



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.:	3900/1
Permit type:	Purpose Permit

1.2. Proponent details

Proponent's name:	Cazaly Resources Limited
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1.3. Property details

Property:	Exploration Licence 69/2061
Local Government Area:	Shire of Wiluna
Colloquial name:	Carnarvon Range Project

1.4. Application

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

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
Beard Vegetation Associations have been mapped at a 1:250,000 scale for the whole of Western Australia and are useful to look at vegetation extent in a regional context. The following Beard Vegetation Association is located within the application area (GIS Database): 39: Shrublands; mulga scrub.	Cazaly Resources Limited has applied to clear up to 0.48 hectares within an application area of approximately 0.82 hectares (GIS Database). The application area is located approximately 148 kilometres north-east of Wiluna (GIS Database). The application is for the purpose of mineral exploration. Clearing will be by mechanical means.	Pristine: No obvious signs of disturbance (Keighery, 1994). to Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery, 1994).	The vegetation condition was determined by the assessing officer using aerial photography. There doesn't appear to have been any disturbance throughout the majority of the application area. The only noticeable disturbance is a track that passes through the area.

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 vegetation of the application area has been mapped as Beard vegetation association 39: Shrublands; mulga shrub (GIS Database). This vegetation association is widespread being located across 11 bioregions (Shepherd, 2007). The application area is located on the border of the Gascoyne and Little Sandy Desert Interim Biogeographic Regionalisation of Australia (IBRA) bioregions and would be expected to exhibit characteristics of both bioregions (GIS Database).

The Carnarvon Range has been identified as being botanically important due to it supporting outlying populations of flora known only from the Hamersley Ranges and areas further north (Department of Environment, Water, Heritage and the Arts, 2010).

No flora or fauna surveys have been conducted over the application area. However, given its size (0.48 hectares) and location within an area that remains largely uncleared, the proposed clearing is not likely to possess a higher level of biodiversity than surrounding areas.

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

Methodology Department of Environment, Water, Heritage and the Arts (2010)
Shepherd (2007)
GIS Database
- IBRA WA (Regions - Subregions)
- Pre-European Vegetation

(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

According to available databases, there are records of five conservation significant fauna species within 40 kilometres of the application area (DEC, 2010):

- Malleefowl (*Leipoa ocellata*) – Vulnerable;
- Striated Grasswren (*Amytornis striatus subsp. striatus*) – Priority 4;
- Australian Bustard (*Ardeotis australis*) – Priority 4;
- Peregrine Falcon (*Falco peregrinus*) – Other specially protected fauna; and
- *Falco peregrinus subsp. macropus* – Other specially protected fauna.

All of these birds are mobile species and would not be expected to rely on the application area as significant habitat. It does not appear that any significant habitat features such as gorges, caves and watercourses are present within the application area. The proposed clearing of 0.48 hectares within a region that remains largely uncleared is not likely to significantly impact indigenous fauna.

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

Methodology DEC (2010)

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

Comments Proposal may be at variance to this Principle

According to available databases, there are no records of Declared Rare Flora (DRF) within the application area. The nearest record of DRF is approximately 38 kilometres from the application area (GIS Database). This DRF occurs on the same soil type as present within the application area (GIS Database). No flora surveys have been undertaken over the application area.

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

Methodology GIS Database
- Declared Rare and Priority Flora List
- Soils, Statewide

(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 (TEC's) within the application area (GIS Database). The nearest record of a TEC is over 200 kilometres from the application area (GIS Database). No vegetation survey has been conducted over the application area.

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

Methodology 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 Gascoyne Interim Biogeographic Regionalisation of Australia (IBRA) bioregion in which approximately 100% of the Pre-European vegetation remains (see table) (GIS Database; Shepherd, 2007).

The vegetation of the application area has been mapped as the following Beard vegetation association (GIS Database):

39: Shrublands; mulga scrub.

According to Shepherd (2007) approximately 100 percent of this Beard vegetation association remains at both a state and bioregional level. Therefore the area proposed to be cleared does not 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 IUCN Class I-IV Reserves
IBRA Bioregion – Gascoyne	18,075,218	18,075,218	~100	Least Concern	1.93
Beard veg assoc. – State					
39	6,613,568	6,613,460	~100	Least Concern	7.25
Beard veg assoc. – Bioregion					
39	2,338,128	2,338,128	~100	Least Concern	2.37

* Shepherd (2007)

** Department of Natural Resources and Environment (2002)

Options to select from: Bioregional Conservation Status of Ecological Vegetation Classes (Department of Natural Resources and Environment 2002)

Presumed extinct	Probably no longer present in the bioregion
Endangered	<10% of pre-European extent remains
Vulnerable	10-30% of pre-European extent exists
Depleted	>30% and up to 50% of pre-European extent exists
Least concern	>50% pre-European extent exists and subject to little or no degradation over a majority of this area

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

Methodology Department of Natural Resources and Environment (2002)
Shepherd (2007)
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 at variance to this Principle**
According to available databases, there are no watercourses or wetlands within the application area (GIS Database). There are several minor ephemeral watercourses within 100 metres of the application area (GIS Database). The proposed clearing of 0.48 hectares is not likely to impact any watercourses in the local area.

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

Methodology 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**
The application area is located within the Free Uplands soil-landscape zone (Tille, 2006). This zone is characterised by hills, hardpan wash plains and salt lakes (with some sandplains and stony plains) on sedimentary rocks of the Earahedy Basin (Tille, 2006).

Soils within the application area have been mapped as Oc49: partially dissected pediments with some low stony hills on fine-grained sedimentary rocks and basic dykes, frequently flanking areas of hard alkaline red soils (GIS Database). Shallow stony soils occur on the steeper slopes and soil with red-brown hardpan occur on the lower slopes and on small areas of valley plains. The application area is located on a low rise ridge (4-5% slope), therefore, the removal of vegetation could cause greater surface runoff and increased erosion.

At a broad scale the surface soil pH within the application area is 5.5 – 6.0 and there is a low probability of the occurrence of acid sulphate soils (CSIRO, 2009). Given the small scale of the proposed clearing (0.48 hectares), there is not expected to be any appreciable land degradation.

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

Methodology CSIRO (2009)
Tille (2006)
GIS Database
- 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 may be at variance to this Principle

The application area is located within the Carnarvon Range proposed reserve (GIS Database). This area is listed on the Register of the National Estate for its botanical and Aboriginal heritage values (Department of Environment, Water, Heritage and the Arts, 2010).

The Carnarvon Range proposed reserve supports outlying populations of flora species known only from the Hamersley Ranges and areas further north. The area is characterised by peaks of the Range (for example, Mount Essendon at 950 metres), gorges containing permanent and semi-permanent waterholes and plains surrounding the range which are dominated by spinifex associations with some areas of mulga (Department of the Environment, Water, Heritage and the Arts, 2010).

It is not known if the proposed clearing will impact any outlying flora populations as no flora survey has been undertaken over the application area (GIS Database). Whilst the proposal will result in the clearing of native vegetation within a conservation area, given the small scale of clearing (0.48 hectares) the impacts on its environmental values are likely to be minimal.

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

Methodology Department of Environment, Water, Heritage and the Arts (2010)
GIS Database
- Register of National Estate

(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

According to available databases, the application area is not located within a Public Drinking Water Source Area (GIS Database). There are no watercourses or wetlands within the application area (GIS Database). During normal rainfall events, the proposed clearing would not likely lead to an increase in sedimentation of watercourses within the application and surrounding area.

The groundwater salinity within the application area is between 1,000 to 3,000 milligrams per litre of Total Dissolved Solids (TDS) (GIS Database). This is considered to be brackish. The proposed clearing of 0.48 hectares is not likely to cause salinity levels within the application or surrounding areas to alter.

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

With an average annual rainfall of 300 millimetres and an average evaporation rate of 3,800 millimetres there is likely to be little surface flow during normal seasonal rains (GIS Database). Given the likelihood of little surface flow, the proposed clearing of 0.48 hectares is not likely to cause or increase the incidence or intensity of flooding.

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

Methodology GIS Database
- Evaporation Isopleths
- Rainfall, mean annual

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

Comments

The clearing permit application was advertised on 30 August 2010 inviting submissions from the public. There was one submission received stating no objection to the proposal.

There is one native title claim over the area under application; WC98/68 (GIS Database). This claim has been registered with the National Native Title Tribunal on behalf of the claimant group (GIS Database). However, the mining tenure has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore, the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

According to available databases, there are no registered Aboriginal Sites of Significance within the application area (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

It is the proponent's responsibility to liaise with the Department of Environment and Conservation and the Department of Water to determine whether a Works Approval, Water Licence, Bed and Banks Permit, or any other licences or approvals are required for proposed works.

Methodology GIS Database
- Aboriginal sites of Significance
- Native Title Determined

4. Assessor's comments

Comment

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 may be at variance to Principles (c) and (h), is not likely to be at variance to Principles (a), (b), (d), (g), (i) and (j) and is not at variance to Principles (e) and (f).

5. References

- Commonwealth Scientific and Industrial Research Organisation (2009) Australian Soil Resource Information System. Available online at: http://www.asris.csiro.au/index_ie.html Accessed on 1 October 2010.
- DEC (2010) NatureMap - Department of Environment and Conservation and Western Australian Museum. <http://naturemap.dec.wa.gov.au/default.aspx> Accessed 1 October 2010.
- Department of Environment, Water, Heritage and the Arts (2010) Australian Heritage Database Place Details: Carnarvon Range Proposed Reserve, Wiluna, WA, Australia. Available online at: http://www.environment.gov.au/cgi-bin/ahdb/search.pl?mode=place_detail;search=place_name%3Dcarnarvon%2520range%3Bkeyword_PD%3Don%3Bkeyword_SS%3Don%3Bkeyword_PH%3Don%3Blatitude_1dir%3DS%3Blongitude_1dir%3DE%3Blongitude_2dir%3DE%3Blatitude_2dir%3DS%3Bin_region%3Dpart;place_id=9895 Accessed 19 September 2010.
- 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.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Shepherd, D.P. (2007) Adapted from: Shepherd, D.P., Beeston, G.R., and Hopkins, A.J.M. (2001), Native Vegetation in Western Australia. Technical Report 249. Department of Agriculture Western Australia, South Perth.
- Tille. P. (2006) Soil-landscapes of Western Australia's Rangelands and Arid Interior. Technical Report 313. Department of Agriculture and Food, Western Australia. ISSN 1039-7205.

6. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government.
CALM	Department of Conservation and Land Management, Western Australia.
DAFWA	Department of Agriculture and Food, Western Australia.
DA	Department of Agriculture, Western Australia.
DEC	Department of Environment and Conservation
DEH	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
DEP	Department of Environment Protection (now DoE), Western Australia.
DIA	Department of Indigenous Affairs
DLI	Department of Land Information, Western Australia.
DMP	Department of Mines and Petroleum, Western Australia.
DoE	Department of Environment, Western Australia.
DoIR	Department of Industry and Resources, Western Australia.
DOLA	Department of Land Administration, Western Australia.
DoW	Department of Water
EP Act	Environment Protection Act 1986, Western Australia.
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999 (Federal Act)
GIS	Geographical Information System.
IBRA	Interim Biogeographic Regionalisation for Australia.
IUCN	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
RIWI	Rights in Water and Irrigation Act 1914, Western Australia.
s.17	Section 17 of the Environment Protection Act 1986, Western Australia.
TECs	Threatened Ecological Communities.

Definitions:

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

P1	Priority One - Poorly Known taxa: taxa which are known from one or a few (generally <5) populations which are under threat, either due to small population size, or being on lands under immediate threat, e.g. road verges, urban areas, farmland, active mineral leases, etc., or the plants are under threat, e.g. from disease, grazing by feral animals, etc. May include taxa with threatened populations on protected lands. Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
P2	Priority Two - Poorly Known taxa: taxa which are known from one or a few (generally <5) populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in urgent need of further survey.
P3	Priority Three - Poorly Known taxa: taxa which are known from several populations, at least some of which are not believed to be under immediate threat (i.e. not currently endangered). Such taxa are under consideration for declaration as 'rare flora', but are in need of further survey.
P4	Priority Four – Rare taxa: taxa which are considered to have been adequately surveyed and which, whilst being rare (in Australia), are not currently threatened by any identifiable factors. These taxa require monitoring every 5–10 years.
R	Declared Rare Flora – Extant taxa (= Threatened Flora = Endangered + Vulnerable): taxa which have been adequately searched for, and are deemed to be in the wild either rare, in danger of extinction, or otherwise in need of special protection, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.
X	Declared Rare Flora - Presumed Extinct taxa: taxa which have not been collected, or otherwise verified, over the past 50 years despite thorough searching, or of which all known wild populations have been destroyed more recently, and have been gazetted as such, following approval by the Minister for the Environment, after recommendation by the State's Endangered Flora Consultative Committee.

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

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

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

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

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

- EX** **Extinct:** A native species for which there is no reasonable doubt that the last member of the species has died.
- EX(W)** **Extinct in the wild:** A native species which:
(a) is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; or
(b) has not been recorded in its known and/or expected habitat, at appropriate seasons, anywhere in its past range, despite exhaustive surveys over a time frame appropriate to its life cycle and form.
- CR** **Critically Endangered:** A native species which is facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with the prescribed criteria.
- EN** **Endangered:** A native species which:
(a) is not critically endangered; and
(b) is facing a very high risk of extinction in the wild in the near future, as determined in accordance with the prescribed criteria.
- VU** **Vulnerable:** A native species which:
(a) is not critically endangered or endangered; and
(b) is facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with the prescribed criteria.
- CD** **Conservation Dependent:** A native species which is the focus of a specific conservation program, the cessation of which would result in the species becoming vulnerable, endangered or critically endangered within a period of 5 years.