



Clearing Permit Decision Report

1. Application details and outcomes

1.1. Permit application details

Permit number:	9743/1
Permit type:	Area Permit
Applicant name:	Golden Mile Milling Pty Ltd
Application received:	18 May 2022
Application area:	40 hectares
Purpose of clearing:	Construction of an additional tailings storage facility and associated infrastructure
Method of clearing:	Mechanical Removal
Tenure:	Mining Lease 26/242
Location (LGA area/s):	City of Kalgoorlie-Boulder
Colloquial name:	Lakewood Mill Tailings Storage Facility 2

1.2. Description of clearing activities

Golden Mile Milling Pty Ltd proposes to clear up to 40 hectares of native vegetation within a boundary of 40 hectares, for the purpose of constructing a new tailings storage facility and associated infrastructure. The project is located approximately five kilometres south-east of Boulder, within the City of Kalgoorlie-Boulder

1.3. Decision on application and key considerations

Decision:	Grant
Decision date:	23 June 2022
Decision area:	40 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 18 May 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), supporting information provided by the applicant including the results of a flora and vegetation survey, the clearing principles set out in Schedule 5 of the EP Act (Appendix B), 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 (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 and mitigation measures to support this clearing permit application:

- The project has been designed to avoid interruption to the hydrological regime of the primary natural drainage line adjacent to the eastern boundary of the development envelope.
- Installation of a wind fence around the perimeter of the site to manage potential land degradation from erosion and sedimentation during clearing.

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 minimise, hygiene, and staged clearing management conditions.

3.2.1. Biological values - Clearing Principles (a)

Assessment

Eco Logical Australia conducted a reconnaissance flora and vegetation survey of the application and surrounding areas on 8 October 2018. A total of three vegetation communities were identified, of which none were representative of any Priority or Threatened Ecological Communities (Eco Logical Australia, 2018b). The majority of the vegetation within the application area was in good condition (Eco Logical Australia, 2018b).

A desktop assessment conducted by Eco Logical Australia (2018b) identified a total of 378 flora species from 57 families with the potential to occur within the application area, including 65 introduced species. However, a total of 28 flora species from 11 genera and 18 families were recorded by Eco Logical Australia (2018b) during the reconnaissance survey in the application and surrounding areas. Based on desktop and database searches, Eco Logical Australia (2018b) undertook a likelihood of occurrence assessment for threatened and priority flora species. As a result, eight conservation significant flora species were classified as potentially occurring within the application area. However, none of these were considered likely to occur due to a lack of suitable habitat, and none were recorded during the field survey (Eco Logical Australia, 2018b).

No weeds were recorded during the flora and vegetation assessment of the application area (Eco Logical Australia, 2018b). Weeds have the potential to out-compete native flora and reduce the biodiversity of an area. Potential impacts to biodiversity as a result of the introduction of weeds may be minimised by the implementation of a weed management condition.

Conclusion

Based on the above assessment, the proposed clearing area is unlikely to represent an area of high biodiversity value. The proposal can be managed to be environmentally acceptable with standard avoid/minimise and hygiene management conditions.

Conditions

No flora management conditions required.

3.2.2. *Biological values - Clearing Principle (b)*

Assessment

Two fauna habitats were described in the application area as Chenopod shrubland and *Tecticornia* drainage lines; however, they were not considered significant in a local or regional context (Eco Logical Australia, 2018a). A desktop assessment conducted by Eco Logical Australia in 2018 identified a total of 246 fauna species, including 59 conservation significant fauna species with the potential to occur within the application area. The likelihood of occurrence assessment for threatened and priority fauna species conducted by Eco Logical Australia (2018a) identified three conservation significant fauna species were considered likely to be present in the application area due to the presence of suitable habitat. These species were: Fork-tailed Swift, *Apus pacificus* (migratory), Rainbow Bee-eater, *Merops ornatus* (migratory), and Grey Wagtail, *Motacilla cinerea* (migratory). However, due to their highly mobile nature and large home ranges, it is unlikely that the proposed clearing will significantly impact these species.

The application area is surrounded by existing disturbances for mining-related infrastructure (GIS Database). Additionally, due to the homogeneity of the fauna habitat and relatively degraded nature, there is reduced opportunity to support a diverse range of fauna species (Eco Logical Australia, 2018a). The fauna habitats are common and well represented throughout the Kalgoorlie and surrounding regions (Eco Logical Australia, 2018a; GIS Database). Therefore, the habitat present is not considered significant in a local or regional context.

The clearing of 40 hectares of native vegetation is not likely to impact significant habitats for any fauna species.

Conclusion

For the reasons set out above, it is considered that the proposed clearing is not likely to have significant impacts to fauna species or their habitat.

Conditions

Based on the above, no specific fauna management conditions are required on the permit.

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

The clearing permit application was advertised on 31 May 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 are two native title claims (WC2017/007, WC2017/001) over the area under application (DPLH, 2022). These claims have been registered with the National Native Title Tribunal 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. Site characteristics

A.1. Site characteristics

Characteristic	Details
Local context	The project is located approximately five kilometres south-east of Boulder, within the City of Kalgoorlie-Boulder 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	As the application area is located adjacent to an existing mine and is to allow for the expansion of mining activities, it is not considered to be an ecological linkage to other areas of vegetation. The nearest conservation area is Lakeside Timber Reserve which is located approximately four kilometres south-east of the application area (GIS Database).
Vegetation description	<p>The vegetation of the application area is broadly mapped as the following Beard vegetation associations:</p> <p>468: Medium woodland; salmon gum and goldfields blackbutt; and 540: Succulent steppe with open low woodland; sheoak over saltbush (GIS Database). The majority of the application area is mapped as Beard vegetation association 540 (GIS Database).</p> <p>A reconnaissance flora and vegetation survey was conducted over the application area by Eco Logical Australia on 8 October 2018. The following vegetation communities were recorded within the application area (Eco Logical Australia, 2018b):</p> <p>S1: <i>Atriplex nummularia</i>, <i>Atriplex bunburyana</i> mid isolated chenopod shrubs over <i>Tecticornia indica</i> subsp. <i>bidens</i>, <i>Tecticornia disarticulata</i> low open samphire shrubland and <i>Frankenia cinerea</i> low sparse shrubland; S2: <i>Myoporum montanum</i> tall isolated shrubs over <i>Lycium australe</i>, <i>Maireana pyramidata</i>, <i>Cratystylis subspinescens</i> mid sparse shrubland over <i>Tecticornia indica</i> subsp. <i>bidens</i>, <i>Tecticornia disarticulata</i> low open samphire shrubland and <i>Frankenia cinerea</i> low sparse shrubland; and S3: <i>Tecticornia indica</i> subsp. <i>bidens</i>, <i>Tecticornia disarticulata</i> low isolated samphire shrubs.</p> <p>The S1 vegetation community was recorded over the majority of the application area (Eco Logical Australia, 2018b).</p>
Vegetation condition	<p>The vegetation survey (Eco Logical Australia, 2018) indicates the vegetation within the proposed clearing area is in good to degraded condition (Keighery, 1994), described as:</p> <ul style="list-style-type: none"> • Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate <p>To</p> <ul style="list-style-type: none"> • Degraded: Structure severely disturbed; regeneration to good condition requires intensive management <p>The full Keighery (1994) condition rating scale is provided in Appendix C.</p>
Climate and landform	The application area is mapped at an elevation of 340 metres AHD (GIS Database). The annual average rainfall (Kalgoorlie-Boulder) is 265.6 millimetres (BoM, 2022).
Land degradation risk and soil description	The application area is located within the Kambalda Soil-Landscape Zone (DPIRD, 2022). This zone is characterised by flat to undulating plains with hills, ranges and some salt lakes and stony plains on greenstone and granitic rocks of the Yilgarn Craton (DPIRD, 2022). The soil is mapped as Mx43, described as gently undulating valley plains and pediments, as well as some outcrops of basic rock (DPIRD, 2022).
Waterbodies	The desktop assessment and aerial imagery indicate that one minor, non-perennial watercourse intersects the area proposed to be cleared.
Hydrogeography	According to available databases, the application area is not located within a Public Drinking Water Source Area (GIS Database). There are no permanent waterbodies or watercourses within the application area (GIS Database). The mapped groundwater salinity is >35,000 milligrams per litre total dissolved solids which is described as hypersaline.
Flora	There are no records of Threatened or Priority flora within the application area, however there are records of eight conservation significant flora species (one Threatened and seven Priority) within 10 kilometres of the application area (GIS Database).
Ecological communities	There are no mapped Threatened or Priority Ecological Communities (TEC/PEC) within or in close proximity to the application area.

Characteristic	Details
Fauna	Eco Logical (2018) desktop assessment identified a total of 246 fauna species (59 conservation significant and 16 introduced species) as potentially occurring within 10 kilometres of the application area. Fork-tailed Swift, <i>Apus pacificus</i> (migratory), Rainbow Bee-eater, <i>Merops ornatus</i> (migratory), and Grey Wagtail, <i>Motacilla cinerea</i> (migratory) are the only conservation significant fauna species considered as possibly occurring in the survey area (Eco Logical,2018).

A.2. Flora analysis table

Flora analysis of records within 10 kilometres of the application area their likelihood of occurrence (Eco Logical, 2018).

Species	Conservation code		Source ³	Preferred habitat	Likelihood of occurrence	Justification for likelihood rating
	EPBC Listing ¹	WA Listing ²				
<i>Gastrolobium graniticum</i>	EN	S3	PMST	An erect open shrub that grows to 2.5m high. It has yellow, orange and red flowers from August to September. It occurs on sand, sandy loam and granite. It does also occur on rock outcrops and along drainage lines. It has been recorded in Kalgoorlie-Boulder (DBCA 2018).	No	Preferred habitat does not occur
<i>Eremophila praecox</i>		P1	Naturemap	Broom like shrub that grows between 1.5 to 3m. It has purple flowers between October and December. It grows on red/ brown sandy loam across undulating plains. It has been recorded in Kalgoorlie-Boulder (DBCA 2018).	No	Preferred habitat does not occur
<i>Ptilotus procumbens</i>		P1	Naturemap	Spreading procumbent annual herb. It grows to 0.1 m and has pink/ white flowers during November. It is found on red clays. It has been recorded in Kalgoorlie-Boulder (DBCA 2018).	No	Preferred habitat does not occur
<i>Elachanthus pusillus</i>		P2	Naturemap	Ascending or decumbent annual herb. It grows to 0.15m high and flowers between August to October. It has been recorded in Kalgoorlie-Boulder (DBCA 2018).	No	Preferred habitat does not occur
<i>Lepidium fasciculatum</i>		P3	Naturemap	Erect annual herb that grows up from 0.3 to 0.6 m. It has been recorded in Kalgoorlie-Boulder (DBCA 2018).	No	Preferred habitat does not occur

<i>Melaleuca coccinea</i>		P3	Naturemap	A shrub with multiple branches. It grows between 1.5 to 2.6 m high with leaf blade elliptic to ovate. The leaves are approximately 2 times as long as wide. It produces red flowers between September to November/ January. It grows on sandy loam over granite and granite outcrops. It also grows on sandplains and river valleys. It has been recorded in Kalgoorlie-Boulder (DBCA 2018).	No	Preferred habitat does not occur
<i>Eucalyptus x brachyphylla</i>		P4	Naturemap	A tree that grows up to 4 m in height. It has rough bark and flakes off. Produces white flowers in June. The species grows on sandy loam soils and granite outcrops. It has been recorded in Kalgoorlie-Boulder (DBCA 2018).	No	Preferred habitat does not occur
<i>Frankenia glomerata</i>		P4	Naturemap	Prostrate shrub that has pink/ white flowers in November. It grows on white sand and has been recorded in Kalgoorlie-Boulder (DBCA 2018).	No	Preferred habitat does not occur

CR = listed as Critically Endangered under the EPBC Act.
EN = listed as Endangered under the EPBC Act.
VU = listed as Vulnerable under the EPBC Act.

¹Species listed in Western Australia under the *Wildlife Conservation Act 1950* (WC Act) or by the Department of Biodiversity, Conservation and Attractions (DBCA).

S1 = Schedule 1: Flora that are considered likely to become extinct or rare, as critically endangered flora (CR) under the WC Act.

S2 = Schedule 2: Flora that are considered likely to become extinct or rare, as endangered flora (EN) under the WC Act.

S3 = Schedule 3: Flora that are considered likely to become extinct or rare, as vulnerable flora (VU) under the WC Act.

P1 = Priority 1: Poorly-known species – species that are known from one or a few locations (generally five or less) which are potentially at risk (DBCA).

P2 = Priority 2: 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 (DBCA).

P3 = Priority 3: Poorly known species – species that are known from several locations, and the species does not appear to be under imminent threat (DBCA).

P4 = Priority 4: Rare, Near Threatened and other species in need of monitoring (DBCA).

²NatureMap = NatureMap database search (DBCA 2007-2018).

³PMST = EPBC Act Protected Matters Search Tool (DoIEE 2018).

Appendix B. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
<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>A flora assessment did not identify any Threatened or Priority flora within the application area (Eco Logical Australia, 2018b). No conservation significant fauna have been recorded within the permit area (GIS Database).</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.1, above.</i>

Assessment against the clearing principles	Variance level	Is further consideration required?
There are no known Threatened or Priority Ecological Communities within the permit area (GIS Database).		
<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 application area is surrounded by existing disturbance for mining related infrastructure (GIS Database). The habitats described within the application area are common and widespread in the local and regional area, and they do not support a diverse range of fauna species due to their homogeneity and relatively degraded nature (Eco Logical Australia, 2018a).</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.2, above.</i>
<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 (GIS Database). A flora survey of the application area did not record any species of Threatened flora (Eco Logical Australia, 2018b), 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 or in close proximity to the application area (GIS Database).</p> <p>A flora and vegetation survey of the application area did not identify any TECs (Eco Logical Australia, 2018b).</p>	Not likely to be at variance	No
Environmental value: significant remnant vegetation and conservation areas		
<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 Coolgardie Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). Approximately 97% of the pre-European vegetation still exists in the IBRA Coolgardie Bioregion (Government of Western Australia, 2018a).</p> <p>The majority of the application area is broadly mapped as Beard vegetation association 540, and a very small section is mapped as 468 (GIS Database). These vegetation associations have not been extensively cleared as approximately 87-88% of the pre-European extent of these vegetation associations remain uncleared at both the state and bioregional level (Government of Western Australia, 2018a). The permit area does not contain any remnants nor does it form part of any remnants in the local area (GIS Database).</p>	Not likely to be 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>There are no conservation areas in the vicinity of the application area. The nearest DBCA managed land is the Lakeside Timber Reserve which is located approximately four kilometres south-east of the application area (GIS Database). The proposed clearing is unlikely to impact on the environmental values of any conservation area.</p>	Not likely to be at variance	No
Environmental value: land and water resources		
<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>	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<p>There are no permanent watercourses or wetlands within the area proposed to clear (GIS Database). One seasonal creek line passes through the application area and another occurs adjacent to the eastern boundary of the application area (GIS Database). Vegetation growing in association with this watercourse may be cleared, however the proponent has advised that drainage lines will be diverted around the proposed Tailings Storage Facility, maintaining water flows to downstream vegetation (Eco Logical Australia, 2018a). Creek lines in the region are dry for most of the year, only flowing briefly immediately following significant rainfall. The application area is subject to run off from elevated features to the north, including TSF1 and the Super Pit, however surface water is only present for short periods of time following rain events (Eco Logical Australia, 2018a). Therefore, 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>		
<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 proposed clearing of up to 40 hectares of native vegetation, for the purpose of a Tailings Storage Facility is unlikely to cause appreciable land degradation. The proponent has advised that the installation of wind fencing around the perimeter of the site will be implemented to manage potential land degradation from erosion and sedimentation during clearing (Eco Logical, 2018a). Therefore, the proposed clearing is not likely to cause appreciable land degradation.</p>	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). There are no permanent watercourses or wetlands within the area proposed to clear (GIS Database). Creek lines in the region are dry for most of the year, only flowing briefly immediately following significant rainfall. The proposed clearing is unlikely to result in significant changes to surface water flows.</p> <p>The groundwater in the area is hypersaline (Eco Logical, 2018a). The proposed clearing is unlikely to cause any significant impact surface or ground water quality.</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>The climate of the region is semi-arid, with a low average rainfall of approximately 250-300 millimetres per year, of mainly winter rainfall (CALM, 2002). The nearest weather station is Kalgoorlie-Boulder Airport, approximately seven kilometres west of the application area, with an average rainfall of approximately 265.6 millimetres per year (BoM, 2022).</p> <p>There are no permanent water courses or waterbodies within the application area (GIS Database). Seasonal drainage lines are common in the region and temporary localised flooding may occur briefly following heavy rainfall events. The application area lies within the Lake Lefroy catchment area (GIS Database). The clearing of 40 hectares within a catchment of approximately 2,488,207 hectares is not likely 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

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.
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 D. Sources of information

D.1. GIS databases

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

- 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)
- Hydrography, Linear (DWER-031)
- IBRA Vegetation Statistics
- Pre-European 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)

D.2. References

- BoM (2022) Bureau of Meteorology Website – Climate Data Online, Kalgoorlie-Boulder Airport. Bureau of Meteorology. <http://www.bom.gov.au/climate/data/> (Accessed 27 May 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 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
- 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.
- 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/nrm-info/> (Accessed 20 June 2022).
- Eco Logical Australia (2018a) Lakewood Mill TSF2 – Native Vegetation Clearing Permit. Report prepared for Golden Mile Milling Pty Ltd, by Eco Logical Australia, November 2018.
- Eco Logical Australia (2018b) Lakewood Mill TSF2 Flora and Vegetation Reconnaissance Survey. Report prepared for Golden Mile Milling Pty Ltd, by Eco Logical Australia, October 2018.
- 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:

BC Act	<i>Biodiversity Conservation Act 2016</i> , Western Australia
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)
DAWE	Department of Agriculture, Water and the Environment, Australian Government
DBCA	Department of Biodiversity, Conservation and Attractions, Western Australia
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)
DoEE	Department of the Environment and Energy (now DAWE)
DoW	Department of Water, Western Australia (now DWER)
DPaW	Department of Parks and Wildlife, Western Australia (now DBCA)
DPIRD	Department of Primary Industries and Regional Development, Western Australia
DPLH	Department of Planning, Lands and Heritage, Western Australia
DRF	Declared Rare Flora (now known as Threatened Flora)
DWER	Department of Water and Environmental Regulation, Western Australia
EP Act	<i>Environmental Protection Act 1986</i> , Western Australia
EPA	Environmental Protection Authority, Western Australia
EPBC Act	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (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	<i>Rights in Water and Irrigation Act 1914</i> , Western Australia
TEC	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.