



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 7720/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Artemis Resources Limited

1.3. Property details

Property: Mining Lease 47/127
Local Government Area: City of Karratha
Colloquial name: Nickol River Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
18		Mechanical Removal	Mineral Production

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 5 October 2017

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. One Beard vegetation association has been mapped over the application area (GIS Database):

Beard vegetation association 589: Mosaic: Short bunch grassland - savanna / grass plain (Pilbara) / Hummock grasslands, grass steppe; soft spinifex.

A Level 1 flora and vegetation survey was conducted over the majority of the application area and included adjacent areas. The following vegetation types were identified within the application area (Astron, 2013):

Triodia angusta hummock grassland

Triodia angusta hummock grassland with *Eragrostis xerophila* on loams with scattered to open shrubland of *Acacia bivenosa*/ *Acacia xiphophylla*. There is *Cenchrus ciliaris* on disturbed areas.

Cenchrus ciliaris tussock grassland

Cenchrus ciliaris tussock grassland with patchy *Eragrostis xerophila* over open herbs of *Scleroleana* ssp and scattered *Acacia pyrifolia*, *A.bivenosa*.

Eragrostis xerophila tussock grassland

Acacia xiphophylla scattered to open shrubland over *Eragrostis xerophila* tussock grassland.

Clearing Description

Nickol River Project
Artemis Resources Limited proposes to clear up to 18 hectares of native vegetation within a total boundary of approximately 18.4 hectares, for the purpose of mineral production. The project is located approximately 5 kilometres east of Karratha in the City of Karratha.

Vegetation Condition

Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994).

To:

Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994).

Comment

The vegetation condition was derived from flora and vegetation surveys conducted by Astron Environmental Services Pty Ltd in 2013 and via the use of aerial imagery.

3. Assessment of application against clearing principles

Comments

The proposed clearing of up to 18 hectares of native vegetation is required in order to conduct small scale gold mining activities at the Nickol River Project area. As required by existing tenement conditions, the proponent has committed to rehabilitating all cleared areas by backfilling, contouring, ripping and spreading topsoil. A mining

proposal associated with the proposed clearing is yet to be approved. However, it is expected that rehabilitation activities will also be completed as required under any future Mining Act approvals.

The application area occurs within the Roebourne subregion of the Pilbara IBRA bioregion (GIS Database). This sub-region is characterised as quaternary alluvial and older colluvial coastal and subcoastal plains with a grass savannah of mixed bunch and hummock grasses and dwarf shrub steppe of *Acacia stellaticeps* or *A. pyrifolia* and *A. inaequilatera*. 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 Level 1 flora and vegetation survey was conducted over the majority of the application area and included adjacent areas. Disturbed areas were observed within the application area and remnant pockets of undisturbed vegetation alternating with vegetation in various stages of regrowth are a feature of the application area and surrounding areas (Astron, 2013). Based on aerial imagery, survey information and images provided by the proponent, the majority of the vegetation proposed to be cleared appears to be in 'Very Good' (Keighery, 1994) although mining disturbance is evident throughout (GIS Database).

The mapped Beard vegetation association (589) is well represented and retains over 99% of its original extent within the state and bioregion (Government of Western Australia, 2016) and large amounts of native vegetation remain in the local area and region (GIS Database).

No Threatened flora species or communities of conservation significance (i.e. Threatened Ecological Communities or Priority Ecological Communities) are known to occur within the local area (20 kilometre radius) (DPaW, 2017; GIS Database) and no communities were identified during the flora survey that were analogous to any TECs or PECs (Astron, 2013).

During a Level 1 flora survey of the application area and surrounding area, no Threatened or Priority listed flora species were identified, although two species of Priority flora were recorded from nearby tenements; *Stackhousia clementii* (P3) and *Rhynchosia bungarensis* (P4). *Stackhousia clementii* is known to occur on skeletal soils and/or sandstone hills (Western Australian Herbarium, 1998-) and was found growing in association with small drainage soak and grassland fringing the saline flat (Astron, 2013). The habitats where *Stackhousia clementii* was recorded do not persist within the application area. *Rhynchosia bungarensis* is relatively well represented in the region (Astron, 2013), is known to occur in association with pebbly, shingly coarse sand amongst boulders (Western Australian Herbarium, 1998-) and was found in numerous locations in vegetation associated with rock piles.

Flora surveys found adjacent areas to contain an unusually large number of species, however the majority of these were not recorded or are not likely to occur within the application area due to the absence of rivers, mudflaps or rocky outcrops that are present in adjacent areas (Astron, 2013).

There are many fauna species of conservation significance known within the local area (20 kilometre radius) (Artemis Resources, 2017; DPaW, 2017; GIS Database). The majority of these are either marine or migratory species that may frequent the application area on occasion, but are not likely to dependant on the vegetation within the application area as essential habitat. Unique and/or restricted habitats that may offer suitable habitat for the recorded Northern Quoll (*Dasyurus hallucatus* – EN) were not identified within the application area. The skink species Nevins slider (*Lerista neviniae* – EN), Short-tailed mouse (*Leggadina lakedownensis* – P4), lined soil-crevice skink (*Notoscincus butleri* – P4) and the Western Pebble-mound mouse, (*Pseudomys chapmani* – P4) are also known from the local area but prefer alternative habitat type or can easily vacate the area during clearing activities. In addition to this, habitats present within the application area are considered common and widespread (Astron, 2013)

Given the above, significant impacts to flora and fauna species of conservation significance are considered unlikely.

No watercourse or wetlands are mapped within the application area (GIS Database); however, the application area is situated within close proximity to areas that are subject to inundation (GIS Database). Given the environmental setting and climate, the proposed clearing of up to 18 hectares of native vegetation with an arid environment is considered unlikely to have any measureable impacts on surface or groundwater quality, increase erosion risks or alter existing flooding regimes.

Introduced flora species (weeds) such as *Cenchrus ciliaris* (buffel grass), *Cenchrus setiger* (birdwood grass), *Malvastrum americanum* (spiked malvastrum), *Vachellia farnesiana* (mimosa bush) and *Aerva javanica* (Kapok) are known from the surrounding area (Astron, 2013). Clearing activities have the potential to spread existing weed species, and possibly introduce new species to the environment, which may negatively impact on the biodiversity of the local area. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

Due to the relatively small size of the proposed clearing and the large amount of remaining vegetation in the surrounding area, significant environmental impacts are unlikely to result from the proposed clearing.

The application has been assessed against the clearing principles, planning instruments and other matters in accordance with s.51O of the *Environmental Protection Act 1986*, and the proposed clearing is not at variance to Principle (e) and is not likely to be at variance with the remaining principles.

- Methodology**
- Artemis Resources (2017)
 - Astron (2013)
 - CALM (2002)
 - DPaW (2017)
 - Government of Western Australia (2016)
 - Keighery (1994)
 - Western Australian Herbarium (1998-)
- GIS Database:
- DPaW Tenure
 - Hydrography, linear
 - IBRA Australia
 - Imagery
 - Pre-European Vegetation
 - Public Drinking Water Source Areas (PDWSAs)
 - Threatened and Priority Flora List
 - Threatened and Priority Ecological Communities Buffers
 - Threatened and Priority Ecological Communities Boundaries

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

Comments

There is one native title claim over the application area (WC1999/014) (DPLH, 2017). This claim has been registered with the National Native Title Tribunal on behalf of the claimant groups. However, the mining tenements have 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*.

According to available databases, there are no registered Sites of Aboriginal Significance located in the vicinity of the application area; however the area has not been surveyed (DPLH, 2017). 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 Water and Environmental Regulation and the Department of Biodiversity Conservation and Attractions, 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 21 August 2017 by the Department of Mines, Industry Regulation and Safety inviting submissions from the public. One submission was received which drew attention to general clearing requirements and tenement conditions.

- Methodology** DPLH (2017)

4. References

- Artemis Resources (2017) Nickol River Project Native Vegetation Clearing Permit Application, Supporting Information for CPS 7720/1. Artemis Resources Limited, West Perth, Western Australia, August 2017.
- Astron (2013) Karratha Earthmoving Tenements M47/435, M47/127, M47/1421, M47/1401, M47/577, M47/455, M47/1491 Flora and Vegetation Survey. Report prepared for Karratha Earthmoving Pty Ltd by Astron Environmental Services, September 2013.
- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Department of Conservation and Land Management.
- DPaW (2017) NatureMap, Department of Parks and Wildlife (now Department of Biodiversity Conservation and Attractions) <<http://naturemap.dpaw.wa.gov.au>> Accessed September 2017.
- DPLH (2017) Aboriginal Heritage Inquiry System, Department of Planning, Lands and Heritage, Perth, Western Australia <<http://maps.daa.wa.gov.au>> Accessed September 2017.
- Government of Western Australia (2016) 2016 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of October 2016. 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.
- Western Australian Herbarium (1998-) FloraBase—the Western Australian Flora. Department of Biodiversity, Conservation and Attractions. <https://florabase.dpaw.wa.gov.au/>

5. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government
DAA	Department of Aboriginal Affairs, Western Australia (now DPLH)
DAFWA	Department of Agriculture and Food, Western Australia (now DPIRD)
DBCA	Department of Biodiversity Conservation and Attractions, Western Australia
DEC	Department of Environment and Conservation, Western Australia (now DBCA and DWER)
DEE	Department of the Environment and Energy, Australian Government
DER	Department of Environment Regulation, Western Australia (now DWER)
DMIRS	Department of Mines, Industry Regulation and Safety, Western Australia
DMP	Department of Mines and Petroleum, Western Australia (now DMIRS)
DPIRD	Department of Primary Industries and Regional Development, Western Australia
DPLH	Department of Planning, Lands and Heritage, Western Australia
DRF	Declared Rare Flora
DoE	Department of the Environment, Australian Government (now DEE)
DoW	Department of Water, Western Australia (now DWER)
DPaW	Department of Parks and Wildlife, Western Australia (now DBCA)
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities (now DEE)
DWER	Department of Water and Environmental Regulation, Western Australia
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
TEC	Threatened Ecological Community

Definitions:

{DPaW (2017) Conservation Codes for Western Australian Flora and Fauna. Department of Parks and Wildlife, Western Australia}:-

- T** **Threatened species:**
Published as Specially Protected under the *Wildlife Conservation Act 1950*, listed under Schedules 1 to 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora (which may also be referred to as Declared Rare Flora).
- Threatened fauna** is that subset of ‘Specially Protected Fauna’ declared to be ‘likely to become extinct’ pursuant to section 14(4) of the Wildlife Conservation Act.
- Threatened flora** is flora that has been declared to be ‘likely to become extinct or is rare, or otherwise in need of special protection’, pursuant to section 23F(2) of the Wildlife Conservation Act.
- The assessment of the conservation status of these species is based on their national extent and ranked according to their level of threat using IUCN Red List categories and criteria as detailed below.
- CR** **Critically endangered species**
Threatened species considered to be facing an extremely high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 1 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.
- EN** **Endangered species**
Threatened species considered to be facing a very high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 2 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.
- VU** **Vulnerable species**
Threatened species considered to be facing a high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 3 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.
- EX** **Presumed extinct species**
Species which have been adequately searched for and there is no reasonable doubt that the last individual has died. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in

Schedule 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Presumed Extinct Fauna and Wildlife Conservation (Rare Flora) Notice for Presumed Extinct Flora.

- IA Migratory birds protected under an international agreement**
Birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and the Bonn Convention, relating to the protection of migratory birds. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 5 of the Wildlife Conservation (Specially Protected Fauna) Notice.
- CD Conservation dependent fauna**
Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 6 of the Wildlife Conservation (Specially Protected Fauna) Notice.
- OS Other specially protected fauna**
Fauna otherwise in need of special protection to ensure their conservation. Published as Specially Protected under the *Wildlife Conservation Act 1950*, in Schedule 7 of the Wildlife Conservation (Specially Protected Fauna) Notice.
- P Priority species**
Species which are poorly known; or
Species that are adequately known, are rare but not threatened, and require regular monitoring. Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.
- P1 Priority One - Poorly-known species:**
Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.
- P2 Priority Two - Poorly-known species:**
Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.
- P3 Priority Three - Poorly-known species:**
Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations 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 locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.
- 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 are close to qualifying for Vulnerable, but are not listed as Conservation Dependent.
(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

Principles for clearing native vegetation:

- (a) Native vegetation should not be cleared if it comprises a high level of biological diversity.
- (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.
- (c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare 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.

- (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.
- (f)** Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.
- (g)** Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.
- (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.
- (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.
- (j)** Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.