

## 1. Application details and outcomes

### 1.1. Permit application details

Permit number:	6182/3
Permit type:	Purpose Permit
Applicant name:	MacPhersons Resources Limited
Application received:	27 March 2024
Application area:	160 hectares
Purpose of clearing:	Mineral production
Method of clearing:	Mechanical Removal
Tenure:	Mining Lease 25/355 Miscellaneous Licence 25/32
Location (LGA area/s):	Shire/City of Kalgoorlie-Boulder
Colloquial name:	Nimbus Project

### 1.2. Description of clearing activities

MacPhersons Resources Limited proposes to clear up to 160 hectares of native vegetation within a boundary of approximately 273 hectares, for the purpose of mineral production. The project is located approximately 14 kilometres east of the city of Boulder, within the Shire of Kalgoorlie-Boulder.

Clearing permit CPS 6182/1 was granted by the Department of Mines and Petroleum (now the Department of Energy, Mines, Industry Regulation and Safety) on 28 August 2014 and was valid from 20 September 2014 to 20 September 2019. The permit authorised the clearing of up to 160 hectares of native vegetation within a boundary of approximately 507 hectares, for the purpose of mineral production.

CPS 6182/2 was granted on 24 April 2019, amending the permit to extend the permit duration to 20 September 2024.

On 27 March 2024, the Permit Holder applied to amend CPS 6182/2 to extend the permit duration to 20 September 2029.

### 1.3. Decision on application and key considerations

Decision:	Grant
Decision date:	9 July 2024
Decision area:	160 hectares of native vegetation

### 1.4. Reasons for decision

This clearing permit application was submitted, accepted, assessed, and determined in accordance with sections 51KA(1) of the *Environmental Protection Act 1986* (EP Act). The Department of Energy, Mines, Industry Regulation and Safety (DEMIRS) advertised the application for a public comment for a period of 21 days, and one submission was received.

In making this decision, the Delegated Officer had regard for the site characteristics (Appendix B), relevant datasets (Appendix F), supporting information provided by the applicant, including the information from a flora and vegetation survey (Appendix E), the clearing principles set out in Schedule 5 of the EP Act (Appendix C), proposed avoidance and minimisation measures (Section 3.1), 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;
- potential impacts on riparian vegetation and watercourses; and
- potential land degradation in the form of erosion.

After consideration of the available information, as well as the applicant's minimisation and mitigation measures (see Section 3.1), the Delegated Officer determined the proposed clearing can be minimised and managed to be unlikely to lead to an unacceptable risk to environmental values.

The Delegated Officer decided to grant a clearing permit subject to conditions to:

- avoid, minimise to reduce the impacts and extent of clearing;
- take hygiene steps to minimise the risk of the introduction and spread of weeds;
- avoid clearing riparian vegetation where possible and maintain waterflows if a watercourse is impacted; and
- commence construction no later than three months after undertaking clearing to reduce the risk of erosion.

The assessment has not changed since the assessment for CPS 6182/2. The Delegated Officer determined that the proposed extension of duration 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)

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)
- *Guidance for the Assessment of Environmental Factors – Terrestrial Fauna Surveys for Environmental Impact Assessment in Western Australia* (EPA, 2004)
- *Guidance for the Assessment of Environmental Factors – Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia* (EPA, 2004)

## 3. Detailed assessment of application

### 3.1. Avoidance and mitigation measures

Cleared areas will be used to stockpile cleared topsoil and vegetation for revegetation purposes (MacPhersons, 2014). The Delegated Officer was satisfied that the applicant has made a reasonable effort to avoid and minimise potential impacts of the proposed clearing on environmental values.

### 3.2. Assessment of impacts on environmental values

As of 31 March 2024, only 0.1227 hectares have been cleared in the application area under CPS 6182/1 (MacPhersons, 2015-2024). The proposed amendment involves extending the duration of the clearing permit by five years. No changes are proposed to the area or amount of authorised clearing.

No new biological information has been provided in support of the amendment application. The environmental values of the application area are well understood, based on biological studies undertaken by Recon Environmental (2010), Mattiske Consulting (2013), and Outback Ecology (2014). A review of current environmental information (Appendix B) reveals that the assessment against the clearing principles has not changed significantly from the Clearing Permit Decision Report CPS 6182/2.

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 previous versions of the decision report. Extending the period in which clearing is authorised by a further five years is unlikely to change the environmental impacts of the proposed clearing. The conditions currently imposed on clearing permit CPS 6182/2 are considered adequate for amended permit CPS 6182/3 to continue to avoid/minimise the impacts of clearing, minimise the introduction and spread of weeds, and minimise disruption to riparian vegetation and surface water flows.

### 3.3. Relevant planning instruments and other matters

The clearing permit amendment application was advertised on 16 April 2024 by the Department of Energy, Mines, Industry Regulation and Safety inviting submissions from the public. One submission was received in relation to this application.

There is one native title claim over the area under application (DPLH, 2024). 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, 2024). 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. Details of public submissions

Summary of comments	Consideration of comment
The City of Kalgoorlie-Boulder has no objection to this amendment.	This comment has been noted.

## Appendix B. Site characteristics

### B.1. Site characteristics

Characteristic	Details
Local context	The area proposed to be cleared is part of an expansive tract of native vegetation in the extensive land use zone of Western Australia. It is surrounded by the native vegetation and landscape of the Coolgardie Bioregion and adjacent to mining developments to the southwest of the application area (GIS Database).
Ecological linkage	Based on aerial imagery, the application area does not form part of any formal or informal ecological linkages (GIS Database).
Conservation areas	The application area is not located within any known or mapped conservation areas. The closest conservation area is the Lakeside Timber Reserve, located approximately 4.8 kilometres southwest of the application area (GIS Database).
Vegetation description	<p>The vegetation of the application area is broadly mapped as the following Beard vegetation association:  <b>468:</b> Medium woodland; salmon gum &amp; goldfields blackbutt (GIS Database).</p> <p>A flora and vegetation survey was conducted over the application area by Mattiske Consulting Pty Ltd during June, 2012. The following vegetation associations were recorded within the application area (Mattiske, 2013):</p> <p><b>E1:</b> Very Open Woodland of <i>Eucalyptus ravida</i>, <i>Eucalyptus salmonophloia</i>, <i>Eucalyptus stricklandii</i> and <i>Eucalyptus transcontinentalis</i> over <i>Eremophila interstans</i> subsp. <i>virgata</i> and mixed <i>Eremophila</i> species over <i>Atriplex vesicaria</i>, <i>Atriplex nummularia</i> and mixed shrubs on flats with red/brown clay soils and scattered quartz pebbles.</p> <p><b>E2:</b> Dense Low Forest of <i>Eucalyptus ravida</i> and <i>Eucalyptus celastroides</i> over <i>Eremophila interstans</i> subsp. <i>virgata</i> and mixed <i>Eremophila</i> species, <i>Exocarpos aphyllus</i> and occasional mixed shrubs on flats with red/brown clay soils.</p> <p><b>E3:</b> Open Woodland of <i>Eucalyptus stricklandii</i> with occasional <i>Eucalyptus ravida</i> and <i>Eucalyptus salmonophloia</i> over <i>Casuarina pauper</i> over <i>Eremophila interstans</i> subsp. <i>virgata</i> and <i>Exocarpos aphyllus</i> over <i>Atriplex nummularia</i>, <i>Atriplex vesicaria</i> and mixed shrubs on flats with rocky red/brown clay soils.</p> <p><b>E4:</b> Open Woodland of <i>Eucalyptus salmonophloia</i> over <i>Atriplex nummularia</i>, <i>Atriplex vesicaria</i>, <i>Exocarpos aphyllus</i> and <i>Eremophila interstans</i> subsp. <i>virgata</i> and mixed shrubs adjacent to drainage lines on flats with red/brown clay soils.</p> <p><b>E5:</b> Open Low Woodland of <i>Eucalyptus stricklandii</i> and <i>Casuarina pauper</i> over <i>Santalum spicatum</i> and <i>Acacia burkittii</i> over <i>Dodonaea lobulata</i>, <i>Eremophila oldfieldii</i> subsp. <i>angustifolia</i>, and other mixed shrubs over occasional <i>Triodia scariosa</i> on flats with red/brown clay soils with scattered ironstone and quartz pebbles.</p> <p><b>E6:</b> Open Woodland of <i>Eucalyptus celastroides</i>, <i>Eucalyptus ravida</i>, <i>Eucalyptus salmonophloia</i> and <i>Eucalyptus stricklandii</i> over <i>Eremophila interstans</i> subsp. <i>virgata</i>, <i>Atriplex vesicaria</i>, <i>Atriplex nummularia</i>, <i>Exocarpos aphyllus</i>, <i>Maireana sedifolia</i> and mixed shrubs and Chenopods on flats with red/brown clay soils with scattered ironstone pebbles.</p> <p><b>C1:</b> Open Chenopod Shrubland of <i>Atriplex nummularia</i>, <i>Atriplex vesicaria</i> and <i>Senna artemisioides</i> subsp. <i>filifolia</i> and <i>Eremophila scoparia</i> over <i>Scaevola spinescens</i> and mixed <i>Maireana</i> species on seasonally inundated drainage lines with red/brown clay soils.</p> <p><b>A1:</b> Closed Shrubland of <i>Acacia burkittii</i> with emergent <i>Eucalyptus stricklandii</i> over <i>Eremophila granitica</i> and <i>Eremophila decipiens</i> on flats with red/brown clay soils.</p> <p>Representative photos are available in Appendix E.</p>
Vegetation condition	<p>The vegetation survey (Mattiske, 2013) and aerial imagery indicate the vegetation within the proposed clearing area is in Very Good to Excellent (Keighery, 1994) condition.</p> <p>The full Keighery (1994) condition rating scale is provided in Appendix D.</p>
Climate and landform	The application area is located in an arid zone with an annual average rainfall (Kalgoorlie-Boulder Airport) of 263.4 millimetres (BoM, 2024).

Characteristic	Details
Soil description	The soil within the application area is mapped as units BB5 and Mx43 (GIS Database). These soil units are described by Northcote et al. (1960-68) as: <b>BB5:</b> Rocky ranges and hills of greenstones--basic igneous rocks: chief soils seem to be shallow calcareous loamy soils with shallow brown and grey-brown calcareous earths below which weathered rock occurs at shallow depths. Associated soils are not described but may include alkaline red earths and narrow valleys. <b>Mx43:</b> Gently undulating valley plains and pediments; some outcrop of basic rock: chief soils are alkaline red earths with limestone or limestone nodules at shallow depth (< 24 in.) on gently sloping slightly concave plains. Associated are clay plains flanking ultrabasic rock outcrop.
Land systems and erosion risk	The application area falls within the Graves Land System and the Mx43 atlas system (as described above) (DPIRD, 2024). The Graves Land System is described as basalt and greenstone rises and low hills, supporting eucalypt woodlands with prominent saltbush and bluebush understoreys. Alluvial plains are susceptible to water erosion where perennial shrub cover is substantially reduced, or the soil surface is disturbed .
Waterbodies	The desktop assessment and aerial imagery indicated that four minor, non-perennial watercourses transect the area proposed to be cleared (GIS Database).
Hydrogeography	The application area falls within the Goldfields Groundwater Area legislated by the RIWI Act 1914 which contains a mapped groundwater salinity of 14,000-35,000 milligrams per litre total dissolved solids which is described as saline (GIS Database).
Flora	No Threatened or Priority flora are known to occur within the application area (Mattiske, 2013; Recon, 2010; GIS Database). There are records of three Priority flora species within 10 kilometres of the application area (GIS Database).
Ecological communities	No Threatened or Priority Ecological Communities (PEC) are known to occur within the application area (Mattiske, 2013; Recon, 2010; GIS Database). The closest record is a PEC located 19.5 kilometres from the application area (GIS Database).
Fauna	There were no Threatened or Priority fauna species recorded in the application area (Outback Ecology, 2014; GIS Database). There are records of three conservation significant fauna species within 10 kilometres of the application area (GIS Database).
Fauna habitat	A targeted malleefowl survey was conducted over the application area by Outback Ecology during December, 2013. Two broad habitat types were identified within the Study Area, these were Eucalypt woodland on red loamy clay and open shrubland on red loamy clay (Outback Ecology, 2014).

## B.2. Flora analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix F.1), impacts to the following conservation significant flora required further consideration.

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
<i>Eremophila praecox</i>	P2	N	N	N	4.69 km	37	N
<i>Eremophila xantholaemus</i>	P1	N	N	Y	3.62 km	4	N
<i>Xanthoparmelia dayiana</i>	P3	Y	Y	Y	3.95 km	5	N/A

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority (Western Australian Herbarium, 1998-; GIS Database)

## B.3. Fauna analysis table

Species name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
Malleefowl	VU	N	Y	0.008 km	29,638	Y
Inland hairstreak butterfly	P1	N	N	7.84 km	33	N
Western spiny-tailed skink	VU	N	N	8.73 km	265	N

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

**Appendix C. Assessment against the clearing principles**

Assessment against the clearing principles	Variance level	Is further consideration required?
<b>Environmental value: biological values</b>		
<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>The area proposed to be cleared does not contain Priority flora or a known or mapped Priority Ecological Community in the application area (Mattiske, 2013; Recon, 2010; GIS Database). The desktop analysis revealed that <i>Eremophila praecox</i> and <i>Eremophila xantholaemus</i> are not likely to occur in the application area (see Appendix B.2). Although habitat is present for <i>Xanthoparmelia dayiana</i>, the proposed clearing of native vegetation is unlikely to represent a significant impact for this lichen species as it mainly grows on rocks.</p> <p>Only one weed species was recorded in the application area (Mattiske, 2013). Weeds have the potential to significantly change the dynamics of a natural ecosystem and lower the biodiversity of an area. Potential impacts to the biodiversity as a result of the proposed clearing may be minimised by the implementation of a weed management condition.</p>	<p>Not likely to be at variance</p> <p>(as per CPS 6182/2)</p>	<p>No</p>
<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 two habitats mapped in the application area were deemed to be unsuitable habitat for mallefowl due to the lack of available ground cover (shrub understorey and leaf litter) and the soils comprising a high proportion of clays which are unsuitable for building mounds (Outback Ecology, 2014).</p>	<p>Not likely to be at variance</p> <p>(as per CPS 6182/2)</p>	<p>No</p>
<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 were no Threatened flora species recorded within the application area (Mattiske, 2013; Recon, 2010; GIS Database).</p>	<p>Not likely to be at variance</p> <p>(as per CPS 6182/2)</p>	<p>No</p>
<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 were no known or mapped Threatened Ecological Communities identified inside the application area (Mattiske, 2013; Recon, 2010; GIS Database).</p>	<p>Not likely to be at variance</p> <p>(as per CPS 6182/2)</p>	<p>No</p>
<b>Environmental value: significant remnant vegetation and conservation areas</b>		
<p><u>Principle (e):</u> <i>“Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.”</i></p> <p><u>Assessment:</u></p> <p>The application area falls within the Coolgardie Bioregion of the Interim Biogeographic Regionalisation for Australia (GIS Database). Over 97 per cent of the pre-European vegetation still exists in the Coolgardie Bioregion (Government of Western Australia, 2019). The application area is broadly mapped as Beard vegetation association 468 (GIS Database). This vegetation association has not been extensively cleared as over 98 per cent of the pre-European extent of this vegetation association remains uncleared at both the state and bioregional level (Government of Western Australia, 2019).</p>	<p>Not at variance</p> <p>(as per CPS 6182/2)</p>	<p>No</p>
<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>Given the distance to the nearest conservation area, the proposed clearing is not likely to have an impact on the environmental values of any known or mapped conservation areas.</p>	<p>Not likely to be at variance</p> <p>(as per CPS 6182/2)</p>	<p>No</p>

Assessment against the clearing principles	Variance level	Is further consideration required?
<b>Environmental value: land and water resources</b>		
<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>Several water courses (drainage lines) are recorded within the application area (GIS Database). Two vegetation communities were identified as growing in association with a watercourse (E4 and C1) (Mattiske, 2013). The proposed clearing is likely to impact native vegetation growing in, or in association with, an environment associated with a watercourse.</p> <p>Potential impacts to these watercourses and associated vegetation may be minimised by the implementation of a watercourse management condition.</p>	At variance  (as per CPS 6182/2)	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>Due to the mapped soils within the application area (GIS Database), there may be a potential for erosion to occur especially given the large size of the proposed clearing (160 hectares) and presence of drainage areas. Potential impacts from erosion as a result of the proposed clearing may be minimised by the implementation of a staged clearing condition.</p>	May be at variance  (as per CPS 6182/2)	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>Given no permanent water courses, wetlands, or Public Drinking Water Source Areas are recorded within the application area (GIS Database), the proposed clearing is unlikely to cause deterioration in the quality of surface or underground water</p>	Not likely to be at variance  (as per CPS 6182/2)	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>Given no permanent water courses or wetlands are recorded within the application area (GIS Database), the proposed clearing is unlikely to cause, or exacerbate, the incidence or intensity of flooding.</p>	Not likely to be at variance  (as per CPS 6182/2)	No

## Appendix D. 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.



Condition	Description
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 E. Photographs of the vegetation**



**Figure 1.** Vegetation Community E1.





**Figure 2.** Vegetation Community E2.



**Figure 3.** Vegetation Community E3.





**Figure 4.** Vegetation Community E4.



**Figure 5.** Vegetation Community E5.





**Figure 6.** Vegetation Community E6.



**Figure 7.** Vegetation Community C1.





**Figure 8.** Vegetation Community A1.

## Appendix F. Sources of information

### F.1. GIS databases

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

- Aboriginal Heritage Places (DPLH-001)
- 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 (WAHerb)
- Threatened Fauna
- Threatened Ecological Communities and Priority Ecological Communities
- Threatened Ecological Communities and Priority Ecological Communities (Buffers)

### F.2. References

Bureau of Meteorology (BoM) (2024) Bureau of Meteorology Website – Climate Data Online, Kalgoorlie-Boulder Airport. Bureau of Meteorology. <https://reg.bom.gov.au/climate/data/> (Accessed 24 June 2024).

- Department of Environment Regulation (DER) (2014) *A guide to the assessment of applications to clear native vegetation*. Perth. [https://www.der.wa.gov.au/images/documents/your-environment/native-vegetation/Guidelines/Guide2\\_assessment\\_native\\_veg.pdf](https://www.der.wa.gov.au/images/documents/your-environment/native-vegetation/Guidelines/Guide2_assessment_native_veg.pdf)
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- Department of Primary Industries and Regional Development (DPIRD) (2024) NRInfo Digital Mapping. Department of Primary Industries and Regional Development. Government of Western Australia. <https://dpiird.maps.arcgis.com/apps/webappviewer/index.html?id=662e8cbf2def492381fc915aaf3c6a0f> (Accessed 24 June 2024).
- Department of Water and Environmental Regulation (DWER) (2021) Procedure: Native vegetation clearing permits. Joondalup. [https://dwer.wa.gov.au/sites/default/files/Procedure\\_Native\\_vegetation\\_clearing\\_permits\\_v1.pdf](https://dwer.wa.gov.au/sites/default/files/Procedure_Native_vegetation_clearing_permits_v1.pdf)
- Environmental Protection Authority (EPA) (2004a) Guidance for the Assessment of Environmental Factors - Terrestrial Fauna Surveys for Environmental Impact Assessment in Western Australia, No. 56, June 2004.
- Environmental Protection Authority (EPA) (2004b) Guidance for the Assessment of Environmental Factors - Terrestrial Flora and Vegetation Surveys for Environmental Impact Assessment in Western Australia, No. 51, June 2004.
- 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.
- Mattiske (2013) Flora and Vegetation Survey of the Nimbus Project Area. Unpublished report prepared by Mattiske Consulting Pty Ltd for MacPhersons Resources, April 2013
- MacPhersons (2014) Clearing permit application form, CPS 6182/1, received 26 September 2014.
- MacPhersons (2015-2024) Annual Clearing Permit Reports, prepared for the Department of Energy, Mines, Industry Regulation and Safety.
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## 4. Glossary

### Acronyms:

<b>BC Act</b>	<i>Biodiversity Conservation Act 2016</i> , Western Australia
<b>BoM</b>	Bureau of Meteorology, Australian Government
<b>DAA</b>	Department of Aboriginal Affairs, Western Australia (now DPLH)
<b>DAFWA</b>	Department of Agriculture and Food, Western Australia (now DPIRD)
<b>DCCEEW</b>	Department of Climate Change, Energy, the Environment and Water, Australian Government
<b>DBCA</b>	Department of Biodiversity, Conservation and Attractions, Western Australia
<b>DEMIRS</b>	Department of Energy, Mines, Industry Regulation and Safety
<b>DER</b>	Department of Environment Regulation, Western Australia (now DWER)
<b>DMIRS</b>	Department of Mines, Industry Regulation and Safety, Western Australia (now DEMIRS)
<b>DMP</b>	Department of Mines and Petroleum, Western Australia (now DEMIRS)
<b>DoEE</b>	Department of the Environment and Energy (now DCCEEW)
<b>DoW</b>	Department of Water, Western Australia (now DWER)
<b>DPaW</b>	Department of Parks and Wildlife, Western Australia (now DBCA)
<b>DPIRD</b>	Department of Primary Industries and Regional Development, Western Australia
<b>DPLH</b>	Department of Planning, Lands and Heritage, Western Australia
<b>DRF</b>	Declared Rare Flora (now known as Threatened Flora)
<b>DWER</b>	Department of Water and Environmental Regulation, Western Australia
<b>EP Act</b>	<i>Environmental Protection Act 1986</i> , Western Australia
<b>EPA</b>	Environmental Protection Authority, Western Australia
<b>EPBC Act</b>	<i>Environment Protection and Biodiversity Conservation Act 1999</i> (Federal Act)
<b>GIS</b>	Geographical Information System
<b>ha</b>	Hectare (10,000 square metres)
<b>IBRA</b>	Interim Biogeographic Regionalisation for Australia

<b>IUCN</b>	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
<b>PEC</b>	Priority Ecological Community, Western Australia
<b>RIWI Act</b>	<i>Rights in Water and Irrigation Act 1914</i> , Western Australia
<b>TEC</b>	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.