



Clearing Permit Decision Report

1. Application details and outcomes

1.1. Permit application details

Permit number:	8843/3
Permit type:	Purpose Permit
Applicant name:	Black Cat (Bulong) Pty Ltd
Application received:	17 May 2022
Application area:	161 hectares
Purpose of clearing:	Mineral Production and Associated Activities
Method of clearing:	Mechanical Removal
Tenure:	Mining Leases 25/24, 25/91, 25/129 Miscellaneous Licence 25/62
Location (LGA area/s):	City of Kalgoorlie-Boulder
Colloquial name:	Bulong Gold Project

1.2. Description of clearing activities

Black Cat (Bulong) Pty Ltd proposes to clear up to 161 hectares of native vegetation within a boundary of approximately 313.1 hectares, for the purpose of mineral production and associated activities. The project is located approximately 25 kilometres east of Kalgoorlie-Boulder, within the City of Kalgoorlie-Boulder.

The application is to allow for an increase to the proposed open pit mine and a change to the site access route.

Clearing permit CPS 8843/1 was granted by the Department of Mines, Industry Regulation and Safety on 7 May 2020 and was valid from 30 May 2020 to 29 May 2025. The permit authorised the clearing of up to 70.55 hectares of native vegetation within a boundary of approximately 114 hectares, for the purpose of mineral production and associated activities.

CPS 8843/2 was granted on 17 December 2020, amending the permit to increase the amount of clearing authorised to 107.29 hectares, and increase the permit boundary to 193.137 hectares.

On 17 May 2022, the Permit Holder applied to amend CPS 8843/2 to increase the amount of clearing authorised to 161 hectares, increase the permit boundary to 313.1 hectares, and add tenure to the permit.

1.3. Decision on application and key considerations

Decision:	Grant
Decision date:	29 September 2022
Decision area:	161 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 17 May 2022. DMIRS advertised the application for a public comment for a period of 21 days, and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (Appendix A), relevant datasets (Appendix D), supporting information provided by the applicant, including the results of biological surveys, 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;
- impacts to riparian vegetation; and
- potential land degradation in the form of soil erosion.

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 conditions currently imposed on clearing permit CPS 8843/2 are considered adequate to manage the impacts of clearing:

- avoid, minimise to reduce the impacts and extent of clearing;
- take hygiene steps to minimise the risk of the introduction and spread of weeds;
- commence construction no later than six months after undertaking clearing to reduce the risk of erosion; and
- watercourse management condition to reduce the impacts to riparian vegetation.

The assessment has not changed since the assessment for CPS 8843/2. The Delegated Officer determined that the proposed increase the amount of clearing authorised and increase the permit boundary is not likely to lead to an unacceptable risk to environmental values.

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 2021)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)
- Technical guidance – *Terrestrial Fauna Surveys for Environmental Impact Assessment* (EPA, 2016; 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

The amendment application has been assessed against the clearing principles, planning instruments and other matters in accordance with s.51KA 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 decision report CPS 8843/2.

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

Assessment

Two reconnaissance flora and vegetation surveys were conducted over the amendment area during 28 July 2019 and 10 September 2020 (Botanica, 2019; 2020). These surveys covered 961 hectares and 1,025.6 hectares respectively (Botanica, 2019; 2020).

The desktop assessments identified five Priority flora species have the potential to occur within the amendment area: *Eremophila xantholaemus* (P1), *Ptilotus procumbens* (P1), *Eremophila praecox* (P2), *Elachanthus pusillus* (P2), *Eremophila arachnoides* subsp. *tenera* (P3) (Botanica, 2019; 2020). The likelihood of occurrence for these species were determined by potentially suitable habitat within the amendment area and known regional records (Botanica, 2019; 2020). While none of these species were identified during the field assessments, no targeted surveys have been conducted within suitable vegetation types for individuals (Botanica, 2019; 2020). None of these species are restricted to the region with the exception of *Elachanthus pusillus* (Western Australian Herbarium, 1998-). While records of *Elachanthus pusillus* are restricted to the Coolgardie bioregion, there are known records located within the Mount Manning Range Nature Reserve (Western Australian Herbarium, 1998-). Based on the provided information the proposed clearing is unlikely to impact potentially occurring Priority flora.

Two desktop and fauna habitat assessments identified that two conservation significant fauna species may possibly occur within the amendment area: malleefowl (*Leipoa ocellata*, VU) and peregrine falcon (*Falco peregrinus*, OS) (Botanica, 2019; 2020). Habitat for malleefowl was identified to be appropriate for dispersal and foraging, but unlikely to provide suitable breeding habitat (Botanica, 2019; 2020). Suitable foraging and dispersal habitat is widely available outside the application area (Botanica, 2019; 2020). The amendment area may provide suitable habitat for peregrine falcon, however the amendment area would likely be utilised as a much larger home range (Botanica, 2019; 2020). Due to peregrine falcons highly mobile nature they are unlikely to be impacted by the proposed clearing (Botanica, 2019; 2020). No evidence of any conservation significant fauna were opportunistically recorded during the field assessments (Botanica, 2019; 2020).

Conclusion

Based on the above assessment, the proposed clearing is unlikely to result in a loss of significant habitat for Priority flora or conservation significant fauna species. The vegetation types and fauna habitats identified are not restricted to the amendment area and are common and widespread within the region (Botanica, 2019; 2020; GIS Database).

Given the area covered for each field assessment is expansive and survey effort is limited (Botanica, 2019; 2020), future amendments of this permit will be subject to additional targeted surveys of all conservation significant flora species that have the potential to occur within the amendment area.

Conditions

No management conditions required for flora or fauna.

3.3. Relevant planning instruments and other matters

There are three native title claims (WC2017/001; WC2017/007; WC2020/005) over the area under application (DPLH, 2022). These claims have been registered with the National Native Title Tribunal on behalf of the claimant groups. However, the mining tenure has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore, the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

There are no registered Aboriginal Sites of Significance within the application area (DPLH, 2022). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

Other relevant authorisations 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 project is located approximately 25 kilometres east of Kalgoorlie-Boulder, within the City of Kalgoorlie-Boulder in the extensive land use zone. The application area is surrounded by vast tracks of uncleared land. The predominant land use in the regions are crown reserves, native pasture grazing, and mining (CALM, 2002).
Conservation areas and ecological linkage	The nearest conservation area is the Kurrawang Nature Reserve which is located approximately 39 kilometres west-southwest of the application area (GIS Database). The amendment area does not represent an ecological linkage.
Vegetation description	<p>The vegetation of the application area is broadly mapped as the following Beard vegetation associations:</p> <p>20: Low woodland; mulga mixed with <i>Allocasuarina cristata</i> & <i>Eucalyptus</i> sp.; and 468: Medium woodland; salmon gum & goldfields blackbutt (GIS Database).</p> <p>Two flora and vegetation surveys were conducted over the amendment area by Botanica Consulting (Botanica) during 28 July 2019 and 10 September 2020. The following vegetation types were recorded within the application area (Botanica, 2019; 2020):</p> <p>CLP-EW1: Low woodland of <i>Eucalyptus salmonophloia</i> over mid shrubland of <i>Eremophila scoparia</i> and low shrubland of <i>Atriplex vesicaria</i> / <i>Olearia muelleri</i> on clay-loam plain.</p> <p>CLP-EW2: Forest of <i>Eucalyptus ravida</i> over mid shrubland of <i>Atriplex nummularia</i> / <i>Eremophila scoparia</i> and low chenopod shrubland of <i>Atriplex vesicaria</i> on clay-loam plain.</p> <p>OD-EW1: Open low woodland of <i>Eucalyptus salmonophloia</i> over mid shrubland of <i>Eremophila scoparia</i> and low samphire shrubland of <i>Tecticornia disarticulata</i> on clayloam plain.</p> <p>HS-CFW1: Forest of <i>Casuarina pauper</i> over mid shrubland of <i>Acacia tetragonophylla</i> and low open shrubland of <i>Dodonaea lobulata</i> on hillslope.</p> <p>HS-EW1: Forest of <i>Eucalyptus stricklandii</i> over mid shrubland of <i>Eremophila oldfieldii</i> subsp. <i>angustifolia</i> and low open shrubland of <i>Ptilotus obovatus</i> on hillslope.</p> <p>HS-EW2: Low woodland of <i>Eucalyptus lesouefii</i> / <i>Eucalyptus griffithsii</i> over mid shrubland of <i>Acacia kalgoorliensis</i> and open low shrubland of <i>Ptilotus obovatus</i> / <i>Westringia rigida</i> on hillslope.</p> <p>HS-MWS1: Tree mallee of <i>Eucalyptus griffithsii</i> over mid shrubland of <i>Eremophila scoparia</i> and low hummock grassland of <i>Triodia scariosa</i> on hillslope.</p>
Vegetation condition	<p>The vegetation surveys (Botanica, 2019; 2020) indicate the vegetation within the proposed clearing area is in very good, good, degraded, and completely 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. - 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. <p>The full Keighery (1994) condition rating scale is provided in Appendix C.</p>

Characteristic	Details
Climate and landform	The amendment area is mapped within elevations of 340-400 metres AHD (GIS Database). The climate of the region is semi-arid to arid (CALM, 2002). The Kalgoorlie-Boulder Airport weather station has a recorded average annual rainfall of approximately 265.6 millimetres per year (BoM, 2022).
Soil description and land degradation risk	The amendment area has been mapped as the Bevon, Gumland, and Moriarty land systems (DPIRD, 2022; GIS Database). These land systems consist of low ironstone hills, stony lower slopes, pediplains, and low greenstone rises and stony plains (DPIRD, 2022; Pringle et al., 1994). These land systems are generally susceptible to erosion if vegetation cover is removed (DPIRD, 2022; Pringle et al., 1994).
Waterbodies and hydrogeography	The desktop assessment and aerial imagery indicated that several ephemeral watercourses transect the area proposed to be cleared (GIS Database). The application area is located within the Goldfields Groundwater Area. The mapped groundwater salinity is 14,000-35,000 milligrams per litre total dissolved solids which is described as saline to hypersaline.
Flora	Five Priority flora species were identified as possibly occurring within the amendment area based on records within the region or suitable habitat may be present (Appendix A.2).
Ecological communities	The amendment area does not intersect any Threatened or Priority Ecological Communities (GIS Database). The nearest Priority (3) Ecological Community is the Mount Belches <i>Acacia quadrimarginea</i> / <i>Ptilotus obovatus</i> (banded ironstone formation), located approximately 48 kilometres southeast of the amendment area (GIS Database).
Fauna	A desktop assessment of the amendment area and surrounds identified 292 fauna species previously recorded within a 40 kilometre radius (Botanica, 2020). This includes 131 bird, 30 mammal, 72 reptile, five amphibian, one fish and 53 invertebrate taxa. This total includes nine introduced species. 11 of these fauna species are of conservation significance, with two considered possibly occurring (Botanica, 2020). In addition, numerous migratory shore birds were identified, however there is no suitable habitat present within the amendment area for these species (Botanica, 2020).

A.2. Flora analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix D.1), and biological survey information (Botanica, 2019; 2020), impacts to the following conservation significant flora required further consideration.

Species name	Conservation status	Suitable vegetation?	Likelihood of occurrence	Distance of closest record to application area (km)	Are surveys adequate to identify? [Y, N, N/A]
<i>Elachanthus pusillus</i>	P2	N/A. Records in the region	Possible	29.5	N
<i>Eremophila arachnoides</i> subsp. <i>tenera</i>	P3	N/A. Records in the region	Possible	18.4	N
<i>Eremophila praecox</i>	P2	May be present	Possible	17.6	N
<i>Eremophila xantholaemus</i>	P1	May be present	Possible	1.9	N
<i>Ptilotus procumbens</i>	P1	May be present	Possible	28.3	N

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		
<p>Principle (a): <i>“Native vegetation should not be cleared if it comprises a high level of biodiversity.”</i></p> <p>Assessment: There is suitable habitat present for a number of Priority flora species within the amendment area, however No Priority flora were identified during the field assessments (Botanica, 2019; 2020).</p>	<p>Not likely to be at variance as per CPS 8843/2</p>	<p>Yes <i>Refer to Section 3.2.1, above.</i></p>
<p>Principle (b): <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>Assessment: The amendment area may provide marginal habitat for two conservation significant fauna species (Botanica, 2019; 2020).</p>	<p>Not likely to be at variance as per CPS 8843/2</p>	<p>Yes <i>Refer to Section 3.2.1, above.</i></p>
<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>Assessment: There are no known records of Threatened flora within the application area (GIS Database). Flora surveys of the amendment area did not record any species of Threatened flora (Botanica, 2019; 2020). The area proposed to be cleared is unlikely to contain habitat suitable for any species of Threatened flora.</p>	<p>Not likely to be at variance as per CPS 8843/2</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>Assessment: 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 (Botanica, 2019; 2020).</p>	<p>Not likely to be at variance as per CPS 8843/2</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>Assessment: The application area falls within the Murchison Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). Approximately 99% of the pre-European vegetation still exists in the IBRA Murchison Bioregion (Government of Western Australia, 2019).</p> <p>The application area is broadly mapped as Beard vegetation associations 20: Low woodland; mulga mixed with <i>Allocasuarina cristata</i> & <i>Eucalyptus</i> sp. and 468: Medium woodland; salmon gum & goldfields blackbutt (GIS Database). Approximately 98-99% of the pre-European extent of these vegetation associations remain uncleared at both the state and bioregional level (Government of Western Australia, 2019). The vegetation proposed to clear is not a remnant in an area that has been extensively cleared.</p>	<p>Not at variance as per CPS 8843/2</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>Assessment: The nearest conservation area is the Kurrawang Nature Reserve which is located approximately 39 kilometres west-southwest of the application area (GIS Database). The proposed amendment is unlikely to impact the environmental values of any conservation area.</p>	<p>Not likely to be at variance as per CPS 8843/2</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>Assessment: There are no permanent watercourses or wetlands within the area proposed to clear (Botanica, 2019; 2020; GIS Database). Several minor drainage lines pass through the amendment area (GIS Database). Drainage lines in the region</p>	<p>At variance as per CPS 8843/2</p>	<p>No</p>

Assessment against the clearing principles	Variance level	Is further consideration required?
<p>are dry for most of the year, only flowing briefly immediately following significant rainfall.</p> <p>The application area contains one vegetation type that is growing in association with a broad floodplain: OD-EW1 – Open low woodland of <i>Eucalyptus salmonophloia</i> over mid shrubland of <i>Eremophila scoparia</i> and low samphire shrubland of <i>Tecticornia disarticulata</i> on clay-loam plain (Botanica, 2019; 2020). Potential impacts to vegetation growing in association with the watercourses may be minimised by the continued implementation of a watercourse management condition.</p>		
<p><u>Principle (g):</u> “Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</p> <p><u>Assessment:</u> The amendment area is mapped within the Bevon, Gumland, and Moriarty land systems (DPIRD, 2022; GIS Database).</p> <p>The Bevon land system is described as irregular low ironstone hills with stony lower slopes supporting mulga shrublands (Pringle et al., 1994). This land system may be susceptible to soil erosion particularly along drainage lines if vegetation cover is removed and the soil surface is disturbed (Pringle et al., 1994).</p> <p>The Gumland land system is described as extensive pediplains supporting eucalypt woodlands with halophytic and non-halophytic shrub understoreys (DPIRD, 2022). This land system is susceptible to soil erosion if perennial shrub cover is reduced (DPIRD, 2022).</p> <p>Moriarty land system consists of low greenstone rises and stony plains, supporting chenopod shrublands with patchy eucalypt overstoreys (Pringle et al., 1994). Drainage lines in this land system are susceptible to water erosion if perennial shrub cover is removed and the soil surface is disturbed (Pringle et al., 1994).</p> <p>The continued implementation of a staged clearing condition may minimise potential land degradation as a result of the proposed clearing.</p>	<p>May be at variance</p> <p>as per CPS 8843/2</p>	<p>No</p>
<p><u>Principle (i):</u> “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.”</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). Several minor drainage lines intersect the application area (GIS Database). Drainage 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 or cause deterioration in the quality of underground water.</p>	<p>Not likely to be at variance</p> <p>as per CPS 8843/2</p>	<p>No</p>
<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> The climate of the region is semi-arid to arid, with an average rainfall of approximately 200-300 millimetres per year (CALM, 2002). The Kalgoorlie-Boulder Airport weather station has a recorded average annual rainfall of approximately 265.6 millimetres per year (BoM, 2022).</p> <p>There are no permanent water courses or waterbodies within the amendment area (GIS Database). Seasonal drainage lines are common in the region and temporary localised flooding may occur briefly following heavy rainfall events. The proposed clearing is unlikely to increase the incidence or intensity of natural flooding events (Botanica, 2019; 2020).</p>	<p>Not likely to be at variance</p> <p>as per CPS 8843/2</p>	<p>No</p>

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
- 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

- BoM (2022) Bureau of Meteorology Website – Climate Data Online, Kalgoorlie-Boulder Airport. Bureau of Meteorology. <http://www.bom.gov.au/climate/data/> (Accessed 31 August 2022).
- Botanica (2019) Reconnaissance Flora/Vegetation & Fauna Survey. Bulong Gold Project. Report prepared for Black Cat (Bulong) Pty Ltd, by Botanica Consulting Pty Ltd, August 2019.
- Botanica (2020) Reconnaissance Flora/Vegetation & Fauna Survey. L25/62. Report prepared for Black Cat (Bulong) Pty Ltd, by Botanica Consulting Pty Ltd, September 2020.
- 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 29 August 2022).

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- 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>
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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.