



Clearing Permit Decision Report

1. Application details and outcomes

1.1. Permit application details

Permit number:	9970/1
Permit type:	Purpose Permit
Applicant name:	Jeffreys Find Pty Ltd
Application received:	21 November 2022
Application area:	90 hectares
Purpose of clearing:	Mineral Production and Associated Activities
Method of clearing:	Mechanical Removal
Tenure:	Mining Lease 63/242 Miscellaneous Licence 63/97
Location (LGA area/s):	Shire of Dundas
Colloquial name:	Jeffreys Find Gold Project

1.2. Description of clearing activities

Jeffreys Find Pty Ltd proposes to clear up to 90 hectares of native vegetation within a boundary of approximately 257.5 hectares, for the purpose of mineral production and associated activities. The project is located approximately 39 kilometres east northeast of Norseman, within the Shire of Dundas.

The application is to allow for the development of a gold operations, including an open pit, waste rock landform, access haul road, run-of-mine, and hardstand areas.

1.3. Decision on application and key considerations

Decision:	Grant
Decision date:	24 January 2023
Decision area:	90 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 21 November 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, the clearing principles set out in Schedule 5 of the EP Act (Appendix C), 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.

After consideration of the available information, 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; and
- take hygiene steps to minimise the risk of the introduction and spread of weeds.

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)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Mining Act 1978* (WA)

Relevant agreements (treaties) considered during the assessment include:

- Japan-Australia Migratory Bird Agreement
- China-Australia Migratory Bird Agreement
- Republic of Korea-Australia Migratory Bird Agreement

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 2019)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)
- Technical guidance – *Terrestrial Fauna Surveys for Environmental Impact Assessment* (EPA, 2020)

3. Detailed assessment of application

3.1. Avoidance and mitigation measures

No evidence of avoidance or mitigation measures were provided to support the application.

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 and hygiene management conditions.

3.2.1. Biological values - Clearing Principles (a and b)

Assessment

A reconnaissance flora and vegetation survey was conducted over the application area by Native Vegetation Solutions (NVS) in August 2022. The field assessment recorded 11 vegetation types within the application area, with the condition varying from 'very good', 'good', and 'degraded' (Keighery, 1994; NVS, 2022). No vegetation that represents a Threatened or Priority Ecological Community was identified during the field assessment, with all vegetation types being common and widespread throughout the Eastern Goldfields subregion (NVS, 2022).

A total of 98 flora taxa from 52 genera and 23 families were recorded within the application area during the field assessment (NVS, 2022). It was determined that there was possible suitable habitat for three priority flora species previously recorded within 20 kilometres of the application area: *Acacia kerryana* (P2), *Chrysocephalum apiculatum* subsp. *norsemanense* (P3), and *Eucalyptus polita* (P3) (NVS, 2022). While possible suitable habitat for these three species may be present, it was assessed that these species were unlikely to be found within the application area as the area was searched extensively (NVS, 2022). No threatened or priority flora species were identified during the field assessment (NVS, 2022). It is unlikely that any conservation significant flora species will be impacted by the proposed clearing.

Two weed species was identified within the application area, neither species were considered declared pests (NVS, 2022). Weeds have the potential to significantly change the dynamics of a natural ecosystem and lower the biodiversity of an area. Potential impacts to the biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed and dieback management condition.

A basic fauna habitat assessment was conducted over the application area by Terrestrial Ecosystems in September 2022. The field assessment also included a search for any evidence of malleefowl (*Leipoa ocellata*, VU) within the application area, including individuals, mounds, or tracks (Terrestrial Ecosystems, 2022). Three broad fauna habitats were identified within the application area, which are common and widespread throughout the region (Terrestrial Ecosystems, 2022).

No fauna species of conservation significance were opportunistically identified during the fauna assessment, and no evidence of malleefowl was found (Terrestrial Ecosystems, 2022). It was determined that there is a possibility that, peregrine falcon (*Falco peregrinus*, OS), western rosella (*Platycercus icterotis xanthogenys*, P4), and central long-eared bat (*Nyctophilus major tor*, P4) may infrequently utilise the application area (Terrestrial Ecosystems, 2022). However, the proposed clearing is unlikely to significantly impact on these species as the fauna habitats available are common and widespread throughout the region, and extend well beyond the application area (Terrestrial Ecosystems, 2022). It is likely that these fauna species will readily move to nearby vegetation (Terrestrial Ecosystems, 2022).

Conclusion

Based on the above assessment, it is considered that the impacts of the proposed clearing on can be managed by taking steps to minimise the risk of the introduction and spread of weeds and to avoid and minimise the extent of clearing where possible.

Conditions

To address the above impacts, the following management measures will be required as conditions on the clearing permit:

- avoid, minimise to reduce the impacts and extent of clearing; and
- take hygiene steps to minimise the risk of the introduction and spread of weeds.

3.3. Relevant planning instruments and other matters

The clearing permit application was advertised on 29 November 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 one native title claim (WC1999/002) over the area under application (DPLH, 2023). This claim has been determined by the Federal Court on behalf of the claimant group. However, the mining tenure has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore, the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

There are no registered Aboriginal Sites of Significance within the application area (DPLH, 2023). 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 that may be required for the proposed land use include:

- A Programme of Work approved under the *Mining Act 1978*.
- 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 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 surrounded by uncleared land and salt lake systems which are common throughout the Eastern Goldfield subregion (GIS Database).
Conservation areas and ecological linkage	There are no conservation areas located within the application area (GIS Database). The nearest conservation area is Dundas Nature Reserve, located approximately 3.5 kilometres southeast of the application area. The application area does not represent and ecological linkage.
Vegetation description	<p>The vegetation of the application area is broadly mapped as the following Beard vegetation associations:</p> <p>8: Medium woodland; salmon gum & gimlet; 221: Succulent steppe; saltbush; 525: Mosaic: Medium woodland; salmon gum & gimlet / Medium woodland; merrit & red mallee; and 676: Succulent steppe; samphire (GIS Database).</p> <p>A reconnaissance flora and vegetation survey was conducted over the application area by Native Vegetation Solutions during August 2022. The following vegetation types were recorded within the application area (NVS, 2022):</p> <p>A: <i>Eucalyptus salubris</i> and <i>Eucalyptus oleosa</i> over <i>Melaleuca sheathiana</i> and sclerophyll shrubs;</p> <p>B: <i>Eucalyptus spreta</i> over <i>Cratystylis conocephala</i>, <i>Atriplex vesicaria</i> and <i>Frankenia interioris</i> shrubland;</p> <p>C: <i>Eucalyptus salubris</i> woodland over <i>Cratystylis conocephala</i> and sclerophyll shrubland;</p> <p>D: <i>Tecticornia</i> shrubland;</p> <p>E: <i>Cratystylis conocephala</i> and mixed sclerophyll shrubland;</p> <p>F: <i>Eucalyptus salubris</i> and <i>Eucalyptus dundasii</i> woodland over <i>Cratystylis conocephala</i> shrubland;</p> <p>G: Chenopod shrubland;</p> <p>H: <i>Pittosporum angustifolium</i> over sclerophyll and chenopod shrubland on greenstone hill rises and sandy areas;</p> <p>I: <i>Eucalyptus salubris</i> and <i>Eucalyptus dundasii</i> woodland over chenopod shrubland;</p> <p>J: Mixed <i>Eucalyptus</i> woodland over sclerophyll shrubland; and</p> <p>K: Very open chenopod shrubland.</p>
Vegetation condition	<p>The vegetation survey (NVS, 2022) indicate the vegetation within the proposed clearing area is in very good, good, and degraded (Keighery, 1994) condition, described as</p> <ul style="list-style-type: none"> - 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. <p>The full Keighery (1994) condition rating scale is provided in Appendix C.</p>
Climate and landform	The application area is mapped within elevations of 280-320 metres AHD (GIS Database). The climate of the region is semi-arid to arid (CALM, 2002). The Norseman weather station has a recorded average annual rainfall of approximately 288.9 millimetres per year (BoM, 2023).

Characteristic	Details
Soil description and land degradation risk	Most of the proposed clearing is mapped within the Dundas land system, and is described as level plains lower than adjacent loamy plains (DPIRD, 2022). Soils are calcareous loamy earth or red-brown non-cracking clay with cracking clays in gilgai areas (DPIRD, 2022). A lesser area is mapped within the Lefroy land system and is described as salt lakes and fringing saline plains, sand sheets and dunes with halophytic shrublands (DPIRD, 2022). These systems are generally not susceptible to erosion (DPIRD, 2022).
Waterbodies and hydrogeography	The aerial imagery indicates that the proposed access haul road is situated on a small partition of vegetation on the banks between two non-perennial salt lakes (GIS Database). The application area is located within the Goldfields Groundwater Area proclaimed under the <i>Rights in Water and Irrigation Act 1914</i> . The mapped groundwater salinity is 14,000-35,000 milligrams per litre total dissolved solids which is described as saline to hypersaline (GIS Database).
Flora	There are records of nine priority and one threatened flora species within 20 kilometres of the application area (NVS, 2022; GIS Database).
Ecological communities	There are no known ecological communities located within the application area (GIS Database).
Fauna	The fauna assessment identified only four species of conservation significance that may utilise the application area (Terrestrial Ecosystems, 2022). These consist of three birds and one mammal species (Terrestrial Ecosystems, 2022).

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> A reconnaissance flora survey of the application area did not record any threatened or priority flora species (NVS, 2022). Three priority flora species were determined to unlikely to be present, but there is possible suitable habitat available (NVS, 2022).</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.1, above.</i>
<p><u>Principle (b):</u> “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.”</p> <p><u>Assessment:</u> The area proposed to be cleared does not contain critical habitat required for the maintenance or survival of any conservation significant fauna (Terrestrial Ecosystems, 2022). The habitats present are common and widespread in the region, and extend well beyond the application area (Terrestrial Ecosystems, 2022).</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.1, above.</i>
<p><u>Principle (c):</u> “Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.”</p> <p><u>Assessment:</u> A flora survey of the application area did not record any threatened flora species (NVS, 2022). The nearest known threatened flora species is <i>Eucalyptus platydisca</i> (NVS, 2022; GIS Database). The preferred soil and landscape profile for this species consists of granitic and clay soils on stony hills which is not present within the application area (Western Australian Herbarium, 1998-).</p>	Not likely to be at variance	No
<p><u>Principle (d):</u> “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.”</p> <p><u>Assessment:</u> There are no known Threatened Ecological Communities (TECs) located within or in close proximity to the amendment area (GIS Database). A flora and vegetation survey of the application area did not identify any vegetation representative of a TEC (NVS, 2022).</p>	Not likely to be at variance	No
Environmental value: significant remnant vegetation and conservation areas		

Assessment against the clearing principles	Variance level	Is further consideration required?
<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> 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, 2019).</p> <p>The application area is broadly mapped as Beard vegetation associations 8: Medium woodland; salmon gum & gimlet; 221: Succulent steppe; saltbush; 525: Mosaic: Medium woodland; salmon gum & gimlet / Medium woodland; merrit & red mallee; and 676: Succulent steppe; samphire (GIS Database).</p> <p>Approximately 94-99% of the pre-European extent of vegetation associations 221, 525, and 676 remain uncleared at both the state and bioregional level (Government of Western Australia, 2019).</p> <p>Approximately 48% of the pre-European extent of vegetation association 8 remains uncleared at a state level, however approximately 98% remains uncleared at a bioregional level (Government of Western Australia, 2019).</p> <p>The vegetation proposed to be cleared is unlikely to represent a significant area of remnant vegetation within a bioregional context (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> The nearest conservation area is the Dundas Nature Reserve which is located approximately 3.5 kilometres southeast of the application area (GIS Database). The most proximal part of the application area to the nature reserve is the entrance of the access haul road, which spans approximately 13 kilometres north to the main mining operations (GIS Database). The proposed clearing is unlikely to impact 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> There are no permanent watercourses or wetlands located within the application area (GIS Database). The proposed access haul road is situated between two partially connecting ephemeral salt lakes (GIS Database). The <i>Tecticornia</i> shrubland vegetation type grows on the banks between these two partially connecting salt lakes, and represents approximately 1.29% of the application area (NVS, 2022). While the proposed clearing will have a small impact on vegetation growing in association within a wetland, it is unlikely to have a significant impact on the salt lake system due to the <i>Tecticornia</i> shrubland representing such a small area.</p>	At variance	No
<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> Most of the proposed clearing is mapped within the Dundas land system, and is described as level plains lower than adjacent loamy plains (DPIRD, 2022). Soils are calcareous loamy earth or red-brown non-cracking clay with cracking clays in gilgai areas (DPIRD, 2022). A lesser area is mapped within the Lefroy land system and is described as salt lakes and fringing saline plains, sand sheets and dunes with halophytic shrublands (DPIRD, 2022). These systems are generally not susceptible to erosion (DPIRD, 2022). The proposed clearing is unlikely 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> 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). The proposed clearing is unlikely to impact surface or ground water quality.</p>	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Principle (j):</u> “Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</p> <p><u>Assessment:</u> There are no permanent watercourses or wetlands located within the application area (GIS Database). The soils and topographic contours in the area do not indicate that removal of vegetation will exacerbate the incidence or intensity of flooding (DPIRD, 2022; GIS Database).</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):

- Contours (DPIRD-073)
- Clearing Regulations – Schedule One Areas (DWER-057)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- Environmentally Sensitive Areas (DWER-046)
- Groundwater Salinity Statewide (DWER-026)
- Hydrographic Catchments – Catchments (DWER-028)
- Hydrography – Inland Waters – Waterlines
- Hydrography, Linear (DWER-031)
- IBRA Vegetation Statistics
- Pre-European Vegetation Statistics
- Regional Parks (DBCA-026)
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- 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 (2023) Bureau of Meteorology Website – Climate Data Online, Norseman. Bureau of Meteorology. <http://www.bom.gov.au/climate/data/> (Accessed 5 January 2023).
- 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 Planning, Lands and Heritage (DPLH) (2023) Aboriginal Heritage Inquiry System. Department of Planning, Lands and Heritage. <https://espatial.dplh.wa.gov.au/AHIS/index.html?viewer=AHIS> (Accessed 4 January 2023).
- Department of Primary Industries and Regional Development (DPIRD) (2022) Advice received in relation to Clearing Permit Application CPS 9970/1. Office of the Commissioner of Soil and Land Conservation, Department of Primary Industries and Regional Development, Western Australia, December 2022.
- Department of Water and Environmental Regulation (DWER) (2021) Procedure: Native vegetation clearing permits. Joondalup. Available from: https://dwer.wa.gov.au/sites/default/files/Procedure_Native_vegetation_clearing_permits_v1.pdf
- Environmental Protection Authority (EPA) (2016) Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment. Available from: http://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/EPA%20Technical%20Guidance%20-%20Flora%20and%20Vegetation%20survey_Dec13.pdf
- Environmental Protection Authority (EPA) (2020) Technical Guidance – Terrestrial Fauna Surveys. Available from: https://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/2020.09.17%20-%20EPA%20Technical%20Guidance%20-%20Vertebrate%20Fauna%20Surveys%20-%20Final.pdf
- 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.
- NVS (2022) Reconnaissance Flora and Vegetation Survey of the Jeffreys Find Gold Project. Prepared by Native Vegetation Solutions, for Auric Mining Ltd, August 2022.
- Terrestrial Ecosystems (2022) Basic Vertebrate Fauna Risk Assessment - Jeffreys Find. Prepared by Terrestrial Ecosystems, for Native Vegetation Solutions, November 2022.
- Western Australian Herbarium (1998-) FloraBase - the Western Australian Flora. Department of Biodiversity, Conservation and Attractions, Western Australia. <https://florabase.dpaw.wa.gov.au/> (Accessed 10 January 2023).

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.