



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 7422/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Echo Resources Limited**

1.3. Property details

Property: Mining Lease 53/1099
Miscellaneous Licence 53/203
Local Government Area: Shire of Wiluna

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 16 February 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. Three Beard vegetation associations are located within the application area (GIS Database):

- Beard vegetation association 18:** Low woodland; mulga (*Acacia aneura*);
- Beard vegetation association 389:** Succulent steppe with open low woodland; mulga over saltbush; and
- Beard vegetation association 560:** Mosaic: Shrublands; bowgada scrub / Succulent steppe; samphire.

A Level 1 flora and vegetation survey has been conducted within the application area. Three vegetation communities were identified (Botanica, 2016):

- Open scrub of *Acacia incurvaneura* over dwarf scrub of *Cratystylis subspinescens*/*Maireana pyramidata*/*Maireana georgei* on clay-loam floodplain/ stony flat
- Low woodland of *Acacia incurvaneura* over low scrub of *Eremophila linearis*/*Senna* sp. Meekatharra (E. Bailey 1-26) and dwarf scrub of *Maireana triptera* on clay-loam plain/ stony flat
- Low woodland of *Acacia caesaneura*/*A. incurvaneura* over low scrub of *Eremophila* spp. and low grass of *Eragrostis eriopoda*/ mid-dense hummock grass of *Triodia irritans* on sand-loam plain

Note: The majority of the application area (~98%) is comprised of the low woodland vegetation community listed as number 3 above.

Clearing Description Julius Project
Echo Resources Limited proposes to clear up to 406 hectares of native vegetation within a total boundary of approximately 406 hectares, for the purpose of mineral production. The project is located approximately 70 kilometres south-east of Wiluna in the Shire of Wiluna.

Vegetation Condition Very Good: Vegetation structure altered, obvious signs of disturbance (Keighery, 1994);

To:

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

Comment The vegetation condition was derived from a flora and vegetation survey conducted by Botanica Consulting (2016).

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 Eastern Murchison (MUR1) subregion of the Murchison Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). This subregion is characterised by its internal drainage, and extensive areas of elevated red desert sandplains with minimal dune development. Salt lake systems associated with the occluded Paleodrainage system. Broad plains of red-brown soils and breakaway complexes as well as red sandplains. Vegetation is dominated by Mulga Woodlands often rich in

ephemerals; hummock grasslands, saltbush shrublands and *Halosarcia* shrublands (CALM, 2002).

The proposed clearing will allow for the construction of two open pits, a waste rock landform, haul road/access roads and other associated infrastructure such as an office site, workshop, laydown and topsoil stockpiles.

A Level 1 flora and vegetation survey was conducted over the application area by Botanica Consulting in May 2016. Two of the three vegetation types present within the application area were considered to be in a 'Good' condition; the remaining vegetation type was rated as being in 'Very Good' condition (Botanica, 2016; Keighery, 1994). None of the vegetation communities or habitats recorded within the application were considered to be unique or restricted. The vegetation types present within the application area appear to be widespread and common in surrounding areas (Botanica, 2016).

No Threatened or Priority flora species were identified within the application area (Botanica, 2016) and no Threatened Ecological Communities (TECs) or Priority Ecological Communities (PECs) are known within the application area (Botanica, 2016; GIS Database). Available databases show that no TECs or PECs occur within a 50 kilometre radius of the application area (GIS Database).

No introduced flora species (weeds) have been identified within the application area (Botanica, 2016). However, clearing activities have the potential to result in the introduction or spread of weed species, 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.

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

Methodology CALM (2002)
Botanica (2016)

GIS Database:
- IBRA WA (Regions - Sub Regions)
- 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**

A Level 1 reconnaissance fauna survey was conducted over the application area during May 2016 by Botanica Consulting. Two broad habitats were identified:

- Clay-Loam Plain: Acacia Shrublands and Acacia Forests and Woodlands
- Sand-Loam Plain: Acacia Forests and Woodlands.

Although no fauna species of conservation significance were recorded within the application area during the Level 1 fauna survey, the habitats present have the potential to be utilised by the Peregrine Falcon (*Falco peregrinus* – OS), Rainbow Bee-eater (*Merops ornatus* – IA), Fork Tailed Swift (*Apus pacificus* - IA) and the Brush-tailed mulgara (*Dasyercus blythi* – P4).

The fauna habitats present within the application area appear to be widespread and common in surrounding areas. There are no habitat types present within the application area that could be considered necessary for the continued survival of local fauna species, including species of conservation significance, and the proposed clearing is not anticipated to impact on the conservation status of any of the abovementioned fauna species (Botanica, 2016), known from the area.

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

Methodology Botanica (2016)

(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, no species of Threatened flora are known within a 20 kilometre radius of the application area (DPaW, 2017; GIS Database) and no Threatened flora species were recorded within the application area during the Level 1 flora survey (Botanica, 2016).

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

Methodology Botanica (2016)
DPaW (2017)

GIS Database
- Threatened 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

According to available datasets, there are no known Threatened Ecological Communities (TECs) within the application area (GIS Database), no TECs were recorded within the application area during the flora survey (Botanica, 2016) and no TECs have been recorded within a 50 kilometre radius of the application area (GIS Database).

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

Methodology Botanica (2016)

GIS Database:

- Threatened and Priority Ecological Communities Buffers
- Threatened and Priority Ecological Communities Boundaries

(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 occurs within the Murchison Interim Biogeographic Regionalisation of Australia (IBRA) bioregion, in which approximately 99% of the pre-European vegetation remains (see table below) (Government of Western Australia, 2015; GIS Database).

The vegetation within the application area has been mapped as Beard vegetation associations 18, 389 and 560 (GIS Database). As the below table illustrates, all Beard vegetation association are well represented, retaining at least 99% of pre-European vegetation within the State and the bioregion (Government of Western Australia, 2015). Given the amount of vegetation remaining in the local area and bioregion, the vegetation proposed to be cleared is not considered to represent a remnant within an extensively cleared area.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in DPaW Managed Lands
IBRA Bioregion - Murchison	28,120,587	28,044,823	99.7	Least Concern	~ 7.8
Beard veg assoc. - State					
18	19,892,305	19,843,727	99.7	Least Concern	~ 6.6
389	642,357	640,469	99.7	Least Concern	~ 3.6
560	84,725	84,725	100	Least Concern	0.0
Beard veg assoc. - Bioregion					
18	12,403,172	12,363,252	99.7	Least Concern	~ 4.9
389	493,977	492,089	99.6	Least Concern	~ 4.6
560	84,725	84,725	100	Least Concern	0.0

* Government of Western Australia (2015)

** 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 (2015)**

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 is not likely to be at variance to this Principle

There are no major wetlands or watercourses mapped or recorded within the application area and no riparian vegetation was identified within the application area during a Level 1 flora survey (Botanica, 2016; GIS

Database). One minor non-perennial watercourse crosses the western end of the application area (GIS Database), where a road is to be constructed for access/haulage. Impacts are not anticipated to be significant and can be managed via the installation of culverts.

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

Methodology Botanica (2016)

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 is not likely to be at variance to this Principle**

Three land systems have been mapped over the application area. The Barwidgee, Violet and Yanganoo land system (Botanica, 2016). The majority of the application area falls within the Violet and Yanganoo land systems, which are generally not susceptible to soil erosion (DAFWA, 1994).

Given the scale of the proposed clearing, localised erosion may occur if cleared areas are left open for extended periods. Potential land degradation issues that may result from the proposed clearing may be minimised by the implementation of a stage clearing condition.

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

Methodology Botanica (2016)
DAFWA (1994)

(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 is not located within or adjacent to any conservation areas (GIS Database). The closest conservation area (Wanjarri Nature Reserve) is situated approximately 50 kilometres northwest of the application area (Botanica, 2016; GIS Database).

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

Methodology Botanica (2016)

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 is not located within a Public Drinking Water Source Area (GIS Database).

The application area is located within an arid environment (CALM, 2002); with an average annual rainfall of 260 millimetres (data taken from Wiluna recording station) and an evaporation rate that far exceeds this figure (BoM, 2017). There are no major wetlands or watercourses located within the application, with only a minor non-perennial watercourse intersecting the western end of the application area, where clearing is required for an access/haul road. This watercourse flows into a small chain of non-perennial lakes, however potential surface water flows will be managed by the use of culverts and significant impacts are not anticipated. Surface water quality is not expected to deteriorate as a result of the proposed clearing.

Groundwater salinity within the application ranges from 1,000 – 7,000 milligrams/Litre Total Dissolved Solids (TDS) and is considered brackish to slightly saline (GIS Database). Given existing groundwater conditions, and the large amount of native vegetation remaining in the local area, the proposed clearing is unlikely to result in a deterioration of the groundwater quality.

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

Methodology BoM (2017)
CALM (2002)

GIS Database:
- Groundwater Salinity, Satewide
- 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

The soils of the application area are predominately composed of shallow stony earthy loams (Northcote, 1960-68; GIS Database). The harder alkaline and hard neutral red soils (which could hold water) occur over parts of the application area that will be used for an access/haul road (Northcote, 1960-68; GIS Database).

Given the high evaporation rate of the local area (BoM, 2017) and that approximately 370 hectares of the application area occurs where stony soils are present, waterlogging and flooding related issues are unlikely to result from the proposed clearing.

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

Methodology BoM (2017)
Northcote et al. (1960-68)

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

Comments

There are two native title claims over the application area (WC1999/204 and WR2016/001) (DAA, 2017). 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*.

According to available databases, there are no registered Sites of Aboriginal Significance located in the area applied to clear (DAA, 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 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 January 2017 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received.

Methodology DAA (2017)

4. References

- Botanica (2016) Julius Project Level 1 Flora & Fauna Survey. Report prepared for Echo Resources Limited by Botanica Consulting, July 2016
- BoM (2017) Climate Statistics for Australian Locations. A Search for Climate Statistics, Australian Government Bureau of Meteorology. <<http://www.bom.gov.au>>.
- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Department of Conservation and Land Management.
- DAA (2017) Aboriginal Heritage Inquiry System, Department of Aboriginal Affairs, Perth, Western Australia <<http://maps.dia.wa.gov.au>> Accessed February 2017.
- DAFWA (1994) *Technical Bulletin: An inventory and condition survey of the north-eastern Goldfields Western Australia (No. 87)*, Department of Agriculture WA, 1994.
- 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.
- DPaW (2017) NatureMap, Department of Parks and Wildlife <<http://naturemap.dec.wa.gov.au>> Accessed February 2017.
- Government of Western Australia (2015) 2015 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of June 2014. 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.
- Northcote, K. H. with Beckmann G G, Bettenay E., Churchward H. M., van Dijk D. C., Dimmock G. M., Hubble G. D., Isbell R. F., McArthur W. M., Murtha G. G., Nicolls K. D., Paton T. R., Thompson C. H., Webb A. A. and Wright M. J. (1960-68): 'Atlas of Australian Soils, Sheets 1 to 10, with explanatory data'. CSIRO and Melbourne University Press: Melbourne.

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
TEC	Threatened Ecological Community

Definitions:

{DPaW (2015) 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.