

# **Clearing Permit Decision Report**

## **Application details**

Permit application details

Permit application No.:

Permit type: Purpose Permit

**Proponent details** 

Proponent's name: Alcoa World Alumina Australia

1.3. Property details

LOT 251 ON PLAN 35963 ( OAKLEY 6208) Property:

LOT 151 ON PLAN 10914 ( OAKLEY 6208)

**Local Government Area:** Shire Of Murray

Colloquial name: Relocation of Powerlines

1.4. Application

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

Mechanical Removal

## 2. Site Information

## **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, and are a useful tool to examine the vegetation extent in a regional context. One Beard vegetation association is located within the application area:  999: Medium woodland; marri (GIS Database, Shepherd <i>et al.</i> , 2001).  The area has also been mapped by Heddle as: - Forrestfield Complex (Open Forest and Fringing Woodlands); and - Guilford Complex (Open Forest to Tall Open Forest and Woodland) (GIS Database).  Alcoa World Alumina Australia (from this point forward referred to as Alcoa) have conducted a site survey of the application area as a part of their rezoning application (Alcoa, 2008). Historically, the site was cleared for farming (Alcoa, 2008). The vegetation within the application area is rehabilitation for the purposes of screening the mining operations from the road (Alcoa, 2008), and does not resemble Beard vegetation association 999.
Clearing Description	Alcoa have applied to clear up to 4.3 hectares of native vegetation for the purposes of relocation of existing power lines (Alcoa, 2008). The proposed clearing is located approximately 6.4 kilometres east of Pinjarra (GIS Database).
Vegetation Condition	Degraded: Structure severely disturbed; regeneration to good condition requires intensive management (Keighery, 1994)
Comment	The vegetation condition is derived from the site visit, Alcoa (2008) information and aerial photography.  The area is rehabilitated pastureland, which is currently grazed.  Alcoa has a Clearing Management Plan (Alcoa, 2008). The actions to be taken prior to clearing include:  • area is marked with a combination of flagged survey pegs and flagging on trees to indicate the area to be cleared;  • clearing cannot commence until the Project Manager has received a copy of the approved clearing permit and associated map;  • clearing is carried out using a dozer;  • access to site is directly off a road so equipment movement will be restricted to the proposed clearing area;  • equipment will not operate or access through other areas of vegetation;  • clearing debris will be mulched for reuse on Alcoa's residue rehabilitation areas or for dust control purposes within the residue area;  • topsoil will not be stripped or removed as a part of the clearing process; and  • any isolated plants that do not encroach on the power-line clearance will be retained (Alcoa, 2008).

#### 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 Swan Coastal Plain (SCP) Interim Biogeographic Regionalisation of

Australia (IBRA) bioregion, and the Perth IBRA subregion (GIS Database).

The SCP is a part of the South West Botanical Province, which has a high degree of species diversity (Mitchell *et al.*, 2002). However, the area under application is rehabilitated pastoral land, and cannot be considered representative of an area of outstanding biodiversity in the Bioregion.

The application area is located immediately adjacent to roads, existing gas maintenance corridors, and an existing residue area (mudlake 1) (Alcoa, 2008).

During the site visit, weeds and pastoral grasses were evident and widespread.

The proposed clearing area is a paddock, planted with non-local species and some remnant isolated marri and jarrah trees. As the vegetation within the application area constitutes rehabilitation, it is unlikely that the area comprises of higher biodiversity values than the surrounding, uncleared vegetation.

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

#### Methodology

Alcoa (2008).

Mitchell et al. (2002).

GIS Database:

- Interim Biogeographic Regionalisation of Australia (subregions) EA 18/10/00.
- Interim Biogeographic Regionalisation of Australia EA 18/10/00.

# (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 proposed clearing area is a paddock, planted with non-local species and some remnant isolated marri and jarrah trees (Alcoa, 2008). According to Alcoa (2008) a marri tree with hollows was located on the south portion of the centre line of the proposed power line. A site visit was conducted to examine the potential of the application area to provide significant habitat for fauna indigenous to Western Australia. During the site visit, the whole application area was traversed and although the marri trees observed contain some hollows, these were quite small and unlikely to provide significant habitat to fauna indigenous to Western Australia.

A number of jarrah trees were noted with hollows, however, all of these were quite small and unlikely to provide significant fauna habitat.

A number of dead or dying trees were also noted with a potential to contain hollows, however, this was hard to confirm from the ground. However, as the trees are quite young, it is unlikely that the hollows, if there were any, would provide fauna habitat.

The lack of significant hollows and other habitats is due to the area being a highly disturbed, rehabilitated paddock. The vegetation within the application area is not mature enough to contain significant hollows, or represent significant fauna habitat.

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

# Methodology Alcoa (2008).

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

# Comments

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

According to available GIS Databases, there are no known records of threatened flora species within the application area (GIS Database). The nearest recorded rare flora species is the *Anthocercis gracilis*, located approximately 2.6 kilometres south-east of the application area.

A survey of the area under application was conducted in November 2004 (Alcoa, 2008). Declared Rare and Priority species known to have occurred historically within the Pinjarra Farmlands area were searched for. These included *Synaphea stenoloba*, *Anthocercis gracilis*, *Boronia tenuis*, *Calothamnus graniticus* subsp. *leptophyllus*, *Acacia oncinophylla* subsp. *oncinophylla* and *Stylidium longitudum* (Alcoa, 2008). No Declared Rare Flora or Priority species were recorded within the application area. One Priority species; *Calothamnus graniticus* subsp. *leptophyllus* was recorded in an area north of the proposed clearing. However, this is not a naturally occurring species, as this plant was grown at Marrinup Nursery, and planted in this location by Alcoa as a part of a project to re-establish restricted flora (Alcoa, 2008).

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

## Methodology

Alcoa (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 area (GIS Database). The nearest recorded TEC is located approximately 5 kilometres south of the application area (GIS Database).

The remnant, isolated strands of *Corymbia calophylla* over a few *Kingia australis* along the edge of the drainage line north of the application area are likely to have once formed a part of the Floristic Community Type 3a, that is now listed as a TEC (Alcoa, 2008). However, as these are isolated occurrences of individual species, and do not actually form a vegetation community, the vegetation cannot be considered a TEC.

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

#### Methodology

Alcoa (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 area under application falls within the Swan Coastal Plain IBRA bioregion, and the Perth IBRA subregion (GIS Database). The proposed clearing is located within the Intensive Land Use Zone (GIS Database; Shepherd *et al.*, 2001).

The vegetation proposed to be cleared is classified as Beard Vegetation association 999: Medium woodland; marri (GIS Database, Shepherd *et al.*, 2001). However, considering that the proposed clearing is previously rehabilitated land, it is unlikely that the table below represents and accurate assessment of the significance of the vegetation within the application area.

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	% of Pre- European area in IUCN Class I- IV Reserves (and current %)
IBRA Bioregion  – Swan Coastal  Plain	1,501,457	571,759	~38.1	Depleted	10.4 (24.2)
Local Government Authority	177,626	91,665	~51.6	Least concern	N/A
Beard veg assoc.  – State					
999	115,712	15,161	~13.1	Vulnerable	0.8 (5.8)
Beard veg assoc.  – Bioregion					
999	102,937	11,100	~10.8	Vulnerable	0.1 (0.9)
Beard veg assoc.  – Sub-region					
999	765	171	~22.4	Vulnerable	0.0 (0.0)

<sup>\*</sup> Shepherd et al. (2001) updated 2006

Available aerial photography shows that the application area is relatively well cleared, with open vegetation structure (GIS Database). The area is located between the residue drying area (mudlake 1) and other refinery infrastructure. Due to its open structure and the lack of understorey, it is unlikely that the application area acts as a corridor for fauna. Available aerial photography also shows uncleared areas to the east of the proposed clearing (GIS Database).

Considering that the area under application comprises previously rehabilitated areas and that the areas directly east of the application area are relatively uncleared, it is unlikely that the area under assessment represents a significant remnant of native vegetation within an extensively cleared region.

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

<sup>\*\*</sup> Department of Natural Resources and Environment (2002)

#### Methodology

Department of Natural Resources and Environment (2002).

Shepherd et al. (2001).

GIS Database:

- Interim Biogeographic Regionalisation of Australia EA 18/10/00.
- Pre-European Vegetation DA 01/01.
- Swan Coastal Plain South 40cm Orthomosaic DLI 05.

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

#### Comments

## Proposal is not at variance to this Principle

There are no natural watercourses or waterbodies within the application area (GIS Database).

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

#### Methodology

GIS Database:

- Geodata, Lakes,
- Hydrography, Lakes (course scale, 1M GA).
- Hydrography, linear.
- Hydrography, linear (hierarchy).
- Hydrography, pipelines.

# (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

Considering that the application area is within the Guildford Clay and Yoganup formation, Alcoa (2008) have committed to avoiding topsoil stripping or removal and that the proposed clearing area is relatively flat (GIS Database), the potential for erosion is unlikely to be increased on or off site.

There are two known contaminated sites within Lots 151 and 251 which have been reported to the Department of Environment and Conservation (DEC) Contaminated Sites Branch (Alcoa, 2008). The contaminated sites are associated with elevated pH in groundwater in specific areas beneath the refinery and residue storage areas (Alcoa, 2008). The proposed clearing will aim to minimise disturbance to topsoil and will not involve any excavation or interaction with the groundwater (Alcoa, 2008), and therefore is unlikely to cause appreciable land degradation.

The application area is within a Dieback risk zone. Alcoa develops dieback management plans where there is a potential risk of dieback spread to areas of dieback free vegetation (Alcoa, 2008). The proposed clearing area consists of highly disturbed paddock areas comprises rehabilitated vegetation and isolated marri and jarrah trees (Alcoa, 2008). There are no areas of secure dieback free vegetation within or adjacent to the proposed clearing area, therefore dieback controls are not required (Alcoa, 2008).

The proposed clearing area is a weed dominated paddock area. Topsoil movement will be minimised throughout and there will be no movement of equipment through adjacent areas of vegetation, so there is no risk of introducing weeds to these areas (Alcoa, 2008).

#### Methodology

Alcoa (2008).

GIS Database:

- Contaminated Reported Sites.
- Surface Geology
- 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 is not likely to be at variance to this Principle

The proposed clearing is not located within a conservation area (GIS Database).

The nearest DEC managed land is the Class 'A' Marrinup State Forest, located approximately 2.3 kilometres east of the application area (GIS Database). Based on the distance between the proposed clearing and the State Forest, adverse impacts on the environmental values of this reserve are unlikely.

The nearest System 6 Conservation Reserve is located 12 kilometres south (GIS Database). Based on the distance between the proposed clearing and the conservation area, as well as the relatively small area of clearing, adverse impacts on the environmental values of those reserves are unlikely.

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

#### Methodology GIS Database:

- CALM proposed 2015 pastoral lease exclusions.
- CALM Regional Parks CALM 12/04/02.
- CALM Managed Lands and Waters.
- System 6 Conservation Reserves.
- Register of National Estate EA 28/01/03.

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

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

The proposed clearing is not located within a Public Drinking Water Source Area (PDWSA) (GIS Database).

Groundwater within the area under application is fresh, at between 500 - 1,000 milligrams per litre of Total Dissolved Solids (GIS Database). Given the small size of the proposed clearing, the quality of the groundwater is unlikely to be impacted by the proposed clearing activity.

The proposed clearing area is relatively flat, and is not associated within any permanent watercourse or waterbody (GIS Database).

Given the limited amount of clearing proposed (4.3 hectares) in comparison with the extent of the Perth Groundwater province (which is approximately 4,660,027 hectares) (GIS Database) it is unlikely the clearing will result in deterioration of the quality of groundwater.

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

#### Methodology

#### GIS Database:

- Groundwater Salinity, Statewide DOW.
- Geodata, Lakes.
- Hydrographic Catchments Catchments DOW.
- Hydrography, Lakes (course scale, 1M GA).
- Hydrography, linear (hierarchy)
- Hydrography, pipelines.
- Hydrography, linear (hierarchy).
- Public Drinking Water Source Areas (PDWSAs) DOW.
- Topographic Contours, Statewide DOLA 12/09/02.

# (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 limited amount of clearing proposed (4.3 hectares) in comparison with the extent of the Peel Estuary - Murray River catchment area (which is approximately 811,656 hectares) (GIS Database) is unlikely to result in an increase in peak flood height or flood peak duration.

The mean annual rainfall for the area is 1,000 millimetres, while the potential evaporation of the area is at around 2,000 millimetres per year (GIS Database). Therefore, it is unlikely that the proposed clearing will cause or exacerbate the incidence or intensity of flooding.

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

#### Methodology

#### GIS Database:

- Evapotranspioration, Point Potential.
- Hydrographic Catchments Catchments DOW.
- Rainfall, Mean Annual BOM 30/09/2001.

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

#### Comments

There is one native title claim (WC98\_058) over the area under application (GIS Database). This claim has been registered with the National Native Title Tribunal. However, the State Agreement Act has been signed 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 is one Aboriginal Site of Significance within the application area, the Wurdaatji Cave (GIS Database). A heritage survey was conducted over the area under application, and no archaeological sites or isolated artefacts were identified (Alcoa, 2008). 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.

The application area is within a *Rights in Water and Irrigation Act 1914* groundwater management and surface management area (GIS Database). The applicant would require approval from the Department of Water to extract groundwater.

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

Purpose

GIS Database:

- Aboriginal Sites of Significance DIA.
- Environmental Impact Assessments.

Comment

- Native Title Claims DLI 7/11/05.
- RIWI Act, Areas.
- RIWI Act, Groundwater Areas.

## 4. Assessor's comments

Method Applied

# Area (ha)/ trees Mineral Mechanical 4.3 Production Removal 4.3 The proposal has been assessed against the Clearing Principles, and is considered to be not at variance to Principle (f), and not likely to be at variance to Principles (a), (b), (c), (d), (e), (g), (h), (i) and (j). Should a permit be granted, it is recommended that conditions be imposed on the permit in relation to reporting on any clearing undertaken during the life of the permit.

#### 5. References

Alcoa (2008) Additional information provided in support of clearing permit application, unpublished report, Alcoa World Alumina Australia, Pinjarra, Western Australia.

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.

Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

Mitchell, D., Williams, K. and Desmond, A. (2002) Swan Coastal Plain 2 (SWA2 - Swan Coastal Plain subregion), in Bioregional summary of the 2002 Biodiversity Audit for Western Australia, Department of Conservation and Land Management, Western Australia

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.

#### 6. Glossary

Acronyms:
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**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.

**DOLA** Department of Industry and Resources, Western Australia.

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}:-

- 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 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 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 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}:-

- 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.
- 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.