



# Clearing Permit Decision Report

## 1. Application details

### 1.1. Permit application details

Permit application No.: 3318/1  
Permit type: Purpose Permit

### 1.2. Proponent details

Proponent's name: **ARC Energy Limited**

### 1.3. Property details

Property: Petroleum Production Licences L 4 R1 and L 5 R1  
Local Government Area: Shire of Carnamah  
Colloquial name: Woodada Gas Field Project

### 1.4. Application

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

## 2. Site Information

### 2.1. Existing environment and information

#### 2.1.1. Description of the native vegetation under application

**Vegetation Description** Beard Vegetation Associations have been mapped at a 1:250,000 scale for the whole of Western Australia. One Beard Vegetation Association has been mapped within the application area (GIS Database; Shepherd, 2007).

**378:** Shrublands; scrub-heath with scattered *Banksia* spp, *Eucalyptus todtiana* & *Xylomelum angustifolium* on deep sandy flats in the Geraldton Sandplain Region.

The following vegetation types were identified within the application area:

1. Open Woodland of *Eucalyptus erythrocorys* over mixed shrubs including *Acacia spathulifolia*, *Melaleuca systema* and *Desmocladius asper* on brown sand with limestone outcropping;
2. Heath dominated by *Banksia attenuata* and *Melaleuca leuropoma* with emergent *Banksia prionotes*, *Banksia menziesii* and *Eucalyptus todtiana* on yellow sand;
3. Heath of mixed myrtaceous species and sedges including *Ecdeicola monostachya* and *Mesomelaena pseudostygia* on grey sand;
4. Open Woodland of *Banksia prionotes* over *Scholtzia laxiflora*, *Melaleuca leuropoma* and *Banksia leptophylla* on yellow sand; and
5. Low forest of *Eucalyptus camaldulensis*, *Casuarina obesa* and *Melaleuca preissiana* over *Hakea preissii* over predominately introduced herbs (AWE, 2009).

Twenty-seven alien weed species were recorded within the application area: Cape Weed (*Arctotheca calendula*), Maltese cockspur (*Centaurea melitensis*), Stinkwort (*Dittrichia graveolens*), Flat Weed (*Hypochaeris radicata*), Rough Sowthistle (*Sonchus asper*), Common Sowthistle (*Sonchus oleraceus*), Ursinia (*Ursinia anthemoides*), Paterson's curse (*Echium plantagineum*), London Rocket (*Sisymbrium irio*), Geraldton Carnation Weed (*Euphorbia terracina*), Common Centaury (*Centaureum erythraea*), Medic (*Medicago* sp.), Hare's Foot Clover (*Trifolium arvense*), Hairgrass (*Aira* sp.), Bearded Oat (*Avena barbata*), Blowfly Grass (*Briza maxima*), Shivery Grass (*Briza minor*), Brome (*Bromus* sp.), Burrgrass (*Cenchrus echinatus*), Couch (*Cynodon dactylon*), Perennial Veldt Grass (*Ehrharta calycina*), Barley Grass (*Hordeum leporinum*), Hare's Tail Grass (*Lagurus ovatus*), Ryegrass (*Lolium* sp.), Pimpernel (*Anagallis arvensis*), Bartsia (*Parentucellia* sp.), and Black Berry Nightshade (*Solanum nigrum*) (Mattiske Consulting Pty Ltd, 2004).

**Clearing Description** ARC Energy Limited is proposing to clear up to 15 hectares of native vegetation within a boundary of 30 hectares (AWE, 2009). The proposed program falls within Petroleum Production Licences L4 and L5 and includes maintaining previously cleared areas within the Woodada Gas Field (WGF) including vehicle access roads, gas gathering flowline easements and well pads (AWE, 2009).

**Vegetation Condition** Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994).

**Comment** The application area is located in the Geraldton Sandplains region, approximately 9 kilometres west of Eneabba (GIS Database). The application area is located within the Lake Logue Nature Reserve (GIS Database) and the proposed clearing is to control and remove regrowing vegetation within the Woodada Gas Field (AWE, 2009).

### 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 application area occurs within the Lesueur Sandplains (GS3) subregion of the Geraldton Sandplain Interim Biogeographic Regionalisation of Australia (IBRA) bioregion (GIS Database). This sub-region is comprised of coastal Aeolian and limestones, Jurassic siltstones and sandstones of the central Perth Basin (CALM, 2002). There are extensive yellow sandplains in the south-eastern parts and shrub-heaths rich in endemics occur on a mosaic of lateritic mesas, sandplains, coastal sands and limestones (CALM, 2002).

The Lesueur Sandplains bioregion contains a high proportion of endemic plants with over 250 plants endemic to the subregion (CALM, 2002). The area is recognised Australia-wide and internationally as having particularly high floristic diversity, with an area of 10 square metres supporting up to 80 different species. The level of threat faced is similar to that of the Avon Wheatbelt, but the reserve system is more representative (CALM, 2002). The main threatening processes to the region are feral animals, grazing pressures, changing fire regimes, increasing land fragmentation, exotic weeds and changes to hydrology (ANRA, 2009).

Twenty-seven alien weed species were recorded within the application area (ARC Energy, 2006). These were Cape Weed (*Arctotheca calendula*), Maltese cockspur (*Centaurea melitensis*), Stinkwort (*Dittrichia graveolens*), Flat Weed (*Hypochoeris radicata*), Rough Sowthistle (*Sonchus asper*), Common Sowthistle (*Sonchus oleraceus*), Ursinia (*Ursinia anthemoides*), Paterson's curse (*Echium plantagineum*), London Rocket (*Sisymbrium irio*), Geraldton Carnation Weed (*Euphorbia terracina*), Common Centaury (*Centaureum erythraea*), Medic (*Medicago* sp.), Hare's Foot Clover (*Trifolium arvense*), Hairgrass (*Aira* sp.), Bearded Oat (*Avena barbata*), Blowfly Grass (*Briza maxima*), Shivery Grass (*Briza minor*), Brome (*Bromus* sp.), Burrgrass (*Cenchrus echinatus*), Couch (*Cynodon dactylon*), Perennial Veldt Grass (*Ehrharta calycina*), Barley Grass (*Hordeum leporinum*), Hare's Tail Grass (*Lagurus ovatus*), Ryegrass (*Lolium* sp.), Pimpernel (*Anagallis arvensis*), Bartsia (*Parentucellia* sp.), and Black Berry Nightshade (*Solanum nigrum*) (Mattiske Consulting Pty Ltd, 2004).

Weeds have the potential to alter the biodiversity of an area, competing with native vegetation for available resources and making areas more fire prone. This in turn can lead to greater rates of infestation and further loss of biodiversity if the area is subject to repeated fires. One of these species (*Echium plantagineum*) is listed as a 'Declared Plant' species under the *Agriculture and Related Resources Protection Act 1976* by the Department of Agriculture and Food (DAFWA). This species is a Priority 1 species and therefore the movement of this plant or its seeds within the state is prohibited, as is the movement of contaminated machinery and produce including livestock and fodder (DAFWA, 2009). Should a clearing permit be granted, it is recommended that a condition be imposed for the purposes of weed management.

The application area is located within a *Phytophthora cinnamomi* dieback risk area. The disease has previously been isolated from some areas within the Gas Field, with these areas displaying disease symptoms indicative of *Phytophthora cinnamomi* infestation (Glevan Consulting, 2004). Should the permit be granted, it is recommended that appropriate conditions be imposed on the permit for the purpose of dieback management.

An area search of the Department of Environment and Conservation's online fauna database conducted by the assessing officer suggests that the application area is diverse in avian, reptile and invertebrate species (DEC, 2009b). The database search found 53 reptile, 82 avian and 294 invertebrate species as potentially occurring within the application area, or within a 25 kilometre radius of the application area.

The application area consists of mostly previously cleared areas. Therefore the biodiversity values of the vegetation proposed to be cleared have been significantly reduced. The vegetation communities within the application area are not likely to be considered as rare, geographically restricted or of significant conservation value. DEC advised that the proposed clearing is not likely to lead to a significant additional impact on biodiversity (DEC, 2009a).

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

##### Methodology

ANRA (2009)  
ARC Energy (2006)  
CALM (2002)  
DAFWA (2009)  
DEC (2009a)  
DEC (2009b)  
Glevan Consulting (2004)  
Mattiske Consulting Pty Ltd (2004)  
GIS Database  
- Interim Biogeographic Regionalisation of Australia

**(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**

The assessing officer has conducted a search of the Department of Environment and Conservation's (DEC) online fauna database between the coordinates 115.4489°E, 29.5625°S and 114.8666°E, 30.0960°S, representing a 25 kilometre radius around the application area.

This search identified 7 Amphibian, 18 Mammalian, 53 Reptilian, 82 Avian and 294 Invertebrate species that may occur within the application area (DEC, 2009b). Of these, the following species of conservation significance have previously been recorded within the search area:

**Schedule 1 - Fauna that is rare or likely to become extinct, Wildlife Conservation (Specially Protected Fauna) Notice, 2008:** Carnaby's Black Cockatoo (*Calypotorhynchus latirostris*), *Falco peregrinus* subsp. *macropus* and the Shield-backed Trapdoor Spider (*Idiosoma nigrum*);

**P2 - DEC Priority Fauna List:** *Austromerope poultoni* and ;

**P3 - DEC Priority Fauna List:** *Hemisaga vepreculae*, *Hylaeus globuliferus* and the Black-striped snake (*Neelaps calonotos*); and

**P4 - DEC Priority Fauna List:** Australian Bustard (*Ardeotis australis*), Rufous Fieldwren (*Campestris montanellus montanellus*), Hooded Plover (*Charadrius rubricollis*), Crested Bellbird (*Oreoica gutturalis gutturalis*) and the Western Brush Wallaby (*Macropus irma*).

Ecologia Environment (2009) conducted a fauna survey of the proposed Woodada-20 drilling area located within the Lake Logue Nature Reserve. In addition to those species listed above, the following fauna species of conservation significance were identified through this survey:

**Schedule 1 - Fauna that is rare or likely to become extinct, Wildlife Conservation (Specially Protected Fauna) Notice, 2008:** Gilled Slender Blue-tongue (*Cyclodomorphus branchialis*);

**P3 - DEC Priority Fauna List:** *Ctenotus gemmula*;

**P4 - DEC Priority Fauna List:** Shy Heathwren (*Hylacola cauta whitlocki*); and

**Environment Protection and Biodiversity Conservation (EPBC) Act:** Rainbow Bee-eater (*Merops ornatus*).

Lake Logue is recognised as a significant water bird habitat (in particular for Carnaby's Black Cockatoo) as it provides breeding habitat when water is present (ARC Energy, 2006; AWE, 2009). As the vegetation to be cleared is previously cleared vegetation fringing on the cleared parts of the nature reserve it is unlikely that the fauna habitats identified within the application area are considered as necessary for the on-going maintenance of any significant fauna habitat. It is likely that equal or higher quality vegetation and fauna habitats would exist throughout the surrounding area.

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

**Methodology** ARC Energy (2006)  
AWE (2009)  
DEC (2009b)  
Ecologia Environment (2009)

**(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 application area (GIS Database).

According to ARC Energy (2006) three species of DRF and five Priority flora species may occur within the application area. These are:

**DRF -** *Paracaleana dixonii*, *Grevillea althoferorum* and *Leucopogon obtectus*;

**P2 -** *Acacia vittata*;

**P3 -** *Acacia telmica*;

**P4 -** *Eremophila microtheca*, *Stawellia dimorphantha* and *Banksia elegans* (ARC Energy, 2006; Western Australian Herbarium, 2009).

Based on the above, the proposed clearing is not likely to be at variance to this Principle. As the vegetation to be cleared within the application area has been previously cleared and maintained as gravelled hardstand and tracks and the aim of the proposal is to only remove vegetative re-growth from these previously cleared areas it is not likely to significantly impact the existence of rare flora.

**Methodology** ARC Energy (2006)  
Western Australian Herbarium (2009)

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**

A search of available databases reveals that there are no Threatened Ecological Communities (TEC's) within the application area (GIS Database).

The nearest (TEC) is located approximately 10 kilometres south-east of the application area (Ferricrete floristic community). At this distance there is little likelihood of any impact to the TEC from the proposed clearing.

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

**Methodology** 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 likely to be at variance to this Principle**

The application area falls within the Geraldton Sandplains IBRA bioregion (GIS Database). Shepherd (2007) report that approximately 42.77% of the pre-European vegetation still exists in this bioregion.

The vegetation in the application area is recorded as Beard Vegetation Associations 378: Shrublands; scrub-heath with scattered *Banksia* spp, *Eucalyptus todtiana* & *Xylomelum angustifolium* on deep sandy flats in the Geraldton Sandplain Region (GIS Database; Shepherd, 2007).

According to Shepherd (2007) approximately 63.66% of this Beard Vegetation Association remains within the Geraldton Sandplain bioregion (see table below).

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in IUCN Class I-IV Reserves (and post clearing %)
IBRA Bioregion – Geraldton Sandplains	3,136,024.64	1,341,266.64	~42.77%	Depleted	~15.35% (~35.58%)
IBRA Subregion – Lesueur Sandplains	1,171,777.48	495,451.01	~42.28%	Depleted	~17.78% (~41.43%)
Local Government – Carnamah	287,239.30	113,090.49	~39.37%	Depleted	~21.31% (~42.23%)
<b>Beard veg assoc. – State</b>					
378	95,109	60,550	~63.66%	Least Concern	~13.34% (~20.91%)
<b>Beard veg assoc. – Bioregion</b>					
378	95,109.42	60,549.91	~63.66%	Least Concern	~13.34% (~20.91%)
<b>Beard veg assoc. - subregion</b>					
378	90,932	60,370.35	~66.40%	Least Concern	~13.95% (~20.98%)

\* Shepherd (2007)

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

Whilst the sub-region has been significantly cleared, the proposed clearing of up to 15 hectares of predominantly regrowth vegetation is unlikely to significantly reduce the extent of Beard vegetation association 378 below current levels. Therefore, the vegetation within the application area is not likely to be a significant

remnant in an area that has been extensively cleared.

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 (2007)  
GIS Database  
- Interim Biogeographic Regionalisation for 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 GIS Databases, there are no permanent watercourses within the application area, however, there are several minor, non-perennial watercourses within the application area (GIS Database).

The application area contains various small channels and creeks, and after exceptional rainfall these drainage flows may cause temporary flooding (GIS Database; AWE, 2009; ARC Energy, 2006). However the permeable nature of the soils within the application area tends to allow rainwater to percolate vertically to the water table rather than running laterally off the surface (ARC Energy, 2006).

One of the five vegetation associations found within the application area is associated with drainage areas (AWE, 2009; ARC Energy, 2006);

- Low forest of *Eucalyptus camaldulensis*, *Casuarina obesa* and *Melaleuca preissiana* over *Hakea preissii* over predominantly introduced herbs.

This vegetation type occurs around the edge of the wetter areas or in the shallower lakes (ARC Energy, 2006). The vegetation communities growing in association with the watercourses are not unique and are considered common and widespread in the Geraldton Sandplains bioregion (Shepherd, 2007; GIS Database). The proposed clearing is unlikely to significantly impact on vegetation communities growing in association with these drainage channels.

Based on the above, the proposed clearing is at variance to this Principle. However, the clearing of 15 hectares of vegetation is unlikely to have a significant impact on the extent of these vegetation communities within the application area, or local area.

**Methodology** ARC Energy (2006)  
AWE (2009)  
Shepherd (2007)  
GIS Database  
- Hydrography - Linear  
- Interim Biogeographic Regionalisation of Australia

**(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 soils within the application area are light, sandy and well-drained (ARC Energy, 2006). These soils consist of calcareous and siliceous sand overlain by aeolianite, which is often exposed (ARC Energy, 2006).

According to available datasets, there are two soil types (CA27 and UB97) within the application area (GIS Database). These soil types are described as:

**CA27** - Sandy plains with occasional pockets of sand dunes, a few small swamps, and stream courses with the chief soils being leached sands, often with a sandy clay substrate between 3 and 6 foot in depth; and

**UB97** - Very gently undulating plains with chief soils being neutral and alkaline yellow mottled soils overlying siliceous pans at depths (Bureau of Rural Sciences, 1992).

Schoknecht (2002) describes these soils as being yellow/brown deep sandy duplexes or yellow/brown shallow sandy duplexes. These have a high risk of wind erodibility and are prone to wind erosion in exposed situations if left bare of surface cover (Schoknecht, 2002).

Based on the above, the proposed clearing may be at variance to this Principle. It is recommended that should a permit be granted, a condition be imposed on the permit with regard to rehabilitation and stockpiling of all cleared topsoil and vegetation. Rehabilitation shall take place within twelve months of the completion of the

activity for which the clearing took place, and involves re-shaping the surface of each cleared area using the stockpiled topsoil and vegetation. DEC recommends that prior to rehabilitation works, the proponent should develop a closure and rehabilitation plan to the requirements of DEC, which outlines activities including, but not limited to, sourcing of brush and seed source material to be used in revegetation works and earthworks and contouring of old borrow pits (DEC, 2009a).

**Methodology** ARC Energy (2006)  
Bureau of Rural Sciences (1992)  
Schoknecht (2002)  
GIS Database  
- Soils - 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 application area occurs within an Environmentally Sensitive Area (ESA) (Register of National Estate), which is the Lake Logue Nature Reserve (GIS Database).

According to the Australian Heritage Database (Australian Heritage Database, 2009) the Lake Logue Nature Reserve is approximately 4,886 hectares and is a wide shallow valley which is flanked on the west coastal limestone ridges and a high ridge of Mesozoic sandstone and shale on the east. The deep sand of the Lake Logue Nature Reserve supports rich heath which is dominated by *Banksia*, Myrtle, Legume and Wattle species (Australian Heritage Database, 2009).

The Lake Logue Nature Reserve supports extensive populations of the rare *Banksia elegans* (Conservation Through Reserves Committee, 1974). This species only occasionally sets seed and as such should be preserved for seed source. However records indicate that populations of *B. elegans* have previously been recorded from 3 IBRA Bioregions (Western Australian Herbarium, 2009) and this species is known to have a range of approximately 180 kilometres with it being recorded from between Hill River and Geraldton (Woodman Environmental Consulting, 2009).

Based on the above, the proposed clearing may be at variance to this Principle. However, despite the area being on the Register of National Estate for natural values, it is considered that the clearing to take place is low impact and of a small scale (3 hectares per year over 5 years) and subsequently will not significantly impact on the environmental values of the Lake Logue Nature Reserve.

**Methodology** Australian Heritage Database (2009)  
Conservation Through Reserves Committee (1974)  
Western Australian Herbarium (2009)  
Woodman Environmental Consulting (2009)  
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**

According to available databases, the application area is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database).

The groundwater salinity within the application area is approximately 1,000 - 3,000 milligrams/Litre Total Dissolved Solids (TDS) (GIS Database). Given the size of the area to be cleared (15 hectares) compared to the size of the Perth Groundwater Province (4,660,027 hectares) (GIS Database), the proposed clearing is not likely to cause salinity levels within the application area to alter significantly.

There are several known groundwater dependent ecosystems within the application area (GIS Database). Given the small size and nature of the proposed clearing it is unlikely to alter the watertable or salinity levels within the application area. Therefore the proposed clearing is unlikely to significantly impact upon the groundwater dependent ecosystems within the application area.

Various small drainage channels exist within the application area, which following exceptional rainfall may cause temporary flooding (ARC Energy, 2006; GIS Database). However the permeable nature of the soils within the application area tends to allow rainwater to percolate vertically to the water table rather than running laterally off the surface (ARC Energy, 2006). Therefore the proposed clearing is unlikely to significantly impact upon the quality of the surface water within the application area.

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

**Methodology** ARC Energy (2006)

- GIS Database
- Groundwater Provinces
- Groundwater Salinity, Statewide
- Potential Groundwater Dependent Ecosystems
- Public Drinking Water Source Area

**(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 application area experiences a Mediterranean climate with an average annual rainfall of 503.9 millimetres recorded from the nearest weather station at Eneabba approximately 9 kilometres east of the application area (CALM, 2002; BoM, 2009).

Various small drainage channels exist which flow into Stockyard Gully Cave and Lake Logue and following exceptional rainfall these drainage flows may cause extensive flooding (ARC Energy, 2006; GIS Database). However the permeable nature of the soils within the application area tends to allow rainwater to percolate vertically to the water table rather than running laterally off the surface (ARC Energy, 2006).

The application area is located within the Indoon Logue catchment area (GIS Database). However, the small area to be cleared (15 hectares) in relation to the size of the Indoon Logue catchment area (137,421 hectares) (GIS Database) is not likely to increase the potential for flooding within the application area, local area or within the catchment (GIS Database).

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

- Methodology**
- ARC Energy (2006)
  - BoM (2009)
  - CALM (2002)
  - GIS Database
  - Hydrographic Catchments - Catchments
  - Hydrography - Linear

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

**Comments**

This clearing permit was referred to the DEC on 5 October 2009 by Department of Mines and Petroleum (DMP). The DEC determined that the proposed clearing does not appear likely to have a significant additional impact on biodiversity (DEC, 2009a). Additionally DEC (2009a) advised that prior to rehabilitation works, the proponent should develop a closure and rehabilitation plan to the requirements of DEC, which outlines activities including, but not limited to, sourcing brush and seed sources material to be used in revegetation works and earthworks and contouring of old borrow pits.

There are two native title claims (WC98/057 and WC04/002) over the area under application. These claims have been registered with the National Native Title Tribunal on behalf of the claimant group. However, the tenements 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*.

There are two known Aboriginal sites of significance (ID\_4660 and ID\_5130) occurring within the application area (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.

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

No public submissions were received in regard to this Clearing Permit application.

- Methodology**
- DEC (2009a)
  - GIS Database
  - Aboriginal Sites of Significance
  - Native Title Claims

## 4. Assessor's comments

### Comment

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

It is recommended that should a permit be granted, conditions be imposed on the permit for the purpose of weed and dieback management, stockpiling all cleared topsoil and vegetation for use in revegetation and rehabilitation, record keeping and permit reporting.

## 5. References

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- Western Australian Herbarium (2009) - FloraBase - The Western Australian Flora. Department of Environment and Conservation. <http://florabase.calm.wa.gov.au/> (Accessed 15 October 2009)
- Woodman Environmental Consulting (2009) Australian Worldwide Exploration Woodada-20-Drill Site Flora and Vegetation Assessment. Prepared for Australian Worldwide Exploration. Unpublished Reported dated February 2009

## 6. Glossary

### Acronyms:

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



<b>DOLA</b>	Department of Land Administration, Western Australia.
<b>DoW</b>	Department of Water
<b>EP Act</b>	Environment Protection Act 1986, Western Australia.
<b>EPBC Act</b>	Environment Protection and Biodiversity Conservation Act 1999 (Federal Act)
<b>GIS</b>	Geographical Information System.
<b>IBRA</b>	Interim Biogeographic Regionalisation for Australia.
<b>IUCN</b>	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
<b>RIWI</b>	Rights in Water and Irrigation Act 1914, Western Australia.
<b>s.17</b>	Section 17 of the Environment Protection Act 1986, Western Australia.
<b>TECs</b>	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.