Department of Industry and Resources

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 2634/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: **The Griffin Coal Mining Company Pty Ltd**

1.3. Property details

Property: Exploration Licence 70/102
Exploration Licence 70/231
Local Government Area: Shire Of Boyup Brook
Colloquial name: Wilga Exploration Project

1.4. Application

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

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
Beard vegetation associations have been mapped at 1:250,000 scale for the whole of Western Australia, and are a useful tool to examine the vegetation extent in a regional context. One Beard vegetation association is located within the area proposed to be cleared (GIS Database, 2007). This vegetation association is: Beard vegetation association 3: Medium forest; jarrah-marri. The application areas have been the subject of two botanical surveys; a flora and vegetation survey undertaken between 1-8 September 2005 by ENV Australia, and a Declared Rare Flora (DRF) search of hydrogeological exploration sites on 2 May 2007 by Bennett Environmental Consulting (Environ, 2008). Based on these searches, the following vegetation associations were recorded in the application areas: **Em:** Forest of *Eucalyptus marginata, Corymbiacalophylla* (with *Persoonia longifolia* and *Banksia grandis*) over mixed shrubs dominated by *Hibbertia hypericoides, Hypocalymma angustifolium, Xanthorrhoea preissii, Dryandra lindleyana* subsp. *sylvestris* and *Acacia pulchella* on sand with occasional laterite outcropping. **Xp:** Forest of *Eucalyptus marginata, Corymbia calophylla* (with *Persoonia longifolia* and *Banksia grandis*) over *Xanthorrhoea preissii, Bossiaea ornata, Dryandra lindleyana* subsp. *sylvestris, macrozamia riedlei, Hibbertia commutata* and *Leucopogon capitellatus* along the lower slopes and drainage lines. **Cc:** Woodland of *Eucalyptus marginate* with *Corymbia calophylla* and *Persoonia longifolia* over *Hibbertia hypercoides*, *Bossiaea ornata*, *Hakea lissocarpha*, *Hibbertia commutata* and *Dryandra nive*.	Griffin Coal have applied to clear up to eight hectares of vegetation within a 24 hectare purpose permit boundary for the Wilga exploration project (Griffin Coal, 2008). The Wilga exploration project will include 13 drill lines and associated tracks. The application areas are found approximately 15 kilometres north-west of Boyup Brook (GIS Database).	Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery 1994) to Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	Forms of disturbance in the application area include existing vehicle tracks, some logging and historical burning of vegetation (Environ, 2008). There are also some areas in the north and east which have been cleared for paddocks. There were 13 species of weeds recorded during the flora and vegetation surveys of the application areas (Environ, 2008).

Kg: Low Woodland A of *Eucalyptus rudis* (with Banksia grandis) over *Kunzea glabrescens*, *Acacia saligna*, *Acacia pulchella* , *Hibbertia commutate* and *Geranium retrorsum*.

BgHh: Low Woodland B of *Banksia grandis* (with *Eucalyptus marginata*, *Corymbia calophylla* and *Persoonia longifolia*) over *Hibbertia hypericoides* , *Xanthorrhoea preissii*, *Bossiaea ornata*, *Hakea lissocarpha*.

Mv: Low Open Woodland of *Melaleuca viminea* (with *Corymbia calophylla* and *Eucalyptus marginata*) over *Xanthorrhoea preissii* , *Hakea varia*, *Acacia pulchella* , *Meeboldina cana*, *Astartea scoparia* and *Hakea varia*.

MvEr: Low Woodland of *Melaleuca viminea* (with *Eucalyptus rudis*, *Banksia littoralis* and *Corymbia calophylla*) over *Hakea varia* an *Acacia pulchella* with open water.

P: Paddock

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 is located within the Jarrah Forest Interim Biogeographic Regionalisation for Australia (IBRA) bioregion, and the Southern Jarrah Forest sub-region (GIS Database). The subregion is characterised by jarrah-marri forest on laterite gravels, and in the eastern part, by marri-wandoo woodlands on clayey soils (Hearn et al., 2002). Hearn et al., (2002) states that the Southern Jarrah Forest has extensive native forest cover, but the biota is patchy considering geological and geomorphic uniformity. The main land use is primarilily grazing (improved pastures) and dry land agriculture, forestry and conservation (Hearn *et al*., 2002).

Two flora and vegetation surveys have been conducted within the application areas; including a flora and vegetation survey undertaken between 1-8 September 2005 by ENV Australia, and a Declared Rare Flora (DRF) search of hydrogeological exploration sites on 2 May 2007 by Bennett Environmental Consulting (Environ, 2008). There were no Declared Rare Flora (DRF) or Priority flora recorded in any of the application areas during either of the flora and vegetation surveys. The results of the surveys also showed there was a total of 191 flora taxa, 107 genera and 42 vascular plant families recorded in the application areas (Environ, 2008). Based on these results, it would appear that the vegetation in the application area is typical of the Bioregion. The vegetation types occurring within the application area are well represented in the region (GIS Database, Environ, 2008).

A desktop fauna survey of the application areas was undertaken on 15 June 2005 by Bamford Consulting Ecologists. The results showed that the application areas may be suitable habitat for the following conservation significant species: Forest Red-tailed Black Cockatoo, Carnaby's Cockatoo, Baudin's Cockatoo, Quenda and Chuditch (Bamford & Wilcox, 2005). Griffin Coal (2008) have committed to a number of measures which will ensure the habitats of these species will be avoided. These included avoiding habitat trees, watercourses and retaining hollow logs. Should a permit be granted, it is recommended that conditions be placed on the permit for the purpose of fauna management.

The application areas have been dieback mapped by CAD Resources (Griffin Coal, 2008). The results show that there are no areas within the application area which are dieback infested; however, one small area to the west was found to be uninterpretable (Griffin Coal, 2008). Given the general area is dieback free, it is important that dieback is not introduced so the biodiversity values of the area can be maintained. Griffin Coal (2008) have stated that during the exploration project the following measures will be implemented to prevent the contamination of uninfected areas with Dieback:

- All work during the project will be undertaken during dry conditions (November – April). If rain occurs during this project, work must stop and not commence until the soil has dried out;
- Install appropriate signage (infested/uninfested etc);
- Install an inspection and/or clean down point for cleaning equipment. Clean down points should be placed where:

    a) Vehicles leave an uninfested site and enter an uninterpretable site;
    b) Vehicles leave an infested site and enter an uninfested site; and
    c) Vehicles leave an uninterpretable site and enter an uninfested site.

- Ensure inspection and/or clean down points are inspected by a member of the Environment Team prior to work commencing;
- Implement a safe place for large vehicles and equipment to turnaround and exit the area if they are found

on inspection to be unclean or cannot be effectively cleaned in the field; and
- Ensure all employees and contractors working the area are made aware of the Clean Down for Dieback Control Procedure.

During the flora and vegetation survey there were 13 species of weeds recorded in the application areas. The occurrence of weeds is likely to originate from the agricultural area which lies to the east and north of the application areas (Environ, 2008). The presence of weeds within the application area diminishes the biodiversity value of the site. Should a clearing permit be granted, it is recommended that a condition be imposed to ensure that the proposed clearing activities do not spread or introduce weed species to non-infested areas.

It should also be noted that during the flora and vegetation surveys further forms of disturbance noted in the application areas included; burning, some logging, and several vehicle tracks (Environ, 2008). These forms of disturbance have contributed to a reduced biodiversity level within the application areas.

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

Methodology

Bamford & Wilcox (2005).
Environ (2008).
Griffin Coal (2008).
Hearn et al., (2002).
GIS Database:
- Interim Biogeographic Regionalisation for Australia (Subregions)
- Pre-European Vegetation

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

Comments

Proposal may be at variance to this Principle

A desktop fauna survey of the application areas was conducted by Bamford Consulting Ecologists on 15 June 2005 (Bamford & Wilcox, 2005). Following this, a fauna impact assessment was undertaken by Bamford Consulting Ecologists on 12 September 2008 in relation to the proposed Boyup Brook exploration project. As a result of the desktop fauna survey it was determined that 11 species of conservation significance may potentially be found within the application areas. Based on habitat preferences and known distributions, it is likely that the following conservation significant species could occur within the application areas:

- Forest Red-tailed Black Cockatoo (*Calyptorhynchus banksii naso*);
- Carnaby's Cockatoo (*Calyptorhynchus latirostris*);
- Baudin's Cockatoo (*Calyptorhynchus baudinii*);
- Quenda (*Isoodon obesulus fusciventer*); and
- Chuditch *(Dasyurus geoffroii*).

The Forest Red-tailed Black-Cockatoo (Schedule 1, fauna that is rare or likely to become extinct, *Wildlife Conservation* (*Specially Protected Fauna*) *Notice*, *2008*) is of concern because clearing has greatly reduced the available breeding and feeding habitat (Bancroft et al., 2007). Feral bees and Galahs also compete with the Forest Red-tailed Black-Cockatoo for nesting hollows. The range of this subspecies is closely tied to the distribution of Marri (*Corymbia calophylla*) (Bancroft et al., 2007).

The Carnaby's Cockatoo (Schedule 1, fauna that is rare or likely to become extinct, *Wildlife Conservation* (*Specially Protected Fauna*) *Notice*, *2008*) occurs in the south-west of Western Australia, approximately south-west of a line between the Murchison River (near Kalbarri) and Cape Arid National Park (east of Esperance) (Bancroft et al., 2007). Land clearing and degradation has reduced available breeding sites (tree hollows) and fragmented breeding and feeding sites of the Carnabys Cockatoo.

The Baudin's Cockatoo (Schedule 1, fauna that is rare or likely to become extinct, *Wildlife Conservation* (*Specially Protected Fauna*) *Notice*, *2008*) occurs in the lower south-west of Western Australia, approximately south-west of a line between Morangup (near Bullsbrook) and Waychinicup National Park (east of Albany) (Bancroft et al., 2007). Birds generally breed in the Karri, Marri and Wandoo forests in the southern parts of the species range and move north to the Darling Range and Swan Coastal Plain during autumn and winter (non-breeding periods) (Bancroft et al., 2007). Clearing for agriculture and logging has removed nesting and feeding trees for this species (Bancroft et al., 2007).

A site visit of the application areas was undertaken by the assessing officer on the 29 October 2008. During this visit the assessing officer noted a flock of either the Baudin's or Carnaby's Cockatoos flying through the application areas, although it could not be confirmed which species was sighted. It is likely that these birds were foraging for food and could possibly utilise large trees in the application areas as nesting sites should suitable nesting hollows be present.

Generally hollows of sufficient size to support nesting Black-Cockatoos do not form until trees are at least 230 years old, and the majority of nests are found in 300-500 year old trees (Bancroft et al., 2007). Given that the application areas are located within the Wilga State Forest which has not been clearfelled, but still subject to

some selective logging (as confirmed during a site visit to the application areas by the assessing officer), the presence of suitable nesting trees within the general area is possible.

According to Ron Johnstone of the Western Australian Museum the average Diameter at Breast Height (DBH) of trees that bear suitable nesting hollows for Black Cockatoo species is approximately 900 millimetres (R. Johnstone – Western Australian Museum pers comm. 15/12/2008). In regards to the management of Black-Cockatoos, Griffin Coal (2008) have committed to avoid clearing habitat trees within the application areas which are 900 millimetres or larger at DBH. Based on this, it is recommended that should the permit be granted, conditions be placed on the permit for the purposes of fauna management.

The Chuditch (Schedule 1, fauna that is rare or likely to become extinct, *Wildlife Conservation* (*Specially Protected Fauna*) *Notice*, *2008*) is a large carnivorous marsupial which is known to occupy a range of habitats from woodlands, dry sclerophyll (leafy) forests, riparian vegetation, beaches and deserts (Strahn & Van Dyck, 2008). According to Bamford Consulting Ecologists (2008), if found in the application areas, the Chuditch is likely to shelter in dense understorey vegetation and hollow logs. Based on this, Griffin Coal (2008) have agreed to retain all hollow logs and stumps from vegetation cleared in the application areas. Should the permit be granted, it is recommended that a condition be placed on the permit for the purpose of fauna management.

The Quenda is listed as a Priority 5 species by DEC, and is of due to habitat clearing, whilst fragmentation, fire and predation by foxes, cats, and domestic dogs also threaten this species (Bancroft et al., 2007). This species occurs in the south-west of Western Australia (Bancroft et al., 2007), where it is noted as occuring in dense shrubby, often swampy vegetation with dense cover up to one metre high. In populations in Jarrah and Wandoo forests this species is usually associated with watercourses (Strahn & Van Dyck, 2008). Given that there are three minor watercourses within the application areas, it is possible that this species could be found within the application areas. However, Griffin Coal (2008) have committed to avoid clearing vegetation for drill pads within any watercourses of the application areas. Should the permit be granted it is recommended that a condition be placed on the permit to avoid clearing vegetation for drill pads within any watercourses of the application areas.

Based on the above, the proposed clearing may be at variance to this Principle. However, it should be noted that the clearing is of a small scale (eight hectares) and is discontinous in nature. Furthermore, it is likely that the placement of conditions on the clearing permit would mitigate impacts to fauna habitats in the application areas. Additionally, all drill pads within the application areas will be rehabilitated within six months of the completion of works, thereby ensuring the proposed clearing is temporary in nature.

Methodology
Bamford Consulting Ecologists (2008).
Bamford & Wilcox (2005).
Bancroft et al., (2007).
Griffin Coal (2008).
Strahn & Van Dyck (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

The nearest Declared Rare Flora (DRF) species to the application areas is *Calademia dorrienii* which is found approximately 14 kilometres to the south-east (GIS Database).

The application areas have been the subject of two botanical surveys; a flora and vegetation survey undertaken between 1-8 September 2005 by ENV Australia, and a Declared Rare Flora (DRF) search of hydrogeological exploration sites on 2 May 2007 by Bennett Environmental Consulting (Environ, 2008). Griffin Coal have submitted a briefing note to the assessing officer which summarises information from both of these reports into one document.

During the 2005 survey, one Priority flora species was recorded near the application areas; *Melaleuca incana* subsp. *Gingalup* (Priority 2) (Environ, 2008). Although this species was recorded in the local area, its location is outside any of the proposed exploration drill lines and therefore will not be impacted upon – the location of this species was verified by the assessing officer and is approximately 190 meters away from one of the proposed drill lines.

There were no DRF species recorded in either the flora and vegetation survey in 2005 or the DRF search of the hydrogeological exploration sites in 2007 (Environ, 2008).

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

Methodology
Environ (2008).
GIS Database:
- Declared Rare and Priority Flora List.

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

Comments

Proposal is not likely to be at variance to this Principle

There are no known Threatened Ecological Communities (TECs) within the application areas (GIS Database). The nearest known TEC to the application areas is Wild Horse Swamp which is found approximately 43 kilometres to the east (GIS Database). The flora and vegetation surveys of the application areas did not identify any significant ecological communities within the areas proposed to be cleared (Environ, 2008).

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

Methodology

Environ (2008).
GIS Database
- Threatened Ecological Communities - CALM.

(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

Comments

Proposal is not likely to be at variance to this Principle

The application areas are located within the Jarrah Forest Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). There is approximately 53.8% of vegetation remaining within this bioregion, of which approximately 25.5% is located within conservation reserves (Shepherd et al., 2001). There is approximately 50.2% of vegetation remaining within the Southern Jarrah Forest IBRA Subregion, of which 32.8 % remains in conservation estate. There is approximately 45.4% of vegetation remaining within the Shire of Boyup Brook; the extent of which is considered 'depleted' (Department of Natural Resources and Environment, 2002; Shepherd et al., 2001).

The vegetation of the application areas is classified as Beard vegetation association 3 – Medium forest; jarrah-marri (GIS Database). This vegetation association is well represented within conservation estate on a state, bioregional and subregional level (Shepherd et al., 2001). The loss of 8 hectares is not likely to significantly impact on the extent of this vegetation type either on a regional or subregional level. Based on the information above, the vegetation proposed to clear does not represent a significant remnant of vegetation in an area that has been extensively cleared.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	% of Pre-European area in IUCN Class I-IV Reserves (and current %)
IBRA Bioregion – Jarrah Forrest	4,506,675	2,426,080	~53.8	Least Concern	14.0 (25.5)
IBRA Subregion – Southern Jarrah Forest	2,607,875	1,308,941	~50.2	Least Concern	16.8 (32.8)
Local Government – Boyup Brook	282,558	128,263	~45.4	Depleted	N/A
Beard veg assoc. – State					
3	2,661,515	1,863,983	~70.0	Least Concern	18.4 (26.2)
Beard veg assoc. – Bioregion					
3	2,390,535	1,661,219	~69.5	Least Concern	16.3 (23.3)
Beard veg assoc. – Subregion					
3	1,482,495	913,332	~61.6	Least Concern	18.7 (30.2)

* Shepherd et al. (2001) updated 2005
** Department of Natural Resources and Environment (2002)

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

Methodology

Department of Natural Resources and Environment (2002).
Shepherd (2001) updated 2005.
GIS Database:
- Interim Biogeographic Regionalisation of Australia
- Pre-European Vegetation

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

Comments

Proposal is at variance to this Principle

The application areas intersect three minor, non-perennial watercourses (GIS Database). Griffin Coal (2008) have stated that no vegetation clearing for drill pads will be undertaken within any watercourses. As a result, it is recommended that should the permit be granted, a condition be placed on the permit to prevent clearing for drill pads within any watercourse found within the application areas.

It is the proponent's responsibility to liaise with the Department of Water to determine whether a Bed and Banks Permit is required for the proposed works.

Based on the above, the proposed clearing is at variance to this Principle. However, it is recommended that a condition be placed on the permit which will mitigate impacts to vegetation associated with watercourses.

Methodology

Griffin Coal (2008).
GIS Database:
- Hydrography, linear (medium scale, 250k GA)
- Hydrography, linear - DOE 1/2/04
- Geodata, Lakes - GA 28/06/02

(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

The Boyup Brook area is characterised by a series of low rises seperated by broad, shallow drainage lines, whilst the soils are generally lateritic and gravelly (Bamford & Wilcox, 2005). The application areas are found on gently sloping granite hills; there is a gradient of 15 metres between the highest (270 metres) and lowest (255 metres) points in the application areas (GIS Database).

Given the topography and soils present, it is possible the removal of vegetation may initiate some soil erosion. However, Griffin Coal (2008) have advised that the following commitments will be implemented which will mitigate the potential for land degradation:

- No clearing will be undertaken during rainfall periods;
- No clearing or drilling will be undertaken within drainage lines;
- Progressive rehabilitation will occur during the life of the project, as land becomes available;
- Rationalisation of access through the closure of redundant tracks; and
- Restriction of access through fencing.

It should also be noted that the area proposed to be cleared is small (eight hectares) and discontinous in nature, hence clearing is unlikely to cause significant levels of soil erosion.

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

Methodology

Bamford & Wilcox (2005).
Griffin Coal (2008).
GIS Database:
- Topographic Contours, Statewide

(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

Comments

Proposal may be at variance to this Principle

The proposed clearing is located within the Wilga State Forest which is managed for multiple purposes, including conservation (GIS Database).

The nearest conservation reserve to the application areas is Wilga Nature Reserve, which is located some 2.8 kilometres to the north (GIS Database). Based on the distance between the Nature Reserve and the application areas, and the small scale of clearing required (eight hectares), it is unlikely that the environmental values of this Nature Reserve will be compromised.

Based on the above, the proposed clearing may be at variance to this Principle. However, given the small amount of clearing required (eight hectares) and the discontinuous nature of clearing, it is unlikley the environmental values of the Wilga State Forest or Wilga Nature Reserve will be significantly impacted from the proposed clearing.

Methodology

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

The application areas are not located within a Public Drinking Water Supply Area (GIS Database).

The ground water salinity within the application area is approximately 1000-3000 milligrams per litre of Total Dissolved Solids (GIS Database). This represents fresh to brackish ground water quality. Given the discontinous natutre of cleairng required, groundwater quality is unlikely to be impacted by the relatively small area (eight hectares) of clearing required.

There are three minor non-perennial watercourses which intersect the application areas (GIS Database). Griffin Coal (2008) have indicated that there will be no clearing for drill pads required within any of the watercourses mentioned. As a result it is recommended that should the permit be granted, a condition be placed on the permit to prevent clearing for drill pads within any watercourses of the application areas.

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

Methodology

Griffin Coal (2008).
GIS Database:
- Salinity Risk LM 25m
- Salinity Mapping LM 25m
- 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 topography of the application areas is described as gently sloping hills with greater elevation in the south of the application areas (270 metres) in comparison to the north (255 metres) (GIS Database). Given the topography present, during normal rainfall events it is likely that surface runoff would move in a northerly direction or towards drainage lines, thereby reducing the potential for flooding within the application areas.

The application areas are located within the Hardy Estuary – Blackwood River Catchment (GIS Database). It is unlikely the proposed clearing will significantly increase the potential for flooding within the application areas, considering the size of the proposed clearing area (eight hectares) in relation to the size of this catchment (137,302 hectares) (GIS Database).

Given the topography within the application areas and discontinuous nature of the proposed clearing, it is unlikely that the proposed clearing will increase the potential for flooding within the application areas.

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

Methodology

GIS Database:
- Hydrographic Catchments - Catchments.
- Topographic Contours, Statewide

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

Comments

The clearing permit application was advertised on the 25 August 2008, inviting submissions from the public. One public submission was received on 16 September 2008, raising concerns regarding the impacts of the proposed clearing on the State Forest and native fauna. Additonally, the local Shire noted that it should be consulted if any further applications to clear land in the State Forest are submitted. A letter of reply was sent to the local Shire on the 17 September 2008 adressing their concerns.

There is one native title claim over the application areas (GIS Database). The claim (WC98/058) has been registered with the National Native Title Tribunal on behalf of the claimant group (GIS Database). 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 known registered Sites of Aboriginal Significance within the areas applied to clear (GIS Database). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Sites of Aboriginal Significance are damaged through the clearing process.

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

Methodology

GIS Databases:

- Aboriginal Sites of Significance
- Native Title Claims

4. Assessor's comments

Comment

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

Should the permit be granted, it is recommended that conditions be imposed on the permit for the purposes of fauna management, record keeping, permit reporting and weed management.

5. References

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Bancroft, W., Metcalf, B. and Bamford, M. (2007) Fauna values of Griffin Coal's proposed Ewington Conveyor Alignment, report prepared for the Griffin Group. MJ & AR Bamford Consulting Ecologists, Kingsley, Western Australia.

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Environ (2008) Briefing Note: Vegetation information to support Clearing Permit application for the Boyup exploration drilling program.

Griffin Coal (2008) Supporting information for clearing permit application CPS 2634/1. Unpublished Report dated 2008.

Hearn, R., Williams, K., Comer, S. and Beecham, B. (2002) Jarrah Forest 2 (JF2 - Southern Jarrah Forest subregion) in Bioregional Summary of the 2002 Biodiversity Audit for Western Australia, Department of Conservation and Land Management, Western Australia.

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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
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.