been converted by the assessing officer to the Keighery scale.

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 is located within the Roebourne sub-region of the Pilbara Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). The Roebourne subregion is broadly described as quaternary alluvial plains with a grass savanna (typically Triodia hummock grasslands) and shrub steppe of Acacia stellaticeps or A. pyrifolia and A. inaequilatera. Areas of Samphire, *Sporobolus* and Mangal occur on marine alluvial flats (Kendrick and Stanley, 2003).

A flora and vegetation survey was conducted by Biota over the application area in July 2014 (Biota, 2014). A total of 80 native vascular flora taxa from 57 genera belonging to 24 families were recorded from the application area during the survey.

No Threatened Ecological Communities, Priority Ecological Communities, Threatened flora species or vegetation associations of restricted distribution were recorded within the application area during the flora and vegetation survey. A single specimen of *Pterocaulon intermedium* (Priority 3) was recorded within the application area during the survey (Biota, 2014). This flora species is currently vouchered from in the Western Australian Herbarium from four IBRA Regions (Central Kimberley, Dampierland, Northern Kimberley and the Pilbara) (WA Herbarium, 2014) therefore it is not expected that the removal of this one population from the application area will pose a significant risk to the overall survival of the species.

The presence of samphire vegetation (Vegetation type S1 and S2) within the application area was identified as being of moderate conservation significance, due to its limited regional distribution, potential to support new or restricted samphire species and its susceptibility to disturbance (Biota, 2014). However, given that only 3 hectares of this vegetation type is proposed to be cleared it is unlikely that this vegetation type will be significantly impacted by the proposed clearing.

Four introduced flora (weed) species (*Calotropis procera* (Calotrope), *Cenchrus ciliaris* (Buffel Grass), *Chloris barbata* (Purpletop Chloris) and *Indigofera oblongifolia*) were also recorded in the application area (Biota, 2014). None of the weed species recorded in the application area are listed as Weeds of National Significance however *Calotropis procera* is listed as a declared pest in the region under the WA *Biosecurity and Agriculture Management Act 2007* (Biota, 2014). However, potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

A fauna habitat assessment and an opportunistic fauna sighting field survey was conducted by Biota over the application area in July 2014. No conservation significant fauna species were recorded within the application area during the field survey (Biota, 2014).

Fauna habitats identified during the survey extend outside the application area and are well represented within the region (Biota, 2014; GIS Database).

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

Methodology

Biota (2014)
Kendrick and Stanley (2003)
Western Australian Herbarium (2014)
GIS Database:
- IBRA WA (Regions – Sub Regions)
- Pre-European Vegetation
- Threatened and Priority Flora
- Threatened and Protected Ecological Communities

(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

A fauna habitat assessment and an opportunistic fauna sighting field survey was conducted by Biota over the application area in July 2014. The survey identified the following four broad fauna habitats within the application area: Alluvial plains, Broad Drainage Foci, Samphire Vegetation and Saline Flats. None of these broad fauna habitats are considered to be restricted to the application area (Biota, 2014, GIS Database).

No conservation significant fauna species where recorded within the application area during the opportunistic fauna sighting field survey (Biota, 2014).

According to the Naturemap database, 3 mammal, 103 bird, 2 amphibian and 23 reptile species have been recorded within a 10 kilometre radius of the application area (DEC, 2014). None of these species would be expected to be restricted or dependent on the fauna habitats within the application area (Biota, 2014).

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

Methodology Biota (2014)
DEC (2014)
GIS Database:
- Pre-European Vegetation
- Threatened and Priority Fauna
- Threatened and Protected Ecological Communities

(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 records of Threatened Flora within the application area (GIS Database).

The flora and vegetation survey conducted by Biota over the application area did not record any species of Threatened Flora (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**
There are no known Threatened Ecological Communities within the application area (GIS Database).

The flora and vegetation survey conducted by Biota over the application area did not record any Threatened Ecological Communities (Biota, 2014).

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

Methodology Biota (2014)
GIS Database:
-Threatnened Ecological Communities

(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 Biogeographic Regionalisation of Australia (IBRA) bioregion in which approximately 99% of the Pre-European vegetation remains (see table) (GIS Database, Government of Western Australia, 2011).

The vegetation of the application area has been mapped as the following Beard vegetation association (GIS Database):

647: Hummock grasslands, dwarf-shrub steppe; *Acacia translucens* over soft spinifex.

Approximately 98% of Beard vegetation association 647 remains at both a state and bioregional level (Government of Western Australia, 2013). Therefore, the area proposed to be cleared does not represent a significant remnant of native vegetation within 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	Least Concern	8
Beard vegetation associations - State					
647	195,861	191,711	~98	Least Concern	0
Beard vegetation associations - Bioregion					
647	195,860	191,711	~98	Least Concern	0

* 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 no permanent water bodies or watercourses within or in close proximity to the application area (GIS Database).

There are two minor ephemeral drainage lines within the application area that flow towards the coastal backwater to the west (Biota, 2014). The surface flows of these drainage lines are likely to be dry most of the year and have already been altered by the construction of a levee bank to the east of the application area (Biota, 2014; GIS Database). Therefore, it is not expected the proposed clearing will have a detrimental effect on these drainage lines (Biota, 2014; GIS Database).

The two minor ephemeral drainage lines within the application area support *Triodia secunda* which has been recognised as being of moderate to high conservation significance due to the limited distribution of this species in the region (Biota, 2014). However, this species is not restricted to the application area and is likely to be present in more pronounced drainage lines located to the west of the application area (GIS Database).

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

Methodology Biota (2014)
GIS Database
-Port Hedland 50CM Orthomosaic (Image)
-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**
The application area occurs in an area mapped by the Geological Survey of Western Australia as the geological unit B1b: coastal dunes and beach deposits; shelly sand containing Anadara granosa; includes backshore deposits (Biota, 2014).

The soil type within the application area is described as extensive sandy plains: chief soils are red earthy sands with extensive areas of red earths and with some hard red soils along creek lines (GIS Database).

The application area intersects areas of the Cheerawarra and Uaroo land systems (Biota, 2014; GIS Database). The Uaroo land system is generally not susceptible to erosion or significant vegetation degradation, however the Cheerawarra land system is highly susceptible to wind erosion if the vegetation cover is reduced by clearing or other disturbance (Van Vreeswyk et al. 2004).

Given that much of the vegetation surrounding the application area is in excellent to very good condition it is likely that surrounding vegetated areas will form a suitable wind break and minimise the impact of land degradation associated with wind erosion within the application area (GIS Database).

The potential impacts from land degradation as a result of the proposed clearing may be minimised by the implementation of a staged clearing condition.

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

Methodology Biota (2014)
Van Vreeswyk et al. (2004)
GIS Database:
- Port Hedland 50CM Orthomosaic (Image)
- Pre-European Vegetation
- Soils, Statewide
- 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 areas are Eighty Mile Marine Park, located approximately 62 kilometres north east of the application area and Mungaroona Range Nature Reserve, located approximately 140 kilometres south west of the application area (GIS Database). Given the distance between the application area and the conservation areas, the proposed clearing is not likely to impact the environmental values of any conservation area.

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 is not located within a Public Drinking Water Source Area (PDWSA) and there are no permanent water bodies or watercourses within the application area (GIS Database).

Two minor ephemeral drainage lines pass through the application area but are likely to be dry most of the year (BoM, 2014; GIS Database). These drainage lines have already been altered by the construction of a levee bank to the east of the application area therefore the proposed clearing is not expected to cause a deterioration in the quality of surface water of these systems (Biota, 2014; GIS Database).

Groundwater salinity within the application area is between 1,000 and 3,000 milligrams/Litre Total Dissolved Solids (TDS) (GIS Database). Given the relatively small scale of proposed clearing, it is not likely that salinity levels within the application area will alter significantly (GIS Database).

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

Methodology Biota (2014)
BoM (2014)
GIS Database:
- Evaporation Isopleths
- Groundwater Salinity, Statewide
- Hydrography, linear
- Public Drinking Water Source Areas (PDWSAs)

(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 climate of the Pilbara region is semi-arid, with a low average rainfall of approximately 200-300 millimetres per year (BoM, 2014; Van Vreeswyk et al., 2004). Drainage lines in the area are dry for most of the year, only flowing briefly immediately following significant rainfall (Biota, 2014).

There are no permanent water courses or water bodies within the application area (GIS Database). Two minor ephemeral drainage lines pass through the application area but are likely to be dry most of the year (BoM, 2014; GIS Database). Temporary localised flooding may occur in these drainage systems during heavy rainfall events however the proposed clearing is unlikely to increase the incidence or intensity of natural flooding events (Biota, 2014).

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

Methodology

Biota (2014)
BoM (2014)
Van Vreeswyk et al. (2004)
GIS Database:
- Hydrography, linear
- Hydrographic, catchments

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

Comments

The clearing permit application was advertised on 03 November 2014 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received in relation to the application.

There is one Native Title Claim (WC1999/026) over the area under application (GIS Database). This claim has been registered with the National Native Title Tribunal on behalf of the claimant group. However, the 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 no 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, the Department of Water, and the Department of Parks and Wildlife, to determine whether a Works Approval, Water Licence, Bed and Banks Permit, or any other licences or approvals are required for the proposed works.

Methodology

GIS Database:
- Aboriginal Sites of Significance
- Native Title Claims - Determined by the Federal Court
- Native Title Claims - Filed at the Federal Court
- Native Title Claims - Registered with the NNTT

4. References

Biota (2014) Dampier Salt Intakes Borrow Pits Native Vegetation Clearing Permit Report. Report prepared by Biota Environmental Sciences for Dampier Salt Pty Ltd, Western Australia.

BoM (2014). Bureau of Meteorology (WWW Document). Retrieved from http://www.bom.gov.au

DEC (2014) NatureMap - Mapping Western Australia Biodiversity, Department of Environment and Conservation. http://naturemap.dec.wa.gov.au/default.aspx, viewed November 2014.

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.

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., and Stanley F., (2003). Pilbara 4 (PIL4 - Roebourne synopsis). A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Department of Conservation and Land Management, Western Australia.

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.

Western Australian Herbarium (1998-2014). FloraBase-The Western Australian Flora. Department of Parks and Wildlife. https://florabase.dpaw.wa.gov.au/

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 DPaW 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.