

# Clearing Permit Decision Report

## 1. Application details and outcomes

### 1.1. Permit application details

Permit number:	9787/1
Permit type:	Area Permit
Applicant name:	Exmouth Quarries & Concrete Pty Ltd
Application received:	28 June 2022
Application area:	0.648 ha
Purpose of clearing:	Limestone Mining
Method of clearing:	Mechanical Removal
Tenure:	Mining Lease 08/62
Location (LGA area/s):	Shire of Exmouth

### 1.2. Description of clearing activities

Exmouth Quarries & Concrete Pty Ltd proposes to clear up to 0.648 hectares of native vegetation within a boundary of 0.648 hectares, for the purpose of limestone mining. The project is located approximately four kilometres south of Exmouth.

The proponent was granted a clearing permit which has now expired (CPS 4338/2); hence the applicant submitted this new application covering a smaller section for clearing in comparison to the previous permit. The proposed clearing is for an expansion of an existing limestone quarry located immediately east of the application area.

### 1.3. Decision on application and key considerations

Decision:	Grant
Decision date:	28 July 2022
Decision area:	0.648 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 28 June 2022. DMIRS advertised the application for a public comment for a period of 21 days, and one submissions were received.

In making this decision, the Delegated Officer had regard for public submissions (Appendix A), the site characteristics (Appendix B), relevant datasets (Appendix E), the clearing principles set out in Schedule 5 of the EP Act (Appendix C), proposed avoidance and minimisation measures (Section 3.1), and 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; and
- potential impacts to an ephemeral drainage line, and consequently on surface water flow.

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 can be minimised and managed to be 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; and
- avoid impacts to riparian vegetation and maintain surface water flow.

## 2. Legislative context

The clearing of native vegetation in Western Australia is regulated under the EP Act and the Environmental Protection CPS 9787/1

(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 includes:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Conservation and Land Management Act 1984* (WA) (CALM Act)
- *Country Areas Water Supply Act 1947* (WA) (CAWS Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC 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)
- *Procedure: Native vegetation clearing permits* (DWER, October 2021)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)

### 3. Detailed assessment of application

#### 3.1. Avoidance and mitigation measures

The applicant has provided the following avoidance measure to support this clearing permit application:

- The densely vegetated channel at the south west corner of the tenement M08/62, although previously approved for clearing under the clearing permit 4338/2, has been excluded from the current application.

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 B) 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 C) identified the impacts of the proposed clearing are limited and able to be managed to be environmentally acceptable with standard avoid and minimise, hygiene management conditions.

##### 3.2.1. Biological values - Clearing Principles (a)

###### Assessment

The following three Priority flora species were identified as potentially occurring within the application area based on a desktop assessment of suitable landscape features and soil types:

- *Corchorus congener* (P3)
- *Cucumis* sp. Barrow Island (P2)
- *Tephrosia* sp. North West Cape (P2)

None of these species have previously been recorded within the application area (DBCA, 2022; GIS Database). Suitable habitats for these species are found elsewhere within the Cape Range region, with substantial areas protected within Cape Range National Park (GIS Database). Part of the application area has previously been disturbed for mining operations under the former clearing permit. Therefore, the proposed clearing is unlikely to have a significant impact on the conservation status of these species in the event they are present within the application area.

###### Conclusion

Based on the above assessment, the proposed can be managed to be environmentally acceptable with avoid and minimise, and hygiene management conditions

###### Conditions

No flora management conditions required.

#### 3.3. Relevant planning instruments and other matters

The clearing permit application was advertised on 5 July 2022 by the Department of Mines, Industry Regulation and Safety inviting submissions from the public. One submission was received in relation to this application on 26 July 2022 (further detail in Appendix A).

There is one joint native title claim (WC1997/028, WC2018/015, WC2019/005) over the area under application (DPLH, 2022). This claim has been determined by the Federal Court on behalf of the claimant groups. 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, 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.

Other relevant authorisations required for the proposed land use include:

- A Mining Proposal / Mine Closure Plan approved under the *Mining Act 1978*.

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.

**End**

## Appendix A. Details of public submissions

Summary of comments	Consideration of comment
<p>One direct interest party submission was received requesting that no vegetation is to be cleared until heritage survey of the area has been conducted to the satisfaction of the traditional owners.</p>	<p>DMIRS has made the permit holder aware of the direct interest party's concerns and sought information on how the concerns raised will be addressed.</p> <p>The applicant informed that in 2006 a formal heritage survey was conducted and no sites of archaeological significance were found. The applicant is now seeking to commission further heritage survey for expansion into another tenement (M 08/494), which is not part of the scope of this clearing permit and assessment.</p> <p>It is noted that there are no registered Aboriginal Sites of Significance within the application area (DPLH, 2022). It is the proponent's responsibility to comply with the <i>Aboriginal Heritage Act 1972</i> and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.</p>

## Appendix B. Site characteristics

### B.1. Site characteristics

Characteristic	Details
Local context	The project is located approximately four kilometres south of Exmouth, within the Shire of Exmouth in the extensive land use zone. The predominant land use in the region is grazing of native pastures, conservation, mining activity and urban development.
Ecological linkage and Conservation areas	The application area is located approximately five kilometres east of the Cape Range National Park (GIS Database). The application area does not represent an ecological linkage to other areas of vegetation.
Vegetation description	<p>The vegetation of the application area is broadly mapped as the following Beard vegetation association: 663: Hummock grasslands, shrub steppe; waterwood over soft spinifex (GIS Database).</p> <p>Although it did not cover the application area, a flora and vegetation survey was undertaken over an area immediately south of this application by Samantha Richards (Richards, 2021) to support a recent clearing permit application for the same company. The survey was conducted in September 2021. The vegetation of this surveyed area has a uniform composition, dominated by <i>Acacia</i> shrubland and <i>Triodia</i> grasses (Richards, 2021).</p>
Vegetation condition	<p>Part of the application area has been previously cleared and the remainder is covered by sparse vegetation (GIS Database). The vegetation survey (Richards, 2021) indicates the vegetation adjacent to the proposed clearing area is in good (Keighery, 1994) condition, described as:</p> <ul style="list-style-type: none"> <li>• Good – Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and/or grazing.</li> </ul> <p>The full Keighery (1994) condition rating scale is provided in Appendix D.</p>
Climate and landform	The application area is mapped within elevations of 20-30 metres AHD (GIS Database). The climate of the region is arid, semi-desert to subtropical, with an average rainfall of approximately 251.5 millimetres per year (BoM, 2022; CALM, 2002).
Land degradation risk and soil description	The application area is located within the Cape Giralia Coastal Zone, characterised by sandy plains, alluvial plains and hills and ranges on Cainozoic deposits and marine limestone over sedimentary rocks of the Carnarvon Basin with red deep sands and red loamy earths (DPIRD, 2022). The soil is mapped as part of the Range System, described as dissected limestone plateaux, hills and ridges with gorges and steep stony slopes supporting hard spinifex, sparse shrubs and eucalypts (DPIRD, 2022).
Waterbodies	The desktop assessment and aerial imagery indicate that one minor, non-perennial watercourse intersects the area proposed to be cleared.

Characteristic	Details
Hydrogeography	The application area is located within Exmouth Water Reserve (GIS Database). The application area is located within the Gascoyne Ground Water Area proclaimed under the <i>Rights in Water and Irrigation Act 1914</i> . The mapped groundwater salinity is 500-1,000 milligrams per litre total dissolved solids which is described as marginal.
Flora	There are records of 15 Priority flora species within 10 kilometres of the application area. None of these records are within the application area.
Ecological communities	There are no mapped Threatened or Priority Ecological Communities (TECs/PECs) within the application area. The nearest TEC is located approximately 1.5 kilometres north of the application area (GIS Database).
Fauna	A NatureMap search identified 31 bird, seven invertebrate, one mammal and one reptile species of conservation significance within a 10 kilometre radius of the application area (DBCA, 2022). No conservation significant fauna species have previously been recorded within the application area (GIS Database).

## B.2. Flora analysis table

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

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable soil type? [Y/N]	Radius of search (km)	Number of known records within 10 kilometres (total)	Are surveys adequate to identify? [Y, N, N/A]
<i>Acacia alexandri</i>	P3	N	Y	10	4	N
<i>Acacia startii</i>	P3	N	Y	10	1	N
<i>Acanthocarpus rupestris</i>	P2	N	N	10	2	N
<i>Brachychiton obtusilobus</i>	P4	N	N	10	2	N
<i>Corchorus congener</i>	P3	Y	Y	10	1	N
<i>Cucumis</i> sp. Barrow Island (D.W. Goodall 1264)	P2	Y	Y	10	1	N
<i>Eremophila forrestii</i> subsp. <i>capensis</i>	P3	N	N	10	1	N
<i>Eremophila youngii</i> subsp. <i>lepidota</i>	P4	N	N	10	1	N
<i>Grevillea calcicola</i>	P3	N	N	10	1	N
<i>Harnieria kempeana</i> subsp. <i>rhadinophylla</i>	P2	N	N	10	1	N
<i>Phyllanthus fuernrohrii</i>	P3	N	N	10	2	N
<i>Stackhousia umbellata</i>	P3	N	N	10	6	N
<i>Tephrosia</i> sp. North West Cape (G. Marsh 81)	P2	Y	Y	10	2	N
<i>Tinospora esiangkara</i>	P2	N	N	10	2	N
<i>Verticordia serotina</i>	P2	N	N	10	1	N

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority

## Appendix C. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Principle (a):</u> <i>“Native vegetation should not be cleared if it comprises a high level of biodiversity.”</i></p> <p><u>Assessment:</u></p> <p>According to available GIS databases (2022), there are no known Threatened or Priority flora within the application area. A flora assessment did not identify any Threatened or Priority flora adjacent to the application area (Richards, 2021). No conservation significant fauna have been recorded within the application area (GIS Database).</p> <p>The vegetation within the application area is unlikely to represent any Threatened or Priority Ecological Communities (GIS Database).</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.1, above.</i>
<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>The NatureMap search radius of the application area intersects the ocean, with bird species recorded categorised as waders or seabirds and are generally migratory or highly mobile (DBCA, 2022). The proposed clearing area does not contain any suitable habitat for these species.</p> <p>Invertebrate species recorded are associated with the Camerons Cave Troglitic Community TEC (DBCA, 2020). This TEC does not intersect the application area, and it is unlikely that other caves or subterranean habitat is present within the application area (GIS Database).</p> <p>Suitable dispersal and foraging habitat for the Cape Range stone gecko (<i>Diplodactylus capensis</i>, P2) and black-footed rock-wallaby (<i>Petrogale lateralis lateralis</i>, EN) may be present within the application area as they are distributed throughout the Cape Range (DBCA, 2022; GIS Database). However, the proposed clearing area is small in a local context and located adjacent to existing limestone quarry operations, concrete batching plant, and limestone block manufacturing plant. It is unlikely that the area proposed for clearing represents significant habitat for these species.</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 known records of Threatened flora within the application area or nearby (GIS Database). A flora survey adjacent to the application area did not record any species of Threatened flora (Richards, 2021) and the vegetation proposed to be cleared is not expected to support any species of Threatened flora (GIS Database).</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>There are no known Threatened Ecological Communities (TECs) located within the application area (GIS Database). The nearest TEC (Camerons Cave Troglitic TEC) is located approximately 1.5 kilometres north of the application area (GIS Database). The vegetation proposed to be cleared is not considered necessary for the maintenance of this TEC.</p>	Not likely to be 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 Carnarvon Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). Approximately 99 % of the pre-European vegetation still exists in the Carnarvon Bioregion (Government of Western Australia, 2019).</p> <p>The application area is broadly mapped as Beard vegetation association 663 (GIS Database). This vegetation association has not been extensively cleared as</p>	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<p>approximately 85-88% of the pre-European extent of this vegetation association remains uncleared at both the state and bioregional level (Government of Western Australia, 2019). The permit area does not contain any remnants nor does it form part of any remnants in the local area (GIS Database).</p>		
<p><b>Principle (h):</b> <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>There are no conservation areas in the vicinity of the application area. The nearest DBCA managed land is the Cape Range National Park which is located approximately five kilometres west of the application area (GIS Database). The proposed clearing is unlikely to have an impact on the environmental values of Cape Range National Park.</p>	Not likely to be at variance	No
<b>Environmental value: land and water resources</b>		
<p><b>Principle (f):</b> <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>The Cape Range Subterranean Waterways, listed on the Directory of Important Wetlands in Australia, is mapped adjacent the application area (GIS Database). Given that the proposed clearing area is relatively small, and the subterranean wetland spans around the coast of the Cape Range, the proposed clearing is unlikely to adversely impact vegetation growing in association with this wetland.</p> <p>The application area has one minor ephemeral drainage line (GIS Database). Drainage lines within the project area are poorly defined and are only likely to flow following major rainfall events. As the vegetation associated with this ephemeral drainage line may be cleared, it is recommended to maintain surface water flow or reinstate downstream into existing natural drainage lines.</p> <p>The proposed clearing is unlikely to significant impact vegetation growing in association with any watercourse or wetland.</p>	Not likely to be at variance	No
<p><b>Principle (g):</b> <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>There are two soil types mapped over the application area (Northcote et al., 1960-68; GIS Database):</p> <ul style="list-style-type: none"> <li>- Narrow coastal plain: shallow loams on limestone with sands overlying limestone. There are some red sands in dunes.</li> <li>- Rugged limestone ranges: steeply dissected and with cliff faces forming their margins. The area is dominated by bare limestone and there are pockets of shallow calcareous loams.</li> </ul> <p>Given the proximity to the coast (approximately 1.7 kilometres) and the potential for sandy soils to be present within the application area, the proposed clearing may be at risk of wind erosion when vegetation cover is removed (GIS Database). However, the proposed area to be cleared is small and part of it has already been degraded, hence, the risk for land degradation is considered to be minimal. No evidence of erosion is visible from previous disturbance within the application area (GIS Database).</p>	Not likely to be at variance	No
<p><b>Principle (i):</b> <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>The application area has been mapped within the Exmouth Water Reserve which is listed as a Public Drinking Water Source Area (PDWSA) and the Exmouth Water Reserve Protection Zone (GIS Database, DWER, 2022). The water source is vulnerable to contamination due to the unconfined nature of the aquifer (DWER, 2022). Furthermore, the application area is located within the Gascoyne Groundwater Area, and Pilbara Surface Water Area proclaimed under the <i>Rights in Water and Irrigation Act 1914</i> (DWER, 2022). Therefore, any take of groundwater or surface water will require licencing (DWER, 2022)</p>	May be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<p>The main risks to the water source from the proposed quarry expansion is through mining operations, detailed by the Department of Water (2022) as:</p> <ul style="list-style-type: none"> <li>- hydrocarbon and other hazardous substance contamination due to the use vehicles and machinery;</li> <li>- microbiological contamination of the water source due to the generation of waste through human activities;</li> <li>- contamination of groundwater through flood or leaks of chemicals stored on site;</li> <li>- use of chemicals, washdown of equipment and spills from machinery; and</li> <li>- reduced vegetation buffers and increased turbidity.</li> </ul> <p>These activities are compatible with conditions in a Priority 1 (P1) Public Drinking Water Source Area (WQPN 25 - Land use compatibility in Public Drinking Water Source Areas) (DWER, 2022). Therefore, the proponent is required to comply with the best management practices as outlined in Department's <i>Water Quality Protection Notes (6- Vegetation buffers to sensitive water resources; 15 – Extractive industries near sensitive water resources, and 56 - Tanks for fuel and chemical storage near sensitive water resources)</i> (DWER, 2022).</p> <p>The proponent is also required to comply with tenement conditions under the <i>Mining Act 1978</i>. These conditions outline how mining activity within the PDWSA must comply with the Department of Water and Environmental Regulation's document 'Water Quality Protection Note 25 Land Use Compatibility in Public Drinking Water Source Areas'.</p> <p>The small reduction of local vegetation cover associated with this clearing proposal is unlikely to cause deterioration to groundwater in the Exmouth Water Reserve. Given no significant water courses are recorded within the application area, the proposed clearing is unlikely to impact surface water quality (GIS Database).</p> <p>Following the conditions aforementioned, the proposed clearing is unlikely cause deterioration in the quality of surface water.</p>		
<p><u>Principle (i):</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>The climate of the region is arid, semi-desert to subtropical, with an average rainfall of approximately 251.5 millimetres per year (BoM, 2022; CALM, 2002). Cyclonic activity can be significant, and cyclonic systems may affect the coast and hinterland annually (CALM, 2002).</p> <p>There are no permanent water courses or waterbodies within the application area, however there are numerous ephemeral drainage lines and oceanic discharge waterlines within the surrounds (GIS Database). Intense thunderstorms, cyclonic rain and run-off events are a feature of the Cape Range climate, however the proposed clearing of 0.648 hectares is unlikely to increase the incidence or intensity of flooding events.</p>	Not likely to be at variance	No

**Appendix D. 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

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

**Measuring vegetation condition for the South West and Interzone Botanical Province (Keighery, 1994)**

Condition	Description
Pristine	Pristine or nearly so, no obvious signs of disturbance.



Condition	Description
Excellent	Vegetation structure intact, with disturbance affecting individual species; weeds are non-aggressive species.
Very good	Vegetation structure altered, with obvious signs of disturbance. For example, disturbance to vegetation structure caused by repeated fires, the presence of some more aggressive weeds, dieback, logging and/or grazing.
Good	Vegetation structure significantly altered by very obvious signs of multiple disturbances. Retains basic vegetation structure or ability to regenerate it. For example, disturbance to vegetation structure caused by very frequent fires, the presence of some very aggressive weeds at high density, partial clearing, dieback and/or grazing.
Degraded	Basic vegetation structure severely impacted by disturbance. Scope for regeneration but not to a state approaching good condition without intensive management. For example, disturbance to vegetation structure caused by very frequent fires, the presence of very aggressive weeds, partial clearing, dieback and/or grazing.
Completely degraded	The structure of the vegetation is no longer intact and the area is completely or almost completely without native species. These areas are often described as 'parkland cleared' with the flora comprising weed or crop species with isolated native trees or shrubs.

## Appendix E. Sources of information

### E.1. GIS databases

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

- Clearing Regulations – Schedule One Areas (DWER-057)
- DBCA – Lands of Interest (DBCA-012)
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)
- Groundwater Salinity Statewide (DWER-026)
- Hydrography, Linear (DWER-031)
- IBRA Vegetation Statistics
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Mapping – Best Available (DPIRD-027)
- 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)

### E.2. References

- BoM (2022) Bureau of Meteorology Website – Climate Data Online, Learmonth Airport. Bureau of Meteorology. <http://www.bom.gov.au/climate/data/> (Accessed 20 July 2022).
- CALM (2002) A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002. Department of Conservation and Land Management, Western Australia.
- Department of Biodiversity, Conservation and Attractions (DBCA) (2022) Advice to Assessing Officer in Regards to Clearing Permit Application CPS 9397/1. Advice received 10 February, 2022.
- 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 31 May 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/hrm-info/> (Accessed 20 June 2022).
- Department of Water and Environmental Regulation (DWER) (2022) Advice to Assessing Officer in Regards to Clearing Permit Application CPS 9787/1. Advice received 14 July, 2022.
- 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>
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.

## 4. Glossary

### Acronyms:

<b>BC Act</b>	<i>Biodiversity Conservation Act 2016, Western Australia</i>
<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, Western Australia</i>
<b>EPA</b>	Environmental Protection Authority, Western Australia
<b>EPBC Act</b>	<i>Environment Protection and Biodiversity Conservation Act 1999 (Federal Act)</i>
<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, Western Australia</i>
<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.

