



# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

Permit application No.: 6439/1  
Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: Norwest Sand and Gravel Pty Ltd

### 1.3. Property details

Property: Miscellaneous Licence 47/543  
Local Government Area: City of Karratha  
Colloquial name:

### 1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
14.657		Mechanical Removal	Sand mining and associated activities

### 1.5. Decision on application

Decision on Permit Application: Grant  
Decision Date: 5 March 2013

## 2. Site Information

### 2.1. Existing environment and information

#### 2.1.1. Description of the native vegetation under application

<b>Vegetation Description</b>	<p>Beard vegetation associations have been mapped for the whole of Western Australia and are useful to look at vegetation in a regional context. One Beard vegetation association has been mapped within the application area:</p> <p>157: Hummock grasslands, grass steppe; hard spinifex, <i>Triodia wiseana</i>.</p> <p>A flora, vegetation and fauna assessment was conducted over the application area in 2012 by West Ecology (West Ecology, 2012). Two vegetation associations were recorded within the application area, including:</p> <p><b>Vegetation Type 1:</b> <i>Acacia bivenosa</i> open shrubland over <i>Triodia epactia</i> and <i>Triodia wiseana</i> hummock grassland on low rolling hills; and</p> <p><b>Vegetation Type 3:</b> <i>Acacia coleii</i> var. <i>coleii</i> high shrubland over <i>Triodia epactia</i> and <i>Triodia wiseana</i> hummock grassland and <i>Cenchrus ciliaris</i> open tussock grassland in drainage lines.</p>
<b>Clearing Description</b>	<p>Norwest Sand and Gravel Pty Ltd (Norwest) proposes to clear up to 14.657 hectares within a total boundary of approximately 46 hectares for the purpose of sand mining and associated activities. The project is located approximately 34 kilometres north-east of Karratha, in the City of Karratha.</p>
<b>Vegetation Condition</b>	<p>Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994);</p> <p>To:</p> <p>Completely Degraded: (Keighery, 1994).</p>
<b>Comment</b>	<p>Vegetation condition was determined during the flora, vegetation and fauna assessment conducted by West Ecology (2012).</p>

### 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 within the Pilbara Interim Biogeographic Regionalisation of Australia (IBRA) region and the Chichester subregion (GIS Database). The Pilbara region represents a transitional zone between semi-arid and tropical climates (Kendrick, 2001). The Chichester IBRA subregion is comprised of undulating Archaean granite and basalt plains supporting a shrub steppe characterised by *Acacia inaequilatera* over *Triodia wiseana* (formerly *Triodia pungens*) hummock grasslands, and basalt ranges that support *Eucalyptus leucophloia* tree steppes (Kendrick and McKenzie, 2001).

The vegetation within the application area is mapped as belonging to Beard association 157 (GIS Database). A flora, vegetation and fauna assessment was conducted by West Ecology in 2012 (West Ecology, 2012). A total of two vegetation associations were recorded within the application area, which ranged from Good to Completely Degraded condition (West Ecology, 2012). None of the vegetation associations represented a Threatened Ecological Community (TEC) or Priority Ecological Community (PEC) (West Ecology), which is consistent with available databases (GIS Database).

A total of 80 flora taxa comprising 28 families and 55 genera were recorded by West Ecology (2012) within the tenement, of which the application area comprises approximately one third. Compared to other flora surveys conducted in the surrounding region, the current survey findings indicate that flora diversity may be slightly higher than surveyed areas in the surrounding region (West Ecology, 2012). However, this may be attributed to an increased sampling effort per hectare compared to previous surveys. No Threatened or Priority flora species were recorded during the survey (West Ecology, 2012).

No fauna surveys have been conducted over the application area. Using a 20 kilometre search radius, a search of the Naturemap database returned records for 167 avian, 39 mammal, 99 reptile, five amphibian and 12 invertebrate species (DPaW, 2015). Excluding marine species, these included seven Threatened species and one Schedule 3 species listed under the *Wildlife Conservation Act 1950*, one Priority 1 species, three Priority 3 species, and 25 bird species protected under International Agreement (DPaW, 2015).

While there is a moderate level of fauna diversity on a landscape scale, the application area is surrounded by and includes previously disturbed areas, which greatly reduces that potential for the proposed clearing of 14.657 hectares to represent an area of high biodiversity on a local or regional scale. Furthermore, the proponent has advised that largely undisturbed areas within the application boundary that are most likely to contribute to biodiversity will be avoided (Austwide Mining, 2015).

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

**Methodology**      Austwide Mining (2015)  
DPaW (2015)  
Kendrick (2001)  
Kendrick and McKenzie (2001)  
West Ecology (2012)  
GIS Database:  
- IBRA WA (Regions - Sub Regions)  
- 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**

A fauna survey has not been conducted over the application area. Based on the flora survey conducted by West Ecology (2012) and aerial imagery (GIS Database), the application area appears to include two fauna habitat types, including:

- Hummock grassland on low rolling hills; and
- Minor drainage line.

While a moderate level of disturbance has occurred in the region surrounding the application area, the habitat types present within the proposed clearing are represented outside the application boundary (GIS Database).

A search of the Naturemap database indicates that a total of 36 conservation significant fauna species have the potential to occur in the application area and surrounds (DPaW, 2015). Thirty of these are Threatened or Migratory bird species, which are highly mobile and unlikely to be dependent on the application area for foraging or shelter.

The Northern Quoll (*Dasyurus hallucatus*; Schedule 1) has been recorded in the wider area over the last five years (DPaW, 2015). This species may use the application area for foraging, but the application area does not comprise suitable denning habitat. Furthermore, habitat within the application area is not considered to be high

quality foraging habitat for this species, due to pre-existing habitat disturbance both within and surrounding the application area (West Ecology, 2011; GIS Database). Therefore, the Northern Quoll is highly unlikely to be significantly dependent on habitat within the proposed clearing area. Similarly, bat species including the Priority 1 Little North-western Mastiff Bat (*Mormopterus loriae subsp. cobourgiana*) occur in the area but are unlikely to be significantly dependent on habitat within the application area due to the absence of suitable roosting habitat, the restricted size of the proposed clearing, and the occurrence of pre-existing disturbance within the application boundary.

Two conservation significant reptiles may occur within the application area, including *Lerista neviniae* (Schedule 1), and *Notoscincus butleri* (Lined Soil-crevice Skink; Priority 4). *Lerista neviniae* is the only restricted endemic reptile species known from the Roebourne Plain subregion (Doughty et al., 2011). This species occurs on coastal sands between Karratha and Roebourne, and has also been recorded adjacent to disturbed areas (Doughty et al., 2011). *Notoscincus butleri* has a moderately broad distribution through the western Pilbara region, and is unlikely to be impacted by the proposed clearing.

The proponent has advised that following liaison with the City of Karratha, a buffer zone will be maintained between the proposed disturbance footprint and the application boundary (Austwide Mining, 2015). In total, this area includes approximately 31.3 hectares of the application area that will not be cleared. Habitat within these buffer areas appears to comprise sloping hills, which may provide habitat for numerous conservation significant fauna including the skink *Lerista neviniae*. The implementation of a restricted clearing condition is recommended to reflect this commitment.

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

**Methodology** Austwide Mining (2015)  
Doughty et al. (2011)  
DPaW (2015)  
West Ecology (2012)  
GIS Database  
- Imagery

**(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, vegetation and fauna assessment conducted by West Ecology (2012).

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

**Methodology** West Ecology (2012)

**(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**

According to available databases, there are no known Threatened Ecological Communities (TECs) within the application area (GIS Database). Similarly, the vegetation survey conducted by West Ecology (2012) did not identify any of the vegetation recorded as being a TEC.

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

**Methodology** West Ecology (2012)  
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 association 157 (GIS Database). Over 90% of this 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).

	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	8.4
Beard veg assoc. - State					
157	502,729	499,312	~99.3	Least Concern	18.2
Beard veg assoc. - Bioregion					
157	199,832	198,409	~99.3	Least Concern	5.7

\* 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:  
- Imagery  
- 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 is at variance to this Principle**

Vegetation type 3 is associated with drainage lines and is therefore considered to be riparian in nature (West Ecology, 2012). A total of 1.6 hectares of this vegetation type occurs within the tenement (West Ecology, 2012). However, drainage lines within the application area are minor and seasonal, and highly limited in extent, such that the proposed clearing is not likely to impact any downstream vegetation. Furthermore, the proponent has advised that the proposed clearing will avoid a majority of this riparian vegetation type (Austwide Mining, 2015).

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

**Methodology** Austwide Mining (2015)  
West Ecology (2012)

**(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**

The application area lies over the Ruth and Cheerawarra land systems (GIS Database). The Ruth land system is not considered to be susceptible to erosion; however, the Cheerawarra land system is highly susceptible to wind erosion following the removal of vegetation (Van Vreeswyk et al., 2004). Erosion within the application area as a result of the proposed clearing may be minimised by the implementation of a staged clearing condition.

A total of three introduced flora species were recorded within the tenement (West Ecology, 2012). Buffel Grass (*Cenchrus ciliaris*) was the most common weed recorded, and was present in 70% of survey quadrats (West Ecology, 2012). Potential land degradation 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 (2012)  
GIS Database:  
- Rangelands 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 managed by the Department of Parks and Wildlife (GIS Database). The nearest conservation area is the Murujuga National Park, which is located approximately 36.5 kilometres west of the application area (GIS Database). From this distance, the proposed clearing is not likely to impact the environmental values of the Murujuga National Park.

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

**Methodology** GIS Database:  
- DPaW 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 proclaimed 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 the purposes other than domestic and/or stock watering is subject to licence by the Department of Water.

A total of three minor, non-perennial watercourses (drainage lines) occur within the application area (GIS Database). Of these, only one is within the proposed disturbance footprint, whereby the disturbance footprint is located on the upstream end of this drainage line (Austwide Mining, 2015). While the entire watercourse is relatively short, there is potential for the proposed clearing to increase sedimentation within the drainage line during periods of inundation via water erosion. However, the level of sedimentation is unlikely to be significant, and any effects will be highly localised. Sedimentation of surface water may be minimised by the implementation of a staged clearing condition.

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 with this Principle.

**Methodology** Austwide Mining (2015)  
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**

Mean annual rainfall in Cossack (approximately 2 kilometres from the application area) is approximately 315 millimetres (BoM, 2015). The Pilbara region represents a transitional zone between semi-arid and tropical climates, and receives a majority of its rainfall during the summer months (Kendrick, 2001; CALM, 2002). While some temporary flooding may occur following heavy rainfall, it is likely to occur on a highly localised scale. The proposed clearing is unlikely to significantly alter the intensity of flooding within the application area or surrounding areas.

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 (14.7 hectares) in relation to the size of the catchment area (7,443 hectares), the proposed clearing is not likely to increase the potential for flooding in this region (GIS Database).

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

**Methodology** BoM (2015)  
CALM (2002)  
Kendrick (2001)  
GIS Database:  
- Groundwater Salinity, Statewide  
- Hydrographic Catchments - Catchments

## Planning instrument, Native Title, RIWI Act Licence, EP Act Licence, Works Approval, Previous EPA decision or other matter.

### Comments

There are no native title claims over the application area (GIS Database). 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 9 February 2015 by the Department of Mines and Petroleum inviting submissions from the public. There were no submissions received.

### Methodology

GIS Database:

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

## 4. References

- Austwide Mining (2015) Information provided to the assessing officer on 3 February 2015. Austwide Mining Title Management Pty Ltd.
- BoM (2015) Climate Statistics for Australian Locations. Climate Statistics for Australian Locations. A Search for Climate Statistics for Cossack, Australian Government Bureau of Meteorology.  
[http://www.bom.gov.au/climate/averages/tables/cw\\_004054.shtml](http://www.bom.gov.au/climate/averages/tables/cw_004054.shtml) (Accessed February 2015).
- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Department of Conservation and Land Management.
- 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.
- Doughty, P., Rolfe, J. K., Burbridge, A. H., Pearson, D. J., & Kendrick, P. G. (2011). Herpetological assemblages of the Pilbara biogeographic region, Western Australia: ecological associations, biogeographic patterns and conservation. *Records of the Western Australian Museum, Supplement*, 78, 315-341.
- DPaW (2015) NatureMap: Mapping Western Australia's Biodiversity. Department of Parks and Wildlife.  
<http://naturemap.dpaw.wa.gov.au/default.aspx> (Accessed February 2015).
- 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 McKenzie, N (2001) Pilbara (PIL1 – Chichester 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. and Hennig, P. (2004) *An Inventory and Condition Survey of the Pilbara Region, Western Australia*, WA Department of Agriculture Technical Bulletin No. 92.
- West Ecology (2012) Flora and Vegetation Survey of Norwest Sand and gravel Tenement L47/543. Unpublished report prepared by West Ecology for Norwest Sand and Gravel, October 2012.

## 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 *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 *Calyptorhynchus 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.