



1. Application details

1.1. Permit application details

Permit application No.: 815/1

Permit type: Area Permit

1.2. Proponent details

Proponent's name: Central Norseman Gold Corporation Ltd

1.3. Property details

Property: M63/133

Local Government Area: Shire Of Dundas

Colloquial name: Central Norseman

1.4. Application

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

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
<p>Beard Vegetation Association 9: Medium woodland Coral Gum (<i>Eucalyptus torquata</i>) and Goldfields Blackbutt (<i>E. lesouefii</i>). Based on 1:250,000 scale mapping. Hopkins <i>et al.</i> (2001) Shepherd <i>et al.</i> (2001)</p> <p>A flora and vegetation survey was undertaken by Mattiske Consulting within the application area during October 2004. The vegetation within the application area was mapped at a scale of 1:10,000 (Mattiske Consulting 2005). The area is dominated by valley floors and extensive lower slopes, with smaller areas covered by mid to upper slopes and outcrops on mid and upper slopes.</p> <p>Five plant communities are represented in the landscape of the application area (Mattiske Consulting 2005), and are associated with the landforms present:</p>	<p>Clearing of 87.7 ha is required, predominantly for the construction of a valley tailings storage facility. Tailings will be stored between the ridges of a small valley located close to the plant. The purpose of the clearing may also include some other varied mining activities such as roads and pipelines (Central Norseman Gold Corporation 2005).</p> <p>The clearing application was initially advertised for 80 ha. After reviewing the boundary it was found that the actual extent of the proposed clearing was 87.7 ha not 80 ha as per the original application. This figure was a result of a miscalculation by the applicant. The applicant subsequently requested an amendment to application 815/1 to reflect this change. DoIR deemed this change to be administrative and the DoIR assessor amended the application accordingly. The boundary of the clearing permit remains the same as initially advertised and the clearing assessment was made considering that 87.7 ha is proposed to be cleared.</p>	<p>Completely Degraded: No longer intact; completely/almost completely without native species (Keighery 1994)</p> <p>to</p> <p>Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive (Keighery 1994)</p>	<p>The vegetation condition of the area proposed to be cleared was described by Mattiske using Keighery (1994). The vegetation condition ranged from completely degraded in previously mined and disturbed areas, to excellent (Mattiske Consulting 2005)</p> <p>The plant communities mapped during the vegetation survey by Mattiske Consulting (2005) are based on 1:10,000 scale mapping and are a more accurate representation of the vegetation within the application area than the Beard Vegetation Association 9 which is based on 1:250,000 scale mapping.</p>

- Valley Floors and Extensive Lower Slopes

* E2. Open Woodland of *Eucalyptus lesouefii* - *E salubris* - *E urna* - *E*

cylindrocarpa over
Melaleuca sheathiana,
Atriplex vesicaria subsp
appendiculata, *Eremophila*
deserti, *E ionantha*,
Dodonaea stenozyga,
Senna artemisioides subsp
filifolia, *Sclerostegia*
disarticulata, *Sclerolaena*
obliquicuspis and *Atriplex*
nummularia subsp
spathulata on clay-loams
on lower slopes and
extensive flats.

* E4. Open Woodland of
Eucalyptus salubris - *E*
dundasii - *E lesouefii* - *E*
urna - *E salmonophloia*
over *Geijera linearifolia*,
Santalum acuminatum,
Eremophila scoparia, *E*
glabra, *Exocarpus aphyllus*
over *Atriplex vesicaria*
subsp *appendiculata*,
Frankenia cinerea,
Scaevola spinescens,
Olearia Muelleri,
Hemichroa diandra and
Frankenia pauciflora var
pauciflora and *Halosarcia*
indica subsp *bidens* on
clay-loams on valley floors.

- Mid to Upper Slopes

* E6. Open Woodland of
Eucalyptus lesouefii - *E*
salubris - *E salmonophloia*
- *E urna* - *E dundasii* - *E*
stricklandii over *Melaleuca*
sheathiana, *Eremophila*
glabra subsp *glabra*,
Atriplex vesicaria subsp
appendiculata, *Eremophila*
psilocalyx, *E interstans*
subsp *interstans*,
Pomaderris forrestiana,
Scaevola spinescens and
Olearia muelleri on soils
ranging from calcretes to
sandy gravels on mind and
upper slopes.

- Outcrops - Mid and
Upper Slopes (exposed
rock)

* S2. Closed Heath to Tall
Shrubland of *Grevillea*
acuaria, *Pomaderris*
forrestiana, *Eremophila*
interstans subsp
interstans, *Allocasuarina*
helmsii, *A acutivalvis*
subsp *acutivalvis*,
Phlebalium filifolium,
Dodonaea adenophora,
Beyeria brevifolia var
brevipes, *Alyxia buxifolia*,
Eremophila glabra,
Dodonaea stenozyga over
Acacia erinacea, *Ptilotus*
obovatus var *obovatus*,
Exocarpus aphyllus,
Eremophila psilocalyx,
Riciniocarpus stylosus and
Atriplex nummularia subsp
spathulata with occasional
emergent *Eucalyptus*
stricklandii on shallow

sandy-gravelly soils associated with outcropping on mid and upper slopes.

E10. Low Open Woodland of *Eucalyptus stricklandii* over *Eremophila psilocalyx*, *Atriplex nummularia* subsp *spathulata*, *Exocarpus aphyllus*, *Acacia dorsenna*, *Hibbertia pungens*, *Melaleuca sheathiana*, *Alyxia buxifolia*, *Allocasuarina helmsii*, *Santalum acuminatum* over *Scaevola spinescens*, *Westringia rigida*, *Dodonaea stenozyga*, *Grevillea acuarina*, *Pomaderris forrestiana*, *Olearia muelleri*, and *Acacia erinacea* with pockets of *Eucalyptus torquata*, *E. incrassata* and *E. urna* on gravelly shallow soils on fringes of heath communities on mid and upper slopes.

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 area of proposed clearing lies within the IBRA (Interim Biogeographic Regionalisation for Australia) Eastern Murchison subregion (GIS database). This IBRA subregion encompasses an area of 5,102,428 ha (Shepherd *et al.* 2001). The vegetation types described by Mattiske Consulting (2005) are widespread in this subregion, with approximately 100 % of the pre-European vegetation remaining.

The biological assessment report prepared by Mattiske Consulting (2005) for the proposed tailings storage facility appears to adequately assess the biodiversity values of the area and the potential impact of the proposal upon local plant communities and flora and fauna species of conservation significance (CALM 2005).

Examination of recent aerial photography reveals that the proposed clearing is situated between two open cut pits, and based on the evidence provided, the vegetation types found within the site appear to be well represented elsewhere (CALM 2005). In addition, the site also appears to lack habitat normally associated with Declared Rare Flora taxa from the local area. On this basis, CALM advises that the proposal is unlikely to have a significant impact on known biodiversity values (CALM 2005).

In consideration of the above, it is unlikely that the biodiversity at the site of this proposal will be considered outstanding, or of a higher diversity than in the bioregion or local area, therefore, the proposal is not likely to be at variance to this principle.

Methodology Mattiske Consulting (2005)
CALM (2005)
Shepherd *et al.* (2001)
GIS Database:
- Interim Biogeographic Regionalisation of Australia (subregions) - EA 18/10/00

(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna indigenous to Western Australia.

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

According to CALM's Threatened and Priority fauna database, no records of species of conservation significance are known to occur within the application area (GIS database).

A fauna assessment of the application area within a wider survey area encompassing M63/133 was undertaken by Ninox Consulting (Mattiske Consulting 2005). The assessment was based on an extensive literature review covering the general area, a data search of relevant Government databases and a field assessment. The two-day site inspection was undertaken in late February 2005 by an experienced field zoologist familiar with the Eastern Goldfields.

No rare, threatened or vulnerable species were recorded during the survey (Mattiske Consulting 2005). One reptile and one bird species listed in the Wildlife Conservation (Specially Protected Fauna) Notice 2005 may occur in the survey area.

The Carpet Python (*Morelia spilota imbricata*), which is listed as a Schedule 4 species (other specially protected fauna), is likely to be resident in the general area where introduced species such as the House Mouse and Rabbit will provide additional food resources (Mattiske Consulting 2005). These snakes are known to use tree hollows, logs and rabbit warrens as shelter. There is moderate probability of occurrence of the Carpet Python within the application area. However, as it uses a wide range of habitats that are present throughout the surrounding Eastern Goldfields, it is unlikely that the clearing will affect the conservation significance of this species, or that the area to be cleared is significant habitat.

The Peregrine Falcon (*Falco peregrinus*), listed as a Schedule 4 species (other specially protected fauna), readily use ledges within existing mining areas for roosting and possibly nesting (Mattiske Consulting 2005). They forage widely for prey and can co-exist with human disturbance. There is a high probability of occurrence of the Peregrine Falcon within the application area. However, as the habitats are well represented in the broader area, it is unlikely that the localised clearing will affect the habitat and distribution of this species, and that of other bird species which may utilise the area.

Two aerial feeding birds listed under international agreements were not recorded, but may potentially occur within the application area (Mattiske Consulting 2005).

The Fork-tailed Swift (*Apus pacificus*) is protected under the CAMBA and JAMBA treaties (China and Japan/Australia Migratory Bird Agreements). A summer migrant, this bird may be observed in the south of the State between late November and April each year. It does not breed in Australia but may be observed aerial feeding during summer. This bird is rarely seen to land in Australia, and therefore, the clearing is unlikely to impact upon this species (Mattiske Consulting 2005).

The Rainbow Bee-eater (*Merops ornatus*) is protected under the JAMBA treaty. A spring-summer breeding migrant, this species will occur between late September and March and may be observed aerial feeding over both forest and cleared areas. However, it is unlikely to breed in the study area because the soil conditions are unsuitable for breeding burrows (Mattiske Consulting 2005).

The Western Rosella (*Platycercus icterotis xanthogenys*), listed as a Priority 3 species (taxa with several, poorly known populations, some on conservation lands) on CALM's Priority Fauna list, was recorded during the site assessment (Mattiske Consulting 2005). The Western Rosella usually occurs in eucalypt and sheoak woodlands and shrublands throughout the Eastern Goldfields (Mattiske 2005). Suitable habitat for this bird was identified within the application area, although given the extent of this vegetation type throughout the surrounding region, the proposal is not likely to impact on this species.

One native mammal and four additional bird species on CALM's Priority Fauna List may potentially occur in the study area (Mattiske Consulting 2005). These include;

- Greater Long-eared Bat (*Nyctophilus timorensis* (central form)) Priority 4. This bat roosts in tree hollows and may forage widely for invertebrate prey. The species is infrequently recorded and may be more or less common than currently understood (Mattiske Consulting 2005). The clearing is not likely to impact on this species considering the extent to which similar vegetation types are found throughout the region.

- Australian Bustard (*Ardeotis australis*) Priority 4. This bird prefers open grasslands, grassy woodlands and pastoral country (Mattiske Consulting 2005). This bird may occur within the proposed area, however, given the widespread distribution of open woodlands throughout the Eastern Goldfields the species is not likely to be impacted on by this proposal.

- Bush Stone-curlew (*Burhinus grallarius*) Priority 4. This mainly nocturnal bird prefers open woodlands and shrublands, often with stoney soils (Mattiske Consulting 2005). The soils of the application are mainly clay loams located on valley floors. This bird would be more likely to occur south of the application area within the open woodlands on the mid to upper slopes where there is a higher occurrence of stoney soils, therefore, is not likely to be impacted upon by this proposal.

- Crested Shrike-tit (*Falcunculus frontatus*) Priority 4. This bird favours smooth-barked trees and occurs mainly in Wandoo woodland and Flooded Gum (*Eucalyptus rudis*) along watercourses (Mattiske Consulting 2005). No watercourses exist within the application area, therefore, this species is not likely to be impacted on by the proposed clearing.

All of the fauna habitats described for the application area are common and widespread in this portion of the Eastern Goldfields (Mattiske Consulting 2005). None of them have any special significance to fauna other than that associated with loss of habitat trees through clearing. The Salmon Gum (*Eucalyptus salmonophloia*) woodlands in particular are likely to provide substantial nesting, roosting and refuge hollows for a relatively large range of species, however, only a small area within the application area contains the open woodland in which Salmon Gums are found. The low open woodlands (containing Salmon Gums) are widespread to the north and south of the application area, and the clearing of this specific vegetation type constitutes less than approximately 5% of the total area of this vegetation type within the vicinity of the application area, therefore, the proposed clearing is not likely to impact upon Salmon Gum numbers in the area. Also, the Norseman area

has been historically cleared to obtain wood for use within the mining industry, therefore, there is unlikely to be Salmon Gums of suitable age to provide habitat to fauna within the application area.

The biological assessment report prepared by Mattiske Consulting (2005) for the proposed tailing storage facility appears to adequately assess the potential impact of the proposal upon fauna habitat and fauna species of conservation significance (CALM 2005). It is recommended that the management recommendations outlined in the flora, vegetation and fauna report by Mattiske Consulting (2005) be adhered to in order to limit the impact of the proposal on fauna species in the area. Most of the management recommendations are related to the land use and will be dealt with under the proposed Mining Proposal in accordance with the *Mining Act 1978*.

With consideration to the above, the proposal is not likely to be at variance to this principle.

Methodology Mattiske Consulting (2005)
CALM (2005)
GIS Database:
- Threatened Fauna - CALM 30/9/05

(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 CALM datasets, no Declared Rare Flora (DRF) or Priority Flora species are known to occur within the area under application (GIS database). CALM have also advised that the site appears to lack habitat normally associated with Declared Rare Flora taxa known from the local area (CALM 2005).

A flora and vegetation survey was undertaken by botanists from Mattiske Consulting during October 2004. The area was surveyed with large buffers around the proposed clearing boundaries to allow for potential relocation of the proposed clearing. The flora survey and report prepared by Mattiske Consulting (2005) appears to adequately assess the potential impact of the proposal upon local plant communities and flora species of conservation significance (CALM 2005).

No Declared Rare Flora species were located during the flora and vegetation survey (Mattiske Consulting 2005).

During the flora survey the Priority One (P1) species *Acacia dorsenna* and the Priority Three (P3) species *Eremophila purpurascens* were located within local plant communities E10 (low open woodland of *Eucalyptus stricklandii*) and S2 (Closed heath to tall shrubland) (Mattiske Consulting 2005), which occur on or adjacent to exposed outcropping on the upper slopes of hills. The vegetation affected by this proposal is located on valley floors and on lower slopes, therefore, these species are not likely to be impacted on by the proposal. The Priority 3 species *Eucalyptus brockwayi* was recorded within plant community E8 (open woodland of *Eucalyptus urna*). This plant community was located in the south-western section of the survey area and also within a small area approximately 200m north-west from the proposed clearing area (Mattiske 2005), therefore, this species is not likely to be affected by the proposal.

The proposal is unlikely to impact on rare flora, therefore, is not likely to be at variance to this principle.

Methodology Mattiske Consulting (2005)
CALM (2005)
GIS Database:
- Declared Rare and Priority Flora List - CALM 01/07/05

(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

No known Threatened Ecological Communities (TECs) have been recorded within the area subject to be cleared (GIS database; Cowan 2001). None of the plant communities recorded during the flora and vegetation survey of the clearing area are classified as TECs, or listed as TECs under the *Environmental Protection and Biodiversity Conservation Act 1999* (Mattiske Consulting 2005). The nearest known TEC is located approximately 73 km north-east of the proposed clearing (GIS database).

In consideration of the above, the clearing proposal is not likely to be at variance to this principle.

Methodology Mattiske Consulting (2005)
CALM (2005)
Cowan (2001)
GIS Database:
- Threatened Ecological Communities - CALM 12/4/05

(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 State Government is committed to the National Objectives Targets for Biodiversity Conservation which includes a target that prevents clearance of ecological communities with an extent below 30% of that present pre-European settlement (Department of Natural Resources and Environment 2002; EPA 2000).

While the benchmark of 15% representation in conservation reserves (JANIS Forests Criteria 1997) has not been met for Beard vegetation association 9, approximately 99.7% of the pre-European extent remains for this association and it is therefore of 'least concern' for biodiversity conservation (Hopkins *et al.* 2001; Department of Natural Resources and Environment 2002).

	Pre-European area (ha)	Current extent (ha)	Remaining %*	Conservation Status**	% in IUCN Class I-IV reserves
IBRA Bioregion - Coolgardie Shire of Coolgardie Beard vegetation associations - 9	12,917,718*	12,719,084*	98.5%	Least concern	
	No information available				
	250,894	250,183	99.7%	Least concern	3.0%

* Shepherd *et al.* (2001)

** Department of Natural Resources and Environment (2002)

Methodology Department of Natural Resources and Environment (2002)
EPA (2000)
JANIS Forests Criteria (1997)
Hopkins *et al.* (2001)
Shepherd *et al.* (2001)

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

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

No permanent wetlands or watercourses are located within the proposed area of clearing, although there are two minor, non-perennial watercourses which pass through the area. These watercourses act as drainage channels into a 894 ha non-perennial salt lake which is located approximately 400 m east from the proposed clearing area, and have been described by the consultant as old flow lines (GIS database; Mattiske pers comm 2006). For the majority of the year these watercourses would remain dry, only flowing for short periods after heavy rainfall events. There is a possibility that the clearing of native vegetation around the non-perennial watercourses may increase soil erosion and surface water runoff into the watercourses and nearby salt lake, especially if native vegetation were to be cleared during heavy rainfall events, however, given the non-seasonal, low average annual rainfall (290 mm/yr) the risk of these impacts occurring is minimal (Mattiske Consulting 2005). The purpose of the clearing is to establish a tailings storage facility, therefore, future management to control soil erosion and sediment export into the watercourses and the non-perennial lake is a land use issue which will be managed under the proposed Mining Proposal in accordance with the *Mining Act 1978*.

With regard to riparian vegetation, the consultant has advised that the vegetation associated with the non-perennial watercourses is not prominent riparian vegetation, rather a continuation of the surrounding vegetation types (Mattiske pers comm. 2006). The proposal raises no issues with regard to vegetation growing in association with a watercourse.

In consideration of the above, the proposal is not likely to be at variance to this principle.

Methodology Mattiske Consulting (2005)
GIS Database:
- Hydrography, linear - DOE 1/2/04
- Lakes, 1M - GA 01/06/00

(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 vegetation of the application area is predominantly open eucalypt woodland which fringes on a non-perennial salt lake (Mattiske Consulting 2005; GIS database). The dominant soil types of the application area are clay loams which are associated with the open eucalypt woodlands on the valley floors and lower slopes. On the mid to upper slopes, the open eucalypt woodlands occur on soils ranging from calcretes to sandy-gravels, with shallow sandy-gravelly soils associated with outcropping (Mattiske Consulting 2005).

The region is characterised by low average annual rainfall of approximately 290 mm/yr and a high evaporation rate of approximately 2300 mm/yr (GIS database). The landscape of the proposed area has low topographic relief so there is unlikely to be surface water runoff during normal seasonal rains, therefore, minimising the risk of water erosion (GIS database). DAWA (2005) advise that the salt lake, sand dune and valley floors fringing the salt lake are vulnerable to land degradation in the form of wind erosion if the protective vegetative cover is removed. Considering that the proposed clearing is for the development of a tailings storage facility (TSF) and other varied mining activities, the risk of soil erosion will be greatest at the time of clearing when the protective vegetative cover is disturbed. The proponent has advised that clearing of the entire application area will not take place all at once, rather, the clearing will take place on an as needs basis (Rankine pers comm. 2006). It is proposed to clear land in the southern portion around Narracoorte Pit, and clear progressively up the valley floor towards the existing Hit or Miss Pit. This management technique will reduce the amount of land without protective vegetative cover thereby reducing the risk of wind erosion and subsequent degradation to the landscape. In construction of the TSF, topsoil will be cleared and stockpiled for later use, subsoil will be utilised for embankment material and remaining material is weathered rock or rock, therefore, the erosion risk will be negligible or of no concern. A condition has been placed on the clearing permit to restrict the total area of land cleared at any one time to 10 hectares (excluding cleared land being used for tailings storage) in order to minimise the likelihood of wind erosion occurring.

Subsequent management techniques to control dust, water and wind erosion from the tailings storage facility are land use issues which will be managed under the proposed Mining Proposal in accordance with the *Mining Act 1978*.

With regard to salinity, any clearing is unlikely to increase salinisation, either on-site or off-site, as saline and subsaline soils are common throughout the region. The proposed area to be cleared is located within 400 m of an 894 ha non-perennial salt lake so it is likely soils are already considered saline (GIS database).

The proposal may be at variance to this principle due to the risk of erosion at the time of clearing.

Methodology Matiske Consulting (2005)
BoM (2006)
DAWA (2005)
GIS Database:
- Hydrography, linear - DOE 1/2/04
- Clearing Instruments
- Evaporation Isopleths - BOM 09/98
- Topographic Contours, Statewide - DOLA 12/09/02

(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**
There are no CALM managed conservation areas within the proposed clearing area. The nearest conservation areas to the proposal are a CALM managed timber reserve, located approximately 8.5 km south of the proposal and the Dundas Nature Reserve which is located approximately 13 km south-east of the proposal (GIS database). The vegetation to be cleared does not serve as a significant ecological linkage or buffer to those regional conservation areas.

Considering the distance between this proposal and the nearest CALM managed reserves, the proposed clearing is not likely to be at variance to this principle.

Methodology GIS Database:
- CALM Managed Lands and Waters - CALM 1/07/05

(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 area to be cleared is located within the Yilgarn-Goldfields groundwater province which covers more than 290,000 sq km. The proposal does not fall within a Public Drinking Water Source Area, therefore, there is no risk of deterioration to the quality of public water supplies (GIS database). The proposed area is located in the vicinity of a salt lake in an area where groundwater quality is already considered poor, with salinities ranging between 14,000 - 35,000 mg/L Total Dissolved Solids (GIS database). As a result, clearing for the proposed tailings storage facility will not impact on the quality of groundwater in the area.

The two non-perennial watercourses which pass through the proposed clearing area are minor and will only flow for short periods after heavy rainfall events (GIS database; Matiske pers com 2006). Rainfall in the area is unlikely to cause significant runoff and any ponded water is likely to evaporate or infiltrate, therefore, there are no surface water quality issues associated with the clearing of native vegetation around these watercourses.

Clearing of native vegetation during or prior to a heavy rainfall event may result in the possibility of increased sediment export into the nearby salt lake, however, this risk is likely to be negligible once the tailings storage facility is constructed and will be managed under the proposed Mining Proposal in accordance with the *Mining Act 1978*.

This proposal raises no water quality issues, therefore, the proposal is not likely to be at variance to this principle

- Methodology** GIS Database:
- Public Drinking Water Source Areas (PDWSAs) - DOE 07/02/06
 - Groundwater Salinity, Statewide - 22/02/00
 - Hydrography, linear - DOE 1/2/04
 - Groundwater Provinces - WRC 98

(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 Norseman township, 3 km west of the proposed clearing area, experiences mean annual rainfall of 290 mm/yr and a mean annual evaporation rate of approximately 2300 mm/yr. Rainfall in the region occurs in winter or is non-seasonal (BoM 2006; Mattiske Consulting 2005; GIS database). Flooding usually only occurs following extreme rainfall events, and the broad valley systems disperse and drain floodwaters into the numerous salt lakes which are scattered throughout the landscape (GIS database). The land surrounding the proposed clearing area drains into an 894 ha non-perennial salt lake which would rarely fill or flood during normal seasonal rains.

The clearing of native vegetation and the construction of the proposed tailings storage facility may affect the natural drainage into the lake system, however, this is a land use issue which will be managed under the proposed Mining Proposal in accordance with the *Mining Act 1978*.

The proposed clearing of 87.7 ha of native vegetation for the tailings storage facility is unlikely to increase the incidence or intensity of flooding, therefore, the proposal is not likely to be at variance to this principle.

- Methodology** BoM (2006)
Mattiske Consulting (2005)
GIS Database:
- Evaporation Isopleths - BOM 09/98_1
 - Hydrography, linear - DOE 1/2/04
 - Topographic Contours, Statewide - DOLA 12/09/02

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

Comments

There is a native title claim over the area under application; WC99/002. This claim has been registered with the National Native Title Tribunal on behalf of Ngadju claimant group. However, 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 sites of aboriginal significance within the proposed area to be cleared (GIS database).

The Shire of Dundas discussed this application at its September 2005 meeting, and resolved to "raise no objections to the application number 815/1 from Central Norseman Gold Corporation Ltd to the Department of Industry and Resources to clear native vegetation on mining tenement M63/133" (Shire of Dundas 2005)

Central Norseman Gold Corporation's lease M63/133 has a current groundwater licence GWL61134 for the purpose of dewatering, granted in accordance with the *Rights in Water and Irrigation Act 1914* (DoE 2005).

Central Norseman Gold Corporation's lease M63/133 has a current operating licence 6043/9 granted in accordance with the *Environmental Protection Act 1986* (DoE 2005).

There are no current Works Approvals over the tenement, however, the activities proposed will require a Works Approval (DoE 2005).

- Methodology** DoE 2005
Shire of Dundas 2005
GIS Database:
- Native Title Claims - DLI 7/11/05
 - Aboriginal Sites of Significance - DIA 28/02/03

4. Assessor's recommendations

Purpose	Method	Applied area (ha)/ trees	Decision	Comment / recommendation
Mineral Production	Mechanical Removal	87.7	Grant	<p>The clearing principles have been addressed and the proposed clearing is not likely to be at variance with principles a, b, c, d, f, h, i and j.</p> <p>The proposed clearing is not at variance with principle e.</p> <p>The proposed clearing may be at variance with principle g as DAWA has indicated that the land units within the application area are vulnerable to land degradation in the form of wind erosion if the protective vegetative cover is removed, however, the proponent has advised that the entire area will not be cleared all at once and that clearing will take place progressively. This clearing technique will reduce the amount of land without protective vegetative cover, and minimise the risk of wind erosion occurring.</p> <p>The assessing officer recommends that the permit be granted with the following conditions.</p> <ol style="list-style-type: none">1) The Permit Holder shall ensure that areas cleared under this permit which have not been used for tailings storage, not exceed 10 hectares in total at any one time within the area cross-hatched red on attached plan 815/1A.2) The Permit Holder shall record the following for each instance of clearing:<ol style="list-style-type: none">a) the location of where the clearing occurred, expressed as grid coordinates using the Geocentric Datum of Australia 1994 coordinate system;b) the size of the area cleared in hectares; and;c) the dates on which the area was cleared.3) The Permit Holder shall provide a report to the Director, Environment, DoIR by 31 March each year, setting out the records required under condition 2 of this permit in relation to clearing carried out between 1 January and 31 December of the previous year.

5. References

- Bureau of Meteorology (2006). Daily Weather Observations for Norseman, Bureau of Meteorology, viewed 31 March 2006, [<http://www.bom.gov.au/climate/dwo/IDCJDW6097.latest.shtml>]
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6. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government.
CALM	Department of Conservation and Land Management, Western Australia.
DAWA	Department of Agriculture, Western Australia.
DA	Department of Agriculture, Western Australia.
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.
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.