



# Clearing Permit Decision Report

## 1. Application details and outcomes

### 1.1. Permit application details

Permit number:	9830/1
Permit type:	Purpose Permit
Applicant name:	Lake Barlee Gold Pty Ltd
Application received:	2 August 2022
Application area:	0.9 hectares
Purpose of clearing:	Mineral Exploration
Method of clearing:	Mechanical Removal
Tenure:	Exploration Licence 77/2700
Location (LGA area/s):	Shire of Menzies

### 1.2. Description of clearing activities

Lake Barlee Gold Pty Ltd (the proponent) proposes to clear up to 0.9 hectares of native vegetation within a boundary of approximately 1.92 hectares, for the purpose of mineral exploration. The project is located approximately 190 kilometres south-east of Mount Magnet, within the Shire of Menzies.

The application is to allow for the construction of 12 drill pads for the purposes of exploration activities.

### 1.3. Decision on application and key considerations

Decision:	Grant
Decision date:	6 October 2022
Decision area:	0.9 hectares of native vegetation

### 1.4. Reasons for decision

This clearing permit application was made in accordance with section 51E of the *Environmental Protection Act 1986* (EP Act) and was received by the Department of Mines, Industry Regulation and Safety (DMIRS) on 2 August 2022. DMIRS advertised the application for a public comment for a period of 21 days, and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (Appendix A), relevant datasets (Appendix D), the clearing principles set out in Schedule 5 of the EP Act (Appendix C), proposed avoidance and minimisation measures (Section 3.1), relevant planning instruments and any other matters considered relevant to the assessment (Section 3.3).

The assessment identified that the proposed clearing may result in:

- the potential introduction and spread of weeds into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values;
- impacts to riparian vegetation; and
- potential impacts to surface water flows.

After consideration of the available information, as well as the applicant's minimisation and mitigation measures (see Section 3.1), the Delegated Officer determined the proposed clearing is unlikely to lead to an unacceptable risk to environmental values.

The Delegated Officer decided to grant a clearing permit subject to conditions to:

- avoid, minimise to reduce the impacts and extent of clearing;
- take hygiene steps to minimise the risk of the introduction and spread of weeds;
- where practicable, avoid clearing riparian vegetation; and
- commence exploration activities no later than three months after undertaking clearing to reduce the risk of erosion.

## 2. Legislative context

The clearing of native vegetation in Western Australia is regulated under the EP Act and the Environmental Protection (Clearing of Native Vegetation) Regulations 2004 (Clearing Regulations).

In addition to the matters considered in accordance with section 51O of the EP Act (see Section 1.4), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

- the precautionary principle
- the principle of intergenerational equity
- the principle of the conservation of biological diversity and ecological integrity.

Other legislation of relevance for this assessment include:

- *Biodiversity Conservation Act 2016 (WA) (BC Act)*
- *Conservation and Land Management Act 1984 (WA) (CALM Act)*
- *Mining Act 1978 (WA)*

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2013)

## 3. Detailed assessment of application

### 3.1. Avoidance and mitigation measures

Evidence was provided by the applicant within their application form, demonstrating that the selected locations of the exploration drill pads have been chosen in a manner to impose as little environmental impact as possible by:

- Reducing the number of original proposed drill holes from 17 to 12. Twelve is the minimum number of holes required to test the geological targets by drilling;
- 1 hole collar location has been removed from an area of sparse low Samphire shrubland;
- The drill pad locations are all intentionally located along the shore lines of Lake Barlee above the high-water line; These surfaces are compact and sparsely vegetated with grasses and ground running salt tolerant species; and
- The areas of disturbance are specifically selected for low impacts, consistent with environmental protection, long term habitat preservation and background land use of grazing and access by pastoralists.

The Delegated Officer was satisfied that the applicant has made a reasonable effort to avoid and minimise potential impacts of the proposed clearing on environmental values.

### 3.2. Assessment of impacts on environmental values

In assessing the application, the Delegated Officer has had regard for the site characteristics (see Appendix A) and the extent to which the impacts of the proposed clearing present a risk to biological, conservation, or land and water resource values.

The assessment against the clearing principles (see Appendix B) identified the impacts of the proposed clearing are limited and able to be managed to be environmentally acceptable with standard avoid and minimize, hygiene and watercourse management conditions.

### 3.3. Relevant planning instruments and other matters

The clearing permit application was advertised on 19 August 2022 by the Department of Mines, Industry Regulation and Safety inviting submissions from the public. No submissions were received in relation to this application.

There is a native title claim over the area under application (DPLH, 2022). 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 is one registered Heritage Sites of Significance (Lake Barlee Mythological Site – 38935) within the application area (DPLH, 2022). 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.

Other relevant authorisations required for the proposed land use include:

- A Programme of Work approved under the *Mining Act 1978*.

**End**

## Appendix A. Site characteristics

### A.1. Site characteristics

Characteristic	Details
Local context	The area proposed to be cleared is part of an expansive tract of native vegetation in the extensive land use zone of Western Australia. It is located within a non-perennial salt lake and nearby pastoral leases. The proposed clearing area contains sparse vegetation that is likely riparian in nature (GIS Database).
Ecological linkage	According to available databases, there are no formal ecological linkages within the application area (GIS Database).
Conservation areas	There are no mapped conservation areas within the application area. The nearest conservation area (proposed conservation park) is approximately 30 kilometres to the east of the application area (GIS Database).
Vegetation description	The vegetation of the application area is broadly mapped as the following Beard vegetation associations: 125: Bare areas; salt lakes; and 411: Succulent steppe with open scrub; scattered bowgada & jam over saltbush (GIS Database).  No flora or vegetation surveys have been submitted with the clearing application.
Vegetation condition	Aerial imagery indicate the vegetation within the proposed clearing area is sparse and riparian in nature (GIS Database). The vegetation is considered to be in “Excellent” condition (Trudgen, 1991). Note that limited information has been provided to assess the vegetation condition, as such, in use of the precautionary principle, the highest ranking has been applied.  Trudgen, 1991 condition, described as <ul style="list-style-type: none"> <li>Excellent - Pristine or nearly so, no obvious signs of damage caused by human activities since European settlement.</li> </ul> The full Trudgen (1991) condition rating scale is provided in Appendix C.
Climate and landform	The application area has a mean yearly rainfall of 254.0 millimetres based on rainfall data collected from Menzies station (Station 012052) (BoM, 2022). The application area is flat, with an elevation of approximately 400 metres Australia Height Datum across the entire application area. The area contains surficial sediments and shallow aquifers (GIS Database) and is within a salt lake basin (GIS Database).
Land system and soil description	The application area is mapped within the Carnegie Land system (DPIRD, 2022), which is described as:  <b>Carnegie System</b> – Salt lakes with fringing saline alluvial plains, kopi dunes and sandy banks, supporting halophytic shrublands and acacia tall shrublands. Erosion susceptibility is generally low (Curry et al., 1994).  The soil is mapped as 279Ca (Carnegie system) and 279CaLB (Carnegie Lake Bed subsystem) (GIS Database).  The 279Ca unit is described as salt lakes with fringing saline alluvial plains, kopi dunes and sandy banks, supporting halophytic shrublands and acacia tall shrublands (DPIRD, 2022).  The 249CaLB unit is described as bare lake beds inundated for short periods after rain (DPIRD, 2022).
Waterbodies	The application area is within Lake Barlee, a non-perennial salt lake (GIS Database). Lake Barlee covers an area of approximately 194,380 hectares (DCCEEW, 2022). It is fed predominantly by groundwater flowing through ancient palaeochannels and through precipitation. The channels are filled with calcretes and alluvial clay-quartz units (Mernagh, T.P, 2013).
Hydrogeography	The application area falls within the Goldfields groundwater area as per the <i>Rights in Water and Irrigation Act 1914</i> (RIWI Act) (GIS Database). The application area does not occur within any public drinking water source areas (GIS Database). The application area is located within the

Characteristic	Details
	Raeside-Ponton hydrographic catchment area (GIS Database).
Flora	There are records of three priority flora within 20 kilometres of the application area (GIS Database), which are outlined in appendix A.3. There are no records of Threatened or Priority flora within the application area (GIS Database).
Ecological communities	There are no Threatened or Priority Ecological Communities (TEC/PEC) within the application area. The nearest TEC (Johnston Range Banded Ironstone Formation) is approximately 25 kilometres south of the application area (GIS Database).
Fauna	There are no records of Threatened or Priority fauna within, or nearby (20 kilometres radius), the application area (GIS Database). Suitable habitat exists for the slender-billed thornbill ( <i>Vu</i> ) ( <i>Acanthiza iredalei</i> ) within the application area, however, there are no known records within 40 kilometres of the application area (GIS Database).

## A.2. Vegetation extent

	Pre-European area (ha)	Current extent (ha)	Extent Remaining %	Current extent in all DBCA managed land (ha)	Current proportion (%) of pre-European extent in all DBCA Managed Lands
IBRA Bioregion - Murchison	28,120,586.77	28,044,823.42	~99.73	2,185,987.96	7.78
IBRA Subregion - Eastern Murchison	21,135,083.96	21,065,967.55	~99.67	1,737,906.81	8.23
Beard vegetation associations - State					
Veg Assoc No. 125	3,485,785.49	3,146,487.22	~90.27	265,740.10	9.29
Veg Assoc No. 411	44,035.16	44,035.16	~100	2,339.88	5.31
Beard vegetation associations - Bioregion					
Veg Assoc No. 125	711,483.67	710,255.44	~99.83	51,223.48	7.2
Veg Assoc No. 411	32,156.23	32,156.23	~100	2,339.88	7.28
Beard vegetation associations - subregion					
Veg Assoc No. 125	701,136.94	699,919.75	~99.83	50,494.86	7.2
Veg Assoc No. 411	32,156.23	32,156.23	~100	2,339.88	7.28

Government of Western Australia (2019)

## A.3. Flora analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix D.1) impacts to the following conservation significant flora required further consideration.

Species name	Conservation status	Suitable habitat features? [Y/N]	Distribution – IBRA Region	Distance of closest record to application area (km)	Are surveys adequate to identify? [Y, N, N/A]
<i>Angianthus prostratus</i>	Priority 3	Y – Salt lakes	Avon Wheatbelt, Murchison	3	N/A
<i>Dampiera plumosa</i>	Priority 1	N – red sandy soils	Coolgardie, Murchison	3	N/A

Species name	Conservation status	Suitable habitat features? [Y/N]	Distribution – IBRA Region	Distance of closest record to application area (km)	Are surveys adequate to identify? [Y, N, N/A]
<i>Millotia falcata</i>	Priority 1	N – sandy edge of clay pan	Murchison	20	N/A

## Appendix B. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
<b>Environmental value: biological values</b>		
<p><u>Principle (a):</u> “Native vegetation should not be cleared if it comprises a high level of biodiversity.”</p> <p><u>Assessment:</u></p> <p>The application area is located within the Eastern Murchison subregion of the Interim Biogeographic Regionalisation for Australia (IBRA) Murchison Bioregion (GIS Database). The Eastern Murchison subregion is characterised by internal drainage, and extensive areas of elevated red desert sandplains with minimal dune development. The area consists of broad plains of red-brown soils and breakaway complexes as well as red sandplains. Vegetation is dominated by Mulga woodlands often rich in ephemerals; hummock grasslands, saltbush shrublands and <i>Tecticornia</i> shrublands (CALM, 2002).</p> <p>A desktop assessment identified a total of three conservation significant flora taxa as occurring within 20 kilometres of the application area (GIS Database). Of these, one species is considered possible to occur within the application area, based on preferred habitat and/or soil types (refer to appendix A.3). <i>Angianthus prostratus</i> (P3) has been recorded approximately 3 kilometres from the application area, however, there are records of this species occurring throughout the Murchison and Avon Wheatbelt bioregions, within salt lake environments (Western Australian Herbarium, 1998-). This indicates that <i>A. prostratus</i> has a distribution beyond Lake Barlee. As such, the proposed clearing is unlikely to significantly impact the species on a local or regional scale. There are no records of Threatened or Priority flora within the application area (GIS Database).</p> <p>The application area sits within Lake Barlee, which is on the Directory of Important Wetlands because it forms an important wetland that supports foraging and breeding habitat for a number of waterbirds after periods of inundation (DCCEEW, 2022). However, given Lake Barlee is mostly dry, with inundation occurring after heavy rainfall events (which occurs approximately every 10 years) (DEC, 2012) and the proposed clearing may impact on an estimated 0.00046% only (0.9 hectares of 194,380 hectares), the proposed clearing is unlikely to significantly impact waterbird species on a local or regional level.</p> <p><u>Conclusion</u></p> <p>There are no known records of Priority or Threatened flora or fauna within the application area. As the clearing area within Lake Barlee is relatively small (0.00046% of Lake Barlee), it is considered that the potential impacts on biodiversity within the application are unlikely to be significant.</p> <p>There is potential for weeds being present within the application area and the proposed clearing has the potential to exacerbate the spread of weeds.</p> <p><u>Conditions</u></p> <p>To address the above impacts, the following management measures will be required as conditions on the clearing permit:</p> <ul style="list-style-type: none"> <li>take hygiene steps to minimise the risk of the introduction and spread of weeds;</li> <li>where practicable, avoid clearing riparian vegetation.</li> </ul>	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Principle (b):</u> <i>“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.”</i></p> <p><u>Assessment:</u></p> <p>There are no records of Priority of Threatened fauna within the application area (GIS Database). The application area may contain suitable habitat for the slender-billed thornbill and various waterbirds however, there are no known records within a 40 kilometre radius of the application area (GIS Database). Furthermore, given the small clearing size in relation to the broader habitat type of Lake Barlee, the proposed clearing area is unlikely to be necessary for the maintenance of a significant habitat for fauna.</p>	Not likely to be at variance	No
<p><u>Principle (c):</u> <i>“Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</i></p> <p><u>Assessment:</u></p> <p>There are no records of Threatened flora within a 20 kilometres radius of the application area (GIS Database). The area proposed to be cleared is unlikely to contain significant habitat flora species listed under the BC Act.</p>	Not likely to be at variance	No
<p><u>Principle (d):</u> <i>“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.”</i></p> <p><u>Assessment:</u></p> <p>The area proposed to be cleared does not contain species that can indicate a threatened ecological community (GIS Database). The nearest TEC is approximately 25 kilometres from the application area (GIS Database) and is unlikely to be impacted from the proposed clearing.</p>	Not at variance	No
<b>Environmental value: significant remnant vegetation and conservation areas</b>		
<p><u>Principle (e):</u> <i>“Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</i></p> <p><u>Assessment:</u></p> <p>The application area falls within the Murchison Bioregion of the Interim Biogeographic Regionalisation for Australia (GIS Database). Approximately 99.73% of the pre-European vegetation still exists in the Murchison Bioregion (Government of Western Australia, 2019). The application area is broadly mapped as Beard vegetation associations 125 and 411 (GIS Database). These vegetation associations have not been extensively cleared as over 90% of the pre-European extent of these vegetation associations remains uncleared at both the state and bioregional level (Government of Western Australia, 2019). The application area does not contain any remnants of native vegetation, nor does it form part of any remnants in the local area.</p>	Not at variance	No
<p><u>Principle (h):</u> <i>“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.”</i></p> <p><u>Assessment:</u></p> <p>The application area does not lie within, or in the vicinity of, any conservation areas (GIS Database). The nearest DBCA managed land is a proposed conservation park, which is approximately 30 kilometres east of the application area (GIS Database).</p>	Not likely to be at variance	No
<b>Environmental value: land and water resources</b>		
<p><u>Principle (f):</u> <i>“Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</i></p> <p><u>Assessment:</u></p> <p>Lake Barlee is listed in the Directory of Important Wetlands in Australia due to it being an important habitat for waterbirds (DEC, 2012). The proposed clearing area is up to 0.9 hectares, with parts of this area containing no vegetation (sparse vegetation) (GIS Database). Lake Barlee is large and covers approximately 194,380 hectares with inundation occurring approximately every 10 years (DEC, 2012). As such, the</p>	May be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
proposed clearing is unlikely to significantly impact the environmental value of Lake Barlee on a local or regional scale.		
<p><u>Principle (g):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</i></p> <p><u>Assessment:</u></p> <p>The application area lies within the Carnegie land system (GIS Database).</p> <p>The Carnegie land system has a low susceptibility to erosion (Curry et al., 1994), however, the removal of riparian vegetation may present a land degradation risk in the form of wind and water erosion, particularly after heavy rainfall events.</p> <p><u>Conclusion</u></p> <p>Based on the above, the proposed clearing has the potential to impact land resources if avoidance, mitigation and/or management measures are not implemented during rainfall events.</p> <p>It is considered that the potential impacts of the proposed clearing on land resources can be managed with conditions to be environmentally acceptable.</p> <p><u>Conditions</u></p> <p>To address the above impacts, the following management measures will be required as conditions on the clearing permit:</p> <ul style="list-style-type: none"> <li>• avoid, minimise to reduce the impacts and extent of clearing;</li> <li>• take hygiene steps to minimise the risk of the introduction and spread of weeds;</li> <li>• avoid impacts to riparian vegetation where practicable and maintain surface water flow to minimise the potential for localised erosion and sedimentation, which can have adverse impacts on downstream water quality; and</li> <li>• commence exploration activities no later than three months after undertaking clearing to reduce the risk of erosion.</li> </ul>	Not likely to be at variance	No
<p><u>Principle (i):</u> <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.”</i></p> <p><u>Assessment:</u></p> <p>There are no Public Drinking Water Source Areas within or in close proximity to the application area (GIS Database). The groundwater in the application area is considered to be hypersaline (&gt;35 000 milligrams/litre total dissolved solids) (GIS Database). The proposed clearing is not expected to have a significant impact on the quality of groundwater in the local area.</p>	Not likely to be at variance	No
<p><u>Principle (j):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</i></p> <p><u>Assessment:</u></p> <p>As the average annual rainfall within the area is 235 millimetres and the average annual evaporation rate is 2,800 millimetres, there is likely to be little surface flow during normal seasonal rains (BoM, 2022; GIS Database). Given the likelihood of low surface flow, the proposed clearing is not likely to cause or increase the incidence or intensity of flooding.</p> <p>The application area sits partially within Lake Barlee, where temporary localised flooding may occur briefly following heavy rainfall events, with the whole lake filling from episodic flooding every ten years (DEC, 2012). Given the low average rainfall, high evaporation rate and relatively small clearing area, the proposed clearing is unlikely to increase the incidence or intensity of natural flooding events.</p>	Not likely to be at variance	No

### Appendix C. Vegetation condition rating scale

Vegetation condition is a rating given to a defined area of vegetation to categorise and rank disturbance related to human activities. The rating refers to the degree of change in the vegetation structure, density and species present in relation to undisturbed vegetation of the same type. The degree of disturbance impacts upon the vegetation’s ability to regenerate. Disturbance at a site can be a cumulative effect from a number of interacting disturbance types.

Considering its location, the scale below was used to measure the condition of the vegetation proposed to be cleared. This scale has been extracted from:

Trudgen, M.E. (1991) *Vegetation condition scale* in National Trust (WA) 1993 Urban Bushland Policy. National Trust of Australia (WA), Wildflower Society of WA (Inc.), and the Tree Society (Inc.), Perth.

#### Measuring vegetation condition for the Eremaean and Northern Botanical Provinces (Trudgen, 1991)

Condition	Description
Excellent	Pristine or nearly so, no obvious signs of damage caused by human activities since European settlement.
Very good	Some relatively slight signs of damage caused by human activities since European settlement. For example, some signs of damage to tree trunks caused by repeated fire, the presence of some relatively non-aggressive weeds, or occasional vehicle tracks.
Good	More obvious signs of damage caused by human activity since European settlement, including some obvious impact on the vegetation structure such as that caused by low levels of grazing or slightly aggressive weeds.
Poor	Still retains basic vegetation structure or ability to regenerate it after very obvious impacts of human activities since European settlement, such as grazing, partial clearing, frequent fires or aggressive weeds.
Very poor	Severely impacted by grazing, very frequent fires, clearing or a combination of these activities. Scope for some regeneration but not to a state approaching good condition without intensive management. Usually with a number of weed species present including very aggressive species.
Completely degraded	Areas that are completely or almost completely without native species in the structure of their vegetation; i.e. areas that are cleared or 'parkland cleared' with their flora comprising weed or crop species with isolated native trees or shrubs.

## Appendix D. Sources of information

### D.1. GIS databases

Publicly available GIS Databases used (sourced from [www.data.wa.gov.au](http://www.data.wa.gov.au)):

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- Clearing Regulations – Schedule One Areas (DWER-057)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)
- Groundwater Salinity Statewide (DWER-026)
- Hydrographic Catchments – Catchments (DWER-028)
- Hydrography – Inland Waters – Waterlines
- Hydrography, Linear (DWER-031)
- Hydrological Zones of Western Australia (DPIRD-069)
- IBRA Vegetation Statistics
- Native Title (ILUA) (LGATE-067)
- Pre-European Vegetation Statistics
- Interim Ramsar Sites (DBCA-010)
- Regional Parks (DBCA-026)
- Remnant Vegetation, All Areas
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Mapping – Best Available (DPIRD-027)
- Soil Landscape Mapping – Rangelands (DPIRD-064)
- WA Now Aerial Imagery

Restricted GIS Databases used:

- Threatened Flora (TPFL)
- Threatened Flora (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities
- Threatened Ecological Communities and Priority Ecological Communities (Buffers)

### D.2. References

BoM (2022) Bureau of Meteorology Website – Climate Data Online, Kalgoorlie. Bureau of Meteorology.



- <http://www.bom.gov.au/climate/data/> (Accessed 21 September 2022).
- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002. Department of Conservation and Land Management, Western Australia.
- Curry, P J, Payne, A L, Leighton, K A, Hennig, P, and Blood, D A. (1994) An inventory and condition survey of the Murchison River catchment, Western Australia. Department of Agriculture, Perth. Technical Bulletin 84.
- Department of Climate Change, Energy, the Environmental and Water (DCCEEW) (2022) A Directory of Important Wetlands in Australia: Third Edition, Chapter 12. <https://www.dcceew.gov.au/water/wetlands/publications/directory-important-wetlands-australia-third-edition> (Accessed 4 October 2022).
- Department of Environment and Conservation (DEC) (2012) A guide to managing and restoring wetlands in Western Australia. Department of Environment and Conservation, Perth, Western Australia. [Wetland Hydrology.pdf \(dpaw.wa.gov.au\)](#)
- Department of Environment Regulation (DER) (2013) *A guide to the assessment of applications to clear native vegetation*. Perth. Available from: [https://www.der.wa.gov.au/images/documents/your-environment/native-vegetation/Guidelines/Guide2\\_assessment\\_native\\_veg.pdf](https://www.der.wa.gov.au/images/documents/your-environment/native-vegetation/Guidelines/Guide2_assessment_native_veg.pdf)
- Department of Planning, Lands and Heritage (DPLH) (2022) Aboriginal Heritage Inquiry System. Department of Planning, Lands and Heritage. <https://espatial.dplh.wa.gov.au/AHIS/index.html?viewer=AHIS> (Accessed 15 September 2022).
- Department of Primary Industries and Regional Development (DPIRD) (2022) NRInfo Digital Mapping. Department of Primary Industries and Regional Development. Government of Western Australia. URL: <https://maps.agric.wa.gov.au/nrm-info/> (Accessed 15 September 2022).
- Mernagh, T.P. (ed.) 2013 A review of Australian salt lakes and assessment of their potential for strategic resources. Record 2013/39. Geoscience Australia: Canberra
- Government of Western Australia (2019) 2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of March 2019. WA Department of Biodiversity, Conservation and Attractions. <https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics>
- Trudgen, M.E. (1991) Vegetation condition scale in National Trust (WA) 1993 Urban Bushland Policy. National Trust of Australia (WA), Wildflower Society of WA (Inc.), and the Tree Society (Inc.), Perth.
- Western Australian Herbarium (1998-) FloraBase - the Western Australian Flora. Department of Biodiversity, Conservation and Attractions, Western Australia. <https://florabase.dpaw.wa.gov.au/> (Accessed 04 October 2022).

## 4. Glossary

### Acronyms:

<b>BC Act</b>	<i>Biodiversity Conservation Act 2016</i> , Western Australia
<b>BoM</b>	Bureau of Meteorology, Australian Government
<b>DAA</b>	Department of Aboriginal Affairs, Western Australia (now DPLH)
<b>DAFWA</b>	Department of Agriculture and Food, Western Australia (now DPIRD)
<b>DAWE</b>	Department of Agriculture, Water and the Environment, Australian Government
<b>DBCA</b>	Department of Biodiversity, Conservation and Attractions, Western Australia
<b>DER</b>	Department of Environment Regulation, Western Australia (now DWER)
<b>DMIRS</b>	Department of Mines, Industry Regulation and Safety, Western Australia
<b>DMP</b>	Department of Mines and Petroleum, Western Australia (now DMIRS)
<b>DoEE</b>	Department of the Environment and Energy (now DAWE)
<b>DoW</b>	Department of Water, Western Australia (now DWER)
<b>DPaW</b>	Department of Parks and Wildlife, Western Australia (now DBCA)
<b>DPIRD</b>	Department of Primary Industries and Regional Development, Western Australia
<b>DPLH</b>	Department of Planning, Lands and Heritage, Western Australia
<b>DRF</b>	Declared Rare Flora (now known as Threatened Flora)
<b>DWER</b>	Department of Water and Environmental Regulation, Western Australia
<b>EP Act</b>	<i>Environmental Protection Act 1986</i> , Western Australia
<b>EPA</b>	Environmental Protection Authority, Western Australia
<b>EPBC Act</b>	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Federal Act)
<b>GIS</b>	Geographical Information System
<b>ha</b>	Hectare (10,000 square metres)
<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>PEC</b>	Priority Ecological Community, Western Australia
<b>RIWI Act</b>	<i>Rights in Water and Irrigation Act 1914</i> , Western Australia
<b>TEC</b>	Threatened Ecological Community

### Definitions:

{DBCA (2019) Conservation Codes for Western Australian Flora and Fauna. Department of Biodiversity, Conservation and Attractions, Western Australia}:-

**T** **Threatened species:**

Listed by order of the Minister as Threatened in the category of critically endangered, endangered or vulnerable under section 19(1), or is a rediscovered species to be regarded as threatened species under section 26(2) of the *Biodiversity Conservation Act 2016* (BC Act).

**Threatened fauna** is that subset of 'Specially Protected Fauna' listed under schedules 1 to 3 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for Threatened Fauna.

**Threatened flora** is that subset of 'Rare Flora' listed under schedules 1 to 3 of the *Wildlife Conservation (Rare Flora) Notice 2018* for Threatened Flora.

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 in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines*".

Listed as critically endangered under section 19(1)(a) of the BC Act in accordance with the criteria set out in section 20 and the ministerial guidelines. Published under schedule 1 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for critically endangered fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for critically endangered flora.

**EN Endangered species**

Threatened species considered to be "*facing a very high risk of extinction in the wild in the near future, as determined in accordance with criteria set out in the ministerial guidelines*".

Listed as endangered under section 19(1)(b) of the BC Act in accordance with the criteria set out in section 21 and the ministerial guidelines. Published under schedule 2 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for endangered fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for endangered flora.

**VU Vulnerable species**

Threatened species considered to be "*facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with criteria set out in the ministerial guidelines*".

Listed as vulnerable under section 19(1)(c) of the BC Act in accordance with the criteria set out in section 22 and the ministerial guidelines. Published under schedule 3 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for vulnerable fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for vulnerable flora.

**Extinct Species:**

**EX Extinct species**

Species where "*there is no reasonable doubt that the last member of the species has died*", and listing is otherwise in accordance with the ministerial guidelines (section 24 of the BC Act).

Published as presumed extinct under schedule 4 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for extinct fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for extinct flora.

**EW Extinct in the wild species**

Species that "*is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; and it has not been recorded in its known habitat or expected habitat, at appropriate seasons, anywhere in its past range, despite surveys over a time frame appropriate to its life cycle and form*", and listing is otherwise in accordance with the ministerial guidelines (section 25 of the BC Act).

Currently there are no threatened fauna or threatened flora species listed as extinct in the wild. If listing of a species as extinct in the wild occurs, then a schedule will be added to the applicable notice.

**Specially protected species:**

Listed by order of the Minister as specially protected under section 13(1) of the BC Act. Meeting one or more of the following categories: species of special conservation interest; migratory species; cetaceans; species subject to international agreement; or species otherwise in need of special protection.

Species that are listed as threatened species (critically endangered, endangered or vulnerable) or extinct species under the BC Act cannot also be listed as Specially Protected species.

**MI Migratory species**

Fauna that periodically or occasionally visit Australia or an external Territory or the exclusive economic zone; or the species is subject of an international agreement that relates to the protection of migratory species and that binds the Commonwealth; and listing is otherwise in accordance with the ministerial guidelines (section 15 of the BC Act).

Includes 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 fauna subject to the *Convention on the Conservation of Migratory Species of Wild Animals* (Bonn Convention), an environmental treaty under the United Nations Environment Program. Migratory species listed under the BC Act are a subset of the migratory animals, that are known to visit Western Australia, protected under the international agreements or treaties, excluding species that are listed as Threatened species.

Published as migratory birds protected under an international agreement under schedule 5 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

**CD Species of special conservation interest (conservation dependent fauna)**

Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened, and listing is otherwise in accordance with the ministerial guidelines (section 14 of the BC Act).

Published as conservation dependent fauna under schedule 6 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

**OS Other specially protected species**

Fauna otherwise in need of special protection to ensure their conservation, and listing is otherwise in accordance with the ministerial guidelines (section 18 of the BC Act).

Published as other specially protected fauna under schedule 7 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

**P Priority species:**

Possibly threatened species that do not meet survey criteria, or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened fauna or flora.

Species that are adequately known, are rare but not threatened, or meet criteria for near threatened, or that have been recently removed from the threatened species or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4. These species 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.

**Principles for clearing native vegetation:**

- (a) Native vegetation should not be cleared if it comprises a high level of biological diversity.
- (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.
- (c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened 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.
- (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.
- (f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.
- (g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.
- (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.
- (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.
- (j) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.