



Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 4674/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Chichester Metals Pty Ltd

1.3. Property details

Property: Exploration Licence 45/2652
Exploration Licence 46/590
Exploration Licence 46/664
Exploration Licence 46/611
Exploration Licence 46/612

Local Government Area: Shire of East Pilbara
Colloquial name: Fortescue Marsh Investigations Stage 2

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
28.3		Mechanical Removal	Hydrological Investigations

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 19 January 2012

2. Background

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. Two Beard vegetation associations have been mapped within the application area (GIS Database; Shepherd, 2009).

29: Sparse low woodland; mulga, discontinuous in scattered groups; and

676: Succulent steppe; samphire (GIS Database; Shepherd, 2009).

The application area was surveyed in 2006 by Mattiske Consulting. The following vegetation types were identified within the application area (Mattiske Consulting, 2007):

2: Low Woodland to Low Open Forest of *Acacia aneura* var. *aneura*, *Acacia citrinoviridis*, *Acacia pruinocarpa* over *Acacia tetragonophylla* and *Psyrax latifolia* over *Chrysopogon fallax*, *Stemodia viscosa*, *Blumea tenella*, *Themeda triandra* and species of *Triodia* and *Aristida*;

3: Low Woodland to Low Open Forest of *Acacia aneura* var. *aneura*, *Acacia pruinocarpa*, *Acacia tetragonophylla*, *Acacia tenuissima*, *Grevillea wickhamii* subsp. *aprica*, *Psyrax latifolia* over *Dodonaea petiolaris* and species of *Triodia* and *Aristida*;

11: Hummock grassland of *Triodia angusta* with patches of *Acacia victoriae*, *Acacia aneura* var. *aneura*, *Acacia xiphophylla* over *Atriplex codonocarpa*, *Eremophila cuneifolia* and mixed Chenopods;

12: Low Halophytic shrubland of *Halosarcia auriculata* and *Halosarcia indica* subsp. *leiostachya* with associated Chenopod species of *Maireana* species and *Atriplex flabelliformis* with *Muehlenbeckia florulenta* with patches of *Acacia victoriae* and *Acacia sclerosperma* subsp. *sclerosperma*;

13: Low Halophytic shrubland of *Halosarcia auriculata*, *Halosarcia indica* subsp. *leiostachya*, *Halosarcia halocnemoides* subsp. *tenuis* with patches of *Frankenia* species;

14: Hummock grassland of *Triodia angusta* with patches of *Acacia victoriae* over *Atriplex codonocarpa* and mixed Chenopods and Poaceae species;

19: Scrub of *Acacia xiphophylla* over *Cenchrus ciliaris*, *Dissocarpus paradoxus* and *Halosarcia indica* subsp. *bidens*;

20: Scrub of *Acacia sericophylla* over *Meullerolimon salicorniaceum*, *Nicotiana occidentalis* and *Mimulus gracilis*;

21: Scrub of *Acacia amplexa* over *Meullerolimon salicorniaceum*, *Halosarcia indica* subsp. *bidens*, *Nicotiana occidentalis* and *frankeniantha*;

22: Low shrubland of *Halosarcia indica* subsp. *bidens* and *Nicotiana occidentalis* over grasses with occasional stands of *Sesbania cannabina* and *Cullen cinereum*;

23: Low shrubland of *Frankenia ambita*, *Halosarcia bidens* subsp. *leiostachya* and *Eragrostis dielsii* with emergent *Acacia sericophylla*;

24: Low shrubland of *Halosarcia bidens* subsp. *leiostachya* with *Eragrostis dielsii*;

25: Low shrubland of *Halosarcia auriculata*, *Halosarcia indica* subsp. *bidens* and *Frankenia ambita* over *Eragrostis dielsii*;

26: Low shrubland of *Meullerolimon salicorniaceum* and *Halosarcia indica* subsp. *bidens*;

27: Low shrubland of *Maireana carcosa*, *Atriplex codonocarpa* and *Sclerolaena cuneata* over *Eragrostis dielsii* and *Trianthema turgidifolia*;

28: Hummock grassland of *Triodia angusta* with *Eremophila spongicarpa* (ms) (P1) and *Halosarcia indica* subsp. *bidens*; and

29: Hummock grassland of *Triodia angusta* with *Halosarcia bidens* subsp. *leiostachya*, *Cullen cinereum*, *Eragrostis dielsii* and emergent *Acacia synchronicia*.

Clearing Description	Chichester Metals Pty Ltd is proposing to clear up to 28.3 hectares of native vegetation to undertake hydrological investigations of the Fortescue Marsh. The application area will be cleared for the purpose of installing nested piezometers at nine locations, 24 soil pit excavations at two locations and access tracks (FMG, 2011).
Vegetation Condition	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994); To Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994).
Comment	The application area is located in the Pilbara region of Western Australia and is situated approximately 74 kilometres south-south-west of Nullagine (GIS Database). The application area is located within the Fortescue Marsh which is listed as a wetland of national importance and a Priority Ecological Community (PEC) (GIS Database). The application area will be cleared for the purpose of implementing stage two of the existing Fortescue Marsh Investigations Project. Clearing for stage one of the project was approved under clearing permit CPS 3828/3 which was granted by the Department of Mines and Petroleum on 23 December 2010.

3. Assessment of application against Clearing Principles

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

Comments	<p>Proposal may be at variance to this Principle</p> <p>The application area occurs within the Fortescue Plains (PIL2) subregion of the Pilbara Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). The Fortescue Plains subregion is characterised by alluvial plains and river frontage (CALM, 2002). The eastern portion of the subregion is comprised of extensive salt marsh, mulga-bunch grass and short grass communities on alluvial plains, while deeply incised gorge systems comprise the western part of the drainage (CALM, 2002). An extensive calcrete aquifer feeds numerous permanent springs in the central Fortescue, supporting large permanent wetlands with extensive stands of river gum and Cadjeput Melaleuca woodlands (CALM, 2002).</p> <p>The vegetation of the Fortescue Marsh is predominantly comprised of samphire communities, with extensive bare areas also common in the lowest elevation areas (FMG, 2011). Nine species of Priority flora were recorded as occurring or possibly occurring in the samphire communities in and adjacent to the Fortescue Marsh (FMG, 2010).</p> <p>P1 - <i>Eremophila spongicarpa</i>, <i>Nicotiana heterantha</i>, <i>Peplidium</i> sp. Fortescue Marsh, <i>Tecticornia</i> sp. Christmas Creek, <i>Tecticornia</i> sp. Fortescue Marsh; P3 - <i>Atriplex flabelliformis</i>, <i>Rhagodia</i> sp. Hamersley, <i>Tecticornia</i> sp. Roy Hill; and P4 - <i>Eremophila youngii</i> subsp. <i>lepidota</i> (FMG, 2010).</p>
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The impact to individuals of these species is unlikely to significantly impact on the survival of the populations.

The application area occurs within a Priority Ecological Community (PEC), which is the Fortescue Marsh (GIS Database). The Fortescue Marsh PEC is described as an extensive, episodically inundated samphire marsh, approximately 100 kilometres long and 10 kilometres wide (CALM, 2002). The Fortescue Marsh PEC is listed as "Priority 1" (DEC, 2010).

An ecological community will be listed as Priority 1 when they are communities with apparently few, small occurrences, all or most not actively managed for conservation and for which current threats exist. Communities may be listed as Priority 1 if they are comparatively well-known from one or more localities but do not meet adequacy of survey requirements, and/or are not well defined, and appear to be under immediate threat from known threatening processes across their range (DEC, 2007).

The PEC is on the Fortescue River, east of Mulga Downs Pastoral Station, on Marillana and Roy Hill Stations (DEC, 2010). The threats facing the PEC include but are not limited to; grazing pressure, feral animals and changes in hydrology (CALM, 2002).

Given the above threats, DEC identified that the lands comprising and surrounding the Fortescue Marsh PEC should be protected in the formal conservation reserve system. The Government is proposing the exclusion of a portion of Hillside, Mulga Downs, Marillana and Roy Hill Stations that contain the PEC from the pastoral lease through the 2015 pastoral lease exclusion process, for future protection as a conservation reserve. The application area forms part of the 2015 pastoral lease exclusion boundary (GIS Database).

The vegetation of the Fortescue Marsh is predominantly comprised of samphire communities, with extensive bare areas in the lowest elevation areas (FMG, 2011). These samphire vegetation types are locally restricted to the Fortescue Marsh and are unique to the central Pilbara region (FMG, 2011).

The Fortescue Marsh and surrounding areas are located on pastoral stations and as such have suffered some previous disturbance from cattle grazing (FMG, 2010; GIS Database). The impacts from cattle grazing on the Fortescue Marsh itself are generally low, mainly as a result of the stability and resilience of the clay soils (FMG, 2010).

The application area is located within a Priority Ecological Community and the area to be cleared may comprise a higher level of biological diversity than surrounding areas. However, considering the size of the proposed clearing in relation to the size of the Fortescue Marsh and given the low impact nature of the proposed activities, the clearing is unlikely to significantly impact the environmental conservation values of the Fortescue Marsh.

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

Methodology CALM (2002)
DEC (2007)
DEC (2010)
FMG (2010)
FMG (2011)
GIS Database:
- DEC Proposed 2015 Pastoral Lease Exclusions
- 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

The Fortescue Marsh is an extensive, episodically inundated samphire marsh, approximately 100 kilometres long and 10 kilometres wide (CALM, 2002). The Fortescue Marsh has been designated as a wetland of national importance under Criteria 3 of the Directory of Important Wetlands in Australia as "it is a wetland that is important as the habitat for animal taxa at a vulnerable stage in their life cycles, or provides a refuge when adverse conditions such as drought prevail" (DEC, 2009; CALM, 2002; Environment Australia, 2001).

The Fortescue Marsh is a significant drought refuge area for native vertebrate fauna in the bioregion (DEC, 2009). The marsh is also known to support migratory waterbird species, including Clamorous Reed-warbler (*Acrocephalus stentoreus*), Great Egret (*Ardea alba*), Swamp Harrier (*Circus approximans*) and Whiskered Tern (*Chlidonias hybridus*), as well as Sacred Kingfisher (*Todiramphus sanctus*). The marsh is also a major breeding area for the Australian Pelican (*Pelecanus conspicillatus*) and Black Swan (*Cygnus atratus*) (DEC, 2009). The Fortescue Marsh is the only Pelican breeding area in the Pilbara bioregion and is isolated by large distances from other Pelican breeding areas (Environment Australia, 2001).

Davis et al. (2005) undertook a comprehensive fauna survey of the Fortescue Metals Group Chichester Operations which included the northern margins of the Fortescue Marsh in April 2005. Three conservation

significant species have been identified as potentially having a special reliance on the habitat provided by the Marsh:

- Night Parrot (*Pezoporus occidentalis*);
- Bilby (*Macrotis lagotis*); and
- Australian Bustard (*Ardeotis australis*) (FMG, 2011).

However, given the extensive nature of the Fortescue Marsh (approximately 100,000 hectares), the native vegetation within the application area is unlikely to be considered as significant habitat for fauna. The low impact clearing activities are unlikely to significantly impact on the quality or availability of fauna habitats that are present within the application area.

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

Methodology CALM (2002)
Davis et al. (2005)
DEC (2009)
Environment Australia (2001)
FMG (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 GIS databases there are no known records of Declared Rare Flora (DRF) within the application area (GIS Database).

The assessing officer conducted a search of DEC's online flora and fauna database (NatureMap) between the coordinates 119°59'26"E - 119°03'10"E, 23°13'0"S - 22°38'43"S, representing a 10 kilometre radius around the application area (DEC, 2011b).

This search revealed that the DRF species *Lepidium catapycnon* may occur within the application area or the surrounding 10 kilometres. *Lepidium catapycnon* is an open woody perennial shrub largely restricted to skeletal soils and hillsides (Western Australian Herbarium, 2010). The required habitat for *Lepidium catapycnon* was not observed within the application area during the vegetation survey conducted by Mattiske Consulting, therefore it is unlikely that this species occurs within the application area (Mattiske Consulting, 2007).

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

Methodology DEC (2011b)
Mattiske Consulting (2007)
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

There are no Threatened Ecological Communities (TECs) within the application area (GIS Database). There are no TECs within a 70 kilometre radius 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 application falls within the Pilbara Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). Shepherd (2009) reports that approximately 99.95% of the pre-European vegetation remains in this bioregion.

The vegetation within the application area is recorded as Beard vegetation associations:
29: Sparse low woodland; mulga, discontinuous in scattered groups; and
676: Succulent steppe; samphire (GIS Database; Shepherd, 2007).

According to Shepherd (2007) approximately 100% of these Beard vegetation associations remain within the Pilbara bioregion (see table below).

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves
IBRA Bioregion - Pilbara	17,804,188	17,794,647	~99.95%	Least Concern	~6.32%
IBRA Subregion - Fortescue	1,951,433	1,951,433	~100%	Least Concern	~0.55%
Beard vegetation associations - State					
29	7,903,991	7,903,991	~100%	Least Concern	~0.3%
676	2,063,389	1,958,293	~94.9%	Least Concern	~3.6%
Beard vegetation associations - Bioregion					
29	1,133,219	1,133,219	~100%	Least Concern	~1.9%
676	92,363	92,300	~99.9%	Least Concern	N/A

* Shepherd (2009)

** Department of Natural Resources and Environment (2002)

Methodology Based on the above, the proposed clearing is not at variance to this Principle.
 Department of Natural Resources and Environment (2002)
 Shepherd (2009)
 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 at variance to this Principle

The application area occurs within the Fortescue Marsh, which is described as "an extensive, episodically inundated samphire marsh, approximately 100 kilometres long and 10 kilometres wide" (CALM, 2002; GIS Database).

The Fortescue Marsh has been identified as a wetland of national significance as it meets the following required inclusion criteria (Environment Australia, 2001):

- It is a good example of a wetland type occurring within a biogeographic region in Australia;
- It is a wetland which plays an important ecological or hydrological role in the natural functioning of a major wetland system/complex;
- It is a wetland which is important as the habitat for animal taxa at a vulnerable stage in their life cycles, or provides a refuge when adverse conditions such as drought prevail; and
- The wetland is of outstanding historical or cultural significance.

The Fortescue Marsh is known to contain habitat that is significant for endemic *Eremophila* species, as well as several near endemic and new to sciences samphires (DEC, 2010). Several specific vegetation types have also been recorded from Mulga Downs Station as occurring only around the marsh, as well as an unusual system occurring downstream (DEC, 2010).

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

The proposed hydrological investigations are required to implement stage two of the existing Fortescue Marsh Investigations Project. The clearing is required for the installation of nested piezometers at nine locations, 24 soil pit excavations at two locations and access tracks (FMG, 2011). All clearing will be conducted in accordance with the, "Fortescue Marsh Eco-hydrology Investigations Site Access Plan and Works Programme" (Access Plan), which has been developed in consultation with the Department of Environment and Conservation (DEC, 2011a).

The Department of Water (DoW, 2011) has also provided the following advice:

- No activity shall be undertaken which results in the loss of riverbank or wetland fringing vegetation, in particular construction of vehicular access tracks. Where possible, existing tracks are to be used;

- The area shall be returned to a state close as possible to that prior to the leaseholder activities and if necessary, be in accordance with an approved rehabilitation plan;
- Authorised staff of the Department of Water have right of access for the purpose of water resource inspection and investigation; and
- The Department of Water requests written notification of any activities that may go beyond those outlined in the conditions stipulated before initiation of activities (DoW, 2011).

Given the size of the proposed clearing in relation to the size of the Fortescue Marsh, the activities are unlikely to significantly impact the environmental conservation values of the Fortescue Marsh.

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

Methodology CALM (2002)
 DEC (2010)
 DEC (2011a)
 DoW (2011)
 Environment Australia (2001)
 FMG (2011)
 GIS Database:
 - ANCA, Wetlands
 - Clearing Regulations - Environmentally Sensitive Areas
 - Geodata, Lakes
 - Threatened Ecological Sites Buffered

(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

The application area comprises the following land systems (GIS Database);

- Cowra land system: Plains fringing the Marsh land system and supporting Snakewood and mulga shrublands with some halophytic undershrubs;
- Jamindie land system: Stony hardpan plains and rises supporting groved mulga shrublands, occasionally with spinifex understorey;
- Marsh land system: Lakebeds and floodplains subject to regular inundation, supporting samphire shrublands, salt water couch grasslands and halophytic shrublands;
- Turee land system: Stony alluvial plains with gilgaied and non-gilgaied surfaces supporting tussock grasslands and grassy shrublands; and
- Warri land system: Low calcrete platforms and plains supporting mulga and cassia shrublands (Van Vreeswyk et al, 2004).

The Marsh land system is subject to regular inundation and covers the majority of the application area (GIS Database). This land system has a low susceptibility to degradation and erosion except for some alluvial fans and drainage floors and some outer margins of flood plains which are moderately susceptible to erosion (Van Vreeswyk et al, 2004).

The Turee land system is protected from erosion by stone surface mantles. However, the less stony parts of the hardpan plains, gilgai plains, saline stony plains and channelled drainage tracts land units are slightly to moderately susceptible to erosion (Van Vreeswyk et al, 2004).

The Cowra land system is generally protected from erosion by surface mantles of gravel (Van Vreeswyk et al, 2004). However, if the mantle is removed or disturbed, particularly on the saline alluvial plains erosion can occur (Van Vreeswyk et al, 2004).

The saline plains of the Warri land system are moderately susceptible to erosion, those with loam over hardpan (hardpan plains) are less susceptible and calcrete tables are not normally susceptible though widely degraded (Van Vreeswyk et al, 2004).

The Jamindie land system contains drainage tract land units which are moderately susceptible to erosion, while some of the hardpan plains land units are slightly susceptible and other parts are inherently resistant (Van Vreeswyk et al, 2004).

Given the low impact nature of the hydrological investigations to be conducted the proposed clearing is unlikely to result in appreciable land degradation although some localised erosion may occur.

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

Methodology Van Vreeswyk et al. (2004)
 GIS Database:

(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 proposed clearing is not located within a conservation reserve (GIS Database). The nearest known conservation reserve is Karijini National Park, located approximately 41 kilometres west (GIS Database).

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

The application area is located within the Fortescue Marsh, an area of high ecological and environmental significance and a nationally important wetland and candidate for RAMSAR nomination (DoW, 2011). The Fortescue Marsh is an extensive intermittent wetland occupying an area around 100 kilometres long by typically 10 kilometres wide located on the floor of the Fortescue Valley (Aquaterra, 2005).

The Fortescue Valley is subjected to localised thunderstorm and cyclonic rainfall events which can produce very large runoff events. Following a significant rainfall event, runoff from the Upper Fortescue River Catchment drains to the marshes. For the smaller runoff events, isolated pools form on the marshes opposite the main drainage inlets, whereas for the larger events the whole marsh area may flood (Aquaterra, 2005).

Surface water runoff to the marshes is of low salinity and turbidity, though the runoff turbidity typically increases significantly during peak periods of flooding. Water stored on the marshes slowly dissipates through the processes of seepage and evaporation (Aquaterra, 2005). During the evaporation process, the water salinity levels increase and as the ponded areas recede, traces of surface salt can be seen. During the seepage process, as the ponds evaporate, increasingly more saline water is believed to seep into the valley floor alluvial deposits (Aquaterra, 2005).

The salinity of the application area is greater than 35,000 milligrams/Litre Total Dissolved Solids (TDS) (GIS Database). The alluvial aquifer beneath the Fortescue Marsh is considered to be saline to hypersaline (10,000 to 75,000 milligrams/Litre TDS) while the deeper aquifers are saturated with hypersaline water (75,000 to 160,000 milligrams/Litre TDS) (FMG, 2010). The hypersalinity is thought to result from the downward migration of salt due to the increased density of the solution (FMG, 2010).

Given the above the proposed clearing is not likely to cause deterioration in the quality of surface or underground water.

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

Methodology Aquaterra (2005)
DoW (2011)
FMG (2010)
GIS Database:
- Groundwater Salinity, Statewide
- RIWI Groundwater Areas

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

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

The application area is located within the Fortescue Marsh which is a samphire marsh episodically inundated covering an area of approximately 100,000 hectares (Environment Australia, 2001; CALM, 2002; GIS Database). The average annual rainfall of Nullagine, which is situated approximately 74 kilometres north-north-east of the application area, is 334.7 millimetres and the area experiences a mean annual evaporation of approximately 3,200 millimetres (BoM, 2010). The application area experiences rainfall mainly during the summer months as cyclonic events (CALM, 2002). The Fortescue Marsh receives drainage from the Upper Fortescue River catchment which covers a total area of approximately 2,975,192 hectares (GIS Database; Aquaterra, 2005).

Given the low impact nature of the proposed clearing activities, it is unlikely that the clearing under this proposal will impact on drainage patterns for the Fortescue Marshes.

The proposed clearing is unlikely to cause or increase the incidence of flooding or result in an increase in peak flood height.

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

Methodology Aquaterra (2005)
BoM (2010)
CALM (2002)
Environment Australia (2001)
GIS Database:
- ANCA Wetlands
- Hydrographic Catchments - Catchments

Planning instrument, Native Title, RIWI Act Licence, EP Act Licence, Works Approval, Previous EPA decision or other matter.

Comments

There is one Native Title Claim (WC99/004) over the area under application. All claims have been registered with the National Native Title Tribunal on behalf of the claimant group. However, the mining tenure has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

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 31 October 2011 by the Department of Mines and Petroleum inviting submissions from the public. No submissions were received in relation to this application.

Methodology GIS Database:
- Aboriginal Sites of Significance
- Native Title NNTT

4. References

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5. 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.
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.