Government of Western Australia
Department of Mines and Petroleum

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 5524/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Forrestania Gold Pty Ltd**

1.3. Property details

Property: Exploration Licence 77/1426
Local Government Area: Shire of Yilgarn
Colloquial name: Forrestania Exploration Project

1.4. Application

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

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 16 May 2013

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 for the whole of Western Australia and are useful to look at vegetation in a regional context. One Beard vegetation association has been mapped within the application area: Beard vegetation association 1413: Shrublands; acacia, casuarina and melaleauca thicket (GIS Database). A botanist from Paul Armstrong and Associates undertook a vegetation and flora survey over the application area and the surrounding Milky Lake prospect in December 2011. The survey area supported three different vegetation types, with part of the survey area burnt one to two years prior (Paul Armstrong and Associates, 2012b). **<u>Unburnt Area</u>** ***Eucalyptus ?concinna* Mallee**: The upper and dominant stratum was tree mallee dominated *Eucalyptus ?concinna* growing to 10 m tall; over heath to thicket dominated by *Melaleuca sheathiana* and *Melaleuca pholidophylla* growing to 1.5 to 2.5 m tall; over open dwarf scrub with no species dominating. The soil was brown sandy loam. ***Eucalyptus eremophila* subsp. *eremophila* Mallee:** The upper and dominant was open tree mallee dominated by *Eucalyptus eremophila* subsp. *eremophila* with *Eucalyptus ?concinna* and *Eucalyptus flocktoniae* subsp. *flocktoniae* growing 5 to 10 m tall; over thicket dominated by *Melaleuca sheathiana* and *Melaleuca pholidophylla* growing 2 to 4 m tall; over open dwarf scrub with no species dominating. The soil was	Forrestania Gold Pty Ltd (Forrestania) has applied to clear up to 0.2 hectares for the purpose of mineral exploration. The clearing is to construct a drill pad and associated access road at Forrestania's Milky Lake prospect. The application area is located approximately 88 kilometres south-east of Southern Cross. Vegetation will be cleared by mechanical means.	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994); To: Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994).	The vegetation condition was assessed by a botanist from Paul Armstrong and Associates (2012b).

orange brown loam sandy.

Burnt Area

Low Forest: The dominant stratum was low forest dominated by *Eucalyptus* seedlings growing to 0.5 m tall; over dwarf scrub with no species dominating. The soil varied between yellow loamy sand to brown sandy loam.

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 Southern Cross Interim Biogeographic Regionalisation of Australia (IBRA) subregion (GIS Database). This subregion is characterised by subdued relief, comprising gently undulating uplands dissected by broad valleys with bands of low greenstone hills (CALM, 2002). Diverse Eucalyptus woodlands occur around chains of saline playa-lakes, on the low greenstone hills, valley alluvials and broad plains of calcareous earths. The scrubs are rich in endemic acacias and Myrtaceae (CALM, 2002).

The application area is within the Greater Western Woodlands, a temperate woodland of significant biological richness, which covers an area of over 16 million hectares (Outback Ecology, 2013).

The application area is within the buffer of the Priority Ecological Community (PEC) 'Parker Range vegetation complexes' (GIS Database). The Parker Range vegetation complexes are described as *Hakea pendula* tall shrubland; *Eucalyptus shealthiana* with *E*. *transcontinentalis* and/or *E*. *eremophila* woodland on sandy soils at the base of ridges and low rises; *E*. *longicornis* with *E*. *corrugata* and *E*. *salubris* or *E*. *myriadena* woodland on broad flats; *E*. *salmonphloia* and *E*. *salubris* woodland on broad flats; *Allocasuarina acutivalvis* and *A*. *corniculata* on deeper sandy soils of lateritic ridges; *E*. *capiosa* subsp. *polyclada* and/or *E*. *loxophleba* over *Hakea pendens* thicket on skeletal soils on ridges and *Callistris glaucophylla* low open woodland on massive greenstone ridges (DEC, 2012b). This PEC was searched for during the flora and vegetation survey but no occurrences were observed (Paul Armstrong and Associates, 2012b).

A botanist from Paul Armstrong and Associates undertook a vegetation and flora survey over the application area and the surrounding Milky Lake prospect in December 2011. The timing of the survey resulted in few ephemeral flora being recorded as well as some plants unable to be identified due to the immature condition of some specimens that were collected. It is estimated that 40 to 50% of the species growing in the area were recorded (Paul Armstrong and Associates, 2012b). A total of 32 native plant taxa from 14 families were recorded during the flora survey. The most speciose families were Myrtaceae, Fabaceae and Scrophulariaceae; which is as expected for the region (Paul Armstrong and Associates, 2012b).

Two Priority Flora species were recorded during the 2011 flora survey, *Grevillea dissecta* (P4) and *Microcorys* sp. Forrestania (P4) (Paul Armstrong and Associates, 2012b). The estimated population of *Grevillea dissecta* was 30 plants from two subpopulations. The plants were located adjacent to existing tracks within the Jilbadji Nature Reserve, not within the application area. Provided reasonable care is exercised, it is unlikely that any of these plants would be impacted by the currently proposed exploration activities (Paul Armstrong and Associates, 2012b). The recorded population of *Microcorys* sp. Forrestania was 400 plants from a single population. These plants were only observed in recently burnt areas. As only a small proportion of the potential habitat of this taxa was traversed, it is considered that the 400 plant estimate is approximately 20% of the likely population, hence the likely population is considered to be 2,000 plants (Paul Armstrong and Associates, 2012b). The proposed exploration program impacts approximately 70 plants, representing 17.5% of the recorded population and 3.5% of the likely population. Being a fire responsive taxa and although not insignificant, the estimated impacts are unlikely to cause the local extinction of this population in the short to medium term (Paul Armstrong and Associates, 2012b).

The timing of the survey, in mid-summer, was not ideal to search for annual species of rare flora. The desktop study by Paul Armstrong and Associates (2012b) identified three Threatened Flora and one Presumed Extinct Flora in the local area but these are all perennial species and would have been apparent if present. Sixteen Priority Flora species have previously been recorded within 20 kilometres of the survey location and five of these were ephemerals or summer dormant (Paul Armstrong and Associates, 2012b). Based on habitat details recorded for *Goodenia heatheriana* (P1), it is unlikely that this species would occur in the survey area, requiring red crumbly clay or greenstone gravel, neither of which were observed (Paul Armstrong and Associates, 2012b). The habitat requirements for *Logania exilis* (P2), however, were similar to those recorded in the survey area, hence it could possibly occur in the application area (Paul Armstrong and Associates, 2012b). Based on habitat descriptions recorded for the fire ephemeral species *Sowerbaea multicaulis* (P4) and *Gyrostemon ditrigynus* (P4), it is possible that these species could occur within the survey area. Much of this area, however, has recently been burnt, which is a requirement of these fire ephemeral species. Had either been present it is very likely that the remnants of the plants would have been noted and recorded. Therefore, it is considered unlikely that these species occur in the survey area (Paul Armstrong and Associates, 2012b). The summer dormant aquatic species *Microseris scapigera* (P3) is considered highly unlikely to occur as no salt lakes or granite rock areas were observed in the survey area (Paul Armstrong, 2012b).

One weed species was recorded during the flora survey, *Solanum hoplopetalum* (Paul Armstrong and Associates, 2012b). Forrestania have committed to removing the population of *Solanum hoplopetalum* by hand prior to clearing activities (Outback Ecology, 2012). Care must be taken to ensure that the proposed clearing activities do not spread or introduce weed species to non-infested areas. Potential impacts to biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

Fauna surveys have not been undertaken over the application area. Given the small area and temporary nature of the exploration activities, the proposed clearing is unlikely to significantly affect any fauna species or remove significant fauna habitats (Outback Ecology, 2012).

Due to the small size of the proposed clearing and considering that the vegetation proposed to be cleared is well represented in the surrounding area, it is unlikely that the proposal will result in the clearing of native vegetation that has higher biodiversity values than that of surrounding undisturbed vegetation.

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

Methodology

CALM (2002)
DEC (2012b)
Ouback Ecology (2012)
Outback Ecology (2013)
Paul Armstong and Associates (2012b)
GIS Database:
- IBRA WA (Regions - Subregions)
- 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

Outback Ecology undertook a Department of Environment and Conservation (DEC) NatureMap database search to determine the conservation significant fauna species with the potential to occur within the Milky Lake prospect area, which includes the application area. A total of 28 conservation significant fauna species occur within 20 kilometres of the application that are specially protected under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), the *Wildlife Conservation Act 1950* (WC Act) or DEC Priority Fauna list. Based on habitat types present, eight of these have the potential to be present within the application area and need to be considered (Outback Ecology, 2012):

- Carnaby's Cockatoo (*Calyptorhynchus latirostris*) (Endangered under EPBC Act; Schedule 1);
- Malleefowl (*Leipoa ocellata*) (Vulnerable under EPBC Act; Schedule 1);
- Rainbow Bee-eater (*Merops ornatus*) (Migratory under EPBC Act; Schedule 3);
- Carpet Python (*Morelia spilota* subsp. *imbricata*) (Schedule 4);
- Lake Cronin Snake (*Paroplocephalus atriceps*) (DEC Priority 3)
- Western Brush Wallaby (*Macropus irma*) (DEC Priority 4);
- Western Rosella (*Platycerus icterotis*) (DEC Priority 4);
- White Browed Babbler (*Pomatostomus superciliosus* subsp. *ashbyi*) (DEC Priority 4).

Given the small area and temporary nature of the proposed clearing, it is unlikely to affect the conservation status of the above species or remove significant habitat (Outback Ecology, 2012). The faunal assemblages present are likely to be similar to those found in similar habitats in the general vicinity and the bioregion (Outback Ecology, 2012).

A flora and vegetation survey of the application area and surrounds was undertaken by Paul Armstrong and Associates in December 2011. During botanical surveys, the location of any Malleefowl nests are usually recorded along with the condition of the nest. While not a qualified zoologist, the botanist who undertook the survey is familiar with the nests having spent many years in the areas where they frequent and having observed many examples of nest ranging from long time disused to currently active. No nests were recorded during the survey (Paul Armstrong and Associates, 2012a).

Several fauna management commitments have been made in Forrestania's Conservation Management Plan (CMP) for the exploration activities. DEC have approved the CMP (DEC, 2012a). Prior to clearing activities the following actions will be implemented at all exploration locations:

- The proposed clearing area will be walked on foot by Forrestania Environmental Staff and checked for the presence of any Malleefowl mounds and breeding hollows;
- All large trees with hollows will be inspected prior to clearing. A suitably qualified environmental professional will be employed to assess each potential hollow;
- Clearing of large trees will be avoided where possible;
- Forrestania environmental staff will create a 50 metre exclusion zone with caution flagging tape around any Malleefowl mounds or tree with active breeding hollows prohibiting all staff and contractors from entering this area without permission of the Forrestania environmental staff; and

- If trees with breeding hollows are found within close vicinity to proposed exploration areas, clearing for the project will be restricted during the breeding season to those exploration areas outside a 50 metre zone from any potential breeding hollow (Outback Ecology, 2012).

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

Methodology DEC (2012a)
Outback Ecology (2012)
Paul Armstrong and Associates (2012a)

(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 known records of Threatened Flora within the application area or the surrounding Jilbadji Nature Reserve (DEC, 2013; GIS Database). The desktop study by Paul Armstrong and Associates (2012b) identified three Threatened Flora and one Presumed Extinct Flora in the local area: *Banksia sphaerocarpa* var. *dolichostyla* (T), *Boronia revoluta* (T), *Isopogon robustus* (T) and *Thomasia gardneri* (X).

A botanist from Paul Armstrong and Associates undertook a vegetation and flora survey over the application area in December 2011, including a rare flora search. The timing of the survey resulted in few ephemeral flora being recorded, however, the nearby Threatened Flora species are perennial and would have been apparent if present (Paul Armstrong and Associates, 2012b). No Threatened Flora were recorded during the flora survey (Paul Armstrong and Associates, 2012b).

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

Methodology DEC (2013)
Paul Armstrong and Associates (2012b)
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

A search of available databases revealed there are no known Threatened Ecological Communities (TECs) within the application area (GIS Database). The nearest recorded TEC is located approximately 175 kilometres south-west of the application area (GIS Database).

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 clearing application area falls within the Coolgardie Interim Biogeographic Regionalisation for Australia (IBRA) bioregion in which approximately 98.0% of the pre-European vegetation remains (see table) (Government of Western Australia, 2013; GIS Database). This gives it a conservation status of 'Least Concern' according to the Bioregional Conservation Status of Ecological Vegetation Classes (Department of Natural Resources and Environment, 2002).

The vegetation of the clearing application area has been mapped as Beard vegetation association 1413 'Shrublands; acacia, casuarina and melaleuca thicket' (GIS Database). Approximately 76.6% of this vegetation association remains at a state level while 98.2% remains at a bioregional level (Government of Western Australia, 2013). This vegetation association would be given a conservation status of 'Least Concern' at both a state and bioregional level (Department of Natural Resources and Environment, 2002).

The vegetation under application is not a remnant of vegetation in 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 – Coolgardie	12,912,204	12,648,491	~98.0	Least Concern	10.9
Beard Veg Assoc. – State					
1413	1,679,917	1,286,968	~76.6	Least Concern	11.5
Beard Veg Assoc. – Bioregion					
1413	1,061,213	1,042,554	~98.2	Least Concern	16.8

* 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 - 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 at variance to this Principle

According to available databases, there are no watercourses or wetlands within the application area (GIS Database). A minor drainage line is located approximately 70 metres south-west of the application area and the proposed clearing is unlikely to affect vegetation growing in association with watercourses or wetlands (Outback Ecology, 2013; GIS Database).

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

Methodology Outback Ecology (2013)
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 area proposed to be cleared is located on a relatively flat area of the landscape (Outback Ecology, 2013). The soils of the application area varied between brown sandy loam, orange sandy loam and yellow loamy sand (Paul Armstrong and Associates, 2012b). There are no watercourses or wetlands within the application area (GIS Database). Given the small amount of proposed clearing and the topography of the application area, it is unlikely that the erosion potential will be increased from the proposed clearing.

The application area is to be rehabilitated upon completion of exploration activities and Forrestania have committed to completing rehabilitation activities within a six month period (Outback Ecology, 2012). Consequently the application area will not be left exposed for long periods after clearing occurs which will reduce the potential for erosion. There are a list of rehabilitation techniques listed within the Conservation Management Plan (CMP) which include:

- Topsoil stockpiles will be re-spread as soon as practicable prior to the next winter rainfall season, to minimise the loss of soil biological components that may occur with inappropriate disturbance and handling and
- On completion of exploration activities, all hard-stand areas, drill pads, roads, drill holes, sumps, costeans and other surface disturbances to be backfilled, deep-ripped, contoured to the original surface topography and rehabilitated (Outback Ecology, 2012).

Other commitments in the CMP relating to land degradation include:

- No ground engagements (grader blade up) when clearing the line to minimise long term damage to the environment;
- Exploration works will be undertaken in dry soil conditions where possible; and
- Clearing footprint to be kept to a minimum for safe operations, including the total length of tracks, track widths and drill pad areas. Where possible, exploration will be restricted to existing gridlines

(Outback Ecology, 2012).

Given the small size of the clearing, the clearing methods to be used and the commitment from Forrestania to implement rehabilitation measures listed within the CMP, it is unlikely that significant land degradation will result from the proposed clearing.

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

Methodology Outback Ecology (2012)
Paul Armstrong and Associates (2012b)
GIS Database:
- Hydrography, Linear

(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 proposed clearing is located wholly within the Jilbadji Nature Reserve; a Department of Environment and Conservation (DEC) 'C' Class nature reserve, an EPA Redbook area and listed on the Register of National Estate (GIS Database). Jilbadji Nature Reserve supports a very high diversity of reptiles and mammals and due to its large size is an important refugium for many species in the wheatbelt (Department of Sustainability, Environment, Water, Population and Communities, 2013).

Forrestania developed a Conservation Management Plan (CMP) in accordance with DEC guidelines for all current and future exploration programs undertaken on Exploration Licences 77/1425 and 77/1426 located in Jilbadji Nature Reserve (Outback Ecology, 2012). The CMP details the management programs proposed by Forrestania to mitigate potential impacts on the local environment caused by the disturbance associated with the proposed exploration program (Outback Ecology, 2012). The CMP is required by the tenement conditions under the *Mining Act 1978*.

The actions listed within the CMP include information relevant to the management of waste, weeds, ground disturbance, flora, fauna and rehabilitation (Outback Ecology, 2012). The CMP has been reviewed and endorsed by DEC (2012a).

Based on the above, the proposed clearing may be at variance to this Principle. However, the proposed clearing for exploration purposes is of a temporary nature, and rehabilitation will occur within six months of completion of activities (Outback Ecology, 2012). In addition, the size of the proposed clearing is relatively small (0.2 hectares) in relation to the total size of Jilbadji Nature Reserve, therefore the overall impacts to the nature reserve are likely to be minimal.

Methodology DEC (2012a)
Department of Sustainability, Environment, Water, Population and Communities (2013)
GIS Database:
- DEC Tenure
- EPA Red Book 1976-91
- 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

There are no watercourses or wetlands within the application area (GIS Database).

The application area experiences annual rainfall of approximately 400 millimetres and average annual evaporation rates of 2,400 millimetres (GIS Database). Due to relatively low rainfall and high evaporation rates, there is likely to be little residual surface water within the application area, hence, the proposed clearing is not likely to reduce the quality of surface water.

According to available databases, the application area is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database). The nearest PDWSA is the Salmon Gums Catchment Area which is located approximately 205 kilometres south-east of the application area (GIS Database).

The small amount of clearing (0.2 hectares) is unlikely to cause deterioration in groundwater.

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

Methodology GIS Database:
- Evaporation Isopleth
- 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

The climate of the subregion is an arid to semi-arid warm Mediterranean climate (CALM, 2002). The application area receives an average annual rainfall of 400 millimetres, and average annual evaporation rates of 2,400 millimetres (GIS Database). Therefore, there is likely to be little likelihood of flooding during normal rainfall events.

The application area is within the Swan Avon - Yilgarn catchment area of the Avon River basin (GIS Database). Given the size of the area to be cleared (0.2 hectares) in relation to the size of the catchment areas (5,836,045 hectares) (GIS Database), the proposed clearing is not likely to increase the potential of flooding on a catchment scale.

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

Methodology

CALM (2002)

GIS Database:
- Evaporation Isopleth
- Hydrographic Catchments - Catchments
- 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*.

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 the proposed works.

The clearing permit application was advertised on 25 March 2013 by the Department of Mines and Petroleum inviting submissions from the public. One submission was received stating no objections to the proposed clearing.

Methodology

GIS Database:
- Aboriginal Sites of Significance
- Native Title Claims - Determined by the Federal Court
- Native Title Claims - Filed at the Federal Court
- Native Title Claims - Registered with the NNTT

4. References

CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Department of Conservation and Land Management, Western Australia.

DEC (2012a) Correspondence on Conservation Management Plan (CMP) Approval. Central Wheatbelt District, Department of Environment and Conservation, Dated 20 September 2012.

DEC (2012b) Priority Ecological Communities for Western Australia Version 17. Species and Communities Branch, Department of Environment and Conservation, April 2012.

DEC (2013) NatureMap: Mapping Western Australia's Biodiversity. Department of Environment and Conservation. http://naturemap.dec.wa.gov.au/default.aspx (Accessed 9 May 2013).

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.

Department of Sustainability, Environment, Water, Population and Communities (2013) Australian Heritage Database. http://www.environment.gov.au/cgi-bin/ahdb/search.pl (Accessed 13 May 2013).

Government of Western Australia (2013) 2012 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). 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.

Outback Ecology (2012) Forrestania Gold Pty Ltd Conservation Management Plan. Prepared by Outback Ecology Services, August 2012.

Outback Ecology (2013) Forrestania Gold NL Exploration Project, Jilbadji Nature Reserve, Clearing Permit Application.

Prepared by Outback Ecology Services for Norilsk Nickel, February 2013.
Paul Armstrong and Associates (2012a) Report for Ground Disturbance Application Milky Lake - Jilbadjie Nature Reserve Conducted December 2011. Prepared by Paul Armstrong and Associates for Forrestania Gold, May 2012.
Paul Armstrong and Associates (2012b) Vegetation Survey and Rare Flora Search at the Milky Lake Prospect. Prepared by Paul Armstrong and Associates for Forrestania Gold, May 2012.

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
DoIR	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:

{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.