



1. Application details

1.1. Permit application details

Permit application No.: 2675/1
Permit type: Purpose Permit

1.2. Proponent details

Proponent's name: Argyle Diamonds Ltd

1.3. Property details

Property: Diamond (Ashton Joint Venture) Agreement Act 1981, Mining Lease 259SA (AM 70/259)
Local Government Area: Shire of Wyndham-East Kimberley
Colloquial name: East Ridge Project

1.4. Application

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

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description	Clearing Description	Vegetation Condition	Comment
Beard Vegetation Associations have been mapped at a scale of 1:250,000 for the whole of Western Australia, and are a useful tool to examine the vegetation extent in a regional context. Four Beard Vegetation Associations are located within the proposed clearing area (GIS Database):	Argyle Diamonds Ltd has applied to clear 100 hectares within a purpose permit boundary of approximately 161 hectares (Argyle Diamonds Ltd, 2008). The application area is a long narrow area which winds around a landform known as East Ridge. The eastern part of the application area (area to the east of East Ridge) will be cleared for a proposed haul road, whilst the area to the west of East Ridge (which is adjacent to existing rock dumps) will be cleared for ongoing maintenance and closure work.	Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery 1994)	The vegetation condition rating is derived from information provided by Argyle Diamonds Ltd (2008), Mattiske Consulting Pty Ltd (2004) and a visit to the Argyle Diamond Mine by the Assessing Officer, DoIR on 20 – 21 October 2008.
818 - Hummock grasslands, low tree steppe; Snappy Gum over <i>Triodia inutilis</i> ;		to	
819 - Grasslands, tall bunch grass savanna low tree; Cabbage Gum & Silverleaved Box over <i>Aristida</i> & Ribbon Grass on sandy plains;	The proposed haul road is a contingency plan in the event that subsidence occurs in the open pit, cutting off access to the northern end of the pit prior to the completion of mining operations there. The haul road will allow trucks to access the crusher from the northern end of the pit, without having to traverse through the current pit (Argyle Diamonds Ltd, 2008).	Completely Degraded: No longer intact; completely/almost completely without native species (Keighery 1994)	
820 - Grasslands, high grass savanna sparse low tree; Snappy Gum (<i>Eucalyptus brevifolia</i>) over upland tall grass & curly spinifex on granite; and			
833 - Grasslands, short bunch grass savanna sparse low tree; scattered Snappy Gum over arid short grass on plains.	The surface of the haul road will be approximately 40 metres wide and 3.5 kilometres long (a disturbance footprint of approximately 14 hectares). However, in order to construct the road to be suitable for large trucks in rugged topography, a substantial amount of fill material (some 3.7 million tonnes) will be hauled directly from the pit and dumped using conventional methods to construct the road. In parts, the road will be approximately 200 metres wide at the base with batter angles of 37 degrees. An estimated 1.88 million tonnes of material will be drilled and blasted in the steep terrain in order to construct the road (Argyle Diamonds Ltd, 2008). A disturbance footprint in the order of 75 hectares is estimated for construction of the road.		
Dames and Moore (1982) mapped the flora and vegetation of the entire Argyle project area at a scale of 1:10,000 as part of the original environmental impact assessment for the Argyle Diamond Mine. Mattiske Consulting Pty Ltd has undertaken numerous surveys over parts of the Argyle lease area in 1998, 2002, 2003 and 2004. Based on flora and vegetation mapping by Dames and Moore (1982) and Mattiske Consulting Pty Ltd (1998; 2002; 2003; 2004), the following vegetation complexes have been described for the proposed clearing area:			

Mountain Complex: Kimberley Gum low tree steppe, Frosted Bloodwood steppe woodland. Bloodwood curly Spinifex tree savanna, Cotton tree low tree steppe, Celtis-Pouteria scrub. Halls Creek Gum low tree steppe, Mixed dwarf shrub steppe;

Hummock Grasslands 1: Hummock Grassland *Triodia bitextura* and *Triodia bynoei* with emergent *Eucalyptus brevifolia*, *Corymbia confertiflora*, *Corymbia opaca*, *Eucalyptus pruinosa*, *Bauhinia cunninghamii* over *Acacia arygraea* and *Acacia hemignosta*;

Hummock Grasslands 2: Hummock Grassland of *Triodia bitextura* and *Triodia bynoei* with emergent *Corymbia confertiflora*, *Corymbia opaca*, *Eucalyptus brevifolia*, *Eucalyptus pruinosa*, *Bauhinia cunninghamii* and *Terminalia canescens*;

Woodlands 5: Mixture of Open Woodland and Low Open Woodland of *Adansonia gregorii*, *Buchanania obovata*, *Bauhinia cunninghamii* and *Eucalyptus brevifolia* over patches of *Typha domingensis*, *Heteropogon contortus*, *Cenchrus elymoides* and *Chloris truncate*; and

Disturbed areas – This includes existing access roads in and around the AK1 Tailings Storage Facility (TSF), two ‘man-made’ dams and modified wetland environments formed artificially after the construction of the TSF.

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 Argyle Diamond Mine is situated approximately 200 kilometres south-west of Kununurra (by road) within the Ord subregion of the Ord Victoria Plains Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). Features of significant biodiversity value at a sub-regional scale include refugia typically associated with rainforest patches as well as centres of endemism which are centred on the Bungle Bungle range and rainforest patches (Graham, 2001).

The Australian Natural Resources Atlas (ANRA) (2008) notes that the Ord Victoria Plains bioregion includes a blend of biota from arid environments and high rainfall areas. It is noted that the Argyle lease area is located in the Northern Botanical District, near the point where three of the four Kimberley Botanical Districts meet (Argyle Diamonds Ltd, 2008). A very high diversity and abundance of granivorous birds are present in the bioregion. This is likely to be a reflection of the numerous grass species present in the area. Pastoral practices, weeds, feral animals and changed fire regimes are identified as being the most influential factors affecting biodiversity of the bioregion (ANRA, 2008).

Vegetation and flora surveys of the Argyle lease area were conducted by Dames and Moore (1982) as part of the original environmental impact assessment for the Argyle Diamond Mine. Since then, Mattiske Consulting Pty Ltd has conducted numerous flora and vegetation surveys at various locations across the lease area. Mattiske Consulting Pty Ltd (2004) reports that 466 plant taxa have been recorded across the lease area. The Assessing Officer, DoIR, notes that Mining Lease 259SA (AM 70/259) covers an area in excess of 60,000 hectares (GIS Database).

A fauna review of the Argyle lease area was undertaken by Bamford Consulting Ecologists (2005) in January 2005. The review concluded that the Argyle area is rich in reptile, amphibian and avifauna, with an abundance of waterbirds drawn to the natural riverine systems and artificial water sources associated with the mining operation. A large number of conservation significant species (41) have previously been recorded from the lease area, with 29 of these being migratory bird species.

The proposed clearing area consists of steep, rugged terrain located either side of the East Ridge (a topographical feature forming a divide between the waste rock dumps and the AK1 Tailings Storage Facility). The main part of East Ridge will not be disturbed by the proposed clearing activities (Argyle Diamonds Ltd,

2008). Parts of the proposed clearing area are completely degraded and consist of access roads in and around the AK1 TSF. On the basis of information available to the Assessing Officer, DoIR, the topography, soils and vegetation of the proposed clearing area would appear typical of the larger Argyle lease area and landscape surrounding the mine.

It is acknowledged that the Ord Victoria Plains bioregion is largely an uncleared landscape, with Shepherd et al (2001) reporting that approximately 100 percent of the native vegetation remains. At a local scale, the Argyle Diamond Mine is likely to have had some impact on biodiversity. An estimated 900 hectares of native vegetation has been progressively cleared for existing waste rock dumps and open pit, with a further 300 – 350 hectares for the AK1 Tailings Storage Facility (Argyle Diamonds Ltd, 2006). Accommodation camps, roads and other mining-related infrastructure have also required native vegetation clearing since the mine began operating in 1982. A further 100 hectares is being sought under this clearing permit application. Impacts to biodiversity are not likely to be significant in a regional context.

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

Methodology ANRA (2008).
Argyle Diamonds Ltd (2006).
Argyle Diamonds Ltd (2008).
Bamford Consulting Ecologists (2005).
Dames and Moore (1982).
Graham (2001).
Mattiske Consulting Pty Ltd (2004).
Shepherd et al (2001).
GIS Database:
- Mining Tenements.

(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

Numerous fauna surveys have been undertaken at the Argyle Diamond Mine lease area, including 1980/1981, 2000 and 2002. In addition, the annual Rio Tinto Bird Watch has been undertaken at Argyle since 2001 and has made an important contribution to understanding the local avifauna of the area (Argyle Diamonds Ltd, 2008).

In 2005, a general review of the local fauna was undertaken by Bamford Consulting Ecologists (2005). As a result of previous surveys at the Argyle lease, 27 mammals, 205 birds, 79 reptiles and 19 amphibians have been recorded. Of these 330 species, 41 are of conservation significance. This includes 29 bird species listed under the *Japan-Australia Migratory Bird Agreement (JAMBA)* or *China-Australia Migratory Bird Agreement (CAMBA)*, 24 of which are waterbirds (Bamford Consulting Ecologists, 2005).

The Argyle lease area has rich reptile, amphibian and avifauna. A mixture of arid and northern zone species are present. Many of the amphibians and reptiles recorded from the lease area are common to the spinifex and sorghum grasslands found on the alluvial plains of the region (Bamford Consulting Ecologists, 2005). A high number of waterbird species (72) have previously been recorded from the lease area. The existing natural riverine systems of the area and 'man-made' tailings storage facility and numerous water storage dams associated with the mining operation provide suitable habitat for waterbird species (Bamford Consulting Ecologists, 2005).

Two 'man-made' water storage dams exist within the proposed clearing area, one which will be in-filled as part of the haul road construction, should a clearing permit be granted. Based on information provided by Argyle Diamonds Ltd, the other dam may also be partially impacted. This will result in a loss of marginal habitat for waterbird species, and potentially for the Freshwater Crocodile (*Crocodylus johnstoni*) which has previously been recorded on the lease. Anecdotal evidence from Argyle Diamond personnel suggests that the Freshwater Crocodile has been found in stormwater drains throughout the mine site. Given that the water storage dams are small 'man-made' habitat adjacent to mining infrastructure and access roads, the loss of these areas is not deemed to be of significance to waterbird species or the Freshwater Crocodile. Bamford Consulting Ecologists (2005) notes that a majority of migratory waterbird species recorded on the Argyle lease area have been recorded from large bodies of water. Apart from the two small dams, there is an artificial environment immediately adjacent to the AK1 TSF which is subject to seasonal inundation and could potentially provide suitable habitat. The Assessing Officer does not consider that there is any other suitable habitat for waterbirds or the Freshwater Crocodile within the proposed clearing area.

Nineteen frog species have previously been recorded on the Argyle lease area (Bamford Consulting Ecologists, 2005). Given that the proposed clearing area contains limited wetland habitat and is characterised by rocky and stony soils which are not conducive to burrowing, it is unlikely that the clearing proposal will have a significant impact upon frog species.

The proposed clearing area consists of very rugged terrain, as observed by the Assessing Officer, DoIR during a visit to the Argyle Diamond Mine on 20 -21 October 2008. Based on observations made by the Assessing Officer, DoIR, it is possible that the rocky hills of the proposed clearing area provide nesting habitat for the

Peregrine Falcon (*Falco peregrinus*), a species which has previously been recorded from the Argyle lease area. Peregrine Falcons are wide-ranging birds which nest where cliffs are present (Bamford Consulting Ecologists, 2005). Given the size of the Ord subregion (2,282,600 hectares) and the Argyle lease area (60,689 hectares), it is unlikely that the proposed clearing (100 hectares) will result in a loss of significant nesting habitat for this species at a regional or local scale.

The native mammal fauna of the Argyle lease is typical of the arid region of the East Kimberley. The distribution and abundance of mammal fauna is highly seasonal, particularly rodents; with many species reaching plague proportions during favourable seasons. Introduced mammal fauna known from the lease area include cats, donkeys and foxes (Argyle Diamonds Ltd, 2008).

Five bat species have previously been recorded from the Argyle lease area, none of which are of conservation significance (Bamford Consulting Ecologists, 2005). No detailed fauna studies have been done focussing on the proposed clearing area, therefore it is unknown whether caves suitable for roosting exist within the proposed clearing area. However, the size of the proposed clearing in relation to the size of the Argyle lease area and the surrounding uncleared landscape suggests that any potential loss of roosting habitat is unlikely to be significant.

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

Methodology Argyle Diamonds Ltd (2008).
Bamford Consulting Ecologists (2005).

(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

There are no known records of Declared Rare Flora (DRF) or Priority flora within a 50 kilometre radius of the proposed clearing area (GIS Database).

Mattiske Consulting Pty Ltd has conducted numerous flora and vegetation surveys at the Argyle lease area (1998, 2002, 2003, and 2004). No DRF species have been recorded in any of these surveys (Mattiske Consulting Pty Ltd, 2004).

One Priority 1 species (*Goodenia lunata*) was previously recorded on the Argyle lease area (outside of the clearing permit application area) specifically within vegetation type W4 (Mattiske Consulting Pty Ltd, 2004). Further surveys have shown this species to occur within vegetation types W2, W4 and W7 (Mattiske Consulting Pty Ltd, 2004). Following further investigations, *Goodenia lunata* now appears to be *Goodenia coronopifolia* (not currently listed as DRF or Priority Flora) and appears to occur in large numbers following regular summer rainfall events (Mattiske Consulting Pty Ltd, 2004).

The Ord Victoria Plains 1 (OVP1) subregion is largely uncleared (Shepherd et al, 2001) and the vegetation communities within the proposed clearing area are not of a restricted nature. The proposed clearing is therefore unlikely to result in a loss of significant habitat for DRF or Priority Flora species.

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

Methodology Mattiske Consulting (2004).
Shepherd et al (2001).
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 found within a 100 kilometre radius of the application area (GIS Database). The flora and vegetation survey of the application area did not identify any significant ecological communities within the area proposed to be cleared (Mattiske Consulting, 2004).

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

Methodology Mattiske Consulting (2004).
GIS Database:
- Threatened Ecological Communities.

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

Comments Proposal is not at variance to this Principle

The proposed clearing area is located within the Ord Victoria Plain Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (Shepherd et al, 2001). According to Shepherd et al (2001) there is approximately

100% of pre-European vegetation remaining within this bioregion (see table).

The vegetation of the proposed clearing area is classified as Beard vegetation associations 818 - Hummock grasslands, low tree steppe; Snappy Gum over *Triodia inutulis*, 819 - Grasslands, tall bunch grass savanna low tree; Cabbage Gum & Silverleaved Box over *Aristida* & Ribbon Grass on sandy plains, 820 - Grasslands, high grass savanna sparse low tree; Snappy Gum (*Eucalyptus brevifolia*) over upland tall grass & curly spinifex on granite and 833 - Grasslands, short bunch grass savanna sparse low tree; scattered Snappy Gum over arid short grass on plains (GIS Database). There is approximately 100% of all of these Beard vegetation associations remaining at both the state and bioregional level (Shepherd et al., 2001). The area 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 – Ord Victoria Plain	5,497,882	5,497,188	~100	Least Concern	5.9 (5.9)
Beard veg assoc. – State					
818	33,358	33,358	~100	Least Concern	0.0 (0.0)
819	58,827	58,827	~100	Least Concern	0.0 (0.0)
820	59,639	59,639	~100	Least Concern	0.0 (0.0)
833	38,675	38,675	~100	Least Concern	0.0 (0.0)

* Shepherd et al (2001) updated 2005.

** Department of Natural Resources and Environment (2002).

Based on the above, the proposed clearing is not 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**
According to available databases, there are numerous minor non-perennial watercourses which traverse the proposed clearing area (GIS Database). These watercourses provide for the shedding of water off the East Ridge during the wet season (Argyle Diamonds Ltd, 2008). Water shedding off the East Ridge empties into the AK1 TSF, whilst drainage near the crusher empties into Gap Creek (located south of the proposed clearing area).

Maps, aerial photography and a visit to the Argyle Diamond Mine between 20 and 21 October 2008 were other tools used by the Assessing Officer, DoIR, to undertake an assessment of this Clearing Principle. It is noted that the proposed clearing area includes two 'man-made' dams and a highly modified area which is subject to seasonal inundation. These areas are artificial wetland environments which have been formed by the construction of the AK1 TSF.

Given that wetland environments are present in the proposed clearing area, the proposed clearing is at variance to this Principle.

However, it is acknowledged that there are no natural swamps, ANCA wetlands, RAMSAR wetlands or Wild Rivers within the proposed clearing area (Argyle Diamonds Ltd, 2008; GIS Database). Wetland environments likely to be impacted as a result of this clearing proposal are artificial environments located adjacent to the AK1 TSF. Such areas are unlikely to contain significant stands of riparian vegetation which warrant retention.

Methodology Argyle Diamonds Ltd (2008).
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 may be at variance to this Principle

The landscape around the Argyle Diamond Mine is hilly, with gentle foothills, mountain and strike ridges and well defined drainage lines (Argyle Diamonds Ltd, 2008). The proposed clearing area is comprised of steep hill slopes and rugged terrain (characteristic of the surrounding environment). The soils of the Argyle lease area vary from skeletal to extensive silt and sandy flats. The soils of the proposed clearing area can be characterised as lithosols, being predominantly coarse-textured (stony and rocky), weakly coherent in the moderately moist state and non-calcareous (Argyle Diamonds Ltd, 2008).

Vegetation removal on steep slopes and hillsides is likely to lead to land degradation if not managed appropriately. Fill material sourced from the pit to construct the road also has the ability to erode and disperse into the surrounding environment if appropriate management strategies are not put in place.

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

The Commissioner for Soil and Land Conservation (Department of Agriculture and Food, Western Australia) previously provided advice on land degradation risk associated with vegetation clearing at the Argyle Diamond Mine for clearing permit application CPS 1459/1. This clearing proposal was for 155 hectares to expand the AK1 Tailings Storage Facility (TSF). Advice provided on 5 April 2006 recommended that clearing at the Argyle Diamond Mine be restricted to the dry season to avoid exposing soil material to high intensity rainfall (DAFWA, 2006).

Should a clearing permit be granted, the Assessing Officer, DoIR recommends that a condition be imposed to prohibit clearing during the wet season.

Argyle Diamonds Ltd (2008) are aware of the land degradation risks associated with the proposal and will implement the following management strategies to minimise these risks:

- Topsoil and vegetation will be stockpiled for use in rehabilitation;
- Vegetation clearing and road construction will be undertaken in a staged approach, ensuring large expanses of cleared land are not exposed to erosion and sediment movement off-site;
- Inert fill material will be used to construct the road, ensuring that there are no on-site or off-site impacts such as acid mine drainage; and
- A two metre high bund wall will be built at the base of the proposed haul road immediately after topsoil stripping to control and minimise sediment movement off site.

Provided that appropriate conditions are imposed on any clearing permit issued to Argyle Diamonds Ltd, land degradation risks associated with this clearing proposal can be adequately managed.

Methodology Argyle Diamonds Ltd (2008).
DAFWA (2006).
GIS Database:
- Hydrography, linear.

(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 nearest conservation reserve to the proposed clearing area is the Purnululu Conservation Reserve, located approximately 50 kilometres to the south (GIS Database). All of the Purnululu Conservation Reserve lies within a larger area that is on the Register of the National Estate that is approximately 36 kilometres south of the clearing proposal at its closest point (GIS Database).

The RAMSAR listed and nationally significant Lake Argyle is situated approximately 18 kilometres to the north east of the proposed clearing area (GIS Database). The area surrounding Lake Argyle adjacent to the Argyle Diamond Mine lease is itself listed on the Register of the National Estate (GIS Database).

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

Methodology GIS Database:
- CALM Managed Lands and Waters.
- Register of the National Estate.

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

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

The application area is traversed by numerous minor non-perennial watercourses which provide for the shedding of water from the hill slopes in the wet season. A majority of the drainage in the east of the proposed clearing area empties into the AK1 Tailings Storage Facility (TSF), ensuring that no water or suspended material is released into the surrounding environment (Argyle Diamonds Ltd, 2008). Drainage on the western side of the proposed clearing area is constrained by the waste rock dumps. Drainage from the southern portion of the proposed clearing area (near the crusher) flows into Gap Creek. Sedimentation ponds are located within this creek system to ensure that any sediment shedding off the East Ridge or surrounding landscape is captured (Argyle Diamonds Ltd, 2008). The proposed haul road construction is not expected to interrupt or alter surface water flows. The free-draining nature of the rock material used to construct the haul road will allow water to flow naturally (Argyle Diamonds Ltd, 2008).

The proposed clearing area is not located within a Public Drinking Water Source Area (GIS Database). Groundwater studies on the Argyle lease area have identified two principal aquifer systems that are being impacted by mine dewatering activities, which have lowered the groundwater table around the open pit and surrounds. Underground mining operations also involve mine dewatering which will continue until at least 2018. The impacts of mine dewatering on groundwater levels and quality are outside the scope of this assessment, however it is noted that dewatering activities are much more likely to impact upon groundwater than the proposed vegetation clearing.

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

Methodology Argyle Diamonds Ltd (2008).

(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 Argyle region is characterised by a mean annual rainfall of approximately 800 millimetres and an annual evaporation rate of approximately 3000 millimetres (GIS Database). All of the watercourses within the area proposed to be cleared are ephemeral, with flows largely restricted to the wet season when rainfall allows rapid flows in these areas (Argyle Diamonds Ltd, 2008). There are no natural swamps within the permit area and the area surrounding the mine site is well drained (Argyle Diamonds Ltd, 2008). Considering the ephemeral nature of the watercourses and the lack of low-lying flood prone areas within the permit area, it is unlikely that the proposal will lead to an incremental increase in peak flood height or duration.

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

Methodology Argyle Diamonds Ltd (2008).
GIS Database:
- Evaporation Isopleths.
- Mean Annual Rainfall.

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

Comments

There are no native title claims over the area under application (GIS Database). The Mining Lease 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 two registered Sites of Aboriginal Significance within the application area (Site ID 14000 and 13559) (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 the proposed clearing is at variance to Principle (f), may be at variance to Principle (g), is not likely to be at variance to Principles (a), (b), (c), (d), (h), (i) or (j) and is not at variance to Principle (e).

Should a clearing permit be granted, it is recommended that conditions be imposed on the permit for the purposes of erosion control, rehabilitation, record keeping and permit reporting.

5. References

- Argyle Diamonds Ltd (2006) Clearing Permit Application Supporting Documentation. Unpublished report to DoIR. January 2006.
- Argyle Diamonds Ltd (2008) East Ridge Area for New Haul Road: Clearing Application Supporting Documentation. Clearing Permit 2675. September 2008. Unpublished report.
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- Bamford Consulting Ecologists (2005) Review of Terrestrial Vertebrate Fauna of the Argyle Diamond Lease and East Kimberley (including impacts of proposed mine expansion near Limestone Creek). Prepared for Argyle Diamond Mine Pty Ltd. January 2005.
- DAFWA (2006) Land degradation assessment report for CPS 1459/1. Prepared by the Office of the Commissioner of Soil and Land Conservation, Department of Agriculture Western Australia, 5 April 2006; for the Native Vegetation Assessment Branch, Department of Industry and Resources.
- Dames and Moore (1982) Environmental Review and Management Programme for Ashton Joint Venture Argyle Diamond Project. Dames and Moore, Perth.
- 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.
- Graham, G. (2001) Ord Victoria Plains 1 (OVP1 - Ord Subregion) in: A Biodiversity Audit of Western Australia's 53 Biogeographical Subregions in 2002. Published report by the Department of Conservation and Land Management Western Australia.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Mattiske Consulting Pty Ltd (2004) Flora and Vegetation Survey: Expansion of Waste Dumps and Area Associated with Underground Expansion near Limestone Creek. Prepared for Argyle Diamonds Ltd. March 2004.
- 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).

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
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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.