



Clearing Permit Decision Report

1. Application details and outcomes

1.1. Permit application details

Permit number:	7772/2
Permit type:	Purpose Permit
Applicant name:	Fortescue Metals Group Ltd
Application received:	30 August 2022
Application area:	0.5 hectares
Purpose of clearing:	Access track
Method of clearing:	Mechanical Removal
Tenure:	Iron Ore (Hamersley Range) Agreement Act 1963, Mineral Lease 4SA (AML 70/4)
Location (LGA area/s):	Shire of Ashburton
Colloquial name:	Radio Hill Exploration Project

1.2. Description of clearing activities

Fortescue Metals Group Ltd proposes to clear up to 0.5 hectares of native vegetation within a total boundary of approximately 38 hectares to allow for the clearing of an access track for their Radio Hill Exploration Project. The project is located approximately four kilometres south of Paraburdoo, within the Shire of Ashburton.

Clearing Permit CPS 7772/1 was granted by the former Department of Mines and Petroleum (now the Department of Mines, Industry Regulation and Safety) on 2 November 2017 authorising the clearing of up to 0.5 hectares of native vegetation within the same total boundary of approximately 38 hectares.

On 30 August 2022, the Permit Holder applied to amend CPS 7772/1 to extend the permit duration by an additional four years to 31 August 2026. No other changes are included in the amendment.

1.3. Decision on application and key considerations

Decision:	Granted
Decision date:	13 October 2022
Decision area:	0.5 hectares of native vegetation

1.4. Reasons for decision

This clearing permit application was made in accordance with section 51KA(1) of the *Environmental Protection Act 1986* (EP Act) and was received by the Department of Mines, Industry Regulation and Safety (DMIRS) on 30 August 2022. DMIRS advertised the application for public comment for a period of 7 days, and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics, relevant datasets, the clearing principles set out in Schedule 5 of the EP Act, and any other matters considered relevant to the assessment. The assessment identified that the proposed clearing will have negligible environmental impacts, given the potential significant areas for flora and fauna habitats have been restricted from native vegetation clearing.

After consideration of the available information, as well as the applicant's minimisation and mitigation measures, the Delegated Officer determined that extending the permit duration by a further four years is not likely to lead to an unacceptable risk to the environment. The Delegated Officer decided to grant a clearing permit with existing and new management conditions.

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)
- *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 2019)

3. Detailed assessment of application

3.1. Avoidance and mitigation measures

The applicant has not provided any additional avoidance or mitigation measures, beyond those already provided in support of the original clearing permit application (CPS 7772/1).

The following key avoidance and mitigation measures were provided by the applicant (FMG, 2017) in support of previous version of CPS 7772/1:

- Pre-clearance checks for conservation significant flora and/or vegetation undertaken by suitably experienced personnel prior to ground disturbance;
- Areas to be cleared clearly delineated both on maps and on the ground;
- Post-clearing audits undertaken to assess compliance with internal permits;
- Vehicles will be confined to defined roads and access tracks;
- Proposed tracks avoid crossing any drainage lines, and where necessary, flood ways will be constructed at drainage line crossings;
- Clearing of individual trees within the creek will be restricted to those absolutely necessary; and
- All machinery, vehicles and plant arriving on site will required to be free of vegetative matter and soil/mud.

The Delegated Officer is satisfied that reasonable efforts have been made to avoid and mitigate the impacts of the proposed clearing.

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 management conditions.

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

The permit holder has advised that as of 30 August 2022, no native vegetation has been cleared pursuant to clearing permit 7772/1 (FMG, 2022). The proposed amendment involves extending the period duration by a further four years, until 31 August 2026 as no works have been conducted until now under the previous permit. No changes are proposed to the area.

No new biological information has been provided in support of the amendment application. No flora, vegetation or fauna surveys have been undertaken over the application area (FMG, 2017). The environmental values of the application area are described in the previous version of the Decision Report, based on the Native Vegetation Clearing Permit Application Supporting Document (FMG, 2017). Similarly, the environmental impacts of the proposed clearing have been previously assessed and conditionally approved via clearing permit CPS 7772/1. This current assessment also considered recent available database information (GIS Database). Therefore, the potential environmental impacts were revised and updated.

As pointed out in the previous decision report, several Priority flora species and one Threatened species occur within a 20 kilometres radius from the application area, with the addition of a recent record of Priority 1 species *Isotropis forrestii* (GIS Database). *Aluta quadrata* (Threatened), *Hibiscus campanulatus* (P1), *Isotropis forrestii* (P1) and some other priority species are usually found at the edge of creeklines, base of cliffs and breakaways, and normally on rocky substrates (Western Australian Herbarium, 1998–). Drainage lines and gully habitats are present within the application area which may provide habitats for the species aforementioned (GIS Database). Potential habitats also exists for other Priority species known to occur in the local area (GIS Database; FMG, 2017).

Numerous conservation significant fauna species were also recorded within the local area (FMG, 2017; GIS Database). Based on known distribution and habitats present, the Northern Quoll (*Dasyurus hallucatus*), Ghost Bat (*Macroderma gigas*), Pilbara Leaf-nosed Bat (*Rhinonictis aurantia*), Western Pebble-mound Mouse (*Pseudomys chapmani*), Long-tailed Dunnart (*Sminthopsis longicaudata*) and Pilbara Olive Python (*Liasis olivaceus* subsp. *barroni*) may all utilise the application area for foraging, denning, or transient purposes (FMG, 2017). Even though the proposed clearing of 0.5 hectares is not likely to have a significant impact on habitats for these fauna species or on flora species in a regional context, it may have in the local area. Therefore, a clearing restriction on drainage lines and gully/hillslope habitats has been placed in the clearing permit to minimise potential impacts on conservation significant flora and fauna species. This is aligned with the conditions placed on the clearing permit CPS 4032/5, which intersects this current tenement.

According to FMG (2017), the proposed clearing for access tracks will either re-establish existing tracks or extend existing tracks to adjacent Fortescue tenure. Therefore, the potential environmental impacts of the proposed clearing are low.

Conclusion

Based on the above assessment, it is considered that the impacts of the proposed clearing on potential habitats for Priority and Threatened flora and conservation significant fauna species is not likely to be significant if avoidance, mitigation and management measures are implemented.

For the reasons set out above, it is considered that the impacts of the proposed clearing on habitats for conservation significant flora and fauna species can be managed with conditions to be environmentally acceptable. There is potential for weeds being present within the application area and the proposed clearing has the potential to exacerbate the spread of weeds.

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
- restricted clearing to minimise potential impacts to significant habitats
- take hygiene steps to minimise the risk of the introduction and spread of weeds.

The amendment application has been assessed against the clearing principles, planning instruments and other matters in accordance with s.51O of the *Environmental Protection Act 1986*. Environmental information has been reviewed, and the assessment of the proposed clearing against the clearing principles remains consistent with the assessment contained in the previous version of the decision report. Extending the period duration by a further four years is unlikely to change the environmental impacts of the proposed clearing. The conditions currently imposed on clearing permit CPS 7772/2 are considered adequate for amended permit CPS 7772/1 to continue to avoid/minimise the impacts of clearing, minimise the introduction and spread of weeds, minimise potential impacts to conservation significant flora and fauna species and their habitat, and require rehabilitation of areas cleared for temporary disturbance.

3.3. Relevant planning instruments and other matters

There is one native title (WC 2010/016) claim over the area under application (DPLH, 2022). This claim has been registered with the National Native Title Tribunal on behalf of the claimant group. However, the mining tenure has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore, the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

There 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 Programme of Work 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 four kilometres south of Paraburdoo, within the Shire of Ashburton 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 34 kilometres west of the Karijini National Park (GIS Database). The application area does not represent an ecological linkage to other areas of vegetation.
Vegetation description	The vegetation of the application area is broadly mapped as the following Beard vegetation association: 82: Hummock grasslands, low tree steppe; snappy gum over <i>Triodia wiseana</i> (GIS Database). A flora and vegetation survey has not been conducted over the application area.
Vegetation condition	The aerial imagery indicate the vegetation within the proposed clearing area is in excellent to degraded (Keighery, 1994) condition, described as: <ul style="list-style-type: none"> Excellent: Vegetation structure intact; disturbance affecting individual species, weeds non-aggressive; 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 within elevations of 480-570 metres AHD (GIS Database). The climate of the region is semi-desert to tropical, with an average rainfall of approximately 320.9 millimetres per year (BoM, 2022; CALM, 2002).
Soil description and land degradation risk	The application area is located within the Hamersley Plateaux Zone, characterised by hills and dissected plateaux (with some stony plains and hardpan wash plains) on sedimentary and volcanic rocks of the Hamersley Basin with stony soils, red shallow loams and some red/brown non-cracking clays and red loamy earths (DPIRD, 2022). The soil is mapped as part of the Newman System, described as rugged jaspilite plateaux, ridges and mountains supporting hard spinifex grasslands (DPIRD, 2022).
Waterbodies	The desktop assessment and aerial imagery indicate there are several non-perennial watercourse intersecting the area proposed to be cleared (GIS Database).
Hydrogeography	The application area is located within Ashburton River Catchment (GIS Database). The application area is located within the Pilbara 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 (GIS Database).
Flora	There are records of 18 Priority flora species within 20 kilometres of the application area (GIS Database). 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 100 kilometres east of the application area (GIS Database).
Fauna	A NatureMap search identified 21 fauna species of conservation significance within a 20 kilometre radius of the application area (FMG, 2017). 10 of these records are migratory birds, four non-migratory birds, six mammals, and one reptile. No conservation significant fauna species have previously been recorded within the application area (GIS Database).

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

Appendix B. 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 databases (GIS Database), there are no known Threatened or Priority flora within the application area. No conservation significant fauna was 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> <p>However, as no flora or fauna survey have been conducted within the application area, and it presents potential habitats for conservation significant flora and fauna species, a condition restricting the clearing in these critical areas has been placed in the permit to minimise potential impacts to these species or their habitats.</p>	Not likely to be at variance	No <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 within 20 kilometres radius of the application area recorded 21 conservation significant species (FMG, 2017). Potential habitats for conservation significant fauna may be present within the application area.</p> <p>However, the proposed clearing area of 0.5 hectares is unlikely to represent significant impacts on the habitats for these species in a regional context.</p> <p>Considering no fauna survey has been conducted to confirm the presence of these species or their habitats, a condition restricting the clearing on these critical areas has been placed in the permit to avoid potential impacts for these species.</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.1, 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 permit area (GIS Database). Based on the habitat present and known distributions of <i>Aluta quadrata</i> (Threatened), this species is likely to be present within the permit area. A condition restricting the clearing of potential habitats for this species has been placed in the clearing permit to avoid potential impacts to this species.</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.1, above.</i>
<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 permit area (GIS Database).</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 Gascoyne Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). Approximately 99 % of the pre-European vegetation still exists in the Gascoyne Bioregion (Government of Western Australia, 2019).</p> <p>The permit area does not contain any remnants nor does it form part of any remnants in the local area (GIS Database).</p>	Not at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<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 Karijini National Park which is located approximately 34 kilometres east of the application area (GIS Database). Given the distance to the nearest conservation area, 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> <p>There are several ephemeral watercourses within the application area (GIS Database). Given that the proposed clearing area is small compared to the proposed boundary, and that the proposed track avoids crossing drainage lines (FMG, 2017), the proposed clearing is unlikely to adversely impact riparian areas in the local region.</p> <p>Additionally, the condition restricting clearing on critical habitats aforementioned will consequently avoid potential impacts in riparian vegetation as well.</p> <p>The proposed clearing is unlikely to significant impact vegetation growing in association with any watercourse or wetland.</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></p> <p>The application area lies within the Newman soil landscape systems, within the Hamersley Plateaux Zone, mainly characterised by stony soils, red shallow loams and some red/brown non-cracking clays and red loamy earths (DPIRD, 2022). This land system has low susceptibility for wind erosion due to the presence of stony mantles (Van Vreeswyk et al., 2004). Noting the <i>extent and the purpose of the proposed clearing</i>, it is <i>not</i> likely to have an appreciable impact on 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>It is unlikely that the proposed clearing of 0.5 hectares will impact on the quality of surface and groundwater in the local area.</p>	Not likely to be at variance	No
<p><u>Principle (j):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</i></p> <p><u>Assessment:</u></p> <p>The climate of the region is semi-desert tropical, average 300mm rainfall, usually in summer cyclonic or thunderstorm events (CALM, 2002). The average rainfall of around the application area is approximately 236 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. However, the proposed clearing of 0.5 hectares for an access track is unlikely to increase the incidence or intensity of natural flooding events.</p>	Not likely to be at variance	No

Appendix C. Vegetation condition rating scale

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

Considering its location, the scale below was used to measure the condition of the vegetation proposed to be cleared. This scale has been extracted from 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)
- 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)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Mapping – Best Available (DPIRD-027)
- Soil Landscape Mapping – Rangelands (DPIRD-064)
- WA Now Aerial Imagery

D.2. References

- BoM (2022) Bureau of Meteorology Website – Climate Data Online, Paraburdoo Aero. Bureau of Meteorology. <http://www.bom.gov.au/climate/data/> (Accessed 19 September 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 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 19 September 2022).
- Department of Primary Industries and Regional Development (DPIRD) (2022) NRInfo Digital Mapping. Department of Primary Industries and Regional Development. Government of Western Australia. URL: <https://maps.agric.wa.gov.au/nrm-info/> (Accessed 19 September 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>.
- FMG (2017) Fortescue Metals Group Ltd - Radio Hill Exploration Prospect. Native Vegetation Clearing Permit Application Supporting Document. Fortescue Metals Group Ltd, August 2017.
- FMG (2022) Fortescue Metals Group Ltd application for clearing permit within Mining Lease 4SA (AML 70/4). Ltd, Fortescue Metals Group Ltd, August 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.
- Van Vreeswyk, A.M.E.; Payne, A.L.; Leighton, K.A.; Hennig, P. (2004) An inventory and condition survey of the Pilbara Region, Western Australia, Technical Bulletin No. 92 Department of Agriculture Western Australia, South Perth.
- Western Australian Herbarium (1998-) FloraBase - the Western Australian Flora. Department of Biodiversity, Conservation and Attractions, Western Australia. <https://florabase.dpaw.wa.gov.au/> (Accessed 19 September 2022).

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.