

# **Clearing Permit Decision Report**

# 1. Application details

1.1. Permit application details

Permit application No.: 4374/1

Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Navigator (Bronzewing) Pty Ltd

1.3. Property details

Property: Mining Lease 36/82
Local Government Area: Shire of Leonora
Colloquial name: Challenger Pits

1.4. Application

Clearing Area (ha) No. Trees Method of Clearing For the purpose of:

Mechanical Removal Mineral Production

1.5. Decision on application

Decision on Permit Application: Grant

Decision Date: 30 June 2011

# 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 and are useful to look at vegetation in a regional context. The following Beard vegetation association is located within the application area (GIS Database):

39: Shrublands; mulga scrub.

A flora and vegetation survey of the application area was conducted by Outback Ecology in July 2007. The following 14 vegetation communities were identified (Outback Ecology, 2011):

- 1. Acacia aneura var. ?intermedia and Acacia aneura var. ?microcarpa Open Low Woodland B over Ptilotus obovatus Open Dwarf Scrub C;
- 2. Acacia aneura var. ?microcarpa Low Woodland A over Sida calyxhymenia Open Dwarf Scrub C over Eragrostis eripoda Very Open Low Grass;
- 3. Acacia aneura var. ?microcarpa and Acacia aneura var. ?intermedia Open Low Woodland B over Eremophila shonae ssp. shonae Dwarf Scrub C;
- 4. Acacia aneura var. ?microcarpa and Acacia qaudrimarginea Scrub over Baeckea sp. Melita Station Low Scrub A;
- 5. Acacia rhodophloia Open Low Woodland B over Ptilotus obovatus Dwarf Scrub D;
- 6. Acacia quadrimarginea, Acacia aneura var. ?microcarpa and Acacia aneura var. ?intermedia Low Woodland B over Eremophila platycalx ssp. platycalyx Open Low Scrub A over Eremophila forrestii and sida calyxhymenia Open Dwarf Scrub C:
- 7. Acacia aneura var. ?microcarpa and Acacia aneura var. ?intermedia Low Forest A to Low Woodland A over Acacia tetragonophylla open Low Woodland B over Sida calyxhymenia Heath B to Open Dwarf Scrub C over Ptilotus obovatus Open Dwarf Scrub C over Aristida contorta and Enneapogon caerulescens Very Open Low Grass:
- 8. Acacia burkitti Low Woodland A over Acacia tetragonophylla Open Scrub over Sida calyxhymenia and Ptilotus obovatus Open Dwarf Scrub C;
- 9. Acacia aneura var. ?microcarpa Low Woodland B over Hakea recurva Low Scrub A over Senna artemisiodes spp. x sturtii Low Scrub B over Maireana georgei Open Dwarf Scrub D;
- 10. Hakea recurva Open Low Woodland A over Acacia aneura var. ?microcarpa, Acacia aneura var. ?intermedia and Acacia burkittii Low Woodland B over Grevillea sarissa ssp. succinct, Senna artisiodes ssp. nemophila and Scaevola spinscens Open Low Scrub A over Ptilotus obovatus and Sida calyxhymenia Open Dwarf Scrub C;
- 11. Hakea aneura var aneura Low Woodland B to Open Low Woodland B with occasional emergents of Acacia

pruinocarpa;

- 12. Acacia aneura var. aneura Scrub over Eremophila ramiflora Open Low Scrub A;
- 13. Acacia aneura var. aneura Open Low Woodland B over a sparse understorey; and
- 14. Acacia oswaldii Open Low Woodland A over Eremophila platycalyx ssp. platycalyx and Grevillea sarissa ssp. succinct Open Scrub over Maireana georgei Open Dwarf Scrub D over Sclerolaena eriacantha Open Herbs over Enneapogon caerulescens Very Open Low Grass.

#### **Clearing Description**

Navigator (Bronzewing) Pty Ltd has applied to clear up to 34 hectares within an application area of approximately 58.3 hectares (GIS Database). The application area is located approximately 46 kilometres north-east of Leinster (GIS Database).

The purpose of the application is the extension of existing pits and the creation of new pits (Outback Ecology, 2011). This may include the construction of a waste rock landform. Clearing will be by mechanical means. Topsoil and vegetation will be retained for use in rehabilitation (Outback Ecology, 2011).

#### **Vegetation Condition**

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

to

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

#### Comment

The vegetation condition was assessed by botanists from Outback Ecology.

The application area has been subjected to previous disturbance from exploration and mining activities (Outback Ecology, 2011).

# 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

A flora and vegetation survey within the application area identified 14 vegetation communities (Outback Ecology, 2011). Much of the vegetation within the application area is in a 'degraded' state due to past mining activities and historic grazing (Outback Ecology, 2011). The survey recorded a total of 57 flora species including the weed species Ruby Dock (*Acetosa vesicaria*) and Roly-Poly (*Salsola tragus*) (Outback Ecology, 2011).

No Threatened or Priority Ecological Communities are known from the application area (GIS Database). No Declared Rare Flora has been recorded within the application area (Outback Ecology, 2011; GIS Database). There were 30 individuals of the Priority 4 flora species *Eremophila pungens* recorded within the application area (Outback Ecology, 2011). *Eremophila pungens* has been recorded from the Murchison and Gascoyne bioregions (Western Australian Herbarium, 2011). A targeted search conducted in August 2006 located over 4,500 plants within the local area (Outback Ecology, 2011). Subsequent opportunistic sightings indicate that this species is relatively widespread within the local area (Outback Ecology, 2011). Outback Ecology (2011) has indicated that the proposed clearing will not require the removal of any *Eremophila pungens* individuals.

The vegetation and fauna habitat within the application area is common throughout the local area and given its disturbed state, it is not likely to comprise a higher level of faunal diversity than nearby undisturbed areas.

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

#### Methodology

Outback Ecology (2011)

Western Australian Herbarium (2011)

GIS Database:

- Declared Rare and Prioirty Flora List
- 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

No formal fauna surveys have been conducted over the application area. Ninox Wildlife Consulting undertook fauna assessments of the Bronzewing and Mt McClure project areas, which are approximately 20 kilometres north and north-east of the application area, in 1989 and 1993 respectively. No conservation significant species were recorded during these studies, however, the following species were identified as potentially occurring within the area (Outback Ecology, 2011):

- Crest-tailed Mulgara (Dasycercus cristicauda) Vulnerable;
- Long-tailed Dunnart (Sminthopsis longicaudata) Priority 4;
- Princess Parrot (Polytelis alexandrae) Priority 4; and
- Peregrine Falcon (Falco peregrinus) Schedule 4.

The application area is not likely to represent significant habitat for the above species. At the Mt McClure project area Ninox Wildlife Consulting identified creeklines, part mulga complexes, low hills complex and breakaway complexes as being the major habitat types (Outback Ecology, 2011). It would be expected that the application area would exhibit similar habitats. These habitats occur throughout the Goldfields region (Outback Ecology, 2011). Much of the vegetation of the application area has been previously disturbed and degraded by past mining and grazing activities (Outback Ecology, 2011). Given the historical use of the area, and the extent of uncleared land in the surrounding landscape, it is not likely that the proposed clearing area represents significant habitat for native fauna.

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

Methodology Outback Ecology (2011)

# (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, there are no records of Declared Rare Flora (DRF) within the application area (GIS Database). Outback Ecology conducted a flora and vegetation survey of the application area on 11 - 12 July 2007. No DRF was recorded during this survey (Outback Ecology, 2011).

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

#### Methodology Outl

Outback Ecology (2011)

GIS Database:

- Declared Rare and Prioirty 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 databases, there are no Threatened Ecological Communities (TECs) within the application area (GIS Database). The vegetation survey did not identify any vegetation communities described as a TEC (Outback Ecology, 2011).

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

# Methodology

Outback Ecology (2011)

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 Murchison Biogeographic Regionalisation of Australia (IBRA) bioregion in which approximately 100% of the Pre-European vegetation remains (see table) (GIS Database; Shepherd, 2009).

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

39: Shrublands; mulga scrub.

According to Shepherd (2009) approximately 100% 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 – Murchison	28,120,589	28,120,589	~100	Least Concern	1.06
Beard veg assoc.  – State					
39	6,613,568	6,613,460	~100	Least Concern	7.2
Beard veg assoc.  – Bioregion					
39	1,148,400	1,148,400	~100	Least Concern	0

- \* Shepherd (2009)
- \*\* 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)

Shepherd (2009)

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 two minor, non-perennial watercourses within the application area (GIS Database). The drainage lines support Mulga low forest to low woodland but the vegetation survey did not identify any riparian vegetation (Outback Ecology, 2011). These drainage lines would only flow following heavy rainfall (Outback Ecology, 2011).

These non-perennial watercourses eventually drain into Lake Darlot, located approximately 27 kilometres southeast of the application area (GIS Database). There are numerous non-perennial watercourses in the local area that also drain into Lake Darlot (GIS Database). The proposed clearing of the vegetation growing in these watercourses is not likely to impact the environment of Lake Darlot.

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

#### Methodology

Outback Ecology (2011)

GIS Database:

- Hydrography, Lakes (medium scale, 250k GA)
- 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 has been mapped as occurring on the Bevon and Felix land systems (GIS Database). The Felix land system's stone mantles provide effective protection of the soil against erosion (Pringle et al., 1994). There are minor areas within the Bevon land system on breakaway footslopes and drainage tracts that are susceptible to soil erosion if cleared or the surface is disturbed (Pringle et al., 1994). As the clearing will occur on low rises and stony plains, it is unlikely the proposed clearing will lead to appreciable erosion.

At a broad scale, the surface soil pH in the application area ranges from 5.5 to 6.0 and there is no known occurrence of acid sulphate soils (CSIRO, 2009). The average annual evaporation rate is 12 times the average annual rainfall, so it is unlikely the proposed clearing will result in increased groundwater recharge causing raised saline water tables (GIS Database).

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

### Methodology

CSIRO (2009)

Pringle et al. (1994)

GIS Database:

- Evaporation Isopleths
- Rainfall, mean annual
- Rangeland Land System Mapping

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

# Comments

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

The application area does not lie within any conservation areas or DEC managed lands (GIS Database). The nearest conservation reserve is the Wanjarri A Class Nature Reserve, located approximately 18 kilometres northwest of the application area (GIS Database). Based on the distance between the application area and the nature reserve, the proposed clearing is not likely to impact the environmental values of any conservation area.

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

#### Methodology

GIS Database:

**DEC 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

According to available databases, the application area is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database). There are no permanent waterbodies or watercourses within the application area, however, there are two minor non perennial watercourses that pass through the application area (GIS Database).

The annual average rainfall for the application area is 300 millimetres and the average annual evaporation rate is 3,600 millimetres (GIS Database). Therefore, during normal rainfall events surface water within the application area is likely to evaporate quickly. However, substantial rainfall events create surface sheet flow which is likely to have a higher level of sediments. During normal rainfall events, the proposed clearing would not likely lead to an increase in sedimentation of watercourses within the application area.

A bore approximately six kilometres north of the application area measured the groundwater salinity as 3,610 micro-Siemens per centimetre (Outback Ecology, 2011). This is considered to be brackish but still suitable for livestock. The proposed clearing is not likely to cause salinity levels within the application area to alter.

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

### Methodology

Outback Ecology (2011)

GIS Database:

- Evaporation Isopleths
- Hydrography, linear
- Public Drinking Water Source Areas (PDWSAs)
- Rainfall, mean annual

# (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 3,600 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 25 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

There are no native title claims over the area under application (GIS Database). The mining tenure has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

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.

The clearing permit application was advertised on 6 June 2011 by the Department of Mines and Petroleum inviting submissions from the public. There were no submissions received.

# Methodology

GIS Database:

- Aboriginal Sites of Significance
- Native Title Claims

### 4. References

CSIRO (2009) Australian Soil Resource Information System. Available online at: http://www.asris.csiro.au/index\_ie.html Accessed on 13 June 2011.

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.
- Outback Ecology (2011) Supporting information for a clearing permit application. Unpublished report for Navigator Resources Limited dated May 2011.
- Pringle, H.J.R, Van Vreeswyk, A.M.E. and Gilligan, S.A. (1994) An inventory and condition survey of rangelands in the northeastern Goldfields, Western Australia, Technical Bulletin No. 87., Department of Agriculture, South Perth, Western Australia.
- Shepherd, D.P. (2009) 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.
- Western Australian Herbarium (2011) Florabase The Western Australian Flora. Department of Environment and Conservation. Available online at http://florabase.dec.wa.gov.au/ Accessed on 13 June 2011.

## 5. Glossary

## **Acronyms:**

**BoM** Bureau of Meteorology, Australian Government

CALM Department of Conservation and Land Management (now DEC), Western Australia

**DAFWA** Department of Agriculture and Food, Western Australia

**DEC** Department of Environment and Conservation, Western Australia

**DEH** Department of Environment and Heritage (federal based in Canberra) previously Environment Australia

**DEP** Department of Environment Protection (now DEC), 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 (now DEC), Western Australia

**DolR** Department of Industry and Resources (now DMP), Western Australia

**DOLA** Department of Land Administration, Western Australia

**DoW** Department of Water

**EP Act** Environmental Protection Act 1986, Western Australia

EPBC Act Environment Protection and Biodiversity Conservation Act 1999 (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

RIWI Act Rights in Water and Irrigation Act 1914, Western Australia

s.17 Section 17 of the Environment Protection Act 1986, Western Australia

TEC Threatened Ecological Community

# **Definitions:**

R

X

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

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.

**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.

**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.

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

- 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 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 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 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}:-

- 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.
- 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.