



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 4425/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: Norwest Sand & Gravel Pty Ltd

1.3. Property details

Property: Mining Lease 47/556
Local Government Area: Shire of Roebourne
Colloquial name:

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
0.89		Mechanical Removal	Installation of Explosives Magazine

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 26 October 2011

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 associations have been mapped for the whole of Western Australia. One Beard vegetation association has been mapped within the application area (GIS Database): 127: Bare areas; mud flats.	Norwest Sand and Gravel Pty Ltd has applied to clear up to 0.89 hectares of native vegetation for the installation of an explosives magazine. The application area is located approximately 2 kilometres south-east of Wickham.	Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994).	The vegetation condition was assessed by a botanist from West Ecology (2011). The vegetation condition was described using a scale based on Trudgen (1988) and has been converted to the corresponding condition from the Keighery (1994) scale.
A flora and vegetation survey was undertaken over Mining Lease 47/556 and several other nearby tenements by West Ecology in May 2011 (West Ecology, 2011). Five vegetation types were identified within the mining lease and two were mapped within the application area (West Ecology, 2011): Vegetation Type 11: Low open shrubland of <i>Acacia bivenosa</i> and <i>Indigofera monophylla</i> over hummock grassland on hills. Vegetation Type 13: Shrubland of <i>Acacia sabulosa</i> and <i>Acacia stellaticeps</i> over hummock and tussock grassland on plains.	Vegetation will be cleared using a bulldozer and front end loader.		

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 subregion of the Pilbara Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). This subregion is characterised by 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. pyriformis* and *A. inaequilatera* (CALM, 2002). Uplands are dominated by *Triodia hummock* grasslands and ephemeral drainage lines support *Eucalyptus victrix* or *Corymbia hamersleyana* woodlands (CALM, 2002). Samphire, *Sporobolus* and mangal occur on marine alluvial flats and river deltas (CALM, 2002).

The vegetation within the application area is broadly mapped as Beard vegetation association 127, which has approximately 98.5% of its pre-European extent remaining in the bioregion (Shepherd, 2009; GIS Database). A flora and vegetation survey of Mining Lease 47/556, including the application area, was conducted by West Ecology in May 2011 (West Ecology, 2011). A total of 89 taxa from 29 families and 59 genera were recorded within the tenement (West Ecology, 2011).

No Declared Rare Flora, Priority Flora, Threatened Ecological Communities or Priority Ecological Communities have been identified within the application area (West Ecology, 2011; GIS Database).

Three introduced flora species were recorded from the mining tenement containing the application area (West Ecology, 2011). These weed species were Buffel Grass (*Cenchrus ciliaris*), Kapok Bush (*Aerva javanica*) and Purslane (*Portulaca oleracea*) (West Ecology, 2011). 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 the Department of Environment and Conservation's (DEC) NatureMap revealed records of 143 bird, 28 mammal, 81 reptile and four amphibian species within a 20 kilometre radius of the application area (DEC, 2011). This search radius reflects a wide variety of fauna habitat types, including the coastline, that are not represented within the application area. The vegetation types present within the application area are common in the local area (West Ecology, 2011) and it is likely that the fauna habitats present also occur elsewhere within the locality.

The application area is not likely to comprise a greater diversity than similar areas within the locality.

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

Methodology CALM (2002)
DEC (2011)
Shepherd (2009)
West Ecology (2011)
GIS Database:
- Declared Rare and Priority Flora List
- IBRA WA (Regions - Subregions)
- Pre-European Vegetation
- 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

No targeted fauna surveys were undertaken within the application area. The two vegetation types recorded within the application area are common in the local area (West Ecology, 2011), therefore it is likely that the fauna habitats associated with these vegetation types are also common in the local area. Based on the vegetation survey and orthophotos of the application area, there are no significant habitat features such as caves, waterholes, significant creeklines or coastal dunes (West Ecology, 2011; GIS Database).

The application area may provide habitat for a variety of fauna species but the fauna habitat type is likely to be represented outside the application area. No conservation significant fauna have previously been recorded within the application area (GIS Database) and while the application area may provide foraging habitat for some conservation significant species it is unlikely to provide core habitat for any species. These factors, combined with the small size of the application area, indicate that the application area is unlikely to provide significant habitat for fauna indigenous to Western Australia.

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

Methodology West Ecology (2011)
GIS Database:
- Dampier DeGrey 85 cm Orthomosaic - Landgate 2001
- Hydrography, Linear
- Threatened Fauna

(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 Declared Rare Flora (DRF) within the application area (GIS Database). The nearest record of DRF is located approximately 210 kilometres south-east of the application area (GIS Database).

No DRF were recorded within the application area during the flora and vegetation survey conducted by West

Ecology in May 2011 (West Ecology, 2011).

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

Methodology West Ecology (2011)
GIS Database:
- Declared Rare and Priority Flora List

(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 160 kilometres south of the application area (GIS Database).

No TECs were identified during the flora and vegetation survey conducted by a West Ecology botanist and ecologist (West Ecology, 2011).

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

Methodology West Ecology (2011)
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 clearing application area falls within the Pilbara Interim Biogeographic Regionalisation for Australia (IBRA) bioregion in which approximately 99.9% of the pre-European vegetation remains (see table) (Shepherd, 2009; GIS Database). This gives it a conservation status of 'Least Concern' according to the Bioregional Conservation Status of Ecological Vegetation Classes (Department of Natural Resources and Environment, 2002).

The vegetation of the clearing application area has been mapped as Beard vegetation association 127 'Bare areas; mud flats' (GIS Database). According to Shepherd (2009) approximately 96.6% of Beard vegetation association 127 remains at the state level and approximately 98.5% remains at a bioregional level. This vegetation association would be given a conservation status of 'Least Concern' at both a state and bioregional level (Department of Natural Resources and Environment, 2002).

The vegetation under application is not a remnant of vegetation in an area that has been extensively cleared.

	Pre-European Area (ha)*	Current Extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves
IBRA Bioregion – Pilbara	17,804,193	17,785,001	~99.9	Least Concern	6.3
Beard Veg Assoc. – State					
127	742,644	717,069	~96.6	Least Concern	8.0
Beard Veg Assoc. – Bioregion					
127	180,401	177,739	~98.5	Least Concern	-

* Shepherd (2009)

** 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)
Shepherd (2009)
GIS Database:
- IBRA WA (Regions - Subregions)
- 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 watercourses or wetlands within the application area (GIS Database). One minor non-perennial watercourse has previously been mapped within the application area (GIS Database) but no watercourses were recorded during the flora and vegetation survey by West Ecology (2011).

Based on the above, the proposed clearing may be at variance to this Principle. However, ephemeral watercourses are common throughout the Pilbara (GIS Database) and the small area of proposed clearing is unlikely to have any significant impact on any watercourse or wetland.

Methodology West Ecology (2011)
GIS Database:
- 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 is within the Cheerawarra Land System (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). Most units of this land system are highly susceptible to wind erosion if vegetative cover is depleted (Van Vreeswyk et al., 2004). Potential impacts from erosion 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 Van Vreeswyk et al. (2004)
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 may be at variance to this Principle

The proposed clearing is not located within a Department of Environment and Conservation (DEC) conservation reserve or a Register of National Estate site (GIS Database). The nearest known DEC conservation areas are on islands off the Western Australian coast (GIS Database) and the application area is unlikely to provide any ecological linkage to these. The nearest mainland DEC conservation area is Millstream Chichester National Park, located approximately 52 kilometres south of the application area (GIS Database). At this distance the proposed clearing is unlikely to impact on the environmental values of the National Park.

The application area is within land reserved for "conservation, recreation and natural landscapes" under the Shire of Roebourne's Town Planning Scheme No. 8 (Department of Planning, 2000). The vegetation types identified within the application area are common locally and there are no significant habitat features such as caves, waterholes, significant creeklines or coastal dunes (West Ecology, 2011; GIS Database). While the proposed clearing will have an impact on the conservation area, the environmental values of the application area are not likely to be elevated above the substantial tracts of land also reserved under the Town Planning Scheme along the Dampier coastline. The small size of the proposed clearing (0.89 hectares) reduces the potential impact on the conservation area.

The proposed clearing poses a risk of spreading weeds into adjacent areas that are reserved for "conservation, recreation and natural landscapes". Potential impacts to the conservation area may be minimised by the implementation of a weed management condition.

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

Methodology Department of Planning (2000)
West Ecology (2011)
GIS Database:
- Dampier DeGrey 85 cm Orthomosaic - Landgate 2001
- DEC Tenure
- Hydrography, Linear
- 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

There are no permanent wetlands or watercourses within the application area (GIS Database). The soil and rock materials occurring on the mining tenement have a high level of permeability and this facilitates rapid infiltration of rainfall without substantial pooling (Norwest Sand and Gravel, 2010). The proposed clearing is unlikely to cause deterioration in the quality of surface water in the local area.

According to available databases the application area is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database). The nearest PDWSA is Roebourne Water Reserve, which is approximately 10 kilometres south of the application area (GIS Database).

The small area of the proposed clearing is unlikely to cause deterioration in the quality of underground water.

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

Methodology Norwest Sand and Gravel (2010)
GIS Database:
- 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 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 (0.89 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.

The soil and rock materials occurring on the mining tenement have a high level of permeability and this facilitates rapid infiltration of rainfall without substantial pooling (Norwest Sand and Gravel, 2010). The small amount of proposed clearing is not likely to increase the potential of flooding on a local scale.

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

Methodology Norwest Sand and Gravel (2010)
GIS Database:
- Hydrographic Catchments - Catchments

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

Comments

The clearing permit application was advertised on 27 June 2011 by the Department of Mines and Petroleum inviting submissions from the public. The application was subsequently readvertised on 18 July 2011 with an increase in the area applied to clear. A submission was received from the Shire of Roebourne stating an objection to the clearing. The objection was based on the application area occurring within land reserved for "conservation, recreation and natural landscapes" under the Shire of Roebourne's Town Planning Scheme No. 8 (Shire of Roebourne, 2011). This matter is addressed in Principle (h). The application was subsequently placed on hold awaiting further information from the application regarding this matter. Discussions between the applicant and the Shire of Roebourne resulted in the withdrawal of the objection to the clearing (Shire of Roebourne, 2011).

There is one Native Title Claim (WC99/14) 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 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 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 and Conservation 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.

Methodology Shire of Roebourne (2011)
GIS Database:
- Aboriginal Sites of Significance
- Native Title Claims - Determined by the Federal Court

4. References

- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Department of Conservation and Land Management, Western Australia.
- DEC (2011) NatureMap: Mapping Western Australia's Biodiversity. Department of Environment and Conservation. <http://naturemap.dec.wa.gov.au>. Accessed 6 September 2011.
- 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 Planning (2000) Shire of Roebourne Town Planning Scheme No. 8, Updated to Include Amd 19 gg 20/05/2011.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Norwest Sand and Gravel (2010) Mining Proposal M47/556. September 2010.
- Shepherd, D.P. (2009) 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.
- Shire of Roebourne (2011) Submissions Concerning CPS 4425/1. Email Correspondence to Assessing Officer, Native Vegetation Assessment Branch, Department of Mines and Petroleum, Received July, August 2011.
- Trudgen, M.E. (1988) A Report on the Flora and Vegetation of the Port Kennedy Area. Unpublished Report Prepared for Bowman Bishaw and Associates, West Perth.
- 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.
- West Ecology (2011) Draft Report - Flora and Vegetation Survey of Welcome Exploration Tenements M47/411, M47/524, M47/556, M47/442 and M45/1195. Report Prepared by West Ecology for Welcome Exploration Pty Ltd.

5. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government
CALM	Department of Conservation and Land Management (now DEC), Western Australia
DAFWA	Department of Agriculture and Food, Western Australia
DEC	Department of Environment and Conservation, Western Australia
DEH	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
DEP	Department of Environment Protection (now DEC), Western Australia
DIA	Department of Indigenous Affairs
DLI	Department of Land Information, Western Australia
DMP	Department of Mines and Petroleum, Western Australia
DoE	Department of Environment (now DEC), Western Australia
DoIR	Department of Industry and Resources (now DMP), Western Australia
DOLA	Department of Land Administration, Western Australia
DoW	Department of Water
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
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:

{Atkins, K (2005). *Declared rare and priority flora list for Western Australia, 22 February 2005*. Department of Conservation and Land Management, Como, Western Australia} :-

- P1** **Priority One - Poorly Known taxa:** taxa which are known from one or a few (generally <5) populations which are under threat, either due to small population size, or being on lands under immediate threat, e.g. road verges, urban areas, farmland, active mineral leases, etc., or the plants are under threat, e.g. from disease, grazing by feral animals, etc. May include taxa with threatened populations on protected lands. Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
- P2** **Priority Two - Poorly Known taxa:** taxa which are known from one or a few (generally <5) populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.

- P3 Priority Three - Poorly Known taxa:** taxa which are known from several populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in need of further survey.
- P4 Priority Four – Rare taxa:** taxa which are considered to have been adequately surveyed and which, whilst being rare (in Australia), are not currently threatened by any identifiable factors. These taxa require monitoring every 5–10 years.
- R Declared Rare Flora – Extant taxa (= Threatened Flora = Endangered + Vulnerable):** taxa which have been adequately searched for, and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.
- X Declared Rare Flora - Presumed Extinct taxa:** taxa which have not been collected, or otherwise verified, over the past 50 years despite thorough searching, or of which all known wild populations have been destroyed more recently, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.

{Wildlife Conservation (Specially Protected Fauna) Notice 2005} [Wildlife Conservation Act 1950] :-

- Schedule 1 Schedule 1 – Fauna that is rare or likely to become extinct:** being fauna that is rare or likely to become extinct, are declared to be fauna that is need of special protection.
- Schedule 2 Schedule 2 – Fauna that is presumed to be extinct:** being fauna that is presumed to be extinct, are declared to be fauna that is need of special protection.
- Schedule 3 Schedule 3 – Birds protected under an international agreement:** being birds that are subject to an agreement between the governments of Australia and Japan relating to the protection of migratory birds and birds in danger of extinction, are declared to be fauna that is need of special protection.
- Schedule 4 Schedule 4 – Other specially protected fauna:** being fauna that is declared to be fauna that is in need of special protection, otherwise than for the reasons mentioned in Schedules 1, 2 or 3.

{CALM (2005). Priority Codes for Fauna. Department of Conservation and Land Management, Como, Western Australia} :-

- P1 Priority One: Taxa with few, poorly known populations on threatened lands:** Taxa which are known from few specimens or sight records from one or a few localities on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, active mineral leases. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P2 Priority Two: Taxa with few, poorly known populations on conservation lands:** Taxa which are known from few specimens or sight records from one or a few localities on lands not under immediate threat of habitat destruction or degradation, e.g. national parks, conservation parks, nature reserves, State forest, vacant Crown land, water reserves, etc. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P3 Priority Three: Taxa with several, poorly known populations, some on conservation lands:** Taxa which are known from few specimens or sight records from several localities, some of which are on lands not under immediate threat of habitat destruction or degradation. The taxon needs urgent survey and evaluation of conservation status before consideration can be given to declaration as threatened fauna.
- P4 Priority Four: Taxa in need of monitoring:** Taxa which are considered to have been adequately surveyed, or for which sufficient knowledge is available, and which are considered not currently threatened or in need of special protection, but could be if present circumstances change. These taxa are usually represented on conservation lands.
- P5 Priority Five: Taxa in need of monitoring:** Taxa which are not considered threatened but are subject to a specific conservation program, the cessation of which would result in the species becoming threatened within five years.

Categories of threatened species (Environment Protection and Biodiversity Conservation Act 1999)

- EX Extinct:** A native species for which there is no reasonable doubt that the last member of the species has died.
- EX(W) Extinct in the wild:** A native species which:
 (a) is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or
 (b) has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
- CR Critically Endangered:** A native species which is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.
- EN Endangered:** A native species which:
 (a) is not critically endangered; and
 (b) is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.
- VU Vulnerable:** A native species which:
 (a) is not critically endangered or endangered; and

(b) is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.

CD

Conservation Dependent: A native species which is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.