



1. Application details and outcomes

1.1. Permit application details

Permit number:	8358/3
Permit type:	Purpose Permit
Applicant name:	Australian Garnet Pty Ltd
Application received:	15 November 2023
Application area:	5.24 hectares
Purpose of clearing:	Wind Farm
Method of clearing:	Mechanical Removal
Tenure:	General Purpose 70/253 Miscellaneous Licence 70/178
Location (LGA area):	Shire of Northampton
Colloquial name:	Balline Garnet Windfarm Project

1.2. Description of clearing activities

Australian Garnet Pty Ltd proposes to clear up to 5.24 hectares of native vegetation within a boundary of approximately 5.759 hectares, for the purpose of a wind farm. The project is located approximately 32 kilometres south of Kalbarri, within the Shire of Northampton (GIS Database).

Clearing permit CPS 8358/1 was granted by the Department of Mines, Industry Regulation and Safety (now Department of Energy, Mines, Industry Regulation and Safety) on 23 May 2019 and was valid from 15 June 2019 to 14 June 2024. The permit authorised the clearing of up to 1.4 hectares of native vegetation within a boundary of approximately 1.9 hectares, for the purpose of wind farm.

Clearing permit CPS 8358/2 was granted by the Department on 11 August 2022 and was valid from 15 June 2019 to 14 June 2024. The permit was amended to increase the amount of approved clearing by 3.84 hectares, increase the permit boundary by 3.856 hectares and include additional tenure.

On 15 November 2023, the Permit Holder applied to amend CPS 8358/2 to extend the permit duration (Australian Garnet, 2023b). The total amount of native vegetation cleared under CP 8358/2 is 1.56 hectares (Australian Garnet, 2023a).

1.3. Decision on application and key considerations

Decision:	Grant
Decision date:	15 February 2023
Decision area:	5.24 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 Energy, Mines, Industry Regulation and Safety (DEMIRS) on 15 November 2023. DEMIRS advertised the application for a 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 (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), relevant planning instruments and any other matters considered relevant to the assessment (Section 3.3).

The assessment has not changed since the assessment for CPS 8358/2. After consideration of the available information, the Delegated Officer determined that the proposed clearing is not likely to lead to an unacceptable risk to the environmental values. The Delegated Officer decided to grant the amended clearing permit with the existing permit conditions.

1.5. Site map

A site map of proposed clearing is provided in Figure 1 below.



Figure 1. Map of the application area. The yellow area indicates the area within which conditional authorised clearing can occur under the granted clearing permit.

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)

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2014)
- *Procedure: Native vegetation clearing permits* (DWER, October 2021)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)
- Technical guidance – *Terrestrial Fauna 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 was provided to support the application.

3.2. Assessment of impacts on environmental values

A review of current environmental information (Appendix A) reveals that the assessment against the clearing principles has not changed from the Clearing Permit Decision Report CPS 8358/2.

The environmental values of the application area are well understood and are described in the previous version of the decision report. The previous assessment of the clearing did not identify any significant environmental impacts from the clearing of 5.24 hectares.

No Threatened flora, Threatened Ecological Communities or Priority Ecological Communities have been recorded within or in close proximity to the application area (GIS Database), and none were found during the flora and vegetation survey (Onshore Environmental, 2022a). Eight Priority flora taxa and one Threatened flora taxa have been recorded within five kilometres of the application area, however none were found within the area proposed to be cleared (Onshore Environmental, 2022a; GIS Database).

Two fauna habitats were identified within the application area: *Acacia* Shrubland and *Melaleuca* shrubland (MBS Environmental, 2022; Onshore Environmental, 2022b). These habitats provides microhabitats in the form of small logs and other debris, soft sand for burrowing species, a dense lower storey, and thick leaf litter and ground cover (Onshore Environmental, 2022b). The habitat within the application area has been subjected to multiple disturbances and was generally degraded. Large portions of these habitats have previously been cleared for pasture with areas supporting regrowth vegetation. These habitats are generally of low value and is unlikely to support conservation significant fauna species (Onshore Environmental, 2022b).

The application area is located in the coastal sub-catchment of the Greenough River basin (MBS Environmental, 2022). It lies within the Northampton Coast surface water management area. The catchment is characterised by numerous small catchments that drain internally to local depressions with no clearly defined drainage lines or connection to other catchments (MBS Environmental, 2022). There are no surface drainage features within or adjacent to the application area (GIS Database). The low relief and sandy costal soils do not facilitate surface water flows (MBS Environmental, 2022).

The groundwater levels within the application area vary from about 0 metres to 15 metres Australian Height Datum (mAHD) (MBS Environmental, 2022). Groundwater flow is in a west to south-westerly direction towards the coast. Groundwater in the application area is fresh to brackish and used by local landholders for pastoral and agricultural activities (MBS Environmental, 2022). There are no watercourses, wetlands, or Public Drinking Water Source Areas, within or in close proximity to the amendment area (GIS Database).

There are no conservation areas within or in close proximity to the application area (GIS Database). The nearest DBCA (formerly DPaW) managed land is the Utcha Well Nature Reserve, located approximately 2.6 kilometres south of the application area (GIS Database). The proposed amendment is unlikely to have any impact on any conservation areas.

Based on the current environmental information, the amendment to extend the permit duration is unlikely to change the environmental impacts of the proposed clearing. The conditions currently imposed on clearing permit CPS 8358/2 are considered adequate to manage the impacts of the clearing.

3.3. Relevant planning instruments and other matters

The clearing permit amendment application was advertised on 12 December 2023 by the Department of Energy, 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 (WC2019/008) 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 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 32 kilometres south of Kalbarri, within the Shire of Northampton (GIS Database). The area is located within the Geraldton Sandplains bioregion and Geraldton Hills subregion as described by the Interim Biogeographic Regionalisation of Australia (IBRA) (GIS Database). The area proposed to be cleared is part of a remnant patch of native vegetation in the intensive land use zone of Western Australia (GIS Database).
Ecological linkage	According to available databases, the application area does not contain any known or mapped ecological linkages.
Conservation areas	There are no conservation areas within or in close proximity to the application area (GIS Database). The nearest DBCA managed land is the Utcha Well Nature Reserve, located approximately 2.6 kilometres south of the application area, at its nearest point (GIS Database).
Vegetation description	<p>The vegetation of the application area is broadly mapped as the following Beard vegetation association:</p> <ul style="list-style-type: none"> 17: Shrublands; <i>Acacia rostellifera</i> thicket (GIS Database). <p>A flora and vegetation survey of the broader Balline Garnet project area, including the application area, was conducted by Onshore Environmental Consultants Pty Ltd (Onshore Environmental) from 5 to 11 October 2013, with a subsequent survey undertaken in October 2021 (Onshore Environmental, 2022a). A total of 19 vegetation associations were recorded within the broader survey area, only two of which were recorded within the current clearing permit application area (MBS Environmental, 2022; Onshore Environmental, 2013; Onshore Environmental, 2022a):</p> <ul style="list-style-type: none"> Acacia High Shrubland on sandy hillslopes (6a): High Shrubland to Open Scrub <i>Acacia rostellifera</i> over Open Annual Tussock Grassland of <i>Avena barbata</i>, <i>Bromus rubens</i> and <i>Ehrharta longiflora</i> with Open Shrubland of <i>Rhagodia latifolia</i> var. <i>latifolia</i>, <i>Pimelea microcephala</i> and <i>Olearia</i> sp. indet.; and Acacia High Shrubland on parkland cleared sandy hillslopes (6b): High Shrubland of <i>Acacia rostellifera</i> and <i>Alyogyne hakeifolia</i> over Open Annual Tussock Grassland of <i>Avena barbata</i>, and <i>Bromus rubens</i> over Open Herbland of <i>Brassica tournefortii</i> and <i>Medicago truncata</i>. <p>* Denotes weed species</p>
Vegetation condition	<p>The vegetation survey by Onshore Environmental (2022a) indicates the vegetation within the proposed clearing area is in 'Good' to 'Degraded' (Keighery, 1994) condition, described as:</p> <ul style="list-style-type: none"> Good: Structure significantly altered by multiple disturbance; retains basic structure/ability to regenerate. Degraded: Basic vegetation structure severely impacted by disturbance. <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 10-20 metres AHD (MBS Environmental, 2022). The annual average rainfall (Kalgoorlie) is 334.9 millimetres (BoM, 2024).
Soil description and Land degradation risk	<p>The soils of the application area are broadly mapped as the following soil type:</p> <ul style="list-style-type: none"> 231Ta_1: Tamala North 1 subsystem. Low hills with relict dunes and some limestone outcrop. Forms a coastal band three to seven kilometres wide (DPIRD, 2024). <p>The Tamala Land System is described as having boulder-strewn limestone plains and rises interspersed with sandy-surfaced plains and sand sheets; much of the local redistribution of topsoil material is tough wind erosion (Payne, et al., 1987).</p>
Waterbodies	The desktop assessment and aerial imagery indicated that no watercourses transect the area proposed to be cleared (GIS Database).
Hydrogeography	According to available databases, the application area is not located within a Public Drinking Water Source Area (GIS Database). The groundwater salinity within the application area is approximately 1,000 - 3,000 milligrams/Litre Total Dissolved Solids (GIS Database).
Flora	No Threatened or Priority flora species were recorded within the application area (Onshore Environmental, 2022a). There are no records of conservation significant flora within the application area (GIS Database).
Ecological communities	There are no Threatened Ecological Communities (TECs) or Priority Ecological Communities (PECs) recorded within the application area (Onshore Environmental, 2022a; GIS Database). The nearest TEC or PEC is located approximately 16 kilometres south-east of the application area (Kalbarri Ironstone Community Priority 1 - PEC) (GIS Databased).

Characteristic	Details
Fauna	There are no records of conservation significant fauna species located within the application area (Onshore Environmental, 2022b; GIS Database).
Fauna habitat	Two broad habitats were mapped within the application area: <ul style="list-style-type: none"> • <i>Acacia</i> Shrubland consisting predominantly of <i>Acacia rostellifera</i> on yellow-brown sands with a ground cover dominated by introduced grasses; and • <i>Melaleuca</i> Shrubland characterised by <i>Melaleuca cardiophylla</i> on sand over limestone (Onshore Environmental, 2022b).

A.2. Vegetation extent

	Pre-European area (ha)	Current extent (ha)	Extent Remaining %	Current extent in all DBCA managed land (ha)	Current proportion (%) of pre-European extent in all DBCA Managed Lands
IBRA Bioregion Geraldton Sandplains	3,136,037.83	1,404,424.32	44.78	568,255.10	18.12
IBRA Subregion Geraldton Hills	1,964,262.65	901,446.88	45.89	355,757.17	18.11
Local Government Shire of Northampton	1,258,428.76	930,228.68	73.92	230,957.58	18.35
Beard vegetation associations - State					
Veg Assoc No. 17	76,633.84	67,605.49	88.22	8,831.50	11.52
Beard vegetation associations - Bioregion					
Veg Assoc No. 17	54,078.08	45,159.85	83.51	6,067.99	11.22
Beard vegetation associations - Subregion					
Veg Assoc No. 17	49,605.04	42,016.28	84.70	5,572.71	11.23

Government of Western Australia (2019)

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>There are no Threatened or Priority Ecological Communities located within the application area (GIS Database). There are no records of any conservation significant flora within the application area. There is potential habitat for several Priority flora species, however, the application area is not likely to represent significant habitat for these species and none were recorded within the area proposed to be cleared (Onshore Environmental, 2022a). The fauna habitats within the application area are common in the local area and are not likely to support a high level of faunal diversity (Ecoscape, 2009; Onshore Environmental, 2022a).</p>	Not likely to be at variance (as per CPS 8358/2)	No
<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></p> <p>The fauna habitat occurring within the application area was considered to be typical of the region, and is well represented in surrounding areas (Ecoscape, 2009; Onshore Environmental, 2022b; GIS Database). A desktop search identified several fauna species of conservation significance with the potential to occur within the broader application area (Ecoscape, 2009; Onshore Environmental, 2022b; GIS Database).</p>	Not likely to be at variance (as per CPS 8358/2)	No

Assessment against the clearing principles	Variance level	Is further consideration required?
However, none were recorded during the fauna survey, and Ecoscape (2009) concluded that the habitats of the application area were unlikely to support any conservation significant fauna.		
<p>Principle (c): <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>No Threatened or Priority flora species have been recorded within the application area (Onshore Environmental, 2022a). The area proposed to be cleared is unlikely to contain habitat for flora species listed under the BC Act.</p>	<p>Not likely to be at variance</p> <p>(as per CPS 8358/2)</p>	<p>No</p>
<p>Principle (d): <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 (Onshore Environmental, 2022a).</p>	<p>Not likely to be at variance</p> <p>(as per CPS 8358/2)</p>	<p>No</p>
Environmental value: significant remnant vegetation and conservation areas		
<p>Principle (e): <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 extent of the mapped vegetation type is consistent with the national objectives and targets for biodiversity conservation in Australia. The vegetation proposed to be cleared is not considered to be part of a significant ecological linkage in the local area.</p>	<p>Not at variance</p> <p>(as per CPS 8358/2)</p>	<p>No</p>
<p>Principle (h): <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 within or in close proximity to the application area (GIS Database). The nearest DBCA managed land is the Utcha Well Nature Reserve, located approximately 2.6 kilometres south of the application area, at its nearest point (GIS Database). The proposed clearing is unlikely to have any impact on any conservation areas.</p>	<p>Not likely to be at variance</p> <p>(as per CPS 8358/2)</p>	<p>No</p>
Environmental value: land and water resources		
<p>Principle (f): <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>Given no water courses or wetlands are recorded within the application area (GIS Database), the proposed clearing is unlikely to impact on- or off-site hydrology and water quality.</p>	<p>Not at variance</p> <p>(as per CPS 8358/2)</p>	<p>No</p>
<p>Principle (g): <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 landform of the application area is described as sandy hillslopes (Onshore Environmental, 2013). While the sandy soils may be at risk of wind erosion if vegetation cover is removed, the small area of proposed clearing (5.24 hectares), largely linear in nature, is unlikely to result in appreciable land degradation.</p>	<p>Not likely to be at variance</p> <p>(as per CPS 8358/2)</p>	<p>No</p>
<p>Principle (i): <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>Given no water courses, wetlands or Public Drinking Water Sources Areas are recorded within the application area (GIS Database), the proposed clearing is unlikely to impact surface or ground water quality.</p>	<p>Not likely to be at variance</p> <p>(as per CPS 8358/2)</p>	<p>No</p>

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></p> <p>The groundwater at the site is at a depth of approximately 10 to 20 metres below the surface (MBS Environmental, 2022). The small area of proposed clearing (5.24 hectares), is unlikely to have any significant impact on surface or groundwater quality, or on the incidence or intensity of flooding.</p>	<p>Not likely to be at variance</p> <p>(as per CPS 8358/2)</p>	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):

- Aboriginal Heritage Places (DPLH-001)
- 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)
- Flood Risk (DPIRD-007)
- Groundwater Salinity Statewide (DWER-026)
- Hydrographic Catchments – Catchments (DWER-028)
- Hydrography – Inland Waters – Waterlines
- Hydrography, Linear (DWER-031)
- IBRA Vegetation Statistics
- Native Title (ILUA) (LGATE-067)
- Pre-European Vegetation Statistics
- Interim Ramsar Sites (DBCA-010)
- Regional Parks (DBCA-026)
- Remnant Vegetation, All Areas
- RIWI Act, Groundwater Areas (DWER-034)

- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Mapping – Best Available (DPIRD-027)
- Soil Landscape Mapping – Rangelands (DPIRD-064)
- WA Now Aerial Imagery

Restricted GIS Databases used:

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

D.2. References

- Australian Garnet (2023a) Lucky Bay Garnet Project: Annual Report for Purpose Permit 8358-2, July 2023.
- Australian Garnet (2023b) Clearing permit application form, CPS 8358/3, received 15 November 2023.
- Bureau of Meteorology (BoM) (2024) Bureau of Meteorology Website – Climate Data Online, Eneabba. Bureau of Meteorology. <http://www.bom.gov.au/climate/data/> (Accessed 9 January 2024).
- Department of Environment Regulation (DER) (2014) *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 21 December 2023).
- Department of Primary Industries and Regional Development (DPIRD) (2024) NRInfo Digital Mapping. Department of Primary Industries and Regional Development. Government of Western Australia. URL: <https://dpird.maps.arcgis.com/apps/webappviewer/index.html?id=662e8cbf2def492381fc915aaf3c6a0f> (Accessed 21 December 2023).
- 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
- Ecoscape (2009) Haddington Resources Balline - Level 1 Flora and Fauna Assessment. Report prepared for Australian Garnet Pty Ltd, by Ecoscape Australia Pty Ltd, April 2009.
- 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) (2016) Technical Guidance – Terrestrial Fauna Surveys. Available from: https://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/Tech%20guidance-%20Terrestrial%20Fauna%20Surveys-Dec-2016.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.
- MBS Environmental (2022) Request to Amend Native Vegetation Clearing Permit 8358/1. Report prepared for Australian Garnet Pty Ltd, by MBS Environmental, March 2022.
- Onshore Environmental (2022a) Lucky Bay Garnet Detailed Flora and Vegetation Survey. Report prepared for Australian Garnet Pty Ltd, by Onshore Environmental Consultants Pty Ltd, January 2022.
- Onshore Environmental (2022b) Lucky Bay Garnet Project Detailed Vertebrate Fauna Survey. Report prepared for Australian Garnet Pty Ltd, by Onshore Environmental Consultants Pty Ltd, January 2022.
- Payne, A L, Spencer, G F, and Curry, P J. (1987) An inventory and condition survey of rangelands in the Carnarvon Basin, Western Australia. Department of Agriculture and Food, Western Australia. Technical Bulletin 73, 478p.

4. Glossary

Acronyms:

BC Act	<i>Biodiversity Conservation Act 2016, Western Australia</i>
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)
DCCEEW	Department of Climate Change, Energy, the Environment and Water, Australian Government
DBCA	Department of Biodiversity, Conservation and Attractions, Western Australia
DEMIRS	Department of Energy, Mines, Industry Regulation and Safety
DER	Department of Environment Regulation, Western Australia (now DWER)
DMIRS	Department of Mines, Industry Regulation and Safety, Western Australia (now DEMIRS)

DMP	Department of Mines and Petroleum, Western Australia (now DMIRS)
DoEE	Department of the Environment and Energy (now DCCEE)
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.