Department of Industry and Resources

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 2470/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **Midwest Corporation Limited**

1.3. Property details

Property: Mining Lease 70/1012
Local Government Area: Shire of Morawa
Colloquial name: Koolanooka Project

1.4. Application

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

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 area applied to clear has been broadly mapped at a scale of 1:250,000 as: Beard Vegetation Association 693: Mosaic: Low woodland: *Allocasuarina heugeliana* over Mallee and Acacia scrub/ *Allocasuarina campestris* thicket (GIS Database). Ecologia Environment Pty Ltd (2008a) undertook a targeted survey for Declared Rare Flora (DRF) and Priority Flora at the proposed drill pad and access track locations provided by Midwest Corporation Ltd. The survey was carried out on 10 July 2008 and involved collecting samples of all flora taxa encountered (so that field identifications could be confirmed by a taxonomist) and recording species density in a stratum table. Whilst being a targeted survey for conservation significant taxa, enough information was gathered to describe the vegetation units of the area. Four vegetation units were recorded within the proposed clearing area by Ecologia Environment Pty Ltd (2008a). All four units were associated with a single topographical feature (alluvial plain): 1. *Acacia coolgardiensis* high shrubland over *Grevillea levis* and *Mirbelia bursarioides* low open shrubland over scattered herbs and grasses; 2. *Acacia coolgardiensis* low woodland over *Baeckea sp. Perenjori* shrubland over very open mixed herbs and scattered grasses; 3. *Eucalyptus loxophleba subsp. lissophloia* low open woodland over *Acacia acuminata* high shrubland over *Acacia paraneura* open shrubland over *Grevillea levis* low open shrubland over open mixed herbs; and 4. *Eucalyptus ebbanoensis subsp. ebbanoensis* medium mallee shrubs over *Acacia coolgardiensis* high open shrubland over *Acacia acanthoclada subsp. glaucescens* and *Eremophila oldfieldii subsp. oldfieldii* tall open shrubland over *Acacia acanthoclada subsp. glaucescens* and *Mirbelia bursarioides* low open shrubland over open mixed herbs and scattered soft grasses.	This clearing permit application is for a Purpose Permit to clear up to 0.328 hectares of native vegetation (GIS Database). The proposed clearing area is located on Mining Lease 70/1012, approximately 20 kilometres east of Morawa (GIS Database). The purpose of the proposed clearing is groundwater exploration. Midwest Corporation Ltd propose to clear 3 drill pads and approximately 350 metres of access track. A small surplus has been applied for to allow for unexpected changes and flexibility in the exploration program. Historical station tracks, shire roads, fence lines and existing cleared areas will be used wherever possible to minimise the disturbance footprint (Midwest Corporation Ltd, 2008). Vegetation clearing will be undertaken via mechanical means and will employ raised blade techniques where practicable.	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994). to Completely Degraded: No longer intact; completely/almost completely without native species (Keighery, 1994).	The vegetation condition rating is based on photographic and vegetation description information provided by Ecologia Environment Pty Ltd (2008a). Interpretation of aerial photography by the Assessing Officer, DoIR, was also used to describe the vegetation condition rating. The proposed clearing area is within historical grazing lease (3116/10539). Anecdotal evidence suggests that the vegetation subject to this clearing permit application is re-growth.

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 proposed clearing area is located approximately 20 kilometres east of Morawa in the Ancient Drainage subregion of the Avon Wheatbelt Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). The Ancient Drainage subregion is characterised by a gently undulating landscape of low relief. There is no connected drainage, yet numerous salt lake chains occur as remnants of ancient drainage systems that now only function in very wet years (Beecham, 2002). The Lake Nullewa system, located approximately 8 kilometres north of the proposed clearing area, is one such example of this drainage. Vegetation in the Ancient Drainage subregion consists of Proteaceous scrub heaths, rich in endemic species. Mixed Eucalypt, *Allocasuarina huegeliana* and Jam-York Gum woodlands are typical of the subregion (Beecham, 2002).

The proposed clearing area is located on a flat alluvial plain on a major fault system within the Koolanooka Hills (Midwest Corporation Ltd, 2008). The Mining Lease on which the clearing is proposed (M70/1012) overlies historical grazing lease (3116/10539) and the Morawa Rifle Range Reserve 46614 (Location 12100). Consequently, the proposed clearing area is characterised by existing disturbance which includes pastoral tracks, a rifle range and fence lines. The biodiversity value of the proposed clearing area is likely to have been impacted somewhat by the land use activities at the site.

No introduced flora species were recorded by Ecologia Environment Pty Ltd (2008a) during a flora survey of the proposed clearing area. Should a permit be granted, it is recommended that conditions be imposed to minimise the risk of light vehicles, drill rigs and other machinery introducing weeds to the area. This should include, but not be limited to, cleaning vehicles and machinery prior to entering the project area.

No Declared Rare Flora (DRF) taxa were recorded by Ecologia Environment Pty Ltd (2008a) during a targeted search for conservation significant taxa within the proposed clearing area, although the Priority 2 taxon, *Baeckea sp. Perenjori* was recorded. The presence of Priority Flora within the proposed clearing area increases the biodiversity value of the site. The proponent is committed to avoiding all recorded plants of this species. Should a permit be granted, it is recommended that a condition be imposed to enforce this commitment.

Five plant assemblages of the Koolanooka Hills System are recognised as Threatened Ecological Communities (TEC's) by the Department of Environment and Conservation and are collectively referred to as the Koolanooka Hills TEC (Ecologia Environment Pty Ltd, 2008a). The proposed clearing area does not contain any of these five plant assemblages and is therefore not considered to constitute a TEC (Ecologia Environment Pty Ltd, 2008a).The landform associated with the proposed clearing area (alluvial plain) is not conducive to support the five plant assemblages which constitute the Koolanooka Hills TEC, which is associated with rocky slopes and summits of the banded ironstone formation ridges which form the Koolanooka Hills System.

From a faunal perspective, impacts associated with this clearing proposal are expected to be minor. Given the scale and nature of the proposed clearing, and the level of disturbance in the proposed clearing area, no fauna species would be expected to rely exclusively on the site as significant habitat.

Rehabilitation of all disturbed areas will take place in accordance with the proponent's Exploration Environmental Management Plan (Ecologia Environment Pty Ltd, 2008b). In accordance with tenement conditions for Mining Lease 70/1012, all disturbances to the surface of the land made as a result of exploration, including drill pads and access tracks, are to be backfilled and rehabilitated to the satisfaction of the Environmental Officer, Department of Industry and Resources (DoIR). Backfilling and rehabilitation is required no later than 6 months after excavation unless otherwise approved in writing by the Environmental Officer, DoIR. Any biodiversity values compromised as a result of the proposed clearing are likely to be partially restored over time as rehabilitation practices facilitate the natural regeneration process.

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

Methodology

Beecham (2002).
Ecologia Environment Pty Ltd (2008a).
Ecologia Environment Pty Ltd (2008b).
Midwest Corporation Ltd (2008).
GIS Databases:
- Interim Biogeographic Regionalisation for Australia (Subregions).

(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

No fauna studies have been undertaken to accompany this clearing permit application. Given the scale and nature of the proposed clearing (0.328 hectares for three discrete drill pads and 350 metres of access track) it is unlikely that impacts to fauna would be significant. The following minor impacts to fauna would be expected as a result of the proposed clearing:

- mortality of vertebrate and invertebrate fauna in the clearing footprint area. Sedentary species and young animals are particularly susceptible;
- displacement of mobile species in the proposed clearing area into surrounding habitats;
- temporary loss of habitat for foraging and shelter; and
- localised disturbance from noise and dust pollution.

Koolanooka is an Aboriginal word meaning 'place of plenty wild turkeys' (Shire of Morawa, 2008). This refers to the abundance of Malleefowl (*Leipoa ocellata*) which used to occur in the area. Since European settlement, numbers of Malleefowl have seriously declined. Factors responsible include: habitat loss through extensive land clearing and fires, remnant vegetation decline through salinity and grazing, and introduced animals such as foxes, cats, rabbits and goats (Malleefowl Preservation Group Inc., 2002). Today, the Malleefowl is listed as 'Vulnerable' under the *Environment Protection and Biodiversity Conservation (EPBC) Act 1999* and Schedule 1 'Fauna that is rare or likely to become extinct', *Wildlife Conservation (Specially Protected Fauna) Notice 2006*.

The proposed clearing area is within the known distribution of the Malleefowl and provides suitable habitat (Mallee woodlands). Ecologia Environment Pty Ltd (2008a) did not observe any evidence of Malleefowl during a flora survey of the proposed clearing area. Similarly, anecdotal evidence from Midwest Corporation personnel indicates that no evidence of Malleefowl has been recorded from the proposed clearing area. The National Recovery Plan for the Malleefowl lists dense canopy cover as the most important feature associated with high breeding densities. In additon, Malleefowl densities in areas subject to sheep grazing is about one tenth that of ungrazed areas (Benshemesh, 2000). Interpretation of aerial photography indicates that the proposed clearing area does not provide a dense canopy cover. The fact that the proposed clearing area is within an historical grazing lease would also suggest that the area does not constitute significant habitat for the Malleefowl.

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

Methodology

Benshemesh (2000).
Ecologia Environment Pty Ltd (2008a).
Malleefowl Preservation Group Inc. (2002).
Shire of Morawa (2008).

(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) or Priority Flora within the proposed clearing area (GIS Database).

The proposed clearing area is located on a flat plain in an area of faulting along the Koolanooka Hills system. A number of flora and vegetation surveys have been conducted in the Koolanooka Hills area, including ATA Environmental (2004) and Meissner & Caruso (2006), cited in Ecologia Environment Pty Ltd (2008a). Most recently, Ecologia Environment Pty Ltd (2008a) conducted a targeted DRF and Priority Flora survey in the proposed clearing area in July 2008, grid searching 30 metre x 30 metre quadrats at each of the three proposed drill pad locations. Approximately 350 metres of proposed access track was also surveyed, in addition to a wider search in the surrounding vegetation to allow for flexibility with repsect to the final placement of drill pads (Ecologia Environment Pty Ltd, 2008a).

Some 143 DRF taxa are known from the Avon Wheatbelt Bioregion. The following six DRF taxa are known from the vicinity of the Koolanooka Hills area (Ecologia Environment Pty Ltd, 2008a):

1. *Eremophila viscida*
2. *Eremophila nivea*
3. *Eremophila rostrata subsp. trifida*
4. *Tecticornia bulbosa*
5. *Frankenia conferta*
6. *Eucalyptus synandra*

No DRF species were recorded by Ecologia Environment Pty Ltd (2008a) during a targeted survey for conservation significant taxa within the proposed clearing area.

A number of Priority Flora taxa are known from the Koolanooka Hills area, many of which were recorded by ATA Environmental (2004) and Meissner & Caruso (2006), cited in Ecologia Environment Pty Ltd (2008a) during flora and vegetation surveys of the Koolanooka Hills. These include:

- *Melaleuca barlowii* (P1)
- *Millotia dimorpha* (P1)

- *Rhodanthe collina* (P1)
- *Baeckea sp. Three Springs* (P2)
- *Baeckea sp. Perenjori* (P2)
- *Stenanthemum poicilum* (P2)
- *Persoonia pentasticha* (P3)
- *Frankenia glomerata* (P3)
- *Grevillea stenostachya* (P3)
- *Gunniopsis rubra* (P3)

Baeckea sp. Perenjori was the only Priority Flora taxa recorded by Ecologia Environment Pty Ltd (2008a) during a targeted DRF and Priority Flora survey of the proposed drill pad and access track locations. This taxa was recorded from a single location within the proposed clearing area. Midwest Corporation Ltd are committed to avoiding all recorded plants of *Baeckea sp. Perenjori* within the proposed clearing area (Ecologia Environment Pty Ltd, 2008b). Should a permit be granted, it is recommended that a condition be imposed to enforce this committment.

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

Methodology Ecologia Environment Pty Ltd (2008a).
Ecologia Environment Pty Ltd (2008b).

(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

Five plant assemblages of the Koolanooka Hills system are listed as Threatened Ecological Communities (TEC's) by the Department of Environment and Conservation (DEC). These are listed below:

1. *Allocasuarina campestris* shrub over red loam on hill slopes;

2. Shrubs (such as Acacia spp.) and emergent mallees on shallow red loam over massive ironstone on steep rocky slopes;

3. *Eucalyptus ebbanoensis subsp. ebbanoensis* mallee and Acacia spp. scrub with scattered *Allocasuarina huegeliana* (cf. *Allocasuarina acutivalvis*) over red loam and ironstone on the upper slopes and summits;

4. *Eucalyptus loxophleba* woodland over scrub on the footslopes; and

5. Mixed Acacia spp. scrub on granite.

None of the five plant assemblages listed as TEC's for the Koolanooka Hills system were encountered by Ecologia Environment Pty Ltd (2008a) during a targeted DRF and Priority Flora survey of the proposed clearing area. Whilst the survey carried out by Ecologia Environment Pty Ltd (2008a) was not comprehensive and targeted conservation significant flora taxa, the following must be taken into consideration:

1. The TEC's of the area are associated with the Koolanooka Hills banded ironstone formation itself, occurring on upper hillslopes, footslopes and summits charactersied by red loams, massive ironstone and granite. The proposed clearing area is a flat plain in an area of faulting along the Koolanooka Hills. Soils appear to be red loams from interpretation of photographs provided. The topography of the proposed clearing area is not consistent with the topgraphy of the TEC's found in the Koolanooka Hills.

2. The vegetation surveyed by Ecologia Environment Pty Ltd (2008a) could not be grouped into any of the TEC's described by the DEC using the indicator species given for each community.

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

Methodology Ecologia Environment Pty Ltd (2008a).

(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 at variance to this Principle

The area applied to clear is within the Interim Biogeographic Regionalisation for Australia (IBRA) Avon Wheatbelt bioregion (GIS Database). According to Shepherd et al (2001) there is approximately 15.4% of the pre-European vegetation remaining in this bioregion. At the subregional level, there is approximately 18.6% of the pre-European vegetation remaining in the Ancient Drainage subregion (Shepherd et al, 2001). The vegetation of the application area is classified as Beard Vegetation Association 693 - Mosaic: Low woodland: *Allocasuarina heugeliana* over Mallee and Acacia scrub/ *Allocasuarina campestris* thicket (GIS Database). This

vegetation type is poorly represented state wide, with approximately 3,146 hectares remaining according to available data (see table below). Approximately 28% of the pre-European extent (4,396 hectares) of this vegetation type has been cleared to date. Of concern, Beard Vegetation Association 693 is not represented within the conservation reserve system.

The proposed clearing area is located in the Shire of Morawa, an agricultural district which has had more than 80 percent of the native vegetation cleared (Shepherd, et al, 2001). Given the low percentage of native vegetation remaining within the Avon Wheatbelt bioregion, Ancient Drainage subregion, Shire of Morawa and Beard Vegetation Association 693, the proposed clearing is at variance to this Principle.

Notwithstanding, the proposed clearing should be considered in context:

- The maximum disturbance footprint for this proposal is 0.328 hectares (3,280 square metres). The proposal is maximising the use of existing cleared areas. An existing access track running off Koolanooka Spring Road will be used to access the project area. One of the three proposed drill pads is located on existing cleared land on the Morawa Rifle Range. Little or no clearing should be required for this drill pad;

- The proposed clearing area is located on an historical grazing property. Native vegetation in the area is said to be re-growth;

- The proposed disturbance will be of a temporary nature. It is a condition of Mining Lease 70/1012 that all disturbances to the surface of the land made as a result of exploration, including drill pads and access tracks, be backfilled and rehabilitated to the satisfaction of the Environmental Officer, Department of Industry and Resources (DoIR). Backfilling and rehabilitation is required no later than 6 months after excavation unless otherwise approved in writing by the Environmental Officer, DoIR.

- Mining Lease 70/1012 covers an area of approximately 605 hectares (GIS Database). More than 150 hectares of native vegetation has been cleared in the south-west corner of the tenement for agricultural purposes, representing approximately 25% of the total tenement area. This clearing permit application (0.328 hectares) represents approximately 0.05% of the total tenement area. Aerial photography indicates that there are no other obvious disturbances on Mining Lease 70/1012 from mineral-related exploration or mining activities.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves (and current %)
IBRA Bioregion – Avon Wheatbelt	9,517,117	1,468,711	~15.4	Vulnerable	1.6 (7.6)
IBRA subregion – Ancient Drainage	6,524,183***	1,212,882***	~18.6	Vulnerable	1.6 (6.6)
Shire of Morawa	289,168***	56,051***	~19.4	Vulnerable	
Beard veg assoc. – State					
693	4,396	3,146	~71.6	Least concern	0 (0)
Beard veg assoc. – Subregion					
693	4,396	3,146	~71.6	Least concern	0 (0)

* Shepherd et al. (2001) updated 2005
** Department of Natural Resources and Environment (2002)
*** Area within the Intensive Landuse Zone

Methodology Department of Natural Resources and Environment (2002).
Shepherd et al (2001).
GIS Databases:
- Interim Biogeographic Regionalisation of Australia.
- Mining Tenements.
- Pre-European Vegetation.

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

Comments **Proposal is not likely to be at variance to this Principle**
According to available GIS databases, there are no permanent or ephemeral wetlands or watercourses in the proposed clearing area (GIS Database). Ecologia Environment Pty Ltd (2008a) did not observe any major

watercourses or wetlands during a targeted Rare and Priority Flora survey of the proposed clearing area in July 2008.

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

Methodology Ecologia Environment Pty Ltd (2008a).
GIS Database:
- Hydrography, linear.

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

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

Three land systems are associated with the Koolanooka area, as described by ATA (2004a), cited in Ecologia Environment Pty Ltd (2008a):

1. Koolanooka Land System - this system comprises the Koolanooka Hills;

2. Noolgabbi Land System - the level and gently inclined flats and lower slopes surrounding the Koolanooka Land System and is often associated with a saline drainage network; and

3. Pindar Land System - the gently undulating sandplain with long, gentle slopes to the south-east of the Koolanooka Hills.

The proposed clearing area is located on a flat alluvial plain which occurs in a major fault system within the Koolanooka Hills banded ironstone formation. The proposed clearing area is some 40 - 45 metres lower than the peaks of the Koolanooka Hills (Midwest Corporation Ltd, 2008). No vegetation clearing is proposed for hillsides or slopes.

Midwest Corporation Ltd (2008) will employ raised blade clearing techniques wherever possible for the proposed works. This will minimise disturbance to the topsoil and preserve rootstock, thereby facilitating natural regeneration of disturbed areas post exploration and minimising the potential for soil erosion. For safety reasons, topsoil may be disturbed when clearing drill pads to remove vegetation stubble. All disturbed topsoil and cleared vegetation will be stockpiled for use in rehabilitation (Midwest Corporation Ltd, 2008). Topsoil and cleared vegetation will be re-spread over the disturbed areas following completion of exploration activities. This is a standard rehabilitation procedure widely used by the mining industry today. Should a clearing permit be granted, it is recommended conditions be imposed to enforce the proponent's committment to stockpile topsoil and cleared vegetation for use in rehabilitation given that this practice has proven benefits in promoting natural regeneration.

In accordance with the tenement conditions for Mining Lease 70/1012 all disturbances to the surface of the land made as a result of exploration, including drill pads and access tracks, will be backfilled and rehabilitated to the satisfaction of the Environmental Officer, Department of Industry and Resources (DoIR). Backfilling and rehabilitation are required no later than 6 months after excavation unless otherwise approved in writing by the Environmental Officer, DoIR.

Provided that the proponent complies with tenement conditions for Mining Lease 70/1012 and implements standard vegetation clearing and rehabilitation techniques, it is unlikely that the proposed clearing will result in appreciable land degradation.

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

Methodology Ecologia Environment Pty Ltd (2008a).
Midwest Corporation Ltd (2008).

(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 area is located on a flat plain in an area of faulting along the Koolanooka Hills System. Much of the Koolanooka hilltops have been mapped as TEC's (Ecologia Environment Pty Ltd, 2008a). Beecham (2002) lists the plant assemblages of the Koolanooka System as a reservation priority for the Avon Wheatbelt 1 (Ancient Drainage) subregion in a 'Biodiversity Audit of Western Australia's 53 Biogeographical Subregions'.The Koolanooka Hills are rated as being of a high biodiversity value in a 'Strategic Review of the Conservation and Resource Values of the Banded Iron Formation of the Yilgarn Craton' (DEC & DoIR, 2007). Whilst not currently protected within any conservation reservation system, DEC & DoIR (2007) note that there is scope for conservation of the Koolanooka Hills System, despite being partly mined by Western Mining Corporation between 1965 and 1973.

The nearest DEC managed lands to the proposed clearing area are an un-named timber reserve, located

approximately 5 kilometres to the north-east, and the Koolanooka Dam Nature Reserve, located approximately 10 kilometres south-west (GIS Database).

The small, non-contiguous nature of the proposed clearing is not expected to have any significant impacts on the conservation values of the Koolanooka Hills System, nearby timber reserve or the Koolanooka Dam Nature Reserve. It is further acknowledged that the proposed clearing area is on flat land and not on the Koolanooka Hills banded ironstone formation ridge. Vegetation communities within the proposed clearing area are not representative of the hilltop TEC's which warrant conservation.

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

Methodology

Beecham (2002).
DEC & DoIR (2007).
Ecologia Environment Pty Ltd (2008a).
GIS Database:
- CALM Managed Lands and Waters.

(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

Comments

Proposal is not likely to be at variance to this Principle

There are no permanent or ephemeral surface water features in the proposed clearing area (GIS Database). It is therefore considered unlikely that the small extent of proposed clearing would impact upon surface water quality.

The proposed clearing area is not located within a Public Drinking Water Source Area (GIS Database). The Koolanooka Spring is located approximately 2 kilometres east-north east of the proposed clearing area along Koolanooka Spring Road (GIS Database). The spring was used as a water source for early settlers in the Morawa area (Shire of Morawa, 2008).

No information has been provided to assess the potential impacts of vegetation removal on groundwater levels or quality, although the scale and nature of the proposal would suggest this is unwarranted. It is unlikely that the proposed clearing would have any significant impacts to groundwater.

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

Methodology

Shire of Morawa (2008).
GIS Database:
-Hydrography, linear.
- Hydrography, points.
- Public Drinking Water Source Areas (PDWSAs).

(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 average annual rainfall of the proposed clearing area is approximately 400 millimetres (GIS Database). Average annual evaporation is approximately 2,800 millimetres (GIS Database).

There are no permanent or ephemeral watercourses or wetlands in the proposed clearing area (GIS Database). The Nullewa Lake System is subject to periodic inundation and is located approximately 8 kilometres north of the proposed clearing area (GIS Database). Topographic contours indicate that this lake system collects surface water run-off from the Koolanooka Hills System (GIS Database).

The small extent of the proposed clearing (0.5 hectares) compared to the size of the YarraMonger catchment (4,182,476 hectares) is not likely to have any impact on the incidence or intensity of natural flood events (GIS Database).

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

Methodology

GIS Database:
- Evaporation Isopleths.
- Hydrographic Catchments - Catchments.
- Hydrography, linear.
- Rainfall, Mean Annual.
- Topographic Contours, Statewide.

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

Comments

The clearing permit application was advertised, inviting public submissions. Two public submissions were received. The first submission raised concerns regarding the potential impacts of the proposed vegetation clearing on Native Title rights, Aboriginal Sites of Significance and the cumulative impact of all clearing permit applications on Mining Lease 70/1012.

There is one native title claim over the area under application (GIS Database). This claim (WC04/002) has been registered with the National Native Title Tribunal on behalf of the claimant group (GIS Database). However, the mining tenement have 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*.

The Koolanooka Hills System is on the permanent register of Aboriginal Sites of Significance (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. Approval must be given under Section 18 of the *Aboriginal Heritage Act 1972* to disturb an Aboriginal Site of Significance.

The cumulative impact of all clearing permit applications on Mining Lease 70/1012 is addressed under the relevant Clearing Principle (e).

The second submission raised concerns that the proposed clearing area includes land owned by the Morawa Pistol Club. An agreement has been reached beween the proponent and the Morawa Pistol Club, permitting clearing and subsequent exploration activity on this land should a clearing permit be granted in accordance with Section 51E of the *Environmental Protection Act 1986* and a Programme of Work be approved pursuant to the *Mining Act 1978*.

It is the proponent's responsibility to liaise with the Department of Environment and Conservation and the Department of Water to determine whether a Works Approval, Water Licence, Bed and Banks Permit, or any other licences or approvals are required for the proposed works.

Methodology GIS Databases:
- Aboriginal Sites of Significance.
- Native Title Claims.

4. Assessor's comments

Comment

The Clearing Principles have been assessed and it is deemed that the proposed clearing is at variance to Principle (e) and not likely to be at variance to Principles (a), (b), (c), (d), (f), (g), (h), (i) or (j).

Should a clearing permit be granted, it is recommended that conditions be imposed on the permit for the purposes of protecting Priority Flora, minimising the risk of weed introduction, rehabilitation, record keeping and permit reporting.

5. References

Beecham, B (2002) Avon Wheatbelt 1 (AW1 - Ancient Drainage subregion) in 'A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions in 2002'. Department of Conservation and Land Management, Western Australia.

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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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Ecologia Environment Pty Ltd (2008b) Midwest Corporation Limited. Environmental Management Plan (Exploration). January 2008.

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Malleefowl Preservation Group Inc. (2002) The Malleefowl (Leipoa ocellata). Available: http://www.malleefowl.com.au/Malleefowl.htm. Accessed 03/09/08.

Midwest Corporation Ltd (2008) Programme of Work - Exploration (Mining Act 1978) Application. Submitted to Minerals Branch, Environment Division, Department of Industry and Resources. April 2008.

Shepherd, D.P., Beeston, G.R. and Hopkins, A.J.M. (2001) Native Vegetation in Western Australia, Extent, Type and Status. Resource Management Technical Report 249. Department of Agriculture, Western Australia (updated 2005).

Shire of Morawa (2008) Koolanooka Springs. Available from: http://www.morawa.wa.gov.au/default.asp?documentid=13. Accessed 29/08/08.

6. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government.
CALM	Department of Conservation and Land Management, Western Australia.
DAFWA	Department of Agriculture and Food, Western Australia.
DA	Department of Agriculture, Western Australia.
DEC	Department of Environment and Conservation
DEH	Department of Environment and Heritage (federal based in Canberra) previously Environment Australia
DEP	Department of Environment Protection (now DoE), Western Australia.
DIA	Department of Indigenous Affairs
DLI	Department of Land Information, Western Australia.
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.