



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 3566/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Western Areas NL

1.3. Property details

Property: Mining Lease 77/582
Mining Lease 77/911
Local Government Area: Shire of Kondinin
Colloquial name: Flying Fox Northeast Exploration Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
10		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 Beard Vegetation Associations have been mapped at a 1:250,000 scale for the whole of Western Australia. Three Beard Vegetation Associations have been mapped within the application area (GIS Database; Shepherd, 2007):

- 511:** Medium woodland; salmon gum & morrel;
- 519:** Shrublands; mallee scrub, *Eucalyptus eremophila*; and
- 2048:** Shrublands, scrub-heath in the Mallee region.

The application area was surveyed by Botanica Consulting staff between 29 - 30 October 2006 (Botanica Consulting, 2006). The following vegetation types were identified within the application area:

***Eucalyptus* Mallee Woodland:** upper-storey comprised of *Eucalyptus eremophila* ssp. *eremophila*, *E. calycogona*, *E. celastroides* ssp. *celastroides* with mid-storey species comprised of *Allocasuarina acutivalvis*, *A. decussata*, *Melaleuca acuminata*, *M. adnata*, *M. pauperiflora* ssp. *pauperiflora*, *M. hamata*, *Grevillea eriostachya*, *G. pterosperma*, *Exocarpos aphyllus* and *Santalum acuminatum* over an under-storey comprised of *Wilsonia humilis*, *Cooperookia strophiolata*, *Westringia rigida*, *Acacia deficiens*, *A. erinacea*, *A. intricate* and *A. sphacelata* ssp. *sphacelata*;

***Eucalyptus salmonophloia* Woodland:** dominated by *Eucalyptus salmonophloia* with mid-storey species comprised of *Melaleuca adnata*, *M. pauperiflora* ssp. *pauperiflora*, *M. pentagona* and *Santalum acuminatum* over an under-storey comprised of *Olearia muelleri*, *Wilsonia humilis*, *Goodenia viscid*, *Westringia cephalantha*, *Acacia sphacelata* ssp. *sphacelata*, *A. deficiens* and *A. poliochroa*;

Sandplain Heath: dominated by *Melaleuca hamata* and *Allocasuarina decussata* with mid-storey species comprised of *Leptosperma erubescens* and *Melaleuca hamata* over an under-storey comprised of *Astroloma serratifolium*, *Westringia cephalantha*, *Darwinia inconspicua*, *Microcybe albiflora*, *Tetratheca efoliata* and *Philothea rhomboidea*; and

Kwongan Vegetation: upper-storey comprised of *Allocasuarina decussata*, *A. acutivalvis*, *Grevillea cagiana* with mid-storey species comprised of *Melaleuca hamata*, *Banksia elderiana*, *Dryandra cirsioides*, *D. erythrocephala*, *Grevillea acuaria*, *G. shuttleworthiana* ssp. *obovata*, *Hakea subsulcata* and *H. corymbosa* over an under-storey comprised of *Lepidosperma brunonianum*, *Lysinema ciliatum*, *Baecke crispiflora*, *Balaustion pulcherrimum*, *Darwinia inconspicua*, *Petrophile divaricata* and *Daviesia elongata* ssp. *implexa* (Botanica Consulting, 2006).

No weed species were recorded within the application area (Botanica Consulting, 2006).

Clearing Description Western Areas NL intend to clear up to 10 hectares of native vegetation to allow further exploration drilling north of the Flying Fox nickel mine (Western Areas NL, 2010).

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

Comment The application area is located in the Coolgardie and Mallee regions, approximately 75 kilometres north of Lake King.

The vegetation condition was derived from a vegetation survey conducted by Botanica Consulting (2006).

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 Western Mallee (MAL2) subregion of the Mallee Interim Biogeographic Regionalisation of Australia (IBRA) bioregion and the Southern Cross (COO2) subregion of the Coolgardie IBRA bioregion (GIS Database). The Southern Cross subregion is characterised by subdued relief, comprised of gently undulating uplands dissected by broad valleys with bands of low greenstone hills (CALM, 2002a). The drainage of the Southern Cross subregion is occluded (CALM, 2002a). While the Western Mallee subregion is characterised by clays and silts underlain by Kankar, exposed granite, sandplains and laterite pavements. Salt lake systems occur on a granite basement, with occluded drainage systems (CALM, 2002b). Mallee communities can be found on a variety of surfaces while *Eucalyptus* woodlands occur mainly on fine-textured soils, with scrub heath on sands and laterite (CALM, 2002b).

The application area occurs within an Environmentally Sensitive Area (Register of National Estate), which is the Lake Cronin Area (GIS Database). The Lake Cronin Area is listed on the Register of National Estate for its high level of flora and fauna diversity and endemism. According to the Australian Heritage Database (2010), 16 fauna species that are endemic to either the south-west region or to Western Australia occur within the Lake Cronin area. The Lake Cronin area is also described as being an important refuge for rare species due to widespread clearing in the wheatbelt to the west. Rare species include fauna such as the Malleefowl (*Leipoa ocellata*) and flora species such as *Eucalyptus steedmanii*.

A vegetation survey of the application area and surrounding vegetation identified 132 flora species belonging to 54 genera from 26 families (Botanica Consulting, 2006). Three species of Priority Flora (P2 - *Baeckea* sp. North Ironcap, P3 - *Dillwynia acerosa* and P4 - *Microcorys* sp. Forrestania) were recorded within the application area during the vegetation survey (Botanica Consulting, 2006). The proposal is not expected to have a significant impact on these species or their habitat.

No weed species were recorded within the application area (Botanica Consulting, 2006). Weeds have the potential to alter the biodiversity of an area, competing with native vegetation for available resources and making areas more fire prone. This in turn can lead to greater rates of infestation and further loss of biodiversity if the area is subject to repeated fires. None of these species are listed as 'Declared Plant' species under the *Agriculture and Related Resources Protection Act 1976* by the Department of Agriculture and Food. The assessing officer recommends that should the permit be granted, that appropriate conditions be imposed on the permit for the purpose of weed management.

An area search of the Department of Environment and Conservation's online fauna database conducted by the assessing officer suggests that the application area is diverse in reptile species (DEC, 2010). The database search found 39 reptile species as potentially occurring within the application area, or within a 10 kilometre radius of the application area. The vegetation communities within the application area are not likely to be considered as rare, geographically restricted or of significant conservation value. The vegetation communities and potential fauna habitats within the application area are considered common within the Mallee and Coolgardie bioregions, and are unlikely to be of higher biodiversity than the surrounding areas. The proposed clearing is unlikely to have a significant impact on the biological diversity of the region, or comprise of a high level of biological diversity.

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

Methodology Australian Heritage Database (2010)
Botanica Consulting (2006)
CALM (2002a)
CALM (2002b)
DEC (2010)
GIS Database
- Clearing Regulations - Environmentally Sensitive Areas
- IBRA WA (regions - subregions)
- Register of National Estate (Status)

(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 may be at variance to this Principle**

The assessing officer has conducted a search of the Department of Environment and Conservation's online

fauna database between the coordinates 119.85750°E, 32.3080°S and 119.8177°E, 32.5070°S, representing a 10 kilometre radius around the application area.

This search identified 8 Amphibian, 14 Mammalian, 24 Avian and 39 Reptilian species that may occur within the application area (DEC, 2010). Of these, the following species of conservation significance have previously been recorded within the search area:

Schedule 1 - Fauna that is rare or likely to become extinct, *Wildlife Conservation (Specially Protected Fauna) Notice, 2010*: Carnaby's Cockatoo (*Calypotorhynchus latirostris*), Malleefowl (*Leipoa ocellata*), Western Rosella (*Platycercus icterotis* subsp. *xanthogenys*), Chuditch (*Dasyurus geoffroi*) and the Carpet Python (*Morelia spilota* subsp. *imbricata*);

Schedule 4 - Other specially protected fauna, *Wildlife Conservation (Specially Protected Fauna) Notice, 2010*: Peregrine Falcon (*Falco peregrinus* subsp. *macropus*);

P3 - DEC Priority Fauna List: Lake Cronin Snake (*Paroplocephalus atriceps*); and

P4 - DEC Priority Fauna List: Western Brush Wallaby (*Macropus irma*), Shy Heathwren (*Hylacola cauta* subsp. *whitlocki*), Crested Bellbird (*Oreoica gutturalis* subsp. *gutturalis*) and the White-browed Babbler (*Pomatostomus superciliosus* subsp. *ashbyi*).

Four vegetation types were recorded over the survey area;

- *Eucalyptus* Mallee Woodland;
- *Eucalyptus salmonophloia* Woodland;
- Sandplain Heath; and
- Kwongan Vegetation (Botanica Consulting, 2006).

The Carnaby's Cockatoo (Schedule 1 - Fauna that is rare or likely to become extinct, *Wildlife Conservation (Specially Protected Fauna) Notice, 2010*) forage in woodland and heath that is dominated by proteaceous species and nest in hollows of large eucalypts, usually Salmon Gum and Wandoo (DEC, 2006a). The vegetation type '*Eucalyptus salmonophloia* Woodland' may provide nesting hollows for this species. Therefore large hollow bearing Salmon Gum trees should be avoided.

The '*Eucalyptus* Mallee Woodland' and '*Eucalyptus salmonophloia* Woodland' vegetation types may also provide significant habitat for the Chuditch. This species occupies a wide range of habitats from woodlands, dry sclerophyll (leafy) forests, riparian vegetation, beaches and deserts (DEC, 2006b). The Chuditch may occur within the application area, particularly given the availability of suitable habitat within the application area. The full extent of the Chuditch population in this area cannot be quantified. However, given this population's isolation from other populations in the state's south-west, the vegetation within the application area may be significant habitat for this species.

Based on the above, the proposed clearing may be at variance to this principle (due to presence of Chuditch and Carnaby's Cockatoo). The assessing officer recommends that should the permit be granted, conditions be imposed on the permit requiring the permit holder to salvage hollows from the application area prior to clearing, relocate to nearby habitat.

Methodology Botanica Consulting (2006)
DEC (2010)
DEC (2006a)
DEC (2006b)

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

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

According to available databases, no Declared Rare Flora (DRF) species occur within the application area (GIS Database). One population of *Baeckea* sp. North Ironcap (P2), *Dillwynia acerosa* (P3) and *Daviesia elongata* subsp. *implexa* (P3) have been recorded within the application area (GIS Database).

Prior to the field survey being undertaken a desktop database search of the Department of Environment and Conservation's Declared Rare and Priority Flora Database and the Western Australian Herbarium database was conducted by Botanica Consulting (2006).

A flora survey was conducted over the application area by Botanica Consulting in October 2006 (Botanica Consulting, 2006). The survey area (approximately 329.8 hectares) was traversed by two people via a Kawasaki Mule and on foot where appropriate. Different vegetation groups encountered during the survey were described and the vegetation associations were examined for the presence or absence of any DRF and Priority Flora species (Botanica Consulting, 2006).

No DRF were recorded during the surveys. Four species of Priority flora were recorded within the application area (Botanica Consulting, 2006).

P3 - *Microcorys pimeleoides*, *Dillwynia acerosa* and *Daviesia elongata* subsp. *implexa*; and

P4 - *Microcorys* sp. *Forrestania* (Botanica Consulting, 2006).

Microcorys pimeleoides is a shrub associated with sandy loam soils (Western Australian Herbarium, 2010). Botanica Consulting (2006) recorded approximately 5 individuals as occurring within the application area.

Dillwynia acerosa is a shrub found on gravelly clay with laterite (Western Australian Herbarium, 2010). Botanica Consulting (2006) recorded approximately 5 individuals as occurring within the application area.

Daviesia elongata subsp. *implexa* is a spreading shrub associated with sandy and laterite (Western Australian Herbarium, 2010). Botanica Consulting (2006) recorded this species as being frequent in patches within the application area.

Microcorys sp. *Forrestania* is an erect shrub associated with yellow sandy clay or red-brown clay (Western Australian Herbarium, 2010). Botanica Consulting (2006) recorded 1000+ individuals as occurring within the application area.

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

Methodology Botanica Consulting (2006)
Western Australian Herbarium (2010)
GIS Database
- Declared Rare and Priority Flora List

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

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

A search of available databases reveals that there are no Threatened or Priority Ecological Communities (TEC or PEC's) within the application area (GIS Database).

The nearest TEC (Bryde) is located approximately 128 kilometres south-west of the application area, whilst the nearest PEC (Parker Range Vegetation Complexes) is located approximately 46 kilometres north of the application area. At this distance there is little likelihood of any impact to the TEC from the proposed clearing.

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

Methodology GIS Database
- Threatened Ecological Sites

(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 likely to be at variance to this Principle

The application area falls within the Coolgardie and the Mallee Interim Biogeographic Regionalisation of Australia (IBRA) bioregions (GIS Database). Shepherd (2007) reports that approximately 98.42% and 54.63% of the pre-European vegetation still exists in these bioregions respectively. In addition, there is approximately 33.29% of vegetation remaining within the Western Mallee IBRA subregion, of which 25.34% remains in conservation estate. There is approximately 50.47% of vegetation remaining within the Shire of Kondinin (Shepherd, 2007).

The vegetation within the application area is recorded as Beard Vegetation Associations (Shepherd, 2007):

- **511:** Medium woodland; salmon gum & morrel;
- **519:** Shrublands; mallee scrub, *Eucalyptus eremophila*; and
- **2048:** Shrublands, scrub-heath in the Mallee region

According to Shepherd (2007) approximately 33.5%, 57.6% and 47.8% of these vegetation associations remain within the Mallee bioregion and 33.54%, 47.63% and 47.80% remain within the Western Mallee subregion (see table below). These vegetation associations are therefore listed as being depleted, particularly at a subregional level.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves (and post clearing %)
IBRA Bioregion - Coolgardie	12,912,204.15	12,707,619.61	~98.42%	Least Concern	~10.87% (~11.04%)
IBRA Subregion - Southern Cross	6,010,834.03	5,808,064.60	~96.63%	Least Concern	~16.25% (~16.81%)
IBRA Bioregion - Mallee	7,395,897.57	4,040,546.98	~54.63%	Least Concern	~17.97% (~31.22%)
IBRA Subregion - Western Mallee	3,981,720.65	1,325,703.20	~33.29%	Depleted	~9.95% (~25.34%)
Local Government - Kondinin	741,927.00	374,477.93	~50.47	Least Concern	~3.80% (~6.04%)
Beard vegetation associations - State					
511	700,410	494,148	~70.6%	Least Concern	~14.1% (~18.8%)
519	2,333,414	1,399,943	~60.0%	Least Concern	~10.5% (~17.2%)
2048	322,220	155,845	~48.4%	Depleted	~7.6% (~15.3%)
Beard vegetation associations - Coolgardie Bioregion					
511	464,425	435,798	~93.8%	Least Concern	~17.5% (~18.6%)
519	147,579	147,579	~100%	Least Concern	~10.7% (~10.7%)
2048	4,379	4,379	~100%	Least Concern	~3.5% (~3.5%)
Beard vegetation associations - Mallee Bioregion					
511	139,594	46,825	~33.5%	Depleted	~10.5% (~19.3%)
519	2,100,314	1,210,402	~57.6%	Least Concern	~10.8% (~18.5%)
2048	313,728	149,978	~47.8%	Depleted	~7.8% (~15.8%)
Beard vegetation associations - Southern Cross subregion					
511	464,424.57	435,793.50	~93.84%	Least Concern	~17.48% (~18.62%)
519	133,411.89	133,411.89	~100%	Least Concern	~11.71% (~11.71%)
2048	4,379.02	4,379.02	~100%	Least Concern	~3.52% (~3.52%)
Beard vegetation associations - Western Mallee subregion					
511	139,593.68	46,825.18	~33.54	Depleted	~10.50% (~19.33%)
519	1,563,571.86	744,745.81	~47.63%	Depleted	~12.64% (~26.02%)
2048	313,693.09	149,943.09	~47.80%	Least Concern	~7.75% (~15.78%)

* Shepherd (2007)

** Department of Natural Resources and Environment (2002)

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

Methodology Department of Natural Resources and Environment (2002)
Shepherd (2007)
GIS Database
- Pre-European Vegetation
- IBRA WA (regions - subregions)

(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 known GIS datasets, there are no known watercourses or water bodies within the application area (GIS Database). Lake Cronin is located approximately 5.6 kilometres to the east-north-east of the application area (GIS Database).

The vegetation types identified by Botanica Consulting (2006) are not representative of riparian vegetation.

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

Methodology Botanica Consulting (2006)
GIS Database
- Geodata, Lakes
- Hydrography, Linear (Hyd_Type)

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

Comments Proposal may be at variance to this Principle

According to available GIS Databases, there are two soil types (Ms8 and Ya28) within the application area (GIS Database). These soil types are described as;

- Ms8:
 - (i) on rolling to undulating terrain, brown and grey cracking clays
 - (ii) on rolling areas, similar shallow soils, with a complex association of soils often containing some ironstone gravels; and
- Ya28:
Sandy plains with some clay pans and small salt lakes, dunes and lunettes, with the chief soils being sandy alkaline yellow mottled soils (Bureau of Rural Sciences, 1992).

Shallow and deep sands have a high risk of wind erodibility and seasonal water logging may occur over the sandy topsoil and clays, whilst cracking clays have a low to moderate risk of wind erodibility (Schoknecht, 2002).

Groundwater levels at the existing Flying Fox mine are in the order of 50-200 metres below ground level (Western Areas, 2007). At these depths, the clearing of native vegetation is not likely to lead to a rise in groundwater, causing salinisation.

Based on the above, the proposed clearing may be at variance to this Principle. However, provided the disturbed areas are rehabilitated after drilling is completed there would be minimal risk. The assessing officer recommends that should a permit be granted, a condition be imposed on the permit with regard to rehabilitation and revegetation of all cleared areas.

Methodology Bureau of Rural Sciences (1992)
Schoknecht (2002)
Western Areas (2007)
GIS Database
- Soils, Statewide (unit)

(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 occurs within an Environmentally Sensitive Area (Register of National Estate), which is the Lake Cronin Area (GIS Database). At its closest point, the application area is approximately 5.6 kilometres west-south-west from Lake Cronin and 2.6 kilometres west of the Lake Cronin Nature Reserve boundary (GIS Database).

According to the Australian Heritage Database (2010) the Lake Cronin Area is one of a number of areas in the south-west which has provided excellent conditions for the persistence of a range of primitive and relict species. At over 31,000 hectares, the Lake Cronin Area is a significant area in maintaining existing processes at a regional scale and therefore is a potentially important contemporary refugia for many species (Australian Heritage Database, 2010).

The Lake Cronin Area is dominated by mallee and woodland associations (Australian Heritage Database, 2010). This is one of the vegetation types described by Botanica Consulting in their 2006 vegetation survey, as occurring within the application area (Botanica Consulting, 2006). The habitat to be cleared is therefore well represented within the conservation estate. Lake Cronin Nature Reserve is surrounded by extensive vegetation and the clearing of up to 10 hectares of vegetation at a distance of approximately 2.6 kilometres or greater from

the reserve will not significantly affect ecological linkages to the reserve.

Based on the above the proposed clearing may be at variance to this Principle. The assessing officer recommends that should the permit be granted a condition be imposed on the permit requiring that rehabilitation be undertaken to mitigate any potential impacts on the environmental values of the Lake Cronin Area.

Methodology Australian Heritage Database (2010)
Botanica Consulting (2006)
GIS Database
- Clearing Regulations - Environmentally Sensitive Areas
- DEC Tenure (category)
- Geodata, Lakes
- Register of National Estate (Status)

(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).

The groundwater salinity within the application area is approximately 14,000 - 35,000 milligrams/Litre Total Dissolved Solids (TDS) (GIS Database). This is considered to be hyper saline. Given the size of the area to be cleared (10 hectares) compared to the size of the Yilgarn_Southwest Groundwater Province (24,601,260 hectares) (GIS Database), the proposed clearing is not likely to cause salinity levels within the application area to alter significantly.

The application area is located within a *Rights in Water Irrigation Act, 1914* (RIWI Act) Groundwater Management Area (GIS Database). The proponent is required to obtain permits to abstract groundwater in this area.

The application area is located within a semi arid, warm Mediterranean environment with an average annual rainfall of 343.6 millimetres recorded from the nearest weather station at Hyden approximately 77 kilometres west of the application area (BoM, 2010; CALM, 2002a; CALM, 2002b). The small size of the proposed clearing area within the above climate is unlikely to result in significant changes to surface water flows.

There are no known groundwater dependent ecosystems within the application area (GIS Database).

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

Methodology BoM (2010)
CALM (2002a)
CALM (2002b)
GIS Database
- Groundwater Provinces
- Groundwater Salinity, Statewide (TDS_MG_L)
- Potential Groundwater Dependent Ecosystems
- Public Drinking Water Source Areas (PDWSAS)
- RIWI Act, Groundwater Areas (P_Status)

(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 experiences a semi arid, warm Mediterranean climate with an average annual rainfall of 343.6 millimetres recorded from the nearest weather station at Hyden approximately 77 kilometres west of the application area (BoM, 2010; CALM, 2002a; CALM, 2002b). Rainfall is usually experienced during winter months and it is likely that during times of intense rainfall there may be some localised flooding in adjacent areas (CALM, 2002a).

The application area is located within the Swan-Avon Lockhart and Swan-Avon Yilgarn catchment areas (GIS Database). However, the small area to be cleared (10 hectares) in relation to the size of the Swan-Avon Lockhart and Swan-Avon Yilgarn catchment areas (2,839,267 and 5,836,045 hectares respectively) (GIS Database) is not likely to increase the potential for flooding within the application area, local area or within the catchment (GIS Database).

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

Methodology BoM (2010)

CALM (2002a)
CALM (2002b)
GIS Database
- Hydrographic Catchments - Catchments

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

Comments

The clearing permit application was advertised on 8 February 2010 by the Department of Mines and Petroleum inviting submissions from the public. Additionally, direct interest parties were notified of the application on 5 February 2010. One public submission was received in regard to this Clearing Permit application. The submission raised concerns regarding the potential impacts of the proposed vegetation clearing on Native Title Rights and Aboriginal Heritage. In response to the issues raised a letter of reply was sent on the 25 February 2010.

There are no native title claims over the application area (GIS Database). The mining tenement 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 located within the clearing permit application area (GIS Database). The closest registered Aboriginal Site of Significance is located approximately 5 kilometres north-east of 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.

Methodology GIS Database
- Aboriginal Sites of Significance
- Native Title Claims

4. Assessor's comments

Comment

The proposal has been assessed against the Clearing Principles, and the proposal may be at variance to Principles (b), (g), (h), is not likely to be at variance to Principles (a), (c), (d), (e), (i) and (j) and is not at variance to Principle (f).

It is recommended that should a permit be granted, conditions be imposed on the permit for the purpose of weed management, fauna management, record keeping and permit reporting.

5. References

- Australian Heritage Database (2010) Register of National Estate: Lake Cronin Area, Forrestania, Southern Cross Rd, Hyden, WA, Australia. <http://www.environment.gov.au> (Accessed 25 February 2010)
- BoM (2010) Bureau of Meteorology Website - Climate Averages by Number, Averages for HYDEN. http://www.bom.gov.au/climate/averages/tables/cw_010568.shtml (Accessed 8 February 2010)
- Botanica Consulting (2006) Flora and Vegetation Survey of the Flying Fox North East Exploration Area (M77/582 and M77/911). Unpublished report prepared for Western Areas NL, November 2006
- Bureau of Rural Sciences (1992) Interpretations of the Digital Atlas of Australian Soils Mapping Units (ARC/INFO format). <http://www.daff.gov.au/brs/data-tools/daas-download> (Accessed 25 February 2010)
- CALM (2002a) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Coolgardie 2 (COO2 - Southern Cross subregion) Department of Conservation and Land management, Western Australia
- CALM (2002b) A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions. Mallee 2 (MAL2 - Western Mallee subregion) Department of Conservation and Land management, Western Australia
- DEC (2006a) Carnaby's black cockatoo. <http://www.naturebase.net/> Accessed 25 February 2010. Department of Environment and Conservation, Western Australia.
- DEC (2006b) Chuditch. <http://www.naturebase.net> Accessed 25 February 2010. Department of Environment and Conservation, Western Australia
- DEC (2010) NatureMap - Department of environment and Conservation and Western Australian Museum. <http://naturemap.dec.wa.gov.au/default.aspx> (Accessed 25 February 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.
- Schoknecht N. (2002) Soil Groups of Western Australia. A simple guide to the main soils of Western Australia. Resource Management Technical Report 246. Edition 3
- 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. Includes subsequent updates for 2006 from Vegetation Extent dataset ANZWA1050000124.
 Western Areas (2007) Supporting Documentation for the Proposed Flying Fox and Lounge Lizard Exploration Purpose Clearing Permit Application, Tenements (M77/545 & M77/582)
 Western Areas NL (2010). Supporting Documentation, Forrestania Nickel Project - Clearing Application, Tenements M77/582 and M77/911. Unpublished report prepared by Western Areas NL
 Western Australian Herbarium (2010) Florabase - the Western Australian Flora.
<http://florabase.calm.wa.gov.au/search/quick?q=microcorys+sp.+forrestania>. (Accessed 8 February 2010)

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.