Government of Western Australia
Department of Mines, Industry Regulation and Safety

Clearing Permit Decision Report

1. Application details

1.1. Permit application details

Permit application No.: 8289/1
Permit type: Area Permit

1.2. Proponent details

Proponent's name: **Lake Hillman Mining Pty Ltd**

1.3. Property details

Property: Mining Lease 70/1291
Local Government Area: Shire of Koorda
Colloquial name: Lake Cowcowing Gypsum Project

1.4. Application

Clearing Area (ha)	No. Trees	Method of Clearing	For the purpose of:
8.5775		Mechanical Removal	Gypsum extraction and associated activities

1.5. Decision on application

Decision on Permit Application: Grant
Decision Date: 7 February 2019

2. Site Information

2.1. Existing environment and information

2.1.1. Description of the native vegetation under application

Vegetation Description

The vegetation of the application area is broadly mapped as the following Beard vegetation association: 125: Bare areas; Salt lakes (GIS Database).

A flora and vegetation survey was conducted over the application area by Landform Research during October 2018. The vegetation within the application area is chenopod with low species richness and is devoid of trees and consists of Saltbush Low Shrubland dominated by *Tecticornia* (Landform, Research 2018).

Clearing Description

Lake Cowcowing Gypsum Project.
Lake Hillman Mining Pty Ltd proposes to clear up to 8.5775 hectares of native vegetation for the purpose of Gypsum extraction and associated activities. The project is located approximately 16 kilometres south west of Koorda, within the Shire of Koorda.

Vegetation Condition

Very Good: Vegetation structure altered; obvious signs of disturbance (Keighery, 1994).

To

Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate (Keighery, 1994).

Comment

The vegetation condition was derived from a vegetation survey conducted by Landform Research (2018).

The proposed clearing is for Gypsum extraction and overburden stockpiling.

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 clearing permit application area is located within the Merredin subregion of the Interim Biogeographic Regionalisation for Australia (IBRA) Avon Wheatbelt Bioregion (GIS Database).

The Avon Wheatbelt can be described as an ancient peneplain with a low relief, gently undulating landscape. Cowcowing Lake is one of four wetlands of regional significance. There is no connected drainage; salt lake chains occur as remnants of ancient drainage systems that now only function in very wet years (CALM, 2002). Proteaceous scrub-heaths, rich in endemics lie on lateritic uplands and derived sandplains, while mixed eucalypt, *Allocasuarina huegeliana* and Jam-York Gum woodlands lie on Quaternary alluvials and eluvials (CALM, 2002).

The application area is located on Cowcowing Lake, in the eastern Wheatbelt, in an area of widespread similar salt lakes that carry gypsum deposits and is surrounded by agricultural land (GIS Database).

A flora survey of the application area identified 6 flora species from 3 families (Landform Research, 2018). This is not considered to be floristically diverse. The plant density is quite low from bare gypsum to scattered low shrubs. The highest vegetation cover is around 15% (Landform Research, 2018).

The vegetation is chenopod with low species richness, is devoid of trees and consists of Saltbush Low Shrubland dominated by *Tecticornia*. In more recent inspections in 2017 and 2018 it is noticed that where gypsum has blown across the lower elevation of M70/1291, there is a surface addition to the lease. That surface addition is pale fine white gypsum/kopi. This has changed the soil conditions in part near the access road and enabled vegetation from the adjoining gypsum ridge to spread seed, and results in additional species establishing in this area. These species were not previously present on the ground of M70/1291, however have recently established as a result of mining and soil movement (Landform Research, 2018).

No Threatened or Priority Ecological Communities (PEC) or Threatened or Priority flora species have been recorded within the application area (Landform Research, 2018). Assemblages of gypsum dunes of the central and southern wheatbelt are listed as a PEC. The PEC only applies to the higher ridges of gypsum that carry the plant diversity and species richness (Landform Research, 2018). On M70/1291 the substrate is lake bed gypsum that is lower than the gypsum ridge to which it adjoins and carries very limited and common species. Lake bed gypsum typically carries two species per 100 m^2 plot, with a total of around four more common species and two uncommon species (Landform Research, 2018).

The proposed vegetation clearing has the potential to introduce weed species into the local area. Weeds can potentially impact on biodiversity by out competing native species for resources and increasing the fire risk. The potential spread of introduced species as a result of the proposed clearing may be minimised by the implementation of a weed management condition.

No detailed fauna surveys have been undertaken over the application area. A search of NatureMap (DBCA, 2019) has identified 58 invertebrate, 52 bird and 3 reptile species records within 10 kilometres of the application area. Given the low density and species richness of the vegetation within the application area, it is unlikely that the area applied to clear would support a diverse range of fauna.

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

Methodology

CALM (2002)
DBCA (2019)
Landform Research (2018)

GIS Database:
- IBRA Australia
- Imagery
- Hydrography, Lakes

(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

A detailed fauna survey has not been undertaken over the application area, although observations were recorded during the vegetation survey undertaken by Landform Research (2018). Landform Research advises that the vegetation within the application may provide some fauna habitat, but the quality has been reduced by previous disturbances to vegetation in the area.

Of the 113 fauna species identified as occurring within ten kilometres of the application area, there is one species of conservation significance (DBCA, 2019): Western Spiny-tailed Skink (*Egernia stokesii badia*) – Schedule 1 (*Wildlife Conservation Act 1950).* Based on habitat preferences and distribution, the Western Spiny-tailed Skink is not likely to utilise vegetation within the application area (DEC, 2012).

Given the vegetation condition, low density and low species richness, vegetation within the application is not likely to provide significant habitat for fauna.

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

Methodology

DBCA (2019)
DEC (2012)
Landform Research (2018)

GIS Database:
- Imagery
- Pre-European Vegetation
- Threatened Fauna

(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 datasets there are no known records of Threatened flora within the application area (GIS Database). No Threatened flora species were identified within the application area and surrounding vegetation during a vegetation survey conducted in October 2018 (Landform Research, 2018).

Specimens of the genus *Frankenia* were identified within the application area (Landform Research, 2018). As the Threatened flora species *Frankenia conferta* has previously been identified in proximity to the application area, the *Frankenia* identified on site was examined extensively under microscope and was confirmed as the species *Frankenia pauciflora*, which occur widely on salt lakes throughout the Wheatbelt (Landform Research, 2018).

The nearest record of Threatened Flora (*Frankenia conferta*) is located approximately one kilometre north of the application area (GIS Database).

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

Methodology

Landform Research (2018)

GIS Database:
- Pre-European Vegetation
- Threatened and Priority Flora

(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

According to available databases, there are no known Threatened Ecological Communities (TECs) within the application area (GIS Database). Landform Research (2018) did not identify any TECs in their flora and vegetation survey of the application area.

The nearest known TEC is located approximately one kilometre south east of the application area (GIS Database). This is a federally listed TEC and is unrelated to the application area, being Eucalypt woodlands of the Western Australian Wheatbelt (GIS Database).

Given the relatively small scale of the clearing it is not anticipated that the proposed clearing will impact on the nearby TEC.

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

Methodology

Landform Research (2018)

GIS Database:
- Threatened and Priority 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 may be at variance to this Principle

The application area falls within the Avon Wheatbelt Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database) in which approximately 18.5% of the pre-European vegetation still remains (Government of Western Australia, 2018). This gives it a conservation status of 'Vulnerable' according to the Bioregional Conservation Status of Ecological Vegetation Classes (Department of Natural Resources and Environment, 2002). Clearing in the area has been extensive, and rising saline groundwater threatens up to 30 per cent of the landscape (Landform Research, 2018).

The vegetation within the application area is recorded as Beard vegetation association 125: Bare areas; salt lakes (GIS Database; Government of Western Australia, 2018).

Approximately 90% of the pre-European extent of the vegetation association remains uncleared at the state level, however <10% remains at the bioregional level (Government of Western Australia, 2018). This gives vegetation association 125 a conservation status of 'Vulnerable' at the bio-regional level (Department of Natural Resources and Environment, 2002).

	Pre-European area (ha)*	Current extent (ha)*	Remaining %*	Conservation Status**	Pre-European % in DBCA managed lands (and post clearing %)
IBRA Bioregion Avon Wheatbelt	9,517,110	1,761,227	18	Vulnerable	2.4 (9.9)
IBRA Subregion - Merredin	6,524,180	1,368,788	21	Vulnerable	2.5 (9.3)
Local Government - Koorda	283,082	40,504	14	Vulnerable	2.3 (5.7
Beard vegetation associations – WA					
125	3,485,785	3,146,487	90	Least Concern	9.3
Beard vegetation associations – Avon Wheatbelt Bioregion					
125	167,448	16,289	9	Endangered	20 (20)
Beard vegetation associations - Merredin Subregion					
125	148,564	13,694	9	Endangered	16 (13)

* Government of Western Australia (2018)
** Department of Natural Resources and Environment (2002)

Whilst Lake Cowcowing itself appears to remain largely uncleared the surrounding areas have been heavily cleared for agricultural purposes (CALM, 2002). Lake Cowcowing covers an area in excess of 20,000 hectares, however, not all of this area will be vegetated (GIS Database). Given the relatively small scale of the clearing it is not anticipated that the proposed clearing will significantly impact the ability of Lake Cowcowing to act as a remnant in the local area.

The vegetation proposed to be cleared equates to 0.05% of the remaining area of vegetation association 125 within the Avon Wheatbelt bioregion and 0.06% of the remaining area of vegetation association 125 within the Merredin subregion.

The vegetation proposed to be cleared is by definition bare areas, salt lakes, and has less than 15% vegetation cover and low species richness compared to other areas of vegetation association 125 in the area, particularly those on the gypsum ridges Landform Research (2018). It is unlikely that clearing the sparse vegetation over this small area would significanlty impact vegetation association 125 or impact on its conservation status.

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

Methodology

CALM (2002)
Department of Natural Resources and Environment (2002)
Government of Western Australia (2018)
Landform Research (2018)

GIS Database:
- IBRA Australia
- Pre-European Vegetation
- Hydrography, Lakes
- Imagery

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

Comments

Proposal is at variance to this Principle

The application area is located on a ridge within a non-perennial lake (Lake Cowcowing) (GIS Database; Landform Research, 2018). The ridge occupied by M70/734 rises two metres above the lake bed and the ridge of M70/1291 runs along the eastern edge of the M70/734 ridge at an elevation of about 500 mm above the lake surface (Landform Research, 2018). Lake Cowcowing is a saline non-perennial lake that only fills with water occasionally as a result of heavy rainfall (Landform Research, 2018).

Although the vegetation proposed to be cleared is not growing in the lake bed of Lake Cowcowing, the vegetation does form part of a buffer to this wetland. However given the size of the lake (over 20,000 hectares), the removal of 8.5775 hectares of vegetation growing in association with Lake Cowcowing is not likely to significantly impact on the environmental values of the lake.

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

Methodology Landform Research (2018)

GIS Database:
- Hydrography, Lakes
- 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**

Lake Cowcowing is a saline lake with a covering of fine gypsum saline lacustrine clays overlain by a salt crust (Landform Research, 2018). The soils are kopi gypsum with little or no topsoil. The top 50 mm of kopi contains a weak plant seed source that is worth recovering for use in rehabilitation and is used for that purpose (Landform Research, 2018).

The soils of the application area have been broadly mapped as gently undulating terrain with some ridges and uneven slopes, and with variable presence of lateritic and granitic landforms (Schoknecht, 2002). Chief soils are hard alkaline yellow mottled soils and hard alkaline red soils, either of which may be dominant locally (Schoknecht, 2002).

The proposed clearing has the potential to increase the risk of wind erosion, however this is not expected to be significant given the highest vegetation cover is around 15% (Landform Research, 2018).

The soils present within the application area are already saline to highly saline (Landform Research, 2018) and the proposed clearing is not likely to contribute to an increase in salinity.

The application area falls within a high Acid Sulphate Soils (ASS) risk area (CSIRO, 2015). Provided the proposed clearing does not expose the subsoil, the generation of acid sulphate soils is not considered likely.

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

Methodology CSIRO (2015)
Landform Research (2018)
Schoknecht (2002)

GIS Database:
- Landsystem Rangelands
- 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 proposed clearing is not located within a conservation reserve (GIS Database). The nearest conservation area is the Dukin Nature Reserve, which is located approximately one kilometre east of the application area (GIS Database).

Due to the close proximity of the proposed clearing to the nature reserve, the application area may form part of an ecological linkage between Dukin Nature Reserve and other remnant vegetation in the local area (GIS Database).Therefore the proposed clearing may have an indirect impact on this conservation area.

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

Methodology GIS Database:
- DPaW Tenure

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

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

There are no Public Drinking Water Source Areas within or in close proximity to the application area. The site lies within the Avon River System Surface Water Area and the Avon River Management Area (GIS Database).

The application area is located on the fringe of Lake Cowcowing, which is a non-perennial salt lake (GIS Database). In wet conditions water fills the lake from precipitation but is saline, becoming more saline as the water evaporates (Landform Research, 2018).

Groundwater lies just beneath the lake bed surface late in winter and this rises to just above the base of the gypsum resource in winter and wet times (Landform Research, 2018). The groundwater salinity of the application area is mapped as being in excess of 35,000 milligrams per litre dissolved solids (GIS Database), which is considered saline.

The proposed clearing is unlikely to cause deterioration in the quality of surface or underground water.

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

Methodology Landform Research (2018)

GIS Database:
- Waterway Management Areas
- Groundwater salinty, Statewide
- PDWSAs

(j) Native vegetation should not be cleared if clearing the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.

Comments

Proposal is not likely to be at variance to this Principle

The climate of the region is semi-arid, with a low average rainfall of approximately 316 millimetres per year at Bencubbin (BOM, 2019). Temperatures average up to maxima of 35c degrees in summer and down to 18c degrees in winter. Most of the rain (60%) falls in the months May to August inclusive. Evaporation is approximately 2,400 mm per annum (BOM, 2019).

Lake Cowcowing is the largest of an extensive system of small saline lakes. The lakes are fed from Culimbin Brook from the north west and from the smaller lakes and minor watercourses to the north east and north (Landform Research, 2018). There is no outlet from Lake Cowcowing, with water in the lake evaporating over time following large rainfall events. The lake only fills with water occasionally as a result of cyclonic or heavy rainfall events. The north eastern portion of the lake in the vicinity of M70/1291 is slightly higher in elevation and does not generally fill with water (Landform Research, 2018).

The scale of the proposed clearing (8.5775 hectares) in relation to the size of Lake Cowcowing (over 20,000 hectares) is unlikely to increase the potential for flooding (GIS Database).

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

Methodology BOM (2019)
Landform Research (2018)

GIS Database:
- Hydrographic Catchments
- Hydrography, linear

Planning Instrument, Native Title, previous EPA decision or other matter.

Comments

The clearing permit application was advertised on 24 December 2018 by the Department of Mines, Industry Regulation and Safety (DMIRS), inviting submissions from the public. One submission was received in relation to this application, regarding Aboriginal heritage, which was responded to on 16 January 2019.

There is one native title claim over the area under application (DPLH, 2019). This claim has been registered with the National Native Title Tribunal on behalf of the claimant group. However, the mining tenure has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore, the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

There are no registered Aboriginal Sites of Significance within the application area (DPLH, 2019). 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 Water and Environmental Regulation and the Department of Biodiversity, Conservation and Attractions, 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 DPLH (2019)

4. References

BoM (2019) Bureau of Meteorology Website – Climate Data Online, Weather Station Name. Bureau of Meteorology. http://www.bom.gov.au/climate/data/ (Accessed 14 January 2019).

CSIRO (2015) Australian Soil Resource Information System. http://www.asris.csiro.au.

CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002. Department of Conservation and Land Management, Western Australia.

DBCA (2019) – Nature Map – Mapping Western Australia's biodiversity. Department of Biodiversity, Conservation and Attractions. https://nautremap.dpaw.wa.gov.au/ (Accessed 22 January 2019).

DEC (2012) Western Australian Wildlife Management Program No. 53; Western Spiny-tailed Skink (Egernia stokesii) Recovery Plan

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.

DPLH (2019) Aboriginal Heritage Enquiry System. Department of Planning, Lands and Heritage. http://maps.daa.wa.gov.au/AHIS/ (Accessed 14 January 2019).

Government of Western Australia (2018) 2017 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of December 2017. WA Department of Biodiversity, Conservation and Attractions. https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics

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

Landform Research (2018) Flora and Vegetation Assessment Lake Cowcowing M70/1291 Addition to the previous vegetation studies on M70/734 and L/70/110.

Schoknecht N. (2002) Soil Groups of Western Australia. A simple guide to the main soils of Western Australia. Resource Management Technical Report 246. Edition 3.

5. Glossary

Acronyms:

BoM	Bureau of Meteorology, Australian Government
DAA	Department of Aboriginal Affairs, Western Australia (now DPLH)
DAFWA	Department of Agriculture and Food, Western Australia (now DPIRD)
DBCA	Department of Biodiversity, Conservation and Attractions, Western Australia
DEC	Department of Environment and Conservation, Western Australia (now DBCA and DWER)
DEE	Department of the Environment and Energy, Australian Government
DER	Department of Environment Regulation, Western Australia (now DWER)
DMIRS	Department of Mines, Industry Regulation and Safety, Western Australia
DMP	Department of Mines and Petroleum, Western Australia (now DMIRS)
DPIRD	Department of Primary Industries and Regional Development, Western Australia
DPLH	Department of Planning, Lands and Heritage, Western Australia
DRF	Declared Rare Flora
DoE	Department of the Environment, Australian Government (now DEE)
DoW	Department of Water, Western Australia (now DWER)
DPaW	Department of Parks and Wildlife, Western Australia (now DBCA)
DSEWPaC	Department of Sustainability, Environment, Water, Population and Communities (now DEE)
DWER	Department of Water and Environmental Regulation, Western Australia
EPA	Environmental Protection Authority, Western Australia
EP Act	*Environmental Protection Act 1986*, Western Australia
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Federal Act)
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
IBRA	Interim Biogeographic Regionalisation for Australia
IUCN	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
PEC	Priority Ecological Community, Western Australia
RIWI Act	*Rights in Water and Irrigation Act 1914*, Western Australia
TEC	Threatened Ecological Community

Definitions:

{DPaW (2017) Conservation Codes for Western Australian Flora and Fauna. Department of Parks and Wildlife, Western Australia}:-

T **Threatened species:**
Published as Specially Protected under the *Wildlife Conservation Act 1950,* listed under Schedules 1 to 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora (which may also be referred to as Declared Rare Flora).

Threatened fauna is that subset of 'Specially Protected Fauna' declared to be 'likely to become extinct' pursuant to section 14(4) of the *Wildlife Conservation Act 1950*.

Threatened flora is flora that has been declared to be 'likely to become extinct or is rare, or otherwise in need of special protection', pursuant to section 23F(2) of the *Wildlife Conservation Act 1950*.

The assessment of the conservation status of these species is based on their national extent and ranked according to their level of threat using IUCN Red List categories and criteria as detailed below.

CR **Critically endangered species**
Threatened species considered to be facing an extremely high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950,* in Schedule 1 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.

EN **Endangered species**
Threatened species considered to be facing a very high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950,* in Schedule 2 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.

VU **Vulnerable species**
Threatened species considered to be facing a high risk of extinction in the wild. Published as Specially Protected under the *Wildlife Conservation Act 1950,* in Schedule 3 of the Wildlife Conservation (Specially Protected Fauna) Notice for Threatened Fauna and Wildlife Conservation (Rare Flora) Notice for Threatened Flora.

EX **Presumed extinct species**
Species which have been adequately searched for and there is no reasonable doubt that the last individual has died. Published as Specially Protected under the *Wildlife Conservation Act 1950,* in Schedule 4 of the Wildlife Conservation (Specially Protected Fauna) Notice for Presumed Extinct Fauna and Wildlife Conservation (Rare Flora) Notice for Presumed Extinct Flora.

IA **Migratory birds protected under an international agreement**
Birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and the Bonn Convention, relating to the protection of migratory birds. Published as Specially Protected under the *Wildlife Conservation Act 1950,* in Schedule 5 of the Wildlife Conservation (Specially Protected Fauna) Notice.

CD **Conservation dependent fauna**
Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened. Published as Specially Protected under the *Wildlife Conservation Act 1950,* in Schedule 6 of the Wildlife Conservation (Specially Protected Fauna) Notice.

OS **Other specially protected fauna**
Fauna otherwise in need of special protection to ensure their conservation. Published as Specially Protected under the *Wildlife Conservation Act 1950,* in Schedule 7 of the Wildlife Conservation (Specially Protected Fauna) Notice.

P **Priority species**
Species which are poorly known; or
Species that are adequately known, are rare but not threatened, and require regular monitoring. Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.

P1 **Priority One - Poorly-known species:**
Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.

P2 **Priority Two - Poorly-known species:**
Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.

P3 **Priority Three - Poorly-known species:**
Species that are known from several locations, and the species does not appear to be under imminent threat,

or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.

P4 **Priority Four - Rare, Near Threatened and other species in need of monitoring:**
(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection, but could be if present circumstances change. These species are usually represented on conservation lands.
(b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for Vulnerable, but are not listed as Conservation Dependent.
(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.