



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 6706/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Western Areas Limited

1.3. Property details

Property: Mining Lease 77/467
Local Government Area: Shire of Kondinin
Colloquial name: Cross Roads Project

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 1 October 2015

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description

The clearing permit application area has been broadly mapped as Beard vegetation association:
511: Medium woodland; salmon gum & morel.

A flora and vegetation survey conducted by PEK Enviro (PEK, 2015) over the application area identified the following six vegetation types:

Belw1 – Low Woodland dominated by regrowth (from 1994 fire) *Eucalyptus transcontinentalis* over Open Low Scrub to Low Scrub dominated by species such as *E. transcontinentalis*, *E. eremophila* subsp. *eremophila* and *E. pileata* over Dwarf Scrub to Low Heath dominated by mixed shrub species including *Melaleuca adnata*, *M. lateriflora*, *M. sheathiana*, *M. pauperiflora* subsp. *pauperiflora* and *Daviesia nematophylla*, *Acacia deficiens*, *A. intricata* and *Wilsonia humilis*.

Belw2 – Very Open Shrub Mallee dominated by *Eucalyptus pileata* over Heath to Open Dwarf Scrub dominated by *Callistemon phoeniceus* and *Melaleuca acuminata* subsp. *acuminata*. Other species in this group included *Eremophila labrosa*, *Melaleuca adnata*, *Dianella revoluta* var. *divaricata* and *Lepidosperma sanguinolentum*.

Besm2 – Shrub Mallee dominated by *Eucalyptus goniocarpa* over Scrub to Dwarf Scrub dominated by *Melaleuca hamata*, *M. lateriflora*, *Melaleuca thyoides*. *Microcybe multiflora* subsp. *baccharoides* was a common low shrub in this group. Approximately half of this vegetation group had been impacted by fire and was relatively new growth while the other half appeared to be mature old growth.

Betw1 – Open Low Woodland dominated by regrowth (from 1994 fire) *Eucalyptus longicornis* often with scattered *E.urna* over Heath dominated by shrub species including *Melaleuca quadrifaria* and *Daviesia nematophylla* over Dwarf Scrub dominated by mixed low shrub species such as *Westringia rigida*, *Eremophila decipiens* subsp. *decipiens*, *Eremophila ionantha*, *Grevillea huegellii* and *Melaleuca sheathiana*. This group was also found partially within the Undulating Plain landform unit.

Unah1 – Heath to Dense Heath dominated by *Acacia assimilis* subsp. *assimilis* and *Melaleuca hamata* over Dwarf scrub dominated variously by mixed low shrub species including *M. cordata*, *Philotheca rhomboidea*, *Dodonaea bursariifolia* and *Phebalium tuberculosum*. This vegetation group included the shrub mallee species *Eucalyptus olivina* and *E. eremophila* subsp. *eremophila* as emergents in some places.

Unelw1 – Open Low Woodland B to Low Forest B dominated often by *Eucalyptus urna* in combination with *E. salubris*, *E. polita* and *E. annulata*, over, Open Low Scrub often dominated variously by mixed *Melaleuca* species including *M. pauperiflora* subsp. *pauperiflora*, *M. quadrifaria* and *M. cucullata*. Shrub species such as *Daviesia nematophylla* and *Exocarpos aphyllus* were also common.

Clearing Description

Cross Roads Project
Western Areas Ltd proposes to clear up to 10 hectares of native vegetation within a total boundary of approximately 371 hectares, for the purpose of mineral exploration. The project is located approximately 170 kilometres south east of Southern Cross, in the Shire of Kondinin.

Vegetation Condition

Very Good: Vegetation structure altered with obvious signs of disturbance (Keighery, 1994).

Comment

Vegetation condition was determined by PEK Enviro (2015) using the Keighery scale.

3. Assessment of application against clearing principles

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

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

The application lies within the Southern Cross subregion of the Coolgardie Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). This subregion is characterised by gently undulating uplands dissected by broad valleys with bands of low greenstone hills (CALM, 2002). Diverse Eucalyptus woodlands rich in endemic Eucalyptus occur around salt lakes, low greenstone hills, valley alluvials and broad plains of calcareous earths (CALM, 2002). Mallees and scrub-heaths occur on uplands as well as sand lunettes associated with playas along the broad valley floors and sand sheets around the granite outcrops. The scrubs are rich in endemic acacias and Myrtaceae (CALM, 2002).

The application area occurs within the Lake Cronin area which was listed on the Register of National Estate due to its high level of flora and fauna diversity and endemism (EPA, 2009). According to the Environmental Protection Authority (2009), the region supports extensive shrubland, sandplain and woodland environments including an excellent representation of a range of vegetation types that are now extensively cleared in the Wheatbelt. Based on its high biodiversity conservation significance and competing land use interests, various forms of conservation reservation and management are proposed for the area (EPA, 2009).

No Threatened Ecological Communities or Threatened Flora were recorded within the application area during the flora and vegetation survey (PEK, 2015). The application area is however located within the boundary of the Priority Ecological Community (PEC) "Ironcap Hill Vegetation Complexes", which includes Mt Holland, Middle Ironcap Hill, North and South Ironcap Hills, Digger Rock and Hatter Hill. (PEK, 2015; GIS Database). Less than 1% of this PEC will be impacted by the proposed clearing therefore, it is not likely to have a significant impact on this PEC.

There were three Priority Flora species (*Acacia asepala* (P1), *Eutaxia acanthoclada* (P3) and *Microcorys* sp. *Forrestania* (P4)) recorded within the application area during the flora and vegetation survey (PEK, 2015). Potential impacts on Priority Flora may be minimised by the implementation of a flora management condition.

No introduced flora species were recorded within the application area during the flora and vegetation survey however, there are several weed species recorded surrounding the application area (PEK, 2015). Potential impacts on biological diversity from weeds may be minimised by the implementation of a weed management condition.

No significant fauna habitats were recorded within the application area however several conservation significant fauna species (*Calyptorhynchus latirostris*; Carnaby's Cockatoo (EN), *Dasyurus geoffroii*; Western Quoll (VU), *Leipoa ocellata*; Malleefowl (VU), *Macropus imma*; Western Brush Wallaby (P4), *Calamanthus campestris montanellus*; Rufous Fieldwren (P4) and *Hylacola cauta whitlocki*; Shy Heathwren (western Ssp.) (P4) have been recorded within close proximity to the application area (PEK, 2015). These species are not expected to be restricted to the application area or rely exclusively on fauna habitats present within the application area.

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

Methodology CALM (2002)
EPA (2009)
PEK (2015)
GIS Database:
- IBRA WA (Regions - Sub Regions)
- Pre-European Vegetation
- Threatened and Priority Flora
- Threatened Fauna
- 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 reconnaissance field survey was conducted by PEK Enviro (PEK, 2015) over the application area in 2012. The following two fauna habitats were recorded within the application area during the fauna survey:

Undulating Plain

Open Low Woodland B to Low Forest B dominated often by *Eucalyptus urna* in combination with *E. salubris*, *E. polita* and *E. annulata*, over, Open Low Scrub often dominated variously by mixed *Melaleuca* species.

Broad Valley

Open Tall Woodland dominated by scattered *Eucalyptus salmonophloia* over Very Open to Dense Shrub.

No significant fauna habitats were recorded within the application area and the fauna habitats within the application area are well represented elsewhere in the local area (GIS Database; PEK, 2015).

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

Methodology PEK (2015)
GIS Database:
- IBRA WA (Regions - Sub Regions)
- Pre-European Vegetation

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, rare flora.

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

There are no records of Threatened Flora within the application area (GIS Database).

The flora and vegetation survey conducted by PEK Enviro over the application area did not record any species of Threatened Flora (PEK, 2015).

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

Methodology PEK (2015)
GIS Database:
- Threatened and Priority Flora

(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.

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

There are no Threatened Ecological Communities within the application area (GIS Database).

The flora and vegetation survey conducted by PEK Enviro over the application area did not record any Threatened Ecological Communities (PEK, 2015).

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

Methodology PEK (2015)
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 occurs within the Coolgardie Interim Biogeographic Regionalisation of Australia (IBRA) bioregion, in which approximately 98% of the pre-European vegetation remains (see table below) (GIS Database; Government of Western Australia, 2013).

The vegetation of the application area has been mapped as the following Beard vegetation association:

511: Medium woodland; salmon gum & morel.

Approximately 74% of Beard vegetation association 511 remains at state level and 94% at bioregion level (Government of Western Australia, 2013). Therefore, the area proposed to be cleared is unlikely to represent a significant remnant of native vegetation within an area that has been extensively cleared.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in DPaW Managed Lands
IBRA Bioregion - Coolgardie	12,912,204	12,648,491	~ 98	Least Concern	~ 16.25
Beard vegetation associations - State					
511	700,693	520,625	~ 74	Least Concern	~ 15.45
Beard vegetation associations - Bioregion					
511	464,424	435,177	~ 94	Least Concern	~ 19.25

* Government of Western Australia (2013)

** Department of Natural Resources and Environment (2002)

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

Methodology Department of Natural Resources and Environment (2002)
Government of Western Australia (2013)
GIS Database:
- IBRA WA (Regions - Sub Regions)
- Pre-European Vegetation

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

Comments Proposal is not likely to be at variance to this Principle

There are no permanent water bodies or watercourses within the application area (GIS Database).

No vegetation associated with a permanent watercourse or wetland was recorded within the application area during the flora and vegetation survey (PEK, 2015).

There is one minor non-perennial drainage line that intersects the application area (GIS Database). The surface flows of this drainage line are likely to be dry most of the year therefore, it is not expected the proposed clearing will have a detrimental effect on native vegetation growing in, or in association with a watercourse or wetland.

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

Methodology PEK (2015)
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

According to available mapping, the application area is comprised of predominantly sandy soils (GIS Databases; PEK, 2015) and small parts of the application area contain ironstone ridges. Sandy soils are known to be susceptible to wind erosion, therefore it is important to minimise the length of time the land is left open following clearing.

While significant land degradation is unlikely, potential land degradation as a result of the proposed clearing may be minimised by the implementation of a staged clearing condition, in conjunction with internal management practises.

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

Methodology GIS Database:
- Rangeland Land System Mapping
- Soils, Statewide

(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

Comments Proposal is not likely to be at variance to this Principle

The application area does not lie within any conservation areas (GIS Database).

The nearest conservation area is Lake Cronin Nature Reserve which lies approximately 150 meters north of the application area (GIS Database). The proposed clearing of up to 10 hectares of vegetation is unlikely to significantly affect ecological linkages to the reserve.

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

Groundwater salinity within the application area is between 20,000 and 40,000 milligrams/Litre Total Dissolved Solids (TDS) which is considered to be hypersaline (GIS Database). Monitoring of groundwater in the area indicates that the depth to ground water level is at least 40 metres below ground level (Western Areas, 2015). The proposed clearing of up to 10 hectares of native vegetation is unlikely to cause deterioration in the quality of groundwater in the local area.

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

Methodology GIS Database:
- Groundwater Salinity, Statewide
- Hydrography, linear
- Public Drinking Water Source Areas (PDWSAs)

(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

Comments Proposal is not likely to be at variance to this Principle

The application area is located within a semi-arid, warm Mediterranean environment with an average annual rainfall of 372 millimetres recorded at Hyden approximately 77 kilometres west of the application area (BoM, 2015). Rainfall is usually experienced during winter months and it is likely that during times of intense rainfall there may be some localised flooding in the area (BoM, 2015).

There are no permanent water bodies or watercourses within the application area (GIS Database).

There is one minor non-perennial drainage line that intersects the application area (GIS Database). The surface flows of this drainage line are likely to be dry most of the year therefore, the proposed clearing is unlikely to cause or exacerbate, the incidence or intensity of flooding.

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

Methodology BoM (2015)
GIS Database:
- Hydrography, linear

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

Comments

There are two Native Title Claims (WC2000/007 & WC2003/006) over the application area (DAA, 2015). These claims have been filed at the Federal Court on behalf of the claimant group. 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 Regulation, the Department of Water, and the Department of Parks and Wildlife, to determine whether a Works Approval, Water Licence, Bed and Banks Permit, or any other licences or approvals are required for the proposed works.

The clearing permit application was advertised on 24 August 2015 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received in relation to the application.

Methodology DAA (2015)
GIS Database:
- Aboriginal Sites Register System

4. References

- BoM (2015) Bureau of Meteorology (WWW Document). Retrieved from <http://www.bom.gov.au> on 31 August 2015.
- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Department of Conservation and Land Management.
- DAA (2015) Department of Aboriginal Affairs (WWW Search – Aboriginal Heritage Inquiry System). Retrieved from <http://maps.dia.wa.gov.au/AHIS2/> on 31 August 2015.
- 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.
- EPA (2009) Advice on Conservation Values and Review of Nature Reserve Proposals in the Lake Cronin Region. Advice of the Environmental Protection Authority to the Minister for Environment under Section 16(e) of the *Environmental Protection Act 1986*. Report Number 1329. Published Report Prepared by the Environmental Protection Authority, June 2009. Government of Western Australia, 2013.
- 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.
- PEK (2015) Forrestania Nickel Operations Regional Exploration Program, Level 1 Vegetation and Flora Survey, Lake Ned and Forrestania Crossroads areas. Report prepared by PEK Enviro for Western Areas Limited, Perth, Western Australia.
- Western Areas (2015) Supporting Document for Clearing Permit (Purpose) Application, Mining Tenement M77/467. Unpublished Report prepared by Western Areas Limited, Perth, Western Australia.

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
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 DPaW 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.