



Clearing Permit Decision Report

1. Application details and outcomes

1.1. Permit application details

Permit number:	9379/3
Permit type:	Purpose permit
Applicant name:	Juno Minerals Limited
Application received:	28 October 2025
Application area:	69 hectares
Purpose of clearing:	Mineral production and associated activities
Method of clearing:	Mechanical removal
Tenure:	General Purpose Lease 29/22 Mining Lease 29/414 Miscellaneous Licence 29/79; 29/100; and 29/121
Location (LGA area):	Shire of Menzies
Colloquial name:	Mount Mason DSO Hematite Project

1.2. Description of clearing activities

Juno Minerals Limited proposes to clear up to 69 hectares of native vegetation within a boundary of approximately 2,046 hectares, for the purpose of building and operating mining related infrastructure (Juno, 2025). The project is located approximately 15 kilometres southwest of Mount Ida, within the Shire of Menzies (GIS Database).

Clearing permit CPS 9379/1 was granted by the Department of Energy, Mines, Industry Regulation and Safety (now the Department of Mines, Petroleum and Exploration) on 10 March 2022 and was valid from 2 April 2022 to 30 April 2027. The permit authorised the clearing of up to 141 hectares of native vegetation within a boundary of approximately 2,829. hectares, for the purpose of mineral production and associated activities.

Clearing permit CPS 9379/2 was withdrawn by the proponent.

On 28 October 2025, the permit holder applied to amend CPS 9379/1 to extend the duration of the permit by 5 years and reduce the size of the area allowed to clear from 141 hectares to 69 hectares and the boundary of the amendment area from 2,828.97 hectares to 2,046.49 hectares (Juno, 2025). Gold Valley Yilgarn Pty Ltd have entered into a transaction with Juno Minerals Pty Ltd that has resulted in the change of ownership of the leases M 29/408 and G 29/23 relevant to CPS 9379/1 (Juno, 2025). Approximately 3.75 hectares had been cleared under previous permit in tenement M 29/408, which now belongs to Gold Valley Yilgarn Pty Ltd (Juno, 2026b).

1.3. Decision on application and key considerations

Decision:	Grant
Decision date:	30 June 2026
Decision area:	69 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) and 51O of the *Environmental Protection Act 1986* (EP Act). The Department of Mines, Petroleum and Exploration (DMPE) 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 B), relevant datasets (Appendix F), supporting information provided by the applicant (Appendix A) including the results of 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 significant impacts to priority flora species *Jacksonia lanicarpa* (Priority 1);
- impacts to the Perrinvale/Walling vegetation complexes (banded ironstone formation) priority ecological community (PEC);
- the loss of malleefowl breeding habitat;
- impacts to vegetation associated with a watercourse;
- potential land degradation in the form of erosion and water starvation.

After consideration of the available information, as well as the applicant's minimisation and mitigation measures (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;
- a flora management condition where no more than three individuals of *Jacksonia lanicarpa* (Priority 1) are permitted to be impacted;
- a fauna management (malleefowl) condition within potentially suitable breeding habitat requiring areas proposed to be cleared between 1 September and 31 January are inspected to identify active (in use) malleefowl mounds, and to maintain a 200 metre buffer around identified active mounds;
- restricted clearing within ABAB habitat (shall not clear within area shaded red in Figure 1 of Section **Error! Reference source not found.**);
- a staged clearing condition to minimise erosion; and
- a watercourse management condition requiring that surface water flows are not impacted by the proposed clearing, and the clearing of riparian vegetation is avoided, where practicable.

1.5. Site map

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

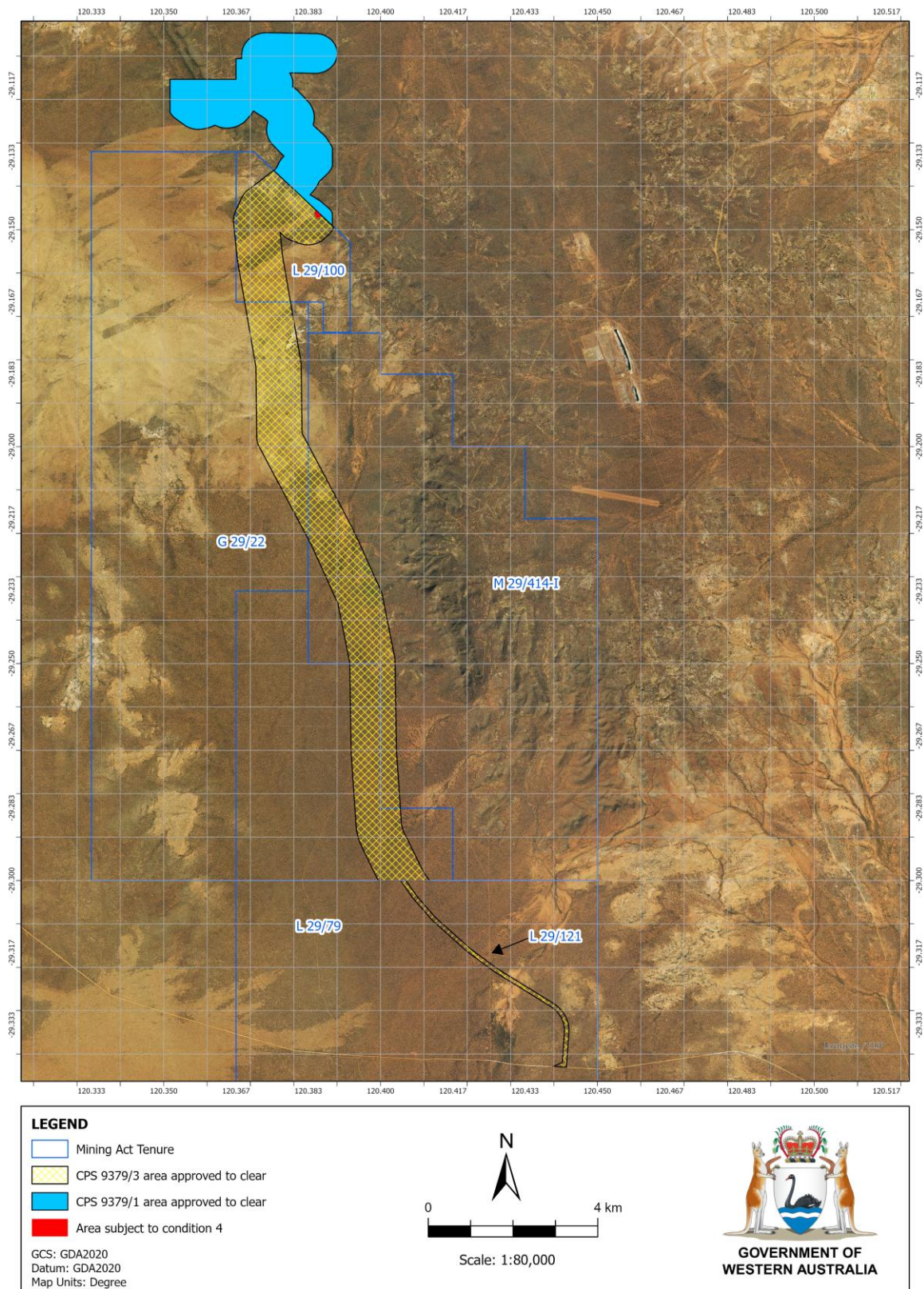


Figure 1. Map of the amendment area. The area cross-hatched yellow indicates the area within which conditional authorised clearing can occur under the granted clearing permit CPS 9379/3. The area shaded blue indicates the area to be removed from CPS 9379/3. No clearing can be conducted in the area shaded red according to Condition 4 of CPS 9379/3.

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 (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)
- *Rights in Water and Irrigation Act 1914* (RIWI Act)

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, 2020)

3. Detailed assessment of application

3.1. Avoidance and mitigation measures

Juno Minerals Limited (2026a) has considered avoiding the potential Arid Bronze Azure Butterfly (ABAB) habitat (area shaded red in Figure 1). Avoidance and mitigation measures proposed for the original clearing permit (CPS 9379/1) will still be implemented for the amended permit.

3.2. Assessment of impacts on environmental values

In assessing the application, the Delegated Officer has had regard for the site characteristics (Appendix B) and the extent to which the impacts of the proposed clearing present a risk to biological, conservation, or land and water resource values.

The assessment against the clearing principles identified that the impacts of the proposed clearing present a risk to biological values (flora, ecological communities and fauna). The consideration of these impacts, and the extent to which they can be managed through conditions applied in line with sections 51H and 51I of the EP Act, is set out below.

3.2.1. Biological values (flora and ecological communities) - Clearing principle (a)

Assessment

Priority flora

Western Botanical (2021) recorded 170 individuals of *Jacksonia lanicarpa* (Priority 1) within the survey area, out of which 149 individuals were recorded within the amendment area. *Jacksonia lanicarpa* is known from hardpan wash plains within the amendment area (Western Botanical, 2021). *Jacksonia lanicarpa* is known from 12 locations within Coolgardie and Murchison bioregions (WAH, 1998-). Three out of 149 individuals lie within the proposed clearing envelope (Western Botanical, 2021). Given this, the proposed impact on *Jacksonia lanicarpa* is not likely to be significant on a regional scale, however, is considered significant at a local scale (WAH, 1998-). Potential impacts to *Jacksonia lanicarpa* may be minimised by continuing the implementation of a flora management condition limiting clearing of *Jacksonia lanicarpa* to three individual plants.

Menkea draboides (Priority 3) has been recorded in sandy or clayey soils in open shrublands and heath, often on disturbed or seasonally moist sites such as flats, drainage areas, and coastal sandplains (WAH, 1998-). The flora and vegetation survey recorded 3 individuals in the broader survey area, where one individual was recorded within the amendment area (Western Botanical, 2021). *Menkea draboides* is distributed within Coolgardie, Geraldton Sandplains, Murchison, Yalgoo regions (WAH, 1998-). The proposed clearing is unlikely to have significant impact on *Menkea draboides* at a species or regional scale as only one individual is being impacted (Western Botanical, 2021).

Western Botanical (2021) has recorded 100 individuals of *Philothea coateana* (Priority 3) on the sandplains within the amendment area. *Philothea coateana* is known from 14 Western Australian Herbarium (1998-) records within Coolgardie and Murchison bioregions (WAH, 1998-). The distribution of *Philothea coateana* is frequent and widely spread locally (WAH, 1998-). The individuals of *Philothea coateana* lies outside of the proposed development envelope within the Mount Mason DSO Hematite Project (Western Botanical, 2021). Therefore, the proposed clearing is unlikely to have significant impact on *Philothea coateana* at a species or regional scale (Western Botanical, 2021).

Drosera eremaea was recorded in the survey by Western Botanical (2021) as Priority 1. However, at the time of assessment, this species has been delisted and is no longer a species of conservation concern (WAH, 1998-).

The flora and vegetation survey and desktop assessment has considered species like *Calotis* sp. Perrinvale Station (R.J. Cranfield 7096) (Priority 3), *Calytrix hislopii* (Priority 3), *Chrysocephalum apiculatum* subsp. *norsemanense* (Priority 3), *Hemigenia exilis* (Priority 4), *Homalocalyx grandifloras* (Priority 3) and *Philotheca deserti* subsp. *brevifolia* (Priority 3) to have possibility to occur in the amendment area (Western Botanical, 2021; GIS Database). These flora species were recorded within or nearby tenements during the survey (Western Botanical, 2021). However, the detailed flora and vegetation survey conducted by Western Botanical (2021) did not record these species within the amendment area. Therefore, the proposed clearing is unlikely to have any significant impact at a species or regional scale (Western Botanical, 2021; WAH, 1998-; GIS Database).

Priority ecological communities (PEC)

The northern extent of the amendment area falls within the (Priority 1) - Perrinvale/Walling vegetation complexes (banded ironstone formation) Priority Ecological Community (PEC) (GIS Database). The banded ironstone formation PECs occur over the hilltops of several ranges in the Midwest and Goldfields regions (GIS Database). The banded ironstone formation (BIF) ranges are of significant biodiversity value, supporting distinct and restricted plant communities which are often unique to a specific range (DEC and DoIR, 2007). In a strategic review of the BIF ranges, the various ranges were classified according to their relative biodiversity values. Mount Mason was not included in the list of areas which were considered to have the highest biodiversity and conservation values (DEC and DoIR, 2007). The Mt Ida/ Mt Mason occurrence of the PEC is mapped over a total area of approximately 11,778 hectares (GIS Database). Clearing in this area was previously approved under clearing permit CPS 5764/1 (expired). The amendment area intercepts less than 9 per cent of the buffer area of the Mt Ida/Mt Mason occurrence of the PEC (GIS Database). However, potential impacts to the PEC are likely to be a lot lower since the proposed clearing is of up to 69 hectares within a boundary of approximately 2,046 hectares, which would represent less than 2 per cent of the PEC (Juno, 2025; GIS Database). It is expected that some vegetation associations of the area may be regionally restricted, particularly those associated with the geology of the BIF ranges and associated laterite caps and the erosion products from these ranges. These will most likely be widespread within similar landforms of the Mt Mason / Mt Ida area (Western Botanical, 2021). The proposed clearing is unlikely to have any significant impact on the continued existence of the PEC.

Conclusion

Based on the above assessment, the proposed clearing will result in potentially significant impacts to *Jacksonia lanicarpa* at a local scale.

Impacts to the Perrinvale/Walling vegetation complexes (banded ironstone formation) PEC are unlikely to be significant.

For the reasons set out above, it is considered that the impacts of the proposed clearing on priority flora can be managed by implementing flora management conditions and avoiding, minimising and reducing the impacts and extent of clearing.

Conditions

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

- a flora management condition where impact on no more than three individuals of *Jacksonia lanicarpa* is permitted; and
- avoid, minimise to reduce the impacts and extent of clearing.

3.2.2. Biological values (fauna) - Clearing principle (a) and (b)

The habitat types are common and widespread within the subregion and are unlikely to function as ecological linkages or refugia (Western Ecological, 2021). The habitats present within the amendment area serve as a potential foraging and breeding habitat for some of the conservation significant fauna species such as malleefowl and long-tailed dunnart and provides suitable habitat for ABAB (Western Ecological 2021; Commonwealth of Australia, 2008).

A subterranean fauna sampling programme was also undertaken within the amendment area by Rockwater Pty Ltd from November 2011 to May 2012, in accordance with the relevant EPA guidelines (Juno Minerals, 2021). Results indicate the stygofauna community within the amendment area are represented by only one stygal group (Nematoda), suggesting a depauperate complexity for arid parts of Western Australia (Juno Minerals, 2021). Nematodes are a widespread group with few representatives confined to subterranean environments. It is considered unlikely that the proposed clearing will affect their conservation status (Juno Minerals, 2021).

Malleefowl (*Leipoa ocellata*) listed as Vulnerable, inhabits a variety of environments but is mainly associated with semi-arid to arid shrublands and low woodlands dominated by mallee vegetation, as well as related habitats such as broombush (*Melaleuca uncinata*) and native pine (*Callitris* species) scrub (DCCEEW, 2024). Their nests are constructed in sandy soil and leaf litter by the building of a large mound for egg incubation (DCCEEW, 2024). The targeted fauna survey conducted by Western Ecological (2021) recorded 15 malleefowl evidence including five tracks, eight mounds and two malleefowl sighting in the survey area, out of which five evidence were recorded within the amendment area (Western Ecological, 2021). During the survey, two malleefowl were sighted, one within the amendment area and the second outside of the amendment area, two old and disused malleefowl mounds and two malleefowl tracks were recorded within the amendment area (Western Ecological, 2021). Only one mound near the southern end of the haul road, outside of the amendment area was considered under construction (Western Ecological, 2021). A map of malleefowl records is provided in Appendix E. Malleefowl are likely to utilise the area for foraging and potentially breeding, although habitats are widespread locally and regionally. Potential impacts to malleefowl may be minimised by continuing the implementation of a fauna management condition requiring further searches for malleefowl if clearing during the breeding season and avoidance of active mounds, if present.

The long-tailed dunnart listed as Priority 4, inhabits in rugged and rocky outcrops in the arid zones (Western Ecological, 2021). Long-tailed dunnarts were captured twice in the survey by Keith Lindbeck and Associates (2012) approximately 2.5 kilometres north of the amendment area. Western Ecological (2021) set out five cameras with universal bait for long-tailed dunnart in suitable habitat for four nights, no long-tailed dunnart were recorded. An example of the camera trap setup and a map of the

camera trap locations are provided in Appendix E. Given the limited number of captures during the historic survey and no traces were recorded within the amendment area during the 2021 survey, the long-tailed Dunnart is likely to occur in very low densities in this area (Western Ecological, 2021). It is considered unlikely that the proposed clearing would result in a significant impact to this species.

Arid bronze azure butterfly (ABAB) (*Ogyris petrina*) listed as Critically Endangered, is threatened by clearing and habitat degradation (DBCA, 2026). The ABAB has an obligate association with sugar ant *Camponotus* sp. nr. *terebrans*, so critical breeding habitat for ABAB are areas which have colonies of the host ant (DBCA, 2026; Western Ecological, 2021). As the amendment area is within the potential distribution of *Camponotus* sp. nr. *terebrans*, further consideration is required (DBCA, 2020). Western Ecological (2021) has mapped two *Eucalyptus* woodland habitats within the amendment area, the first being *Eucalyptus salubris* open woodland and the second being *Eucalyptus lesouefii* open woodland. *Eucalyptus lesouefii* is not known to host *Camponotus* sp. nr. *terebrans*, and is not smooth-barked (DBCA, 2020; 2026; WAH, 1998-). *Eucalyptus salubris* is a smooth-barked species and is known to be suitable for *Camponotus* sp. nr. *terebrans* (DBCA, 2020; 2026; WAH, 1998-). Based on the Western Ecological (2021) mapping, there is approximately 1.6 hectares of suitable *Eucalyptus salubris* open woodland habitat within the amendment area (area shaded in red in Figure 1). The Western Botanical (2021) survey identified four Eucalypt woodland vegetation associations, with dominant species being *Eucalyptus salubris*, *Eucalyptus lesouefii* and *Eucalyptus oleosa*. *Eucalyptus oleosa* is not smooth-barked at the base and is therefore unsuitable as habitat for *Camponotus* sp. nr. *terebrans* (DBCA, 2026; WAH, 1998-). The applicant has committed to avoid the suitable habitat for ABAB (Juno Minerals, 2026a). The potential impact to the potential habitat of ABAB can be minimized by implementing restricted clearing condition.

Conclusion

Based on the above assessment, the proposed clearing is unlikely to have any significant impact on fauna habitats at either a local or regional scale. However, a fauna management condition and restricted clearing conditions are recommended to minimize potential impact to malleefowl and ABAB potential habitat respectively.

Conditions

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

- a fauna management (malleefowl) condition within potentially suitable breeding habitat requiring areas proposed to be cleared between 1 September and 31 January are inspected to identify active (in use) malleefowl mounds, and to maintain a 200 metre buffer around identified active mounds; and
- restricted clearing (shall not clear within areas shaded red in Figure 1 of Section **Error! Reference source not found.**).

3.3. Relevant planning instruments and other matters

The clearing permit amendment application was advertised on 16 January 2026 by the Department of Mines, Petroleum and Exploration inviting submissions from the public. No submissions were received in relation to this application.

There are no native title claims over the area under application (DPLH, 2026). 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 amendment area (DPLH, 2026). 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 Development and Closure Proposal 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. Additional information provided by applicant

Summary of comments	Consideration of comment
The applicant provided additional information about the avoidance of suitable habitat for ABAB through email (Juno Minerals, 2026a).	The assessment is completed using the provided additional information.

Appendix B. Site characteristics**B.1. Site characteristics**

Characteristic	Details
Local context	The area is approximately 15 kilometres southwest of Mt Ida within the Shire of Menzies (GIS Database). The area proposed to be cleared is part of an expansive tract of native vegetation in the extensive land use zone of Western Australia (GIS Database). It is surrounded by the landscape and vegetation of Eastern Murchison of the Murchison bioregion as described in Interim Biogeographic Regionalisation of Australia (IBRA) (GIS Database), and it is adjacent to existing Mt Ida Gold Project (GIS Database).
Ecological linkage	Based on areal imagery, the amendment area does not form part of any formal or informal ecological linkages (GIS Database).
Conservation areas	The amendment area does not form part of known or mapped conservation area. The nearest conservation area is the Goongarrie National Park located approximately 113 kilometres southeast of the amendment area (GIS Database).
Vegetation description	The vegetation of the amendment area is broadly mapped as the following Beard vegetation associations: 18: Low woodland; mulga (<i>Acacia aneura</i>); 202: Shrublands; mulga & <i>Acacia quadrimarginea</i> scrub; 483: Hummock grasslands, mixed sandplain - open mallee over sparse dwarf shrubs with spinifex ; red mallee mallee & mixed sparse dwarf shrubs over <i>Triodia basedowii</i>; and 484: Shrublands; jam thicket (GIS Database). A flora and vegetation survey was conducted over the amendment area by Western Botanical over the period April to October 2021. The following vegetation associations were recorded within the amendment area (Western Botanical, 2021):

Characteristic	Details																																																																												
	<table><tr><th>Influencing Geology / Soil</th><th>Structural Formation</th><th>Vegetation Assoc. Code</th><th>Vegetation Association Name</th></tr><tr><td>Banded Ironstone outcrop and subcrop</td><td>Acacia (Mulga) Woodlands</td><td>A1</td><td><i>Acacia quadrimarginea</i>, <i>A. incurvaneura</i>, <i>A. mulganeura</i>, <i>A. caesaneura</i> (narrow phyllode form) Woodland over <i>Thryptomene decussata</i>, <i>Prostanthera althoferi</i> subsp. <i>althoferi</i>, <i>Hibbertia arcuata</i>, <i>Olearia humilis</i> Shrubland on BIF outcrop and upper slopes.</td></tr><tr><td>Lateritised Duricrust, minor Banded Ironstone</td><td>Acacia (Mulga) Woodlands</td><td>A2</td><td><i>Acacia incurvaneura</i> and <i>Acacia quadrimarginea</i>, <i>Acacia cockertoniana</i> over <i>Philotheca brucei</i>, <i>Hibbertia arcuata</i>, <i>Prostanthera althoferi</i> subsp. <i>althoferi</i> and <i>Dodonaea rigida</i> on BIF outcrop and upper slopes.</td></tr><tr><td>Colluvial sandy BIF and laterite gravel</td><td>Acacia (Mulga) Woodlands</td><td>A3</td><td><i>Acacia incurvaneura</i>, <i>A. mulganeura</i>, <i>A. caesaneura</i> over <i>Eremophila forrestii</i> subsp. <i>forrestii</i> on sandy gravelly mid to lower slopes.</td></tr><tr><td>Weathered basalt, calcrete</td><td>Acacia (Mulga, Acacia sibirica) Woodlands</td><td>A4</td><td><i>Acacia sibirica</i> Woodland over <i>Dodonaea lobulata</i>, <i>Ptilotus obovatus</i> (Upright form, G Cockerton et. al. 15206) on weathered basalt and calcrete.</td></tr><tr><td>Aeolian Sandplain over gravel</td><td>Acacia (Mulga) Woodlands</td><td>A5</td><td><i>Acacia effusifolia</i> with emergent <i>Eucalyptus leptopoda</i>, <i>E. ewartiana</i> Mallees on orange-brown sandplain.</td></tr><tr><td>Exfoliating granite outcrop and subcrop</td><td>Acacia (Mulga) Woodlands</td><td>A6</td><td><i>Thryptomene costata</i> Shrubland with emergent <i>Acacia quadrimarginea</i>, <i>Acacia ramulosa</i> subsp. <i>ramulosa</i>, <i>A. cockertoniana</i> small trees on granite sheets and exfoliating outcrop with <i>Drosera eremaea</i> P3.</td></tr><tr><td>Archaean granite breakaway plateaux</td><td>Acacia (Mulga) Woodlands</td><td>A7</td><td><i>Acacia cockertoniana</i>, <i>A. quadrimarginea</i>, <i>A. ramulosa</i> subsp. <i>ramulosa</i>, <i>Calytrix erosipetala</i>, <i>Hibbertia arcuata</i>, <i>Ptilotus obovatus</i> (typical Goldfields form) on lateritic duricrust hills and outcrops.</td></tr><tr><td>Aeolian sandplain over laterite gravel</td><td>Acacia (Mulga) Woodlands</td><td>A8</td><td><i>Callitris columellaris</i>, <i>Acacia ramulosa</i> subsp. <i>ramulosa</i>, <i>Eucalyptus leptopoda</i> mallee on orange-brown sandplain.</td></tr><tr><td>Hardpan plain, sheet wash,</td><td>Acacia (Mulga) Woodlands</td><td>A9</td><td><i>Acacia incurvaneura</i>, <i>A. ramulosa</i> subsp. <i>ramulosa</i>, <i>A. tetragonophylla</i>, <i>A. mulganeura</i> over <i>Ptilotus obovatus</i> (typical Goldfields form) on hardpan plains, colluvium and alluvium.</td></tr><tr><td>Drainage focus, hardpan and clay soil</td><td>Acacia (Mulga) Woodlands</td><td>A10</td><td>Drainage line Mulga Shrublands.</td></tr><tr><td>Weathered basalt, calcrete</td><td>Casuarina pauper Woodland</td><td>C1</td><td><i>Casuarina pauper</i> Woodland over <i>Ptilotus obovatus</i> (Upright form, G Cockerton et. al. 15206) Shrubland on weathered basalt and abundant calcrete.</td></tr><tr><td>Weathered basalt, calcrete</td><td>Eucalypt Woodlands</td><td>E1</td><td><i>Eucalyptus</i> aff. <i>lesouefii</i> (G & S Cockerton WB40262) Woodland over <i>Eremophila pantonii</i> and (Upright form, G Cockerton et. al. 15206) Shrubland on weathered basalt and abundant calcrete.</td></tr><tr><td>Drainage focus, clay soil</td><td>Eucalypt Woodlands</td><td>E2</td><td><i>Eucalyptus</i> aff. <i>salubris</i> glaucous branchlets (G & S Cockerton WB40683) Woodland over <i>Atriplex bunburyana</i>, <i>Ptilotus obovatus</i> (Upright form, G Cockerton et. al. 15206) and occasional <i>Eremophila pantonii</i> Shrubland on red-brown clay, alluvium.</td></tr><tr><td>Colluvial plains, sandy clay soils</td><td>Eucalypt Woodlands</td><td>E3</td><td><i>Eucalyptus oleosa</i> emergent over <i>Acacia incurvaneura</i> and <i>Acacia cockertoniana</i> Woodland.</td></tr><tr><td>Colluvial plains, sandy clay soils</td><td>Eucalypt Woodlands</td><td>E4</td><td><i>Eucalyptus oleosa</i>, <i>Acacia caesaneura</i> over <i>Acacia ramulosa</i> subsp. <i>ramulosa</i> over <i>Eremophila forrestii</i> subsp. <i>forrestii</i>, on shallow sandy profiles over hardpan plains, colluvium and alluvium</td></tr><tr><td>Sandy clay soils</td><td>Eucalypt Woodlands</td><td>E5</td><td><i>Eucalyptus horistes</i> over <i>Acacia ramulosa</i>, <i>A. hemiteles</i>, <i>Senna artemisioides</i> subsp. <i>filifolia</i> on sandy clay.</td></tr><tr><td>Lateritised duricrust, minor BIF and quartz outcrop</td><td>Low Shrublands with emergent Acacia, Allocasuarina</td><td>S1</td><td><i>Hibbertia arcuata</i>, occasionally with <i>Calytrix desolata</i> or <i>C. erosipetala</i> or <i>C. hislopiae</i> P3 Shrubland with emergent <i>Acacia cockertoniana</i>, <i>A. quadrimarginea</i>, <i>Allocasuarina acutivalvis</i> subsp. <i>acutivalvis</i> tall shrubs on lateritic duricrust outcrop.</td></tr><tr><td>Saline plains, kaolinitic sandy clay</td><td>Low Shrublands with Emergent Acacia, Allocasuarina</td><td>S2</td><td><i>Frankenia setosa</i> Shrubland on saline stony plain with kaolinitic soil.</td></tr></table>	Influencing Geology / Soil	Structural Formation	Vegetation Assoc. Code	Vegetation Association Name	Banded Ironstone outcrop and subcrop	Acacia (Mulga) Woodlands	A1	<i>Acacia quadrimarginea</i> , <i>A. incurvaneura</i> , <i>A. mulganeura</i> , <i>A. caesaneura</i> (narrow phyllode form) Woodland over <i>Thryptomene decussata</i> , <i>Prostanthera althoferi</i> subsp. <i>althoferi</i> , <i>Hibbertia arcuata</i> , <i>Olearia humilis</i> Shrubland on BIF outcrop and upper slopes.	Lateritised Duricrust, minor Banded Ironstone	Acacia (Mulga) Woodlands	A2	<i>Acacia incurvaneura</i> and <i>Acacia quadrimarginea</i> , <i>Acacia cockertoniana</i> over <i>Philotheca brucei</i> , <i>Hibbertia arcuata</i> , <i>Prostanthera althoferi</i> subsp. <i>althoferi</i> and <i>Dodonaea rigida</i> on BIF outcrop and upper slopes.	Colluvial sandy BIF and laterite gravel	Acacia (Mulga) Woodlands	A3	<i>Acacia incurvaneura</i> , <i>A. mulganeura</i> , <i>A. caesaneura</i> over <i>Eremophila forrestii</i> subsp. <i>forrestii</i> on sandy gravelly mid to lower slopes.	Weathered basalt, calcrete	Acacia (Mulga, Acacia sibirica) Woodlands	A4	<i>Acacia sibirica</i> Woodland over <i>Dodonaea lobulata</i> , <i>Ptilotus obovatus</i> (Upright form, G Cockerton et. al. 15206) on weathered basalt and calcrete.	Aeolian Sandplain over gravel	Acacia (Mulga) Woodlands	A5	<i>Acacia effusifolia</i> with emergent <i>Eucalyptus leptopoda</i> , <i>E. ewartiana</i> Mallees on orange-brown sandplain.	Exfoliating granite outcrop and subcrop	Acacia (Mulga) Woodlands	A6	<i>Thryptomene costata</i> Shrubland with emergent <i>Acacia quadrimarginea</i> , <i>Acacia ramulosa</i> subsp. <i>ramulosa</i> , <i>A. cockertoniana</i> small trees on granite sheets and exfoliating outcrop with <i>Drosera eremaea</i> P3.	Archaean granite breakaway plateaux	Acacia (Mulga) Woodlands	A7	<i>Acacia cockertoniana</i> , <i>A. quadrimarginea</i> , <i>A. ramulosa</i> subsp. <i>ramulosa</i> , <i>Calytrix erosipetala</i> , <i>Hibbertia arcuata</i> , <i>Ptilotus obovatus</i> (typical Goldfields form) on lateritic duricrust hills and outcrops.	Aeolian sandplain over laterite gravel	Acacia (Mulga) Woodlands	A8	<i>Callitris columellaris</i> , <i>Acacia ramulosa</i> subsp. <i>ramulosa</i> , <i>Eucalyptus leptopoda</i> mallee on orange-brown sandplain.	Hardpan plain, sheet wash,	Acacia (Mulga) Woodlands	A9	<i>Acacia incurvaneura</i> , <i>A. ramulosa</i> subsp. <i>ramulosa</i> , <i>A. tetragonophylla</i> , <i>A. mulganeura</i> over <i>Ptilotus obovatus</i> (typical Goldfields form) on hardpan plains, colluvium and alluvium.	Drainage focus, hardpan and clay soil	Acacia (Mulga) Woodlands	A10	Drainage line Mulga Shrublands.	Weathered basalt, calcrete	Casuarina pauper Woodland	C1	<i>Casuarina pauper</i> Woodland over <i>Ptilotus obovatus</i> (Upright form, G Cockerton et. al. 15206) Shrubland on weathered basalt and abundant calcrete.	Weathered basalt, calcrete	Eucalypt Woodlands	E1	<i>Eucalyptus</i> aff. <i>lesouefii</i> (G & S Cockerton WB40262) Woodland over <i>Eremophila pantonii</i> and (Upright form, G Cockerton et. al. 15206) Shrubland on weathered basalt and abundant calcrete.	Drainage focus, clay soil	Eucalypt Woodlands	E2	<i>Eucalyptus</i> aff. <i>salubris</i> glaucous branchlets (G & S Cockerton WB40683) Woodland over <i>Atriplex bunburyana</i> , <i>Ptilotus obovatus</i> (Upright form, G Cockerton et. al. 15206) and occasional <i>Eremophila pantonii</i> Shrubland on red-brown clay, alluvium.	Colluvial plains, sandy clay soils	Eucalypt Woodlands	E3	<i>Eucalyptus oleosa</i> emergent over <i>Acacia incurvaneura</i> and <i>Acacia cockertoniana</i> Woodland.	Colluvial plains, sandy clay soils	Eucalypt Woodlands	E4	<i>Eucalyptus oleosa</i> , <i>Acacia caesaneura</i> over <i>Acacia ramulosa</i> subsp. <i>ramulosa</i> over <i>Eremophila forrestii</i> subsp. <i>forrestii</i> , on shallow sandy profiles over hardpan plains, colluvium and alluvium	Sandy clay soils	Eucalypt Woodlands	E5	<i>Eucalyptus horistes</i> over <i>Acacia ramulosa</i> , <i>A. hemiteles</i> , <i>Senna artemisioides</i> subsp. <i>filifolia</i> on sandy clay.	Lateritised duricrust, minor BIF and quartz outcrop	Low Shrublands with emergent Acacia, Allocasuarina	S1	<i>Hibbertia arcuata</i> , occasionally with <i>Calytrix desolata</i> or <i>C. erosipetala</i> or <i>C. hislopiae</i> P3 Shrubland with emergent <i>Acacia cockertoniana</i> , <i>A. quadrimarginea</i> , <i>Allocasuarina acutivalvis</i> subsp. <i>acutivalvis</i> tall shrubs on lateritic duricrust outcrop.	Saline plains, kaolinitic sandy clay	Low Shrublands with Emergent Acacia, Allocasuarina	S2	<i>Frankenia setosa</i> Shrubland on saline stony plain with kaolinitic soil.
Influencing Geology / Soil	Structural Formation	Vegetation Assoc. Code	Vegetation Association Name																																																																										
Banded Ironstone outcrop and subcrop	Acacia (Mulga) Woodlands	A1	<i>Acacia quadrimarginea</i> , <i>A. incurvaneura</i> , <i>A. mulganeura</i> , <i>A. caesaneura</i> (narrow phyllode form) Woodland over <i>Thryptomene decussata</i> , <i>Prostanthera althoferi</i> subsp. <i>althoferi</i> , <i>Hibbertia arcuata</i> , <i>Olearia humilis</i> Shrubland on BIF outcrop and upper slopes.																																																																										
Lateritised Duricrust, minor Banded Ironstone	Acacia (Mulga) Woodlands	A2	<i>Acacia incurvaneura</i> and <i>Acacia quadrimarginea</i> , <i>Acacia cockertoniana</i> over <i>Philotheca brucei</i> , <i>Hibbertia arcuata</i> , <i>Prostanthera althoferi</i> subsp. <i>althoferi</i> and <i>Dodonaea rigida</i> on BIF outcrop and upper slopes.																																																																										
Colluvial sandy BIF and laterite gravel	Acacia (Mulga) Woodlands	A3	<i>Acacia incurvaneura</i> , <i>A. mulganeura</i> , <i>A. caesaneura</i> over <i>Eremophila forrestii</i> subsp. <i>forrestii</i> on sandy gravelly mid to lower slopes.																																																																										
Weathered basalt, calcrete	Acacia (Mulga, Acacia sibirica) Woodlands	A4	<i>Acacia sibirica</i> Woodland over <i>Dodonaea lobulata</i> , <i>Ptilotus obovatus</i> (Upright form, G Cockerton et. al. 15206) on weathered basalt and calcrete.																																																																										
Aeolian Sandplain over gravel	Acacia (Mulga) Woodlands	A5	<i>Acacia effusifolia</i> with emergent <i>Eucalyptus leptopoda</i> , <i>E. ewartiana</i> Mallees on orange-brown sandplain.																																																																										
Exfoliating granite outcrop and subcrop	Acacia (Mulga) Woodlands	A6	<i>Thryptomene costata</i> Shrubland with emergent <i>Acacia quadrimarginea</i> , <i>Acacia ramulosa</i> subsp. <i>ramulosa</i> , <i>A. cockertoniana</i> small trees on granite sheets and exfoliating outcrop with <i>Drosera eremaea</i> P3.																																																																										
Archaean granite breakaway plateaux	Acacia (Mulga) Woodlands	A7	<i>Acacia cockertoniana</i> , <i>A. quadrimarginea</i> , <i>A. ramulosa</i> subsp. <i>ramulosa</i> , <i>Calytrix erosipetala</i> , <i>Hibbertia arcuata</i> , <i>Ptilotus obovatus</i> (typical Goldfields form) on lateritic duricrust hills and outcrops.																																																																										
Aeolian sandplain over laterite gravel	Acacia (Mulga) Woodlands	A8	<i>Callitris columellaris</i> , <i>Acacia ramulosa</i> subsp. <i>ramulosa</i> , <i>Eucalyptus leptopoda</i> mallee on orange-brown sandplain.																																																																										
Hardpan plain, sheet wash,	Acacia (Mulga) Woodlands	A9	<i>Acacia incurvaneura</i> , <i>A. ramulosa</i> subsp. <i>ramulosa</i> , <i>A. tetragonophylla</i> , <i>A. mulganeura</i> over <i>Ptilotus obovatus</i> (typical Goldfields form) on hardpan plains, colluvium and alluvium.																																																																										
Drainage focus, hardpan and clay soil	Acacia (Mulga) Woodlands	A10	Drainage line Mulga Shrublands.																																																																										
Weathered basalt, calcrete	Casuarina pauper Woodland	C1	<i>Casuarina pauper</i> Woodland over <i>Ptilotus obovatus</i> (Upright form, G Cockerton et. al. 15206) Shrubland on weathered basalt and abundant calcrete.																																																																										
Weathered basalt, calcrete	Eucalypt Woodlands	E1	<i>Eucalyptus</i> aff. <i>lesouefii</i> (G & S Cockerton WB40262) Woodland over <i>Eremophila pantonii</i> and (Upright form, G Cockerton et. al. 15206) Shrubland on weathered basalt and abundant calcrete.																																																																										
Drainage focus, clay soil	Eucalypt Woodlands	E2	<i>Eucalyptus</i> aff. <i>salubris</i> glaucous branchlets (G & S Cockerton WB40683) Woodland over <i>Atriplex bunburyana</i> , <i>Ptilotus obovatus</i> (Upright form, G Cockerton et. al. 15206) and occasional <i>Eremophila pantonii</i> Shrubland on red-brown clay, alluvium.																																																																										
Colluvial plains, sandy clay soils	Eucalypt Woodlands	E3	<i>Eucalyptus oleosa</i> emergent over <i>Acacia incurvaneura</i> and <i>Acacia cockertoniana</i> Woodland.																																																																										
Colluvial plains, sandy clay soils	Eucalypt Woodlands	E4	<i>Eucalyptus oleosa</i> , <i>Acacia caesaneura</i> over <i>Acacia ramulosa</i> subsp. <i>ramulosa</i> over <i>Eremophila forrestii</i> subsp. <i>forrestii</i> , on shallow sandy profiles over hardpan plains, colluvium and alluvium																																																																										
Sandy clay soils	Eucalypt Woodlands	E5	<i>Eucalyptus horistes</i> over <i>Acacia ramulosa</i> , <i>A. hemiteles</i> , <i>Senna artemisioides</i> subsp. <i>filifolia</i> on sandy clay.																																																																										
Lateritised duricrust, minor BIF and quartz outcrop	Low Shrublands with emergent Acacia, Allocasuarina	S1	<i>Hibbertia arcuata</i> , occasionally with <i>Calytrix desolata</i> or <i>C. erosipetala</i> or <i>C. hislopiae</i> P3 Shrubland with emergent <i>Acacia cockertoniana</i> , <i>A. quadrimarginea</i> , <i>Allocasuarina acutivalvis</i> subsp. <i>acutivalvis</i> tall shrubs on lateritic duricrust outcrop.																																																																										
Saline plains, kaolinitic sandy clay	Low Shrublands with Emergent Acacia, Allocasuarina	S2	<i>Frankenia setosa</i> Shrubland on saline stony plain with kaolinitic soil.																																																																										
Vegetation condition	The vegetation survey (Western Botanical, 2021) and aerial imagery indicate the vegetation within the proposed clearing area is in pristine to excellent (Keighery, 1994) condition. The full Keighery (1994) condition rating scale is provided in Appendix D.																																																																												
Climate and landform	The amendment area is located in an arid zone of Western Australia with a low average annual rainfall of approximately 252.7 millimetres (BoM, 2026).																																																																												
Soil description and Land degradation risk	The soils of the amendment area are broadly mapped as the following land systems (DPIRD, 2026; GIS Database): - Bandy Land System: It is described as gritty-surfaced plains and low outcrops of granite with scattered acacia shrublands. This land system is generally not susceptible to soil erosion (Pringle et al., 1994); - Bevon Land System: It is described as dissected uplands with mulga shrublands. This land system may be susceptible to erosion if vegetation cover is removed (Pringle et al., 1994);																																																																												

Characteristic	Details
	- Brooking Land System: It is described as prominent ridges of banded iron formation supporting mulga shrublands. This land system is not generally susceptible to erosion (Pringle et al., 1994); - Marmion Land System: It is described as gently undulating sandplains with mixed shrublands and hummock grasslands. This land system may be susceptible to erosion if vegetation cover is removed (Pringle et al., 1994); - Monitor Land System: It is described as distributary alluvial fans and wash plains supporting mulga - chenopod shrublands. This land system is not generally susceptible to erosion (Pringle et al., 1994); - Rainbow Land System: It is described as hardpan plains supporting mulga shrublands. This land system is not generally susceptible to erosion (Pringle et al., 1994). However, impedance of sheet flow can initiate erosion and cause water starvation and consequent loss of vigour in vegetation downslope (Pringle et al., 1994); - Sherwood Land System: It consists of breakaways, kaolinised foot slopes and extensive gently sloping plains on granite supporting mulga shrublands and minor halophytic shrublands. This land system may be susceptible to erosion if vegetation cover is removed (Pringle et al., 1994); - Waguin Land System: It is described as sandplains and stripped granite or laterite surfaces with low fringing breakaways and lower plains; supports bowgada and mulga shrublands with wanderrie grasses and minor mixed halophytes. This land system is susceptible to erosion if vegetation cover is removed (Pringle et al., 1994); and - Yowie Land System: It is characterised by sandy plains supporting shrublands of mulga and bowgada with patchy wanderrie grasses. This land system is generally not susceptible to soil erosion (Pringle et al., 1994).
Waterbodies	The desktop assessment and aerial imagery indicated that there are several minor non-perennial watercourses transect the area proposed to be cleared (GIS Database).
Hydrogeography	The nearest Public Drinking Water Source Area is Menzies Water Reserve located approximately 70 kilometres southeast of the amendment area (GIS Database). The amendment area is located within the Goldfields Ground Water Area proclaimed under the <i>Rights in Water and Irrigation Act 1914</i> (GIS Database). The groundwater salinity is mapped as 1,000 to 3,000 and 3,000 to 7,000 milligrams per litre total dissolved solids which is described as brackish and saline respectively (BoM, 2019; GIS Database).
Flora	There are no records of threatened flora species within the amendment area (Western Botanical, 2021; GIS Database). Three priority flora species were recorded within the amendment area (Western Botanical, 2021). Mapping of conservation significant flora locations is provided in Appendix E (Western Botanical, 2021). There are records of 11 priority flora species within the local surrounds (20 kilometres) (GIS Database).
Ecological communities	There are no known records of Threatened Ecological Community (TEC) within or in close proximity of the amendment area (GIS Database). The northern extent of the amendment area falls within the (Priority 1) - Perrinvale/Walling vegetation complexes (banded ironstone formation) Priority Ecological Community (PEC) (Western Botanical, 2021; GIS Database).
Fauna	Desktop surveys identified nine fauna species of conservation significance in the vicinity of the amendment area (50 kilometres) (GIS Database). One malleefowl, two malleefowl mounds and two malleefowl tracks were recorded within the amendment area (Western Ecological, 2021).
Fauna habitat	A targeted fauna survey was conducted over the amendment area by Western Ecological (2021). The following fauna habitats were recorded within the amendment area (Western Ecological, 2021): - Acacia Shrubland - Acacia Shrubland (Burnt) <i>Eucalypt lesouefi</i> Open woodland; <i>Eucalypt salubris</i> Open woodland; and - Mulga Shrubland.

B.2. Vegetation extent

	Pre-European area (ha)	Current extent (ha)	Extent remaining (%)	Current extent in all DBCA managed land (ha)	Current extent in all DBCA Managed Land (proportion of pre-European extent) (%)
IBRA Bioregion - Murchison	28,120,586	28,044,823	~99	2,185,987	7.77
Beard vegetation associations					

- State					
Veg Assoc No. - 18	19,892,306	19,843,148	~99	1,317,179	6.62
Veg Assoc No. - 202	448,529	448,343	~99	102,759	22.91
Veg Assoc No. - 483	439,579	439,546	~99	53,188	12.10
Veg Assoc No. - 484	70,663.51	70,663	~100	4,769	6.75
Beard vegetation associations					
- Bioregion					
Veg Assoc No. - 18	12,403,172	12,363,252	~99	614,964	4.96
Veg Assoc No. - 202	339,742	339,641	~99	72,202	21.25
Veg Assoc No. - 483	238,598	238,566	~99	30,762	12.89
Veg Assoc No. - 484	69,401	69,401	~100	4,717	6.80

Government of Western Australia (2019)

B.3. Flora analysis table

The following conservation significant flora species have records within a 20 kilometres radius of the amendment area (GIS Database). Habitat suitability and likelihood of occurrence was determined utilising biological survey information (Western Botanical, 2021; WA Herbarium, 1998-; GIS Database).

Species name	Conservation status	Suitable habitat features? [Y/N]	Likelihood of occurrence	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
<i>Calotis</i> sp. Perrinvale Station (R.J. Cranfield 7096)	3	Y	Possibly	<5	24	Y
<i>Calytrix hislopii</i>	3	Y	Possibly	<10	8	Y
<i>Chrysocephalum apiculatum</i> subsp. <i>norsemanense</i>	3	Y	Possibly	<5	18	Y
<i>Hemigenia exilis</i>	4	Y	Possibly	<10	45	Y
<i>Homalocalyx grandiflorus</i>	3	Y	Possibly	<5	16	Y
<i>Jacksonia lanicarpa</i>	1	Y	Recorded – discussed in section 3.2.1	0	12	Y
<i>Menkea draboides</i>	3	Y	Recorded – discussed in section 3.2.1	0	10	Y
<i>Minuria</i> sp. Murchison (T. Lowrey 1713)	1	N	Unlikely	<20	14	N/A
<i>Philothea coateana</i>	3	Y	Recorded – discussed in section 3.2.1	0	14	Y
<i>Philothea deserti</i> subsp. <i>brevifolia</i>	3	Y	Possibly	<5	6	Y
<i>Pterostylis virens</i>	3	N	Unlikely	<5	17	Y
<i>Stackhousia muricata</i> subsp. Perennial (W.R. Barker 3641)	3	N	Unlikely	<20	50	N/A
<i>Tecticornia mellarium</i>	1	N	Unlikely	<20	21	N

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

B.4. Fauna analysis table

The following conservation significant fauna species have records within a 50 kilometres radius of the amendment area (GIS Database). Habitat suitability, likelihood of occurrence and impact was determined utilising biological survey information (Commonwealth of Australia, 2008; Western Ecological 2021; GIS Database).

Species name	Common name	Conservation status		Suitable habitat features? [Y/N]	Likelihood of occurrence	Distance of closest record to application area (km)	Are surveys adequate to identify? [Y, N, N/A]
		EPBC	WA				
<i>Antechinomys longicaudata</i>	long-tailed dunnart	-	P4	Y	Possibly – discussed in Section 3.2.1	<5	Y
<i>Calonectris leucomelas</i>	streaked shearwater	MI	MI	N	Unlikely	<10	N/A
<i>Charadrius cucullatus</i>	hooded plover, hooded dotterel	-	P4	N	Unlikely	<20	Y
<i>Dasycercus blythi</i>	brush-tailed mulgara	-	P4	N	Unlikely	<20	N/A
<i>Leipoa ocellata</i>	malleefowl	VU	VU	Y	Recorded – discussed in Section 3.2.1	0	Y
<i>Ogyris petrina</i>	Arid Bronze Azure Butterfly	CR	CR	Y	Possibly – discussed in Section 3.2.1	-	N
<i>Phascogale calura</i>	red-tailed phascogale, kenngoor	VU	CD	N	Unlikely	<40	N/A
<i>Tringa nebularia</i>	common greenshank	MI	MI	N	Unlikely	<20	N/A

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, MI: migratory, CD: conservation dependent, OS: other specially protected, P: priority

Appendix C. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
<u>Principle (a):</u> “Native vegetation should not be cleared if it comprises a high level of biodiversity.” <u>Assessment:</u> The amendment area proposed to be cleared may contain locally or regionally significant assemblages of plants (Western Botanical, 2021; GIS Database). A portion of the amendment area is mapped as the (Priority 1) - Perrinvale/Walling vegetation complexes (banded ironstone formation) Priority Ecological Community (PEC) (Western Botanical, 2021; GIS Database)	Not likely to be at variance (as per CPS 9379/1)	Yes <i>Refer to Section 3.2.1, above.</i>
<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.” <u>Assessment:</u> The area proposed to be cleared may contain foraging and potential breeding habitat for malleefowl and critical habitat for arid bronze azure butterfly (Western Ecological, 2021; GIS Database).	Not likely to be at variance (as per CPS 9379/1)	Yes <i>Refer to Section 3.2.2, above.</i>
<u>Principle (c):</u> “Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.” <u>Assessment:</u> The area proposed to be cleared does not contain any threatened flora species (Western Botanical, 2021). The vegetation associations within the amendment area are common and widespread within the region and the native vegetation proposed to be cleared is unlikely to be necessary for the continued existence of any species of Threatened flora (CALM, 2002, Western Botanical, 2021).	Not likely to be at variance (as per CPS 9379/1)	No
<u>Principle (d):</u> “Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community.” <u>Assessment:</u> There are no known TECs located within or in close proximity to the amendment area (Western Botanical, 2021; GIS Database).	Not likely to be at variance (as per CPS 9379/1)	No

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: significant remnant vegetation and conservation areas		
<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> <u>Assessment:</u> Approximately 99 percent of the pre-European extent of the mapped vegetation type remains uncleared at both state and bioregional level (Government of Western Australia; 2019). The vegetation proposed to be cleared does not represent a significant remnant of native vegetation in the local area (GIS Database).	Not at variance (as per CPS 9379/1)	No
<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> <u>Assessment:</u> Given the distance to the nearest conservation area, the proposed clearing is not likely to have an impact on the environmental values of nearby conservation areas (GIS Database).	Not likely to be at variance (as per CPS 9379/1)	No
Environmental value: land and water resources		
<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> <u>Assessment:</u> Several minor, non-perennial watercourses transect the amendment area (GIS Database). The drainage line mulga shrubland vegetation association (A10) is associated with drainage foci (Western Botanical, 2021; GIS Database). Therefore, the proposed clearing is likely to impact vegetation associated with a watercourse. However, potential impacts to the riparian vegetation can be managed by continuing the implementation of the vegetation management condition.	At variance (as per CPS 9379/1)	No
<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> <u>Assessment:</u> The amendment area lies within the Bandy, Bevon, Brooking, Marmion, Monitor, Rainbow, Sherwood, Waguin and Yowie land systems (DPIRD, 2026; GIS Database). These land systems comprise a range of plains, sandplains, uplands, ridges and breakaways supporting mainly mulga and acacia dominated shrublands, which are generally not susceptible to soil erosion under intact vegetation cover but may become erosion prone where vegetation is removed or surface water flow is impeded (Pringle et al., 1994). The proposed clearing of up to 69 hectares of native vegetation within a boundary of approximately 2046.49 hectares, for the purposes of mineral production and associated activities may cause appreciable land degradation. Potential land degradation impacts may be minimised by continuing the implementation of a staged clearing condition.	May be at variance (as per CPS 9379/1)	No
<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> <u>Assessment:</u> There are no permanent watercourses, wetlands or Public Drinking Water Sources Areas are recorded within the amendment area (GIS Database), the proposed clearing is unlikely to impact surface or ground water quality.	Not likely to be at variance (as per CPS 9379/1)	No
<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> <u>Assessment:</u> The average annual rainfall at the nearest weather station is 252.7 millimetres (BoM, 2026). There are no permanent water courses or waterbodies within the amendment	Not likely to be at variance (as per CPS 9379/1)	No

Assessment against the clearing principles	Variance level	Is further consideration required?
area (GIS Database). Creek lines in the region are dry for most of the year, only flowing briefly immediately following significant rainfall (Western Botanical, 2021). Therefore, the proposed clearing is unlikely to contribute to waterlogging or increase the incidence or intensity of flooding.		

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.
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. Biological survey information excerpts

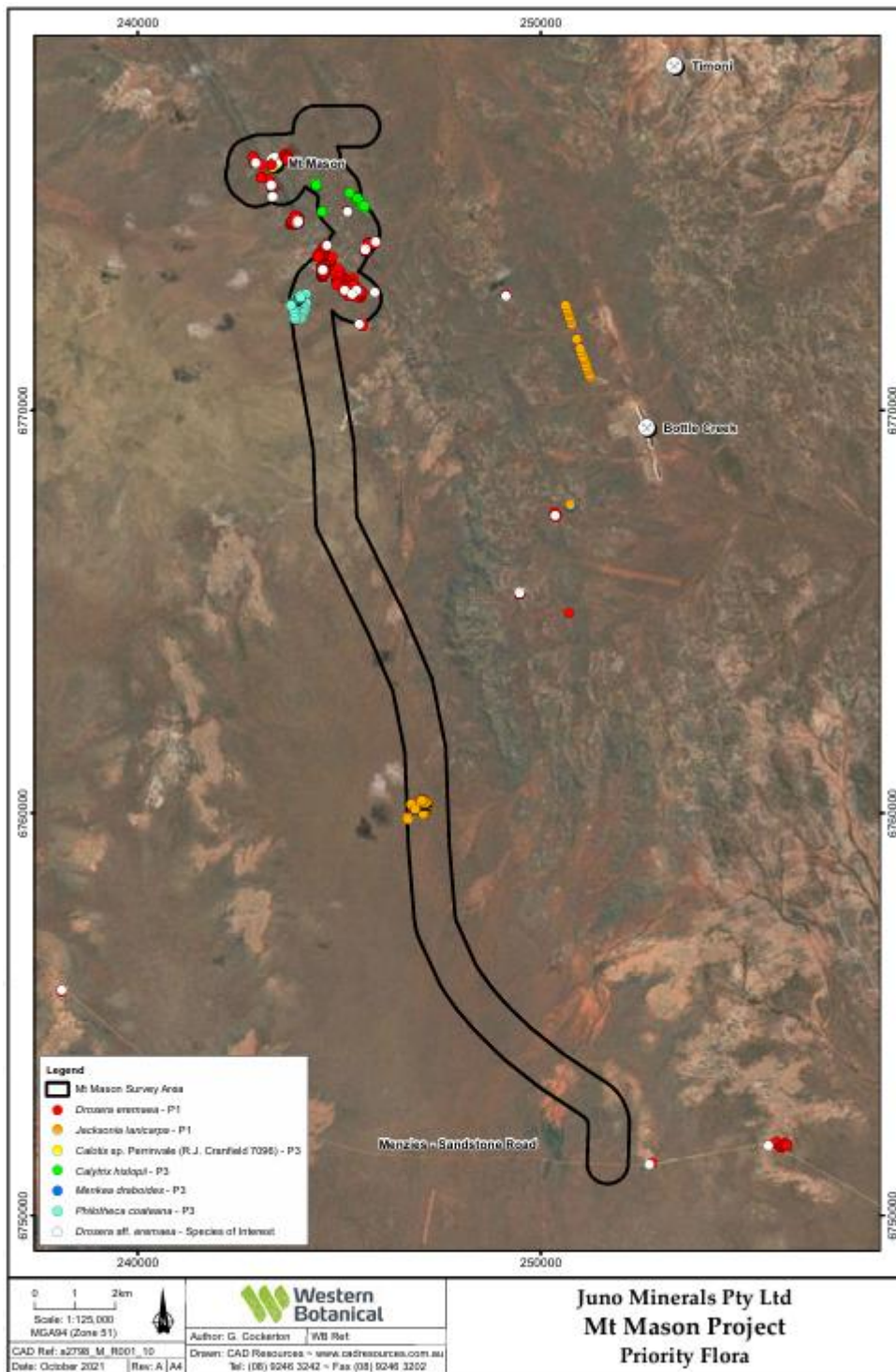


Figure 2: Significant flora mapped within Mt Mason Project survey area (Western Botanical, 2021).



Figure 3: Example of Camera trap setup in the project area to detect the Long-tailed Dunnart (bait station on the left and camera on right side of the image) (Western Ecological, 2021).



Figure 4: Old and disused malleefowl mounds recorded within the amendment area (Western Ecological, 2021).

Appendix F. Sources of information

F.1. GIS datasets

Publicly available GIS datasets used (sourced from www.data.wa.gov.au):

- 10 metre contours (DPIRD-073)
- Cadastre (Polygon) (LGATE-217)
- Clearing Instruments Activities (Areas Approved to Clear) (DWER-076)
- Clearing Instruments Conditions (Areas Subject to Conditions) (DWER-077)
- Clearing Regulations - Environmentally Sensitive Areas (DWER-046)
- Clearing Regulations - Schedule One Areas (DWER-057)
- Contaminated Sites Database (DWER-059)
- DBCA - Lands of Interest (DBCA-012)
- DBCA - Legislated Lands and Waters (DBCA-011)
- DBCA Fire History (DBCA-060)
- Groundwater Salinity Statewide (DWER-026)
- IBRA Vegetation Statistics
- IBSA Survey Details (DWER-118)
- Local Government Area (LGA) Boundaries (LGATE-233)
- Localities (LGATE-234)
- Native Title (Determination) (LGATE-066)
- Native Title (Fed Court) (LGATE-005)
- Native Title (NNTT) (LGATE-004)
- Native Vegetation Extent (DPIRD-005)
- Pre-European Vegetation (DPIRD-006)
- Public Drinking Water Source Areas (DWER-033)
- Reserves (LGATE-227)
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Mapping - Best Available (DPIRD-027)
- Surface Water Management Areas (DWER-041)
- Townsites (LGATE-248)
- WA Now Aerial Imagery

Restricted GIS Databases used:

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

F.2. References

- Bureau of Meteorology (BoM) (2019) Bureau of Meteorology Website – Groundwater Information – Average Salinity. Bureau of Meteorology. <https://www.bom.gov.au/water/groundwater/insight/metadata.shtml> (Accessed 15 May 2026).
- Bureau of Meteorology (BoM) (2026) Bureau of Meteorology Website – Climate Data Online, Menzies (12052). Bureau of Meteorology. <https://reg.bom.gov.au/climate/data/> (Accessed 15 May 2026).
- Conservation and Land Management (CALM) (2002) A Biodiversity Audit of Western Australia's 53 Biogeographic Subregions in 2002. Department of Conservation and Land Management, Western Australia.
- Commonwealth of Australia (2008) Species Profile and Threats Database. Department of Climate Change, Energy, the Environment and Water, Australia. <https://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl> (Accessed 19 May 2026).
- DEC and DoIR (2007) Strategic Review of the Banded Iron Formation Ranges of the Midwest and Goldfields. Department of Environment and Conservation, Department of Industry and Resources, Western Australia. 024311.pdf (dbca.wa.gov.au) (Accessed 21 May 2026).
- Department of Climate Change, Energy, the Environment and Water (DCCEEW) (2024) National Recovery Plan for the malleefowl (*Leipoa ocellata*). Department of Climate Change, Energy, the Environment and Water, Canberra. <https://www.dcceew.gov.au/sites/default/files/documents/national-recovery-plan-malleefowl.pdf>
- 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

- Department of Biodiversity, Conservation and Attractions (DBCA) (2020) Guideline for the survey of arid bronze azure butterfly (ABAB) in Western Australia. Department of Biodiversity, Conservation and Attractions.
- Department of Biodiversity, Conservation and Attractions (DBCA) (2026) Threatened and priority fauna resources: Arid bronze azure butterfly. Department of Biodiversity, Conservation and Attractions. Threatened and priority fauna resources | Department of Biodiversity, Conservation and Attractions (Accessed 24 April 2026).
- Department of Planning, Lands and Heritage (DPLH) (2026) Aboriginal Cultural Heritage Inquiry System. Department of Planning, Lands and Heritage. <https://espatial.dplh.wa.gov.au/ACHIS/index.html?viewer=ACHIS> (Accessed 17 February 2026).
- Department of Primary Industries and Regional Development (DPIRD) (2026) 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 21 April 2026).
- Department of Water and Environmental Regulation (DWER) (2021) Procedure: Native vegetation clearing permits. Joondalup. <https://www.wa.gov.au/system/files/2024-11/procedure-native-vegetation-clearing-permits.pdf>
- Environmental Protection Authority (EPA) (2016) Technical Guidance - Flora and Vegetation Surveys for Environmental Impact Assessment. 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. 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>
- Juno Minerals Limited (Juno) (2021) Native Vegetation Clearing Permit Application - Mount Mason DSO Hematite Project. Unpublished report prepared for Juno Minerals Limited by Western Botanical, August 2021.
- Juno Minerals Limited (Juno) (2025) Clearing permit application form, CPS 9379/3, received 28 October 2025.
- Juno Minerals Limited (Juno) (2026a) Additional information received via email, 23 April 2026.
- Juno Minerals Limited (Juno) (2026b) Juno Annual Clearing Report – 2024/2025, CPS 9379/1, received 11 May 2026.
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Pringle, H.J.R., Van Vreeswyk, A.M.E., and Gilligan, S.A. (1994) An Inventory and Condition Survey of the north-eastern Goldfields, Western Australia. Department of Agriculture, Western Australia.
- Western Australian Herbarium (WAH) (1998-) FloraBase - the Western Australian Flora. Department of Biodiversity, Conservation and Attractions, Western Australia. <https://florabase.dbca.wa.gov.au/> (Accessed 19 May 2026).
- Western Botanical (2021) Flora and Vegetation of the Mount Mason Study Area, Mt Mason DSO Haematite Project. Unpublished report prepared for Juno Minerals Limited by Western Botanical, December 2021.
- Western Ecological (2021) Targeted Fauna Survey - Mount Mason Project. Unpublished report prepared for Juno Minerals Limited by Western Ecological, July 2021.

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)
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 (now DMPE)
DER	Department of Environment Regulation, Western Australia (now DWER)
DMIRS	Department of Mines, Industry Regulation and Safety, Western Australia (now DMPE)
DMP	Department of Mines and Petroleum, Western Australia (now DMPE)
DMPE	Department of Mines, Petroleum and Exploration
DoEE	Department of the Environment and Energy (now DCCEEW)
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> (Commonwealth 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 (2023) Conservation Codes for Western Australian Flora and Fauna. Department of Biodiversity, Conservation and Attractions, Western Australia:

Threatened species

T 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 the species of fauna that are listed as critically endangered, endangered or vulnerable threatened species.

Threatened flora is the species of flora that are listed as critically endangered, endangered or vulnerable threatened species.

The assessment of the conservation status of threatened species is in accordance with the BC Act listing criteria and the requirements of [Ministerial Guideline Number 1](#) and [Ministerial Guideline Number 2](#) that adopts the use of the International Union for Conservation of Nature (IUCN) [Red List of Threatened Species Categories and Criteria](#), and is based on the national distribution of the species.

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.

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.

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.

Extinct species

Listed by order of the Minister as extinct under section 23(1) of the BC Act as extinct or extinct in the wild.

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).

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.

Specially protected species

SP 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).

Migratory species include birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) or 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.

CD Species of special conservation interest (conservation dependent fauna)

Species of special conservation need that are 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).

Currently only fauna are listed as species of special conservation interest.

OS Other specially protected species

Species 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).

Currently only fauna are listed as species otherwise in need of special protection.

Priority species

P Priority species

Priority is not a listing category under the BC Act. The Priority Flora and Fauna lists are maintained by the department and are published on the department's website.

All fauna and flora are protected in WA following the provisions in Part 10 of the BC Act. The protection applies even when a species is not listed as threatened or specially protected, and regardless of land tenure (State managed land (Crown land), private land, or Commonwealth land).

Species that may possibly be threatened species that do not meet the criteria for listing under the BC Act because of insufficient survey 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 prioritisation for survey and evaluation of conservation status so that consideration can be given to potential listing as threatened.

Species that are adequately known, meet criteria for near threatened, or are rare but not threatened, or that have been recently removed from the threatened species list or conservation dependent or other specially protected fauna lists for other than taxonomic reasons, are placed in Priority 4. These species require regular monitoring.

Assessment of priority status 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 – known from few locations, none on conservation lands

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, for example, 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 for threatened listing and appear to be under immediate threat from known threatening processes. These species are in urgent need of further survey.

P2 Priority Two - Poorly-known species – known from few locations, some on conservation lands

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, for example, 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 for threatened listing and appear to be under threat from known threatening processes. These species are in urgent need of further survey.

P3 Priority Three - Poorly-known species – known from several locations

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. These species need 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 a conservation dependent specially protected species.
- (c) Species that have been removed from the list of threatened species or lists of conservation dependent or other specially protected species, during the past five years for reasons other than taxonomy.
- (d) Other species in need of monitoring.

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.