Department of Industry and Resources

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 1249/1

Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Western Areas NL**

1.3. Property details

Property: M77/545
M77/584
M77/912

Local Government Area: Shire Of Kondinin

Colloquial name: Mining Lease 77/912 Forestania Nickel Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
4.5		Mechanical Removal	Building or Structure

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
The proposed clearing area is broadly mapped as Beard Vegetation Association 511: Medium woodland; salmon gum and morrel, and Vegetation Association 2048: Shrublands; scrub-heath in the Mallee Region. The vegetation within the proposed clearing permit area was surveyed in further detail by Jim Seeds Weeds and Trees (2006). This survey described the vegetation as three vegetation associations: Eucalyptus mallee woodland, Sand Plain Heath and Banded Ironstone Hill Rises. However, the survey area encompassed a wider area than that of the proposed clearing area and only two of these communities, Eucalyptus mallee woodland and Sand Plain Heath, occur within the proposed clearing area.	The proposed clearing of 4.5 hectares of native vegetation is for the construction of a dewatering pipeline. The pipeline will be carrying hypersaline water from the Flying Fox mine to the Cosmic Boy mine. The project is located in the Forrestania area approximately 80 kilometres east of Hyden and 160 kilometres south of Southern Cross. Part of the proposed pipeline route is through an area listed on the Register of National Estate for its natural values, classified as an Environmentally Sensitive Area (ESA) in the *Environmental Protection Act 1986*. As a result there is a requirement for a native vegetation clearing permit for part of the proposed pipeline construction.	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery 1994)	The pipeline will be buried where a previous pipeline was laid along an existing track.

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 under application occurs within the Lake Cronin Red Book area which is listed on the National Estate Register for its high level of flora and fauna diversity and endemism. According to the National Heritage Estate database (2006) 16 fauna species that are endemic either to 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 Malleefowl (*Leipoa ocellata*), Carnaby's Cockatoo (*Calyptorhyncus latirostris*) and Chuditch (*Dasyurus geoffroii*) and flora such as *Eucalyptus steedmanii*. The Lake Cronin area also represents the northern most limit of several fauna species distribution.

On a regional scale, the area to be cleared lies within the Coolgardie IBRA Bioregion which remains 98.4% uncleared. Threats to biodiversity as listed within the Coolgardie IBRA Bioregion (CALM, 2002) include fragmentation, altered fire regimes, weeds, grazing, feral predators, mining and changed hydrology. Of the two Beard Vegetation Associations mapped within the proposed clearing area, 70.5% remains of Vegetation Association 511 (Salmon Gum and Morrel medium woodland) statewide and 48.4% remains of Vegetation Association 2048 (Shrublands; scrub heath in mallee region) statewide (Shepherd et al, 2001).

On a local scale, Jims Seeds, Weeds & Trees (2006) identified three vegetation types (only two within the clearing application) which mirror those on a regional scale, Mallee woodland, scrub heath. Within the clearing area, the vegetation was described as degraded according to the Keighery vegetation condition scale, due to it having been previously disturbed.

Lying within the South West Botanical province, the area has high endemism and several priority species are found within the proposed clearing area. The priority species appear to be locally abundant and well represented in the general Forrestania area. A rare species of eucalypt (*Eucalyptus steedmanii*) is known to have occurred 300m south of the application area within 15 metres of the proposed pipeline. However, it could not be located during a survey conducted by Jims Seeds, Weeds & Trees (2006) and may have been destroyed by fire. Many young Eucalypts were located both here and within the Sibelius borefield but their identification is not possible until reaching maturity (fruiting).

No threatened ecological communities exist within the proposed clearing area.

Regionally, 40% of the Coolgardie IBRA Bioregion's mammalian fauna species is extinct. 18 fauna species identified as being of conservation significance by Biota (2006) could be expected to be found within the clearing area. Biota determined that none of those species are likely to be affected by the clearing as these species are able to utilise other vegetation habitats within the region. As the result of the survey, Biota (2006) determined that the fauna assemblages in the local area were typical of what could be expected for the region.

DEC (2006a) has advised that "although the notified area is within the Lake Cronin Red Book area, known for its high level of flora and fauna diversity and endemism, information contained within supporting documentation provides insufficient evidence to conclude that the notified area comprises a higher level of biological diversity than surrounding areas. Jim's Seeds, Weeds & Trees (2006) determined that the vegetation condition is "disturbed" and notes that the proposed pipeline is set to be buried where a previous pipeline has been laid along an existing track".

Given the small area (4.5 ha) and the degraded nature of the area to be cleared (next to a vehicle track, in a ditch previously cleared), it is not likely that there will be a significant effect on the biodiversity value of the area both on a local and on a regional scale. Therefore, the proposal is considered not likely to be at variance to this principle.

Methodology

Biota Environmental Services (2006)
CALM (2003)
DEC (2006a)
DEH (2006)
Jims Seeds, Weeds & Trees (2006)
Shepherd et al, (2001) updated 2005

(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

A fauna survey was conducted during February-March 2005 and November 2005 by Biota Environmental Sciences for the Forrestania Project Area (Biota, 2006). The survey's were conducted according to the EPA's Position statement No. 3 "Terrestrial Biological Surveys as an Element of Biodiversity Protection" (2002) and Guidance Statement No. 56 "Terrestrial Fauna Surveys for Environmental Impact Assessment in Western Australia" (2004).

During the two surveys, a total of 106 species were recorded, consisting of 60 bird species, 15 mammals, three introduced mammals and 28 reptile species. Of these, eight species are considered to be of conservation significance, that is, listed as specially protected or as priority fauna species under the *Wildlife Conservation Act 1950*. These are Carnaby's Black Cockatoo (*Calyptorhyncus latirostris*), Western Quoll (Chuditch) (*Dasyurus geoffroii*), Western Rosella (*Platycercus icterotis xanthogenys*), Western Brush Wallaby (*Macropus irma*), Carpet Python (*Morelia spilota imbricata*), White-browed Babbler (*Pomatostomus superciliosus ashbyi*), Crested Bellbird (*Oreoica gutturalis*) and Shy Groundwren (*Hylacola cauta whitlocki*). A discussion on each of these species follows.

The occurrence of Carnaby's Cockatoo in the region is considered to be widespread on an occasional basis only, and the species would not utilise the habitat for nesting due to the absence of nesting hollows (Biota, 2006).

A single Chuditch was trapped during the November survey period. This single trapping record does not constitute a matter of environmental significance and does not require federal referral. The species is likely to be found throughout the area at very low densities in a wide variety of habitats. Western Areas has made a commitment to a feral animal baiting program in partnership with DEC (formally known as CALM) within it's tenements and within Lake Cronin Nature Reserve. The aim is to improve the conservation status of the species at a local level (Biota, 2006).

The area appears to support a healthy population of the inland sub-species of Western Rosella. The species utilises eucalypt woodland and mallee woodland, which is widespread throughout the general area (Biota, 2006).

A South West Carpet Python was observed during a site inspection prior to the survey commencing. Carpet pythons utilise a wide variety of habitat types at low densities (Biota, 2006).

Shy Groundwrens are known to inhabit dense mallee woodland (Garnett et al, 2000). During the survey Shy Groundwrens were recorded in heath also (Biota, 2006). Garnet et al (2000) states that the conservation status of the species is more of a concern where it occurs within the intensive landuse zone. The extensive habitat remaining within the Southern Cross IBRA subregion should support healthy populations.

Crested Bellbirds live in the shrub-layer of eucalypt woodland, mallee, acacia shrubland, saltbush and heath (Garnett et al, 2000). Not all of these habitat types are found within the area surveyed (Biota, 2006), but can be found extensively throughout the Southern Cross IBRA sub-region (CALM, 2002). It can be concluded therefore that the species could be expected to be widespread throughout the area utilising a wide range of habitats.

Biota (2006) recorded White-browed Babbler's in salmon gum woodland and melaleuca shrubland. However there is no discussion of this species within the report. The White Browed Babbler utilises Eucalypt forest and woodlands within the wheatbelt and Southern Goldfields/Great Southern region. It has declined severely in the agricultural region but persists in uncleared continuous habitat (Garnett et al, 2000). The habitat types preferred by this species are found commonly within the Southern Cross IBRA sub region (CALM, 2002) and it could be expected that this species is found within the region at low densities. For instance, White Browed Babblers have been observed on Jaurdi Station over 150 km to the north (pers. obs. 2005).

A further nine fauna species of conservation significance that were identified in known database searches were not recorded within the survey area. These species are the Red Tailed Phascogale (*Phascogale calura*), Heath Mouse (*Pseudomy shortridgei*), Numbat (*Myrmecobius fasciatus*), Malleefowl (*Leipoa ocellata*), Peregrine Falcon (*Falco peregrinus*), Western Mouse (*Pseudomys occidentalis*), Australian Bustard (*Ardeotis australis*), Rufous Fieldwren (*Calamanthus campestris montanellus*) and Fork-tailed Swift (*Apus pacificus*).

DEC (2006a) has advised that the fauna species of conservation significance recorded during a fauna habitat and fauna assemblage survey do not have restricted ranges and that the habitat types present appear to be well represented in the region. It is unlikely that the fauna habitat that is proposed to be cleared would be considered "significant". DEC advises that the 6 recommendations arising from the fauna survey should be set as conditions of the permit (Biota 2006 Section 1.3 page 7). However, most of the recommendations made in Biota's report are not associated with vegetation clearing and such conditions could be considered *ultra vires*.

Although the habitat types to be cleared under this proposal do support populations of conservation significant species, these habitats are well represented in the region and the removal of 4.5 ha of vegetation is not likely to impact significantly on the conservation status of these species. Indeed, feral animal control within those tenements held by Western Areas may result in an improvement of the conservation status of some of those species. Therefore, the proposal is considered not likely to be at variance to this principle.

Methodology

Biota Environmental Sciences Pty Ltd (2006).
CALM (2002)
DEC (2006a).
EPA (2002).
EPA (2004).
Garnett et al (2000).

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

Comments

Proposal may be at variance to this Principle

No Declared Rare Flora (DRF) were recorded within the clearing permit area. However one CALM record (dated 1981) exists for the Declared Rare Flora Species *Eucalyptus steedmanii* within 15 metres of the proposed pipeline route approximately 300 metres south of the clearing permit area. Despite extensive searches, no specimen could be found in that location. Jim's Seeds, Weeds & Trees have stated that many juvenile Mallee plants occur along the proposed route. The positive identification of those juvenile plants is not possible until those plants form fruits. It is possible that some of the juvenile mallee present along the route of

the clearing permit area may be *Eucalyptus steedmanii*. DNA testing was considered to help resolve that issue (Jim's Seeds, Weeds & Trees, 2006). Western Areas have agreed to monitor this location to aid in identification of plants when they mature and that a copy of the survey for this species would be prepared and submitted to DOIR and DEC for comment.

The survey report submitted by Western Areas (2006a) stated that the pipeline would be buried under the road within a 50m radius of the historical location of *E. steedmanii* and therefore no young seedlings will be affected by the laying of the pipeline. CALM (now DEC) advice (2006b) was received in regards to the survey that as the disturbance in the area is only going to affect a proportion of the habitat in the area for *E. steedmanii*, if *E. steedmanii* is present, it is probable that the level of impact will be minor. CALM (now DEC) believed that Western Areas had taken reasonable steps to ensure that rare flora would not be taken, and thus have no objection to the proposal going ahead as proposed, including the precautionary measure of not disturbing the current recorded site. As a precautionary measure, CALM (now DEC) suggested to the company that they seek a permit to take rare flora to cover any inadvertent taking of rare flora.

The priority flora species *Eremophila racemosa* (P4) was recorded from four locations within the clearing permit application. The clearing proposed will result in the removal of 23 plants from the area subject to the clearing permit application. Prior to the survey only one location was recorded on the pipeline route. The vegetation survey has increased the knowledge of the abundance and distribution of this species and given that the species is recorded from other locations within the Forrestania area, it is not likely that the removal of 23 plants will affect the conservation of this species.

Approximately 1000 plants of the species *Microcorys* sp. Forrestania (P4) were located along the pipeline route in two locations. It is expected that approximately 200 plants will be disturbed in construction of the pipeline. Recorded occurrences made by DEC (formerly CALM) in the general area would suggest that this species is common and abundant in the area. The species is also considered disturbance opportunistic. The proposed clearing would not have significant impact on the conservation of this species.

Approximately 1000 *Spyridium mucronatum* ssp *recurvum* (P3) plants were located by Jims Seeds, Weeds & Trees (2006) of which 207 occur within the proposed clearing area. This population is north of its known range. It is likely that this species is widespread throughout its range and the clearing is not likely to have a significant impact on the conservation of this species.

179 specimens of *Stenanthemum liberum* were recorded along the pipeline route during the flora survey (Jims Seeds, Weeds & Trees, 2006). Jim's Seeds, Weeds & Trees (2006) state that previous surveys have revealed many other populations of this species in the Forrestania area although DEC (2006a) has advised that this species was known from only 3 populations previously. A large population (~1000) plants was also found adjacent to the pipeline. It is not likely that the clearing would have significant impact on the conservation of this species.

DEC (2006a) have advised that no DRF species were found in the area surveyed. However concerns were raised by DEC that high numbers of unidentifiable juvenile trees could be DRF species *Eucalyptus steedmanii*. Following a subsequent survey undertaken in April 2006 DEC is satisfied that if *E. steedmanii* is present the level of impact is likely to be minor. DEC also advises that several priority species were recorded along the pipeline route. Information provided shows that these populations are reasonably secure within the Forrestania area, and some appear to be disturbance opportunists. Therefore the proposed clearing is unlikely to have a significant impact on the conservation status of the local distribution of these priority species.

A management plan has been prepared by Western Areas to minimise harm to any existing *E. steedmanii* plants that have yet to be identified. However, the proposal may be at variance to this principle.

Methodology

CALM (now DEC) (2006b)
DEC (2006a)
Jims Seeds, Weeds & Trees (2006)
Western Areas (2006b)
Knapton pers comm (2006)

(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 may be at variance to this Principle

A survey by Jim's Weeds, Seeds & Trees (2006) identified no threatened ecological communities (TEC's) in the area under proposal. The two vegetation types as described by Jim's Seeds, Weeds & Trees that occur within the proposed clearing area are not significant ecological communities as listed in the Biodiversity Audit of Western Australia's 53 Biogeographical Subregions (CALM, 2002). Interrogation of GIS database revealed no TEC's in the proposed clearing area.

DEC (2006a) has advised that 'with respect to Threatened Ecological Communities DEC notes that there are 12 occurrences of Priority Ecological Community Forrestania 1A to the south of CPS 1249/1, the closest site being 12km from the southern end of the notified area. This priority community is described as "species rich shrublands and thickets with scattered eucalypt emergents on yellow sandy loam". The community is

associated with Banded Ironstone Formations and is a 2006 addition to the DEC database and DEC listing (as such, it has not yet been allocated a Priority number/ranking). Jim's Seeds, Weeds & Trees (2006) mapped several occurrences of vegetation representative of Banded Ironstone hill formations through which the proposed pipeline will pass. A Senior Research Scientist within DEC reviewed the survey information provided with the clearing application and advised "*While the community is of very high conservation significance & the occurrence of a P1 species for which there only 3 collections in the Herbarium is also very significant, the linear nature of this disturbance along pre-existing track are likely to have minimal impact on both the community & the individual species in this particular case*". The P1 species referred to (in the quote,sic) is *Stenanthemum liberum* which is only known from 3 locations in addition to those listed in the report. DEC (2006a) further advised that Western Areas NL are made aware of the occurrence of these Priority communities, with reference to the following article for example: Journal of the Royal Society of Western Australia, 87:49-62, 2004 Flora and vegetation of the Eastern Goldfields Ranges: Part 7. Middle and South Ironcap, Digger Rock and Hatter Hill by N Gibson.'

Therefore the proposal may be at variance to this principle.

Methodology CALM (2002)
DEC (2006a)
GIS Database: Threatened Ecological Communities - CALM 12/4/05
Jims Weeds, Seeds & Trees (2006).

(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 proposed clearing area is mapped as Beard Vegetation Association 511 and 2048.

	Pre-European area (ha)	Current extent (ha)	Remaining %*	Conservation Status**	Pre-european % in IUCN Class I-IV Reserves (and current %)
IBRA Bioregion - Coolgardie	12,917,718	12,719,084	98.5	Least concern	9.7 (9.9)
Shire of Kondinin	736570	369365	50.1	Depleted	unknown
Beard veg assoc. (state)					
- 511	700414	493991	70.5	Least concern	14.1 (18.9)
- 2048	4376	4376	100	Least concern	3.5 (3.5)
Beard veg assoc. by Bioregion					
511	464427	435795	93.8	Least concern	17.5 (18.6)
2048	4376	6376	100	Least concern	3.5 (3.5)

* Shepherd et al. (2001)
** Department of Natural Resources and Environment (2002)

Options to select from: Bioregional Conservation Status of Ecological Vegetation Classes (Department of Natural Resources and Environment 2002)

Presumed extinct	Probably no longer present in the bioregion
Endangered*	<10% of pre-European extent remains
Vulnerable*	10-30% of pre-European extent exists
Depleted*	>30% and up to 50% of pre-European extent exists
Least concern	>50% pre-European extent exists and subject to little or no degradation over a majority of this area

* or a combination of depletion, loss of quality, current threats and rarity gives a comparable status

Explanation:

The vegetation associations as described by Beard (511 and 2048) remains at 70.5% and 100% of its pre-european vegetation cover statewide respectively and 93.8% and 100% of its pre-european vegetation cover within the Coolgardie Bioregion respectively. According to the "Bioregional Conservation Status of Ecological Vegetation Classes" published by the Department of Natural Resources and Environment, 2002, these values give the vegetation type a Conservation Status of "Least Concern".

The proposed clearing area falls within the Kondinin Shire which remains at 50.1% of its pre-european vegetation extent. Kondinin Shire straddles the divide between the intensive land use zone and the largely uncleared extensive land use zone. Given that remaining vegetation within the intensive landuse zone can range from excellent to degraded as ranked by Keighery (1994), this value should be interpreted as "Depleted" Conservation Status as defined by the "Bioregional Conservation Status of Ecological Vegetation Classes" published by the Department of Natural Resources and Environment, 2002.

As vegetation has remained largely uncleared within the Coolgardie IBRA region, the percentage of vegetation

within IUCN reserves has changed little since European settlement.

DEC (2006a) has advised that Beard Vegetation Associations 511 and 2048 are well represented in the Region, as are the Mallee woodlands and Heath vegetation groups described by Jimýs Seeds, Weeds and Trees (2006).

Therefore the area under proposal is not a significant remnant and the proposal is not likely to be at variance to this principle.

Methodology DEC (2006a)
Department of Natural Resources and Environment (2002)
EPA (2000)
Jims Seeds, Weeds & Trees (2006)
Shepherd et al (2001) updated 2005

(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**
An interrogation of GIS database reveals that there are no watercourses or wetlands or drainage channels within the proposed clearing area. This was also identified in supporting documentation provided by Western Areas NL (2006). The clearing is to take place in an existing artificial drain adjacent to a track. The removal of this regrowth vegetation is not likely to alter the groundwater level or quality. Therefore, the proposal is not likely to be at variance with this principle.

Methodology GIS database: Hydrography, linear - DOE 1/2/04
Western Areas NL (2006a).

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

Comments **Proposal is not likely to be at variance to this Principle**
Western Areas NL (2006a) stated that the topography of the clearing area is low relief. There is a gentle slope to the south of 1.5% which Western Areas consider mild. The area experiences a low rainfall of ~344 mL per year. Good healthy vegetation exists on both sides of the existing track and drain, and will slow any erosion. The drain and track are pre-existing and have shown little sign of erosion to date (Western Areas NL, 2006)

The existing soil is described as red sandy soils with mottled yellow clayey subsoils. Jims Seeds, Weeds & Trees (2006) described heavy soils dominated by Eucalypt woodlands and siliceous soils dominated by scrub heath.

The groundwater table is 40-60 metres below the surface, reflecting previous dewatering efforts associated by mining. Waterlogging will not be increased by the clearing proposed. Groundwater is hypersaline (40,000 mg/L Total Dissolved Solids) (Western Areas NL 2006). However at such depths, and with a small area to be cleared, it is unlikely that salinisation of the soil will occur. Therefore, the proposal is not likely to be at variance with this principle.

Methodology Jims Seeds, Weeds & Trees (2006)
Western Areas NL (2006a)

(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 clearing proposed (4.5 ha) occurs within an ESA and Schedule 1 area surrounding Lake Cronin Nature Reserve. The nearest point of clearing to the reserve is 4.5 km to the southwest. However, the area under proposal has been previously cleared for an access track and drain. 39% of the clearing will be for removing regrowth from the drain that will be used to bury the dewatering pipeline, 49% of the clearing involves the widening of the existing track and the remainder is for re-establishment of existing tracks and additional disturbance around existing pipelines (Western Areas NL, 2006a). The vegetation to be cleared is well represented in the area both regionally and locally. A site visit to Lake Cronin Nature Reserve in 2000 confirms that vegetation associations identified within the clearing proposal are represented within Lake Cronin Nature Reserve (pers obs, 2000). The pre-existence of the track does not prevent ecological linkage.

DEC (2006a) has advised that the proposed clearing covers a relatively small linear area and involves widening of an existing access track and clearing regrowth from a drain. Lake Cronin Nature Reserve is sufficiently distanced from the notified area that its conservation values are unlikely to be impacted by this work.

Therefore, the clearing proposal is not likely to be at variance with this principle.

Methodology DEC (2006a)
Western Areas NL (2006a)

(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 proposed clearing straddles the Swan Avon/Lockhart and Swan Avon/Yilgarn catchments, neither of which are Public Drinking Water Source Areas. The area receives ~344.6 mL/y (BOM, 2006) and experiences a pan evaporation rate of 2200 mm/y (Luke et al, 1987). Surface water flow is likely to be low during normal seasonal rains. Sedimentation or turbidity of waterbodies is not likely as there are no permanent water bodies in the clearing area or near vicinity. A slope of 1.5% to the south is considered minor and the minimal surface water flow during normal rains is not likely to cause erosion problems. A saline to hypersaline (15000 - 35000 TDS) water table located 40-60 m below the surface (Western Areas NL, 2006a) is not likely to be effected by the clearing of regrowth vegetation. No vegetation is likely to be dependant on groundwater at such depths. Therefore, this proposal is not likely to be at variance with this principle.

Methodology Bureau of Meteorology website (2006).
Luke et al (1987)
Western Areas NL, 2006a)

(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**
Low annual rainfall (344 mL/y) (BOM, 2006), high evaporation rates (2200 mm/y) (Luke et al, 2006), no waterbodies or watercourses in the area (GIS Databases) and a gentle slope of 1.5% to the south (Western Areas NL, 2006) would suggest that this area is not subject to flooding. Therefore this proposal is not likely to cause or exacerbate flooding and is not likely to be at variance with this principle.

Methodology Bureau of Meteorology website (2006)
GIS database: Hydrography, linear - DOE 1/2/04
Luke et al, (1987)
Western Areas NL (2006)

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

Comments

The proposal was referred to the EPA by Western Areas under section 38 of the EP Act on 31 March 2006. The EPA set the level of assessment on the 20 April 2006 as: Not Assessed-Managed under part V of EP Act (Works Approval) and clearing regulations (EPA 2006). There are no native title claims to the area, however, a direct interest party has raised an issue with regards to Aboriginal Heritage Issues. The party was advised to contact the proponent for any information relating to Aboriginal Heritage Issues as this is not considered as part of the clearing permit assessment.

Water License GWL156549(1) and EP License 8041/1 are current for these tenements.

Methodology EPA (2006).

4. Assessor's recommendations

Purpose	Method	Applied area (ha)/ trees	Decision	Comment / recommendation
Building or Structure	Mechanical Removal	4.5	**Grant**	The assessable criteria have been addressed and no objections were raised. The assessment of the vegetated area under application revealed that the proposal may be at variance to Principles (c) for rare flora and (d) for threatened ecological communities. A specific condition has been imposed to monitor the area for the presence of Eucalyptus steedmanii (principle c) and DEC have advised that the linear nature of the clearing is not likely to have a significant impact on any ecological community (principle d). The assessing officer therefore recommends that the clearing permit be granted subject to the following conditions. 1. The Permit Holder shall record the following for each instance of clearing: a) Location where clearing occurred; b) Purpose; c) Area cleared in square metres; d) cumulative total of hectares cleared. 2. When undertaking any clearing, revegetation and rehabilitation, or other activity pursuant to this Permit, the permit holder must take the following steps to minimise the risk of introduction and spread of dieback: (a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared; (b) avoid the movement of soil in wet conditions;

(c) if movement of soil in wet conditions is necessary, the permit holder must prepare, implement and adhere to a dieback management plan developed in consultation with Department of Environment and Conservation for minimising the spread of dieback; and

(d) ensure that no dieback-infected road building materials, mulches or fill are brought into an area that is not affected by dieback.

3. When undertaking any clearing, revegetation and rehabilitation, or other activity pursuant to this Permit the permit holder must take the following steps to minimise the risk of the introduction and spread of weeds:

(a) clean earth-moving machinery of soil and vegetation prior to entering and leaving the area to be cleared; and

(b) ensure that no weed-infected road building materials, mulch, fill or other material is brought into the area to be cleared.

4. The permit holder shall, at intervals of not less than 1 year for the duration of the permit, arrange for a qualified botanist to inspect the area cross-hatched red on Plan 1249/1 to identify any specimens of *Eucalyptus steedmanii* and record the following details a) Total Area Surveyed (ha); b) Total number of Trees counted; c) Unknown trees counted as a percentage of total; d) *Eucalyptus eremophila* trees counted as percentage of total; and e) *Eucalyptus. steedmanii* trees counted as percentage of total.

5. The Permit Holder shall provide a report to the Director, Environment, Department of Industry and Resources by 31 January each year for the duration of the permit setting out the records required under condition 1 of this permit in relation to clearing carried out between 1 January and 31 December of the previous year.

6. The Permit Holder shall provide a report to the Director, Environment, Department of Industry and Resources by 31 January each year for the duration of the permit setting out the records required under condition 4 of this permit in relation to inspections conducted between 1 January and 31 December the previous year.

5. References

Bureau of Meteorology Website (2006). http://www.bom.gov.au/climate/averages/tables/cw_010568.shtml

Biota Environmental Sciences Pty Ltd (2006) Forrestania Fauna Survey, Fauna and Faunal Assemblages report prepared for Western Areas NL by Biota Environmental Sciences Pty Ltd. Unpublished report dated February 2006, Perth Western Australia.

CALM (2003) Bioregional Summary of the 2002 Biodiversity Audit for Western Australia.

DEC (2006a) Land clearing proposal advice. Advice to Assessing Officer, Department of Industry and Resources (DOIR). Department of Environment and Conservation, Western Australia.

DEC (2006b) Advice on Western Areas DRF Survey. Advice to Assessing Officer, Department of Industry and Resources (DOIR). Department of Environment and Conservation, Western Australia.

Department of Environment and Heritage website (2006). http://www.deh.gov.au/cgi-bin/ahdb/search.pl

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.

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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, 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.