Department of Mines, Petroleum and Exploration

GOVERNMENT OF WESTERN AUSTRALIA

Clearing Permit Decision Report

1. Application details and outcomes

1.1. Permit application details

Permit number:	10969/1
Permit type:	Purpose Permit
Applicant name:	Pantoro South Pty Ltd
Application received:	24 February 2025
Application area:	18.1 hectares
Purpose of clearing:	Mineral production and associated infrastructure
Method of clearing:	Mechanical Removal
Tenure:	Mining Lease 63/156
Location (LGA area/s):	Shire of Dundas
Colloquial name:	Desirables Project

1.2. Description of clearing activities

Pantoro South Pty Ltd proposes to clear up to 18.1 hectares of native vegetation within a boundary of approximately 199 hectares, for the purpose of mineral production and associated infrastructure. The project is located approximately 6 kilometres north of Norseman, within the Shire of Dundas.

The application is to allow for the proposed mining of an open pit, construction of waste rock dump, ROM pad and construction of supporting infrastructure at the Desirables site. Supporting infrastructure includes (but is not limited to), laydown area, topsoil and growth medium stockpiles, roads and abandonment bunds.

1.3. Decision on application and key considerations

Decision:	Grant
Decision date:	24 July 2025
Decision area:	18.1 hectares of native vegetation

1.4. Reasons for decision

This clearing permit application was submitted, accepted, assessed, and determined in accordance with sections 51E and 51O of the *Environmental Protection Act 1986* (EP Act). The Department of Energy, Mines, Industry Regulation and Safety (now DMPE) advertised the application for a public comment for a period of 21 days, and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (Appendix A), relevant datasets (Appendix E), supporting information provided by the applicant, including the results of a flora and vegetation survey and a fauna survey (Appendix D), the clearing principles set out in Schedule 5 of the EP Act (Appendix B), 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; 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 (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; and

- commence operations no later than three months after undertaking clearing to reduce the risk of erosion.

1.5. Site map

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

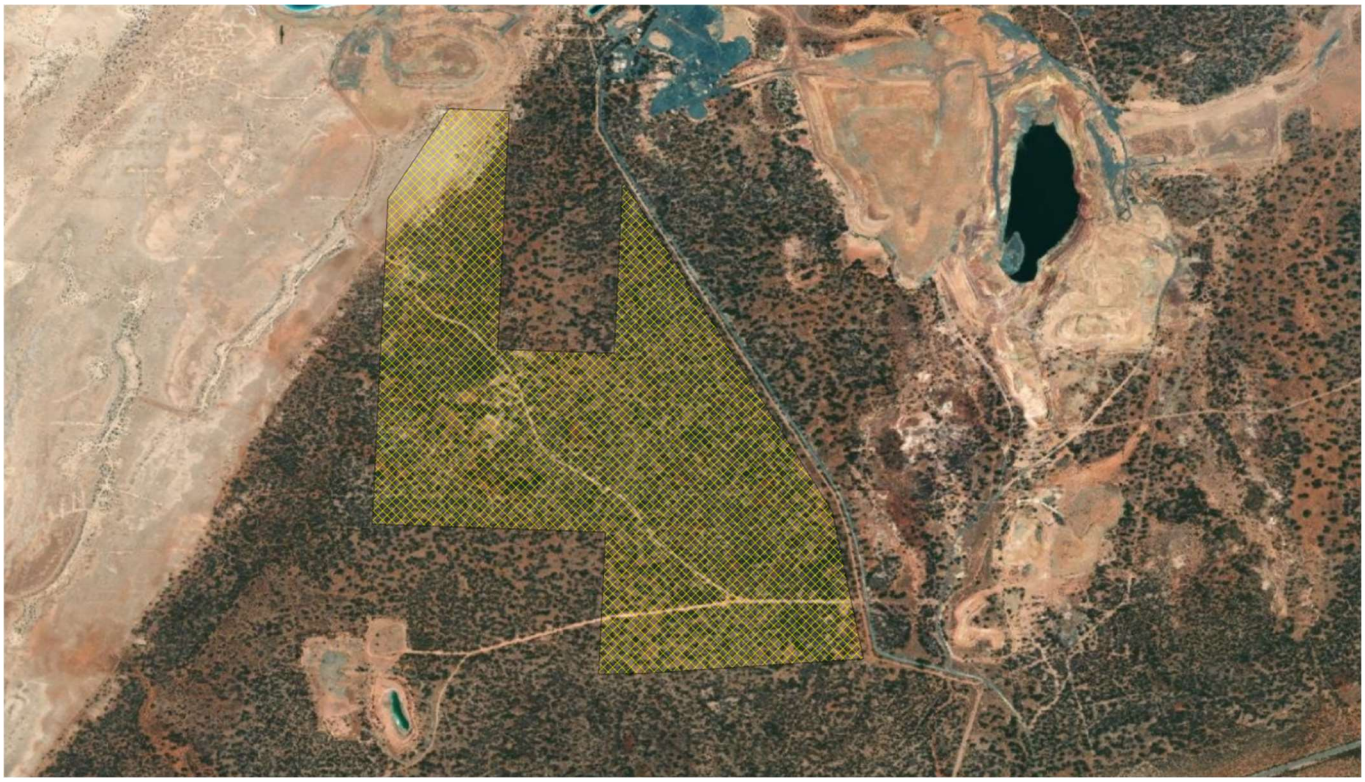

Figure 1. Map of the application area. The yellow area indicates the area within which conditional authorised clearing can occur under the granted clearing permit.

2. Legislative context

The clearing of native vegetation in Western Australia is regulated under the EP Act and the Environmental Protection (Clearing of Native Vegetation) Regulations 2004 (Clearing Regulations).

In addition to the matters considered in accordance with section 51O of the EP Act (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)
- *Biosecurity and Agriculture Management Act 2007* (BAM 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

The supporting document submitted by the applicant, states the environmental management measures that will be taken for the proposed clearing (Pantoro, 2024). These measures are listed below:

- Disturbance will be minimised through careful design of site layout.
- Clearing activities will be managed to ensure clearing is strictly limited to that necessary for the operations.
- Ground disturbance and clearing is restricted to approved areas, amounts and limits.
- Implementation and adherence to the NVCP and valid exemptions.
- All Threatened and Priority flora and fauna species will be avoided.
- Inclusion of the relevant clearing approval (e.g., CPS number) on the internal site Disturbance Permit.
- Prior to clearing, the area will be demarcated.
- Stockpiles of growth medium (topsoil) will be stored at no greater than 2 metres in height and will be protected from vehicular traffic and stormwater flows. Growth medium will be used to rehabilitate disturbed areas as soon as practicable.
- Post-clearing survey of ground disturbance.
- All vehicles and other equipment should be free of weed seeds and soil prior to mobilisation to site.
- Vehicles and other equipment will travel on designed access routes and mining infrastructure areas.
- Personnel will be required to adhere to speed limits and drive to road/weather conditions to minimise the risk of fauna injuries due to traffic.
- Annual review of disturbance areas and reporting in accordance with the NVCP, Mining Rehabilitation Fund (MRF) and Annual Environmental Report (AER) requirements.
- Disturbed areas will be rehabilitated progressively where possible and in accordance with the Mine Closure Plan.
- All personnel to complete the site induction which outlines strategies to protect the environment.

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

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

The assessment against the clearing principles identified that the impacts of the proposed clearing present a risk to biological values (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 (fauna) - Clearing Principle (b)

Assessment

The fauna survey conducted by Western Wildlife (2024) assessed the likelihood of occurrence for conservation significant fauna species of the region. This likelihood of occurrence assessment is in section A.2. Given the proposed clearing will only impact the Eucalypt woodland on plains habitat, only species that occur in this habitat and have a moderate likelihood of occurrence or higher required further consideration.

Arid Bronze Azure Butterfly (ABAB) (*Ogyris subterrestris petrina*) – Critically Endangered

This species occurs in smooth barked Eucalyptus woodlands in the Goldfields (Invertebrate Solutions, 2024). The ABAB has an obligate association with the sugar ant *Camponotus* sp. nr. *terebrans*, with ABAB larvae living in the ants nest during development, large colonies of this ant are required to support ABAB presence (DBCA, 2020). A field assessment of suitable vegetation combined with the presence of the sugar ant *Camponotus* sp. nr. *terebrans* was undertaken in May 2024 by Invertebrate Solutions whilst completing the Short-Range Endemics (SRE) survey. Whilst vegetated areas in the application area were dominated by smooth barked Eucalyptus, no individuals, or nests of *Camponotus* sp. nr. *terebrans* were recorded during the active SRE searches, hence the likelihood of ABAB being present is Very Low. No further assessment for ABAB was considered necessary based upon the initial habitat assessment (Invertebrate Solutions, 2024).

Malleefowl (*Leipoa ocellata)* – Vulnerable

The closest record is a 2002 sighting within approximately 2 kilometres of the Desirables project area (Western Wildlife, 2024). Malleefowl occur in a range of habitats, critical habitat is hard to define and can only be described in general terms, additionally, no particular areas can be described as being more or less important for the long-term survival of the species (Benshemesh, 2007). Consequently, any occupied habitat, or habitat that is temporarily unoccupied (e.g. due to fire) that may be used in the future, may be considered habitat critical to the survival of the species. All habitats in the application area are potential foraging habitat for malleefowl (Western Wildlife, 2024). Possible breeding habitat occurs in the eucalypt woodlands on rocky hills and eucalypt woodland on plains, but such habitat is very patchy within the application area, as much of the understory is sparsely vegetated and lacking in leaf litter (Western Wildlife, 2024).

Western rosella (inland) *(Platycercus icterotis xanthogenys)* – Priority 4

A single bird of this species was recorded in the application area (Western Wildlife, 2024). This species occurs in eucalypt and casuarina woodlands, nesting in tree hollows Western Wildlife, 202; 2024).

Peregrine falcon *(Falco peregrinus)* – Other Specially Protected

The peregrine falcon nests mainly on ledges on cliffs or rocky outcrops, and it may also use tall trees. This species is likely to occur in the study area and breeding habitat may be present in existing open pits (Western Wildlife, 2024).

Central long-eared bat *(Nyctophilus major tor)* – Priority 3

This species occurs in eucalypt woodlands with a tall shrub understorey and around granite outcrops, roosting beneath bark, in tree crevices or in the foliage of trees (Western Wildlife, 2024).

Conclusion

Malleefowl (*Leipoa ocellata)* – Vulnerable

Despite extensive searching, no malleefowl mounds were detected in the study area during the field survey (Western Wildlife, 2024). Similarly, no malleefowl mounds were detected in adjacent areas in the 2020 survey on the Norseman Gold Project (Western Wildlife, 2021). If present, the malleefowl appears to be uncommon (Western Wildlife, 2021;2024).

Western rosella (inland) *(Platycercus icterotis xanthogenys)* – Priority 4

The Inland Western Rosella is likely to forage in woodland and shrubland habitats in the study area, potentially breeding in woodland habitats with tree hollows (Western Wildlife, 2021;2024). It is unlikely that the woodlands of the application area are of particular importance for this species (Western Wildlife, 2024).

Peregrine falcon *(Falco peregrinus)* – Other Specially Protected

This species was not recorded in the application area. If a pair nests nearby, they are likely to forage in the application area, preferring more open areas of habitat, including cleared areas (Western Wildlife, 2021;2024).

Central long-eared bat *(Nyctophilus major tor)* – Priority 3

This species was not recorded The Central long-eared bat may occur in the eucalypt woodlands of the application area (Western Wildlife, 2021; 2024).

The surveys to date concluded that habitats present are common in the region. Habitats that are less common in the region, such as granite outcrops or freshwater wetlands, were absent from the application area. Although all habitats have importance in supporting native fauna, the habitats of the application area are unlikely to be of particular significance as ecological linkages, refugia or supporting important populations of conservation significant vertebrate fauna (Western Wildlife, 2021;2024). The proposed clearing of 18.1 hectares is considered to be relatively small.

For the reasons set out above, it is considered that the impacts of the proposed clearing on conservation significant fauna of the region and their habitats does not constitute a significant residual impact.

Conditions

No fauna management conditions required.

3.3. Relevant planning instruments and other matters

The clearing permit application was advertised on 25 March 2025 by the Department of Mines, Industry Regulation and Safety (now DMPE) inviting submissions from the public. No submissions were received in relation to this application.

There is one native title claim over the area under application (DPLH, 2025). This claim has been determined by the Federal Court on behalf of the claimant group (Ngadju). 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, 2025). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

Other relevant authorisations required for the proposed land use include:

- A Mining Proposal / Mine Closure Plan approved under the *Mining Act 1978*.

It is the proponent's responsibility to liaise with the Department of Water and Environmental Regulation and the Department of Biodiversity, Conservation and Attractions, to determine whether a Works Approval, Water Licence, Bed and Banks Permit, or any other licences or approvals are required for the proposed works.

End

Appendix A. Site characteristics

A.1. Site characteristics

Characteristic	Details
Local context	The 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 landscape and vegetation of the Coolgardie bioregion. The application area is located in between the Norseman Gold Project and Lake Cowan (GIS Database).
Ecological linkage	Based on aerial imagery, the proposed clearing are does not form part of any formal or informal ecological linkages (GIS Database).
Conservation areas	The application area does not form part of any known or mapped conservation areas. The closest conservation area is an unnamed Nature Reserve located 700 metres east of the application area (GIS Database).
Vegetation description	The vegetation of the application area is broadly mapped as the following Beard vegetation association: 9: Medium woodland; coral gum (*Eucalyptus torquata*) & goldfields blackbutt (*E. le soufii*) (GIS Database). A flora and vegetation survey was conducted over the application area by Mattiske Consulting Pty Ltd during September, 2024. The following vegetation communities were recorded within the application area (Mattiske, 2024): • **NS5:** *Santalum acuminatum*, *Melaleuca* spp. (*M. ?lanceolata*, *M. sheathiana*), *Eucalyptus* spp. tall open shrubland over *Eremophila scoparia*, *Cratystylis conocephala*, *Scaevola spinescens* low sparse shrubland on brown-orange sandy clay on slopes and flats. • **NW4:** Open low woodland of *Eucalyptus lesouefii* over tall, isolated clumps of *Melaleuca ?sheathiana* and *Eremophila* spp. shrubs over low isolated clumps of *Cratystylis conocephala* shrubs. • **NW5:** Mid woodland of *Eucalyptus lesouefii* and *Eucalyptus salubris* over mid isolated shrubs of *Eremophila scoparia* and occasional low *E. parvifolia ?*subsp. *auricampi* shrubs over open low chenopod shrubland of *Tecticornia* spp. and *Atriplex* spp. on orange to brown sandy clay with some surface gravel on flats and gentle slopes. • **NW7:** Low woodland of *Eucalyptus salubris* and *E. lesouefii* over tall sparse shrubland of *Melaleuca ?sheathiana* or *M. lanceolata* over mid-low sparse shrubland of *Atriplex ?nummularia* and *Atriplex ?vesicaria* on red to brown sandy clay with scattered surface rocks on flats and lower slopes. • **NW10:** Mid woodland of mixed *Eucalyptus* spp. over tall sparse shrubland of *Melaleuca ?sheathiana* over open mid-low shrubland of *Atriplex* spp. on brown clayey loam with some surface rocks on gentle mid to upper slopes. • **NW11:** Open low woodland of *Casuarina obesa* over low isolated clumps of *Chenopodiaceae* sp. and *Aizoaceae* sp. shrubs and isolated tussock grassland on dry, powdery pale orange clay on low dune ridges and flats at the edge of salt lakes. • **NW16:** *Eucalyptus oleosa* mid sparse mallee shrubland over *Cratystylis conocephala*, *Melaleuca sheathiana* mid open shrubland over *Atriplex* sp. on low sparse shrubland on orange clay on flats. • **W2:** Woodland to open woodland of *Eucalyptus flocktoniae*, *E. urna*, *E. lesouefii* and *E. dundasii* over sparse shrubland of *Melaleuca sheathiana*, *Eremophila scoparia*, *Scaevola spinescens*, *Beyeria sulcata* and *Exocarpos aphyllus* over isolated shrubs of *Olearia muelleri* on orange-red to brown clayey loam on flats and slopes. • **CL:** Cleared or disturbed. Representative photos of these vegetation types are available in Appendix D.
Vegetation condition	The vegetation survey (Mattiske, 2024) and aerial imagery indicate the vegetation within the proposed clearing area is in Excellent to Degraded (Trudgen, 1991) condition. The full Trudgen (1991) condition rating scale is provided in Appendix C.
Climate and landform	The application area is in zone of Western Australia characterised by wet winters and low summer rainfalls (BoM, 2016) with an annual average rainfall of 280.5 millimetres (BoM, 2025).
Soil description	The soil in the application area is mapped as calcareous stony soil, calcareous loamy earth, calcareous sandy earth, and alkaline red shallow sandy duplex (DPIRD, 2025).
Land degradation risk	The application area falls mostly within the Coolgardie land system and a small area to the north falls within the Lefroy land system (DPIRD, 2025). These land systems are described as below. **Coolgardie land system:** Uplands and undulating plains associated with ultramafic greenstones, supporting eucalypt woodlands and halophytic shrublands. Where not protected by a stony mantle, footslopes and valley floors are susceptible to water erosion, particularly where perennial shrub cover is substantially reduced and/or the soil surface is disturbed (Waddell and Galloway, 2023). **Lefroy land system:** Salt lakes and fringing saline plains, sand sheets and dunes, supporting halophytic shrublands and scattered eucalypts. Salinity makes this land system in its natural state susceptible to high erosion rates, but a lack of slope causes erosion and deposition to be localised, resulting in the entire land system being in dynamic equilibrium. Minor areas receiving concentrated run-on (alluvial plains) are susceptible to rilling when shrub cover is reduced or surface flows from degraded areas upslope affect flow

<table>
<tr><th>Characteristic</th><th>Details</th></tr>
<tr><td></td><td>regimes below. Loss of stabilising perennial shrubs may exacerbate wind erosion of landforms derived from eolian deposits and lake margins (Waddell and Galloway, 2023).</td></tr>
<tr><td>Waterbodies</td><td>The desktop assessment and aerial imagery indicated that no drainage lines transect the area proposed to be cleared. The northern part of the application area intersects the bank of Lake Cowan (salt lake) (GIS Database).</td></tr>
<tr><td>Hydrogeography</td><td>The application area is located within the Goldfields Groundwater Area, which is legislated by the RIWI Act 1914. The mapped groundwater salinity is 14,000-35,000 milligrams per litre total dissolved solids which is described as saline (GIS Database).</td></tr>
<tr><td>Flora</td><td>There are no records of Priority or Threatened flora within the application area (Mattiske, 2024; GIS Database).</td></tr>
<tr><td>Ecological communities</td><td>No known or mapped Priority Ecological Communities (PECs) have been recorded in the application area. One PEC identified as 'Allocasuarina globosa assemblages on greenstone rock', supporting the Threatened flora species Allocasuarina globosa (Threatened) is located south of Norseman (Pantoro, 2024; GIS Database).</td></tr>
<tr><td>Fauna</td><td>No Threatened fauna species were identified in the vicinity of the Desirables Project area (Pantoro, 2024; GIS Database). One Priority fauna species was recorded in the application area (Western Wildlife, 2024).</td></tr>
<tr><td>Fauna habitat</td><td>A fauna survey was conducted over the application area by Western Wildlife Pty Ltd during 2021 and 2024. The following fauna habitats were recorded within the application area (Western Wildlife, 2021; 2024):
<table>
<tr><th>Fauna Habitat</th><th>Fauna Habitat Type (Western Wildlife 2021 and 2024)</th><th>Photo (Western Wildlife 2021 and 2024)</th><th>Proposed Clearing of Fauna Habitat (ha)</th><th>Total Mapped by Western Wildlife (2021 and 2024) (ha)</th><th>% Fauna Habitat to be Impacted</th></tr>
<tr><td>Salt lake</td><td>The bare lakebeds of Lake Cowan and Lake Dundas lack vegetation.</td><td>  </td><td>0.0</td><td>812.1</td><td>0%</td></tr>
<tr><td>Shrubland on lake edges</td><td>Open shrubland of Sticky Hopbush (Dodonaea viscosa), Currant Bush (Scaevola spinescens), Eremophila sp. and mixed chenopods, sometimes with scattered Rottnest Island Pine (Callitris preisii).</td><td>  </td><td>0.0</td><td>169.0</td><td>0%</td></tr>
<tr><td>Eucalypt woodland on plains</td><td>Woodland of Merrit (Eucalyptus flocktoniae), Red Morrel (Eucalyptus longicornis), Gimlet (Eucalyptus salubris), Dundas Blackbutt (Eucalyptus dundasii), Mallett (Eucalyptus prolixa) and Goldfields Blackbutt (Eucalyptus lesouefii).</td><td>  </td><td>18.1</td><td>1,553.2</td><td>0.01%</td></tr>
<tr><td>Eucalypt woodland on rocky hills</td><td>Woodland of Coral Gum (Eucalyptus torquata) over shrubs such as Boree (Melaleuca sheathiana), Brilliant Hopbush (Dodonaea microzyga) and Sea Box (Alyxia buxifolia).</td><td>  </td><td>0.0</td><td>611.1</td><td>0%</td></tr>
<tr><td>Shrubland on rocky hills</td><td>Shrubland of sheoaks (Allocasuarina acutivalvis or Allocasuarina campestris), Grevillea nematophylla and/or Acacia neurophylla.</td><td>  </td><td>0.0</td><td>97.2</td><td>0.1%</td></tr>
<tr><td colspan="3">Total</td><td>18.1</td><td>3,242.6</td><td>-</td></tr>
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A.2. Fauna analysis table

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

Species	Status*				Likelihood of Occurrence	Habitat								Notes
	EPBC Act**	BC Act***	DBCA Priority	Locally Significant		Eucalypt Woodland on Rocky Hills	Eucalypt Woodland on Plains	Mallee Woodland over Spinifex	Shrubland on Rocky Hills	Shrubland on Salt Lake Edges	Gypsum Dunes	Chenopod Shrubland	Salt Lake	
REPTILES														
Paroplocephalus atriceps **Lake Cronin Snake**			P3		Very Low		X							Although the habitats present are potentially suitable, its distribution is not currently known to extend as far north as the study areas.
BIRDS														
Calidris ferruginea **Curlew Sandpiper**	Cr	Cr			Moderate								X	Although it may occur on occasion, this species is not likely to be present in significant numbers.
Leipoa ocellata **Malleefowl**	Vu	Vu			Moderate	X	X		X					This species is known to occur in the region, but no evidence of its presence was recorded during the field survey despite extensive searching.
Falco peregrinus **Peregrine Falcon**		OS			High	X	X	X		X	X	X		Although likely to occur, foraging in most open habitats, the study area is unlikely to be of particular significance to this species.
Actitis hypoleucos **Common Sandpiper**	Mi	Mi			High								X	Although likely to occur on occasion, this species is not likely to be present in significant numbers.
Calidris acuminata **Sharp-tailed Sandpiper**	Mi	Mi			High								X	Although likely to occur on occasion, this species is not likely to be present in significant numbers.
Tringa nebularia **Common Greenshank**	Mi	Mi			High								X	Although likely to occur on occasion, this species is not likely to be present in significant numbers.
Calidris ruficollis **Red-necked Stint**	Mi	Mi			High								X	Although likely to occur on occasion, this species is not likely to be present in significant numbers.
Calidris melanotos **Pectoral Sandpiper**	Mi	Mi			Low								X	This species may occur but prefers vegetated freshwater wetlands.
Apus pacificus **Fork-tailed Swift**	Mi	Mi			Moderate									This species is largely aerial in Australia, and although it may overfly the area the terrestrial habitats of the study area are not likely to be important for this species.
Thinornis cucullata **Hooded Plover**			P4		High								X	Known to occur on Lake Dundas, this species is likely to occur in the study area, at least on occasion.
Platycercus icterotis xanthagenys **Inland Western Rosella**			P4		Known to occur	X	X		X					This species was recorded in the OK study area during the 2020 field survey and is likely to be a breeding resident.
MAMMALS														
Dasyurus geoffroii **Chuditch**	Vu	Vu			Low	X	X		X					Although the habitats present are suitable, there are few records of this species in the region.
Nyctophilus major tor **Central Long-eared Bat**			P3		Moderate	X	X							This species is known to occur in the region and its favoured woodland habitats are present.
Notamacropus irma **Western Brush Wallaby**			P4		Low	X	X		X					This species may occur at low densities in the region, although it is likely to be at the very eastern limit of its distribution in the vicinity of the study areas.

Mi: Migratory, Cr: Critically Endangered, En: Endangered, Vu: Vulnerable, OS: Other Specially Protected Fauna, P: Priority.

Appendix B. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		

Assessment against the clearing principles	Variance level	Is further consideration required?
Principle (a): *"Native vegetation should not be cleared if it comprises a high level of biodiversity."* Assessment: No conservation significant flora species have been recorded in the application area (Mattiske, 2024; GIS Database). *Eremophila purpurascens* (P3) was found at the Desirables Project site but outside of the application area. It was concluded that no factors would either be a concern or warrant additional surveys for this species (Mattiske, 2024). No Priority Ecological Communities (PEC) were recorded in the application area (Mattiske, 2024; GIS Database). The area proposed to be cleared is not likely to provide significant habitat for regional conservation significant flora, fauna, habitats, or assemblages of plants. Vegetation communities are considered common and widespread in the subregion. The vegetation proposed to be cleared does not comprise a high level of biological diversity hence the proposed clearing is not likely to be at variance with this Principle (Pantoro, 2024). Six introduced flora species (weeds) have been recorded in the application area. None of the recorded species are declared pest organisms pursuant to section 22 of the BAM Act 2007 (Mattiske, 2024). 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.	Not likely to be at variance	No
Principle (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."* Assessment: The area proposed to be cleared has five mapped fauna habitats. Only one habitat (Eucalypt woodlands on plains) is to be disturbed by the proposed clearing (Western Wildlife, 2024).	Not likely to be at variance	Yes *Refer to Section 3.2.1, above.*
Principle (c): *"Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."* Assessment: There have been no records of Threatened flora in the area proposed to be cleared (Mattiske, 2024; GIS Database).	Not likely to be at variance	No
Principle (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."* Assessment: The area proposed to be cleared does not form part of any known or mapped Threatened Ecological Communities (Mattiske, 2024; GIS Database).	Not likely to be at variance	No
Environmental value: significant remnant vegetation and conservation areas		
Principle (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."* Assessment: 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 9 (GIS Database). This vegetation association has not been extensively cleared as over 97 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).	Not likely to be at variance	No
Principle (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."* Assessment: Given the small scale of the proposed clearing and distance to the nearest conservation area (GIS Database), the proposed clearing is not likely to have an impact on the environmental values of any known or mapped conservation areas.	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: land and water resources		
Principle (f): *"Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland."* Assessment: The application area does not contain any mapped watercourses. Lake Cowan (salt lake) intersects the northern part of the application area (GIS Database). The salt lake habitat is not to be impacted by the proposed clearing. Given no permanent water courses or wetlands are recorded within the application area, the proposed clearing is unlikely to impact vegetation growing in, or in association with, an environment associated with a watercourse or wetland.	Not likely to be at variance	No
Principle (g): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation."* Assessment: The mapped land systems are susceptible to water erosion if shrub cover is reduced (Waddell and Galloway, 2023). Noting the location of the application area, the proposed clearing may cause appreciable land degradation.	May be at variance	No
Principle (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."* Assessment: 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.	Not likely to be at variance	No
Principle (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."* Assessment: It is only during and after heavy rainfall events that the intersecting Lake Cowan is prone to inundation. Lake Cowan sits at an elevation of 268 metres and the application area sits at an elevation of 280-300 metres (GIS Database). Since the application area is not situated within a low-lying section of this salt lake, it is not prone to holding water. Since the area proposed to be cleared is located adjacent to a salt lake within which rainfall can be spread and distributed, it is unlikely that the clearing associated with this proposal will cause, or exacerbate, the incidence or intensity of flooding.	Not likely to be at variance	No

Appendix C. Vegetation condition rating scale

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

Considering its location, the scale below was used to measure the condition of the vegetation proposed to be cleared. This scale has been extracted from Trudgen, M.E. (1991) *Vegetation condition scale* in National Trust (WA) 1993 Urban Bushland Policy. National Trust of Australia (WA), Wildflower Society of WA (Inc.), and the Tree Society (Inc.), Perth.

Measuring vegetation condition for the Eremaean and Northern Botanical Provinces (Trudgen, 1991)

Condition	Description
Excellent	Pristine or nearly so, no obvious signs of damage caused by human activities since European settlement.
Very good	Some relatively slight signs of damage caused by human activities since European settlement. For example, some signs of damage to tree trunks caused by repeated fire, the presence of some relatively non-aggressive weeds, or occasional vehicle tracks.
Good	More obvious signs of damage caused by human activity since European settlement, including some obvious impact on the vegetation structure such as that caused by low levels of grazing or slightly aggressive weeds.

Condition	Description
Poor	Still retains basic vegetation structure or ability to regenerate it after very obvious impacts of human activities since European settlement, such as grazing, partial clearing, frequent fires or aggressive weeds.
Very poor	Severely impacted by grazing, very frequent fires, clearing or a combination of these activities. Scope for some regeneration but not to a state approaching good condition without intensive management. Usually with a number of weed species present including very aggressive species.
Completely degraded	Areas that are completely or almost completely without native species in the structure of their vegetation; i.e. areas that are cleared or 'parkland cleared' with their flora comprising weed or crop species with isolated native trees or shrubs.

Appendix D. Photographs of the vegetation

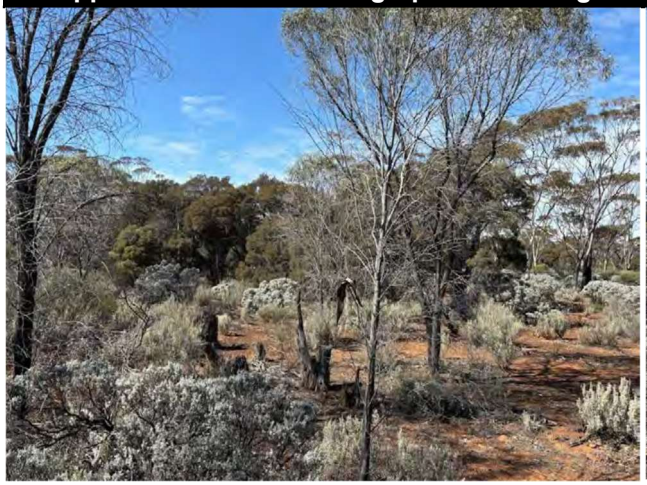

Figure 1. Vegetation Community NS5

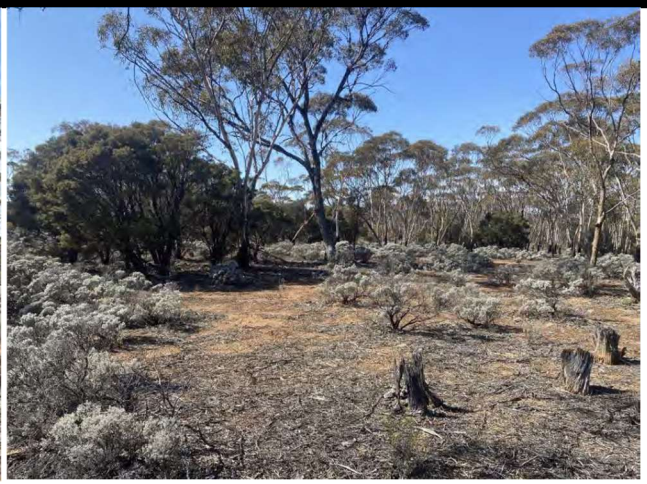

Figure 2. Vegetation Community NW4

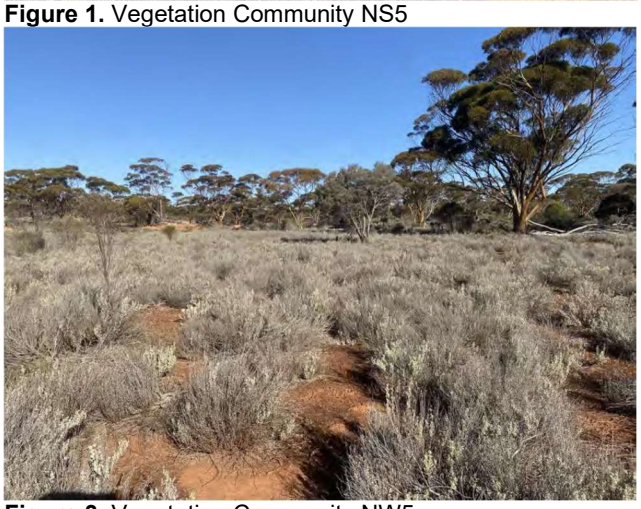

Figure 3. Vegetation Community NW5

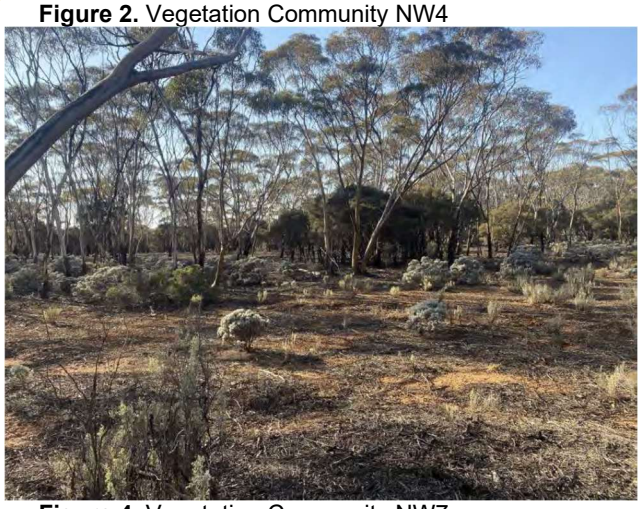

Figure 4. Vegetation Community NW7

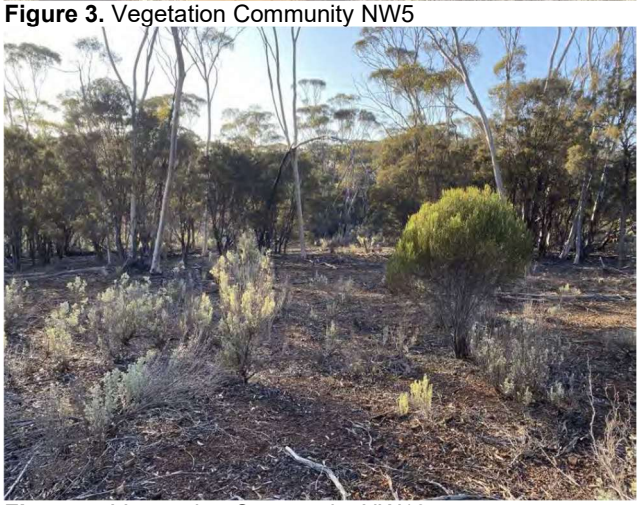

Figure 5. Vegetation Community NW10

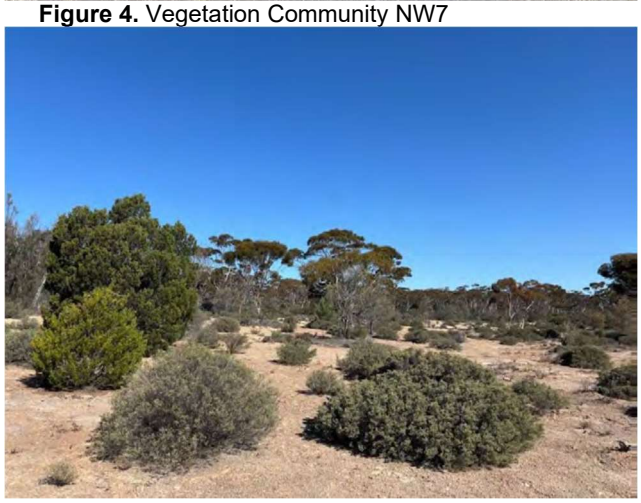

Figure 6. Vegetation Community NW11

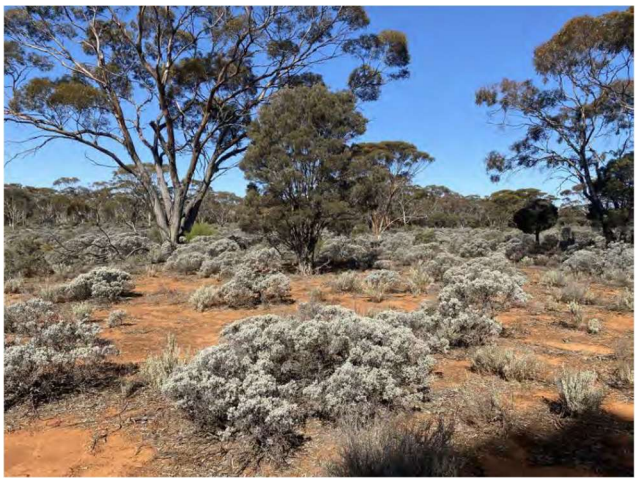

Figure 7. Vegetation Community NW16

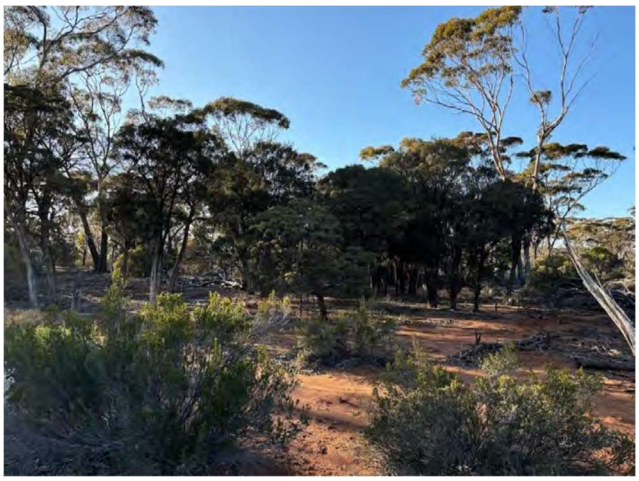

Figure 8. Vegetation Community W2

Appendix E. Sources of information

E.1. GIS databases

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

- Clearing Instruments Activities (Areas Approved to Clear) (DWER-076)
- Clearing Regulations - Environmentally Sensitive Areas (DWER-046)
- Clearing Regulations - Schedule One Areas (DWER-057)
- 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)
- Medium Scale Topo Contour (Line) (LGATE-015)
- Medium Scale Topo Elevation (Point) (LGATE-014)
- Native Title (Determination) (LGATE-066)
- Native Vegetation Extent (DPIRD-005)
- Pre-European Vegetation (DPIRD-006)
- Public Drinking Water Source Areas (DWER-033)
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Rivers (DWER-036)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Mapping - Best Available (DPIRD-027)
- 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)

E.2. References

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Bureau of Meteorology (BoM) (2016) Bureau of Meteorology Website – Climate Classification Maps. Bureau of Meteorology. http://www.bom.gov.au/jsp/ncc/climate_averages/climate-classifications/ (Accessed 4 July 2025).

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Department of Biodiversity, Conservation and Attractions (DBCA) (2020) Guideline for the survey of arid bronze azure butterfly (ABAB) in Western Australia, September 2020.

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 Planning, Lands and Heritage (DPLH) (2025) Aboriginal Cultural Heritage Inquiry System. Department of Planning, Lands and Heritage. https://espatial.dplh.wa.gov.au/ACHIS/index.html?viewer=ACHIS (Accessed 7 July 2025).

Department of Primary Industries and Regional Development (DPIRD) (2025) NRInfo Digital Mapping. Department of Primary Industries and Regional Development. Government of Western Australia. https://dpird.maps.arcgis.com/apps/webappviewer/index.html?id=662e8cbf2def492381fc915aaf3c6a0f (Accessed 4 July 2025).

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

Invertebrate Solutions (2024) *Survey for Short Range Endemic Fauna for the Norseman Gold Project, Norseman, Western Australia*. An unpublished report prepared for Pantoro Limited.

Mattiske Consulting Pty Ltd (2024) Flora and Vegetation Assessment TSF 5 and Desirables Areas, Norseman Gold Project. An unpublished report prepared for Pantoro Limited.

Pantoro South Pty Ltd (Pantoro) (2024) *Norseman Gold Project Supporting Document - Native Vegetation Clearing Permit (Purpose Permit) Application - Assessment of Clearing Principles*. Prepared by Pantoro South Pty Ltd, February 2024.

Trudgen, M.E. (1991) Vegetation condition scale in National Trust (WA) 1993 Urban Bushland Policy. National Trust of Australia (WA), Wildflower Society of WA (Inc.), and the Tree Society (Inc.), Perth.

Waddell, P.A and Galloway, P.D (2023) '*Land systems, soils and vegetation of the southern Goldfields and Great Western Woodlands of Western Australia*', Technical bulletin 99, vol 1, Department of Primary Industries and Regional Development, Western Australian Government.

Western Wildlife (2021) *Norseman Gold Project: Basic Vertebrate Fauna Survey and Targeted Malleefowl Survey 2020.* An unpublished report prepared for Pantoro Limited.

Western Wildlife (2024) *Norseman Gold Project: Basic Vertebrate Fauna Survey and Targeted Malleefowl Survey of TSF5 and Desirables*. An unpublished report prepared for Pantoro Limited.

4. Glossary

Acronyms:

BC Act	*Biodiversity Conservation Act 2016,* 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	*Environmental Protection Act 1986*, Western Australia
EPA	Environmental Protection Authority, Western Australia
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Federal Act)
GIS	Geographical Information System
ha	Hectare (10,000 square metres)
IBRA	Interim Biogeographic Regionalisation for Australia
IUCN	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
PEC	Priority Ecological Community, Western Australia
RIWI Act	*Rights in Water and Irrigation Act 1914*, 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.