



Clearing Permit Decision Report

1. Application details and outcomes

1.1. Permit application details

Permit number:	11184/1
Permit type:	Purpose Permit
Applicant name:	Black Cat (Paulsens) Pty Ltd
Application received:	14 July 2025
Application area:	80 hectares
Purpose of clearing:	Mineral production and associated activities
Method of clearing:	Mechanical removal
Tenure:	Mining Lease 08/196, 08/222, Miscellaneous Licence 08/15
Location (LGA area/s):	Shire of Ashburton
Colloquial name:	Belvedere Project

1.2. Description of clearing activities

Black Cat (Paulsens) Pty Ltd proposes to clear up to 80 hectares of native vegetation within a boundary of approximately 286 hectares, for the purpose of mining and associated infrastructure. The project is located approximately 162 km southeast of Onslow within the Shire of Ashburton.

The application is to allow for clearing to support the Belvedere Gold Project (e.g., boxcut, Run of Mine pad, waste dump, roads, turkeys nest, laydown areas, etc.).

1.3. Decision on application and key considerations

Decision:	Granted
Decision date:	17 March 2025
Decision area:	80 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 Mines, Petroleum and Exploration (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 B), relevant datasets (Appendix E), supporting information provided by the applicant (Appendix A) including the results of fauna, flora and vegetation surveys 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:

- impacts to a newly identified hybrid species (*Senna artemisioides* subsp. *oligophylla* × *helmsii*)
- potential impacts to a ghost bat and Pilbara Leaf-nosed bat roost
- the potential introduction and spread of weeds into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values
- the risk of fauna injury or mortality
- potential land degradation in the form of water erosion.

After considering the available information, along with the applicant's minimisation and mitigation measures (Section 3.1), the Delegated Officer determined that the proposed clearing can be managed to reduce risks and is unlikely to result in unacceptable impacts to environmental values.

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

- not undertake clearing within the restricted area shown in Schedule 1 of CPS 11184/1

- not to clear more than two of the known individuals of *Senna artemisioides* subsp. *oligophylla* × *helmsii*
- avoid, minimise to reduce the impacts and extent of clearing
- take hygiene steps to minimise the risk of the introduction and spread of weeds
- undertake slow, progressive one-directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity
- commence construction no later than three months after undertaking clearing to reduce the risk of erosion
- where practicable, avoid clearing riparian vegetation
- the permit holder shall not clear native vegetation unless the purpose for which the clearing is authorised is enacted within six months of the authorised clearing being undertaken.

1.5. Site map

Site maps of proposed clearing are provided in Figure 1 and 2 below.



Figure 1. Map of the permit area. The yellow area indicates the area within which all authorised clearing can occur under the granted clearing permit. Red shows exclusion area where no clearing is permitted.



<p>LEGEND</p> <ul style="list-style-type: none"> Mining Act Tenure ● Senna sp Hybrid ◆ Bat roost adit CPS 11184/1 Exclusion Area 	<p>N</p>  <p>0 1.8 km</p> <p>Scale: 1:35,000</p>	<p>GCS: GDA2020 Datum: GDA2020 Map Units: Degree</p>  <p>GOVERNMENT OF WESTERN AUSTRALIA</p>
--	---	---

Figure 2. Map of area showing key details relating to 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)*
- *Conservation and Land Management Act 1984 (WA) (CALM Act)*
- *Environment Protection and Biodiversity Conservation Act 1999 (Cth) (EPBC Act)*
- *Mining Act 1978 (WA)*

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2014)
- *Procedure: Native vegetation clearing permits* (DWER, October 2021)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016)
- Technical guidance – *Terrestrial Fauna Surveys for Environmental Impact Assessment* (EPA, 2020)

3. Detailed assessment of application

3.1. Avoidance and mitigation measures

Avoidance and mitigation measures for clearing and the overall operation are set out in the Mining Development and Closure Proposal for the Belvedere project and associated responses to request for information submitted by the applicant, and the Native Vegetation Clearing permit application form. Key measures are summarised below:

Native Vegetation Clearing permit application form

- The size and scale of clearing is proportional to the mine design;
- Avoid clearing of large habitat trees;
- Where possible, trees will be left to provide shade near offices, workshops, parking areas, along road verges and between facilities;
- All machinery to be thoroughly washed and inspected. Soil and Seed Inspection Forms will be completed prior to clearing activities commencing; and
- No watercourses or drainage lines will be changed or damaged.

Mining Proposal / Mine Development and Closure Proposal

- Areas will be adequately surveyed and marked to ensure only the required clearing is undertaken;
- Clearing is conducted in accordance with relevant regulatory approvals (i.e., Clearing Permit and Mining Proposal);
- Copy of approved clearing boundary (GIS/DXF) provided to Project Manager/ Engineer/ Surveyor;
- Inspection of clearing boundary prior to clearing by Mine Manager (or delegate);
- Following disturbance, cleared areas and stockpiles will be surveyed, documented on the site plan and reported in the AER and MRF;
- Training and Awareness regarding clearing procedures; and
- Ensure all vehicles and mobile machinery are restricted to designated access tracks.

Ghost bat and Pilbara Leaf-nosed bat roost management measures

- Ensure zero direct, physical destruction of the adit over the life of the mine;
- No disturbance/clearing of the hill and habitat where the adit is located;
- Locate the vent portal at least 50 metres away from the adit;
- Locate the underground access portal at least 100 metres away from the adit;
- Provide workforce awareness training on bat sensitivity and habitat protection;
- Install signage to prevent inadvertent access to sensitive areas; and
- Reduce speed limits to reduce noise, dust and fauna strike risk.

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 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) – Clearing principle (a) and (c)*

Assessment

Anders Environmental Consulting (2025) undertook flora and vegetation surveys of the Belvedere Project area in October 2024 and March 2025, covering approximately 397.4 hectares.

The desktop assessment identified 56 conservation-significant flora taxa within the region. Of these, *Indigofera rivularis* (Priority 3) and *Solanum sp.* W Hamersley Range (Priority 1) were considered highly likely to occur due to suitable alluvial and

drainage-line habitat within the clearing footprint. Targeted searches in March 2025 did not record these species, and no other priority flora were identified, however the potential for occurrence did not change (Anders Environmental Consulting, 2025). Minimising clearing around drainage lines will reduce the potential for impact on these species.

The surveys recorded 187 flora taxa across 96 genera and 33 families, with species richness varying considerably across the survey area. Floristic diversity was highest within drainage lines and cracking clay environments, reflecting localised moisture availability and episodic recruitment following rainfall. Vegetation is dominated by Fabaceae, Poaceae, Malvaceae and Asteraceae, consistent with the Pilbara bio-region (Anders Environmental Consulting, 2025).

Six introduced species were recorded — *Aerva javanica* (kapok bush), *Cenchrus ciliaris* (buffel grass), *Cenchrus setiger* (birdwood grass), *Malvastrum americanum* (spiked malvastrum), *Portulaca pilosa* (Djanggarra) and *Vachellia farnesiana* (mimosa bush) — primarily within creek lines, cattle-access areas and disturbed corridors (Anders Environmental Consulting, 2025). These species are generally widespread in the Pilbara (Western Australian Herbarium, 1998-) and should be managed to minimise local spread.

A hybrid species, *Senna artemisioides* subsp. *oligophylla* × *helmsii*, was recorded across the survey area. A total of 12 individuals were identified, eight of which occur within the application area (Anders Environmental Consulting, 2025).

This hybrid is not formally recognised in FloraBase (Western Australian Herbarium, 1998) and therefore has not been assessed for conservation significance. A review of FloraBase identified three other *Senna* hybrids with wide ranges that are not considered conservation significant (Western Australian Herbarium, 1998-). Flora of Australia Volume 12 documents extensive hybridisation, polyploidy and apomixis within the *Senna artemisioides* complex (Randell, 1998), with *Senna* known to exhibit hybrid swarms (Randell, 1998). While data on abundance and distribution are limited, given the broader distribution of *Senna* and its tendency for hybridisation, it is unlikely that this hybrid is restricted to the individuals recorded during the survey.

Assessment of information provided as part of the Mining Development and Closure Proposal for the Black Cat (Paulsens) project (Reg ID: 500675) indicates that six of the eight individuals within the application area are outside footprint of the proposed mine infrastructure. Two plants, 'PQ8' and 'PQ35', plot as within the proposed haul road and waste dump respectively and would be impacted by clearing (Anders Environmental Consulting, 2025; Botanica 2025b). Refer to Figure 2.

Conclusion

Based on the above assessment, the proposed clearing will result in disturbance to potential habitat for priority flora; increased potential for spread of weed species; and removal of individuals of the *Senna* hybrid species.

It is considered that the impacts from the proposed clearing on potential habitat of other species and from weed spread can be managed through standard conditions requiring minimisation of native vegetation clearing and implementation of weed management protocols.

For the *Senna* hybrid identified, it is considered that restricting the number of individuals that may be cleared will manage impacts in a manner consistent with application of the Part 1 Section 4A of the *Environmental Protection Act 1986*.

Conditions

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

- avoid, minimise and reduce the impacts and extent of clearing on native vegetation
- no more than two individuals of *Senna artemisioides* subsp. *oligophylla* × *helmsii* individuals to be cleared
- take hygiene steps to minimise the risk of the introduction and spread of weeds.
- watercourse management to avoid riparian vegetation

3.2.2. Biological values (fauna) – Clearing principle (b)

Assessment

A total of 16 conservation significant species (including Priority species) were identified during the desktop review (Western Ecological, 2025). Of these, 11 were considered as either; recorded, possible or unlikely to occur in the survey area, with this based on location of the database record and habitats present in the survey (Western Ecological, 2025); see Appendix B.4 – Table 1 for further information.

Basic and targeted fauna surveys of the Black Cat Belvedere Project area was conducted during October 2024 and March 2025 (Western Ecological, 2025), with a total of 14 person days spent on site. Sixty-four species were recorded of vertebrate fauna were recording. Excluding the two threatened species discussed below, the remaining species are considered common and widespread in the region (Western Ecological, 2025).

Four broad habitat types plus disturbed areas were mapped within the application area (Western Ecological, 2025). Type, area and summary of the Western Ecological assessment is provided in Appendix B.4 – Table 2. The primary area of potential habitat is the 'minor drainage line' which provides potential habitat for small fauna (particularly reptiles) and birds (Western Ecological, 2025).

Targeted surveys (camera traps and acoustic recording) were undertaken for the following threatened species *Liasis olivaceus baronni* (Pilbara olive python), *Pezoporus occidentalis* (Night Parrot), *Dasyurus hallucatus* (northern quoll), *Macroderma gigas* (ghost bat), *Rhinonictis aurantia* (Pilbara Leaf-nosed bat) and *Pseudomys chapmani* (western pebble-mound mouse); see Appendix B.4 – Table 3. Of these, two (*Macroderma gigas* and *Rhinonictis aurantia*) were recorded during the survey (Western Ecological, 2025).

***Macroderma gigas* (ghost bat) and *Rhinonictis aurantia* (Pilbara Leaf-nosed bat)**

The ghost bat is a carnivorous species with a patchy distribution of isolated populations in the semi-desert Pilbara region, though it occurs across northern Australia (Bat Call WA, 2021a; Bullen, 2023). It moves seasonally, or with weather conditions, between roosts in caves, rock crevices and disused mine adits (Bat Call WA, 2021a). Outside of large, abandoned mines, Pilbara ghost bats are often present singularly or in small groups (less than 15) (Bat Call WA, 2021a). The species depends on day roosts deep underground in temperature-stable caves with chambers and cavities that trap humidity (Bat Call WA, 2021a). Ghost bats typically forage within 5 km of diurnal roosts, although greater distances have been recorded (Bat Call WA, 2021a; TSSC, 2016). Available GIS records place the project on the south-western edge of most ghost bat records, with the nearest approximately 14 km to the north-east (GIS Database).

Ghost bat calls were recorded on SM4-6 which was placed inside the adit in March 2025 (no calls were recorded in October 2024). The first call was recorded at 7.30 p.m. (one call) on 11 March 2025 and the last call was at 5.24 a.m. (two calls) on 12 March. The timing, particularly the last call at 5.24 a.m., indicate that ghost bats are roosting in this adit but that there are probably not many individuals (Western Ecological, 2025). Whether ghost bats use this adit all year is unknown (Western Ecological, 2025). Ghost bats are known to move from roost to roost tracking food resources (Bat Call WA, 2021a).

The Pilbara Leaf-nosed bat is a slightly divergent form of the orange leaf-nose bat that occurs only in the Pilbara region. They forage in a variety of habitats and roosts during the day in the dark areas of caves and underground mines with stable, warm and humid microclimates (Bat Call WA, 2021b). Some structures are used during the day on a year-round permanent basis, some are visited only at night for a variety of possible reasons, others are used for at least some proportion of the breeding cycle, and the remainder might provide microclimates suitable for roosting for only part of the year (Bat Call WA, 2021b). All known permanent Pilbara Leaf-nosed bat roosts in historical underground mines are within similar flying ranges of a permanent water source (Bat Call WA, 2021b).

Available GIS databases showed no records within 50 km; however, Western Ecological cited two unpublished surveys (2012 and 2021) that recorded the species within an overlapping part of the survey area and approximately 5.5 km to the north-east, respectively (Western Ecological, 2025).

Pilbara leaf-nosed bats were recorded at four of the six SM4 locations, including in the minor drainage line habitat and near the adit in October 2024 and March 2025. At SM4-6 (inside the adit), two calls were recorded at 00:10 a.m. on 12 March (Western Ecological, 2025).

Black Cat (Paulsens) Pty Ltd advised that the adit is not considered deep enough to support the warm, humid microclimates favoured by these bats and is therefore unfavourable as a maternity or long-term roost. The proponent also noted evidence that both species can co-exist with mining operations (Black Cat Syndicate, 2025). Following further engagement on the mining development and closure proposal, the applicant agreed not to clear around the adit (see Figures 1 and 2) and to minimise disturbance and access in the broader area (Black Cat Syndicate, 2026). The applicant also committed to monitoring and mitigation measures (see Section 3.1).

Foraging habitat exists for both species within in the application area but is also widespread outside it (Bat Call WA, 2021a; Bat Call WA, 2021b; Western Ecological, 2025).

***Dasyurus hallucatus* (northern quoll)**

Dasyurus hallucatus (can be found in a variety of habitats but show a preference for complex rocky areas, such as ranges, breakaways and boulder fields, that when in close proximity to permanent water is considered critical habitat (Department of the Environment, 2016; Northover et al., 2023). No Northern Quolls were recorded during the survey and none were recorded on the camera traps despite 2,493 nights of camera trap effort. Habitat in the survey area appears to be marginal for the Northern Quoll, as overall, there are no large suitable rock piles and rock outcropping for denning, there are no gorges i.e., there is little ruggedness in the Spinifex Low Hills habitat. And there are no large trees such as Eucalypts with hollows large enough to be used as a den site. Consequently, there is no denning habitat for this species. However, this species could potentially forage in the area as it is relatively mobile. (Western Ecological, 2025).

***Notoscincus butleri* (lined soil-crevice skink)**

Notoscincus butleri (lined soil-crevice skink) is restricted to near coastal Pilbara areas. Preferred habitat of spinifex dominated stony plains near creeks and rivers (Cogger, 2014; Willson & Swan, 2021). The 'spinifex low hills habitat' in the survey area may potentially be suitable for this species (Western Botanical, 2025). Due to the extent of similar habitat type in the surrounding region the proposed clearing is unlikely to impact significant habitat for this species (GIS Database)

***Anilius ganei* (Gane's blind snake)**

The Gane's Blind Snake is restricted to the Pilbara region, typically found between Newman and Pannawonica (Wilson and Swan, 2021). This species is generally associated with moist gullies and gorges (Wilson and Swan, 2021). Due to the lack of suitable habitat within the application area, proposed clearing is unlikely to impact significant habitat (GIS Database).

***Pseudomys chapmani* (western pebble-mound mouse)**

No pebble-mounds were recorded during the survey, and no animals were recorded on the camera traps despite 2,493 nights of camera trap effort. The lower slopes in the survey area are unlikely to be suitable for the construction of pebble-mounds as the stones are mostly too large and angular. The records from 5.5 km away come from an area that is much more rugged with greater elevation and therefore the slopes are greater in size i.e. they are longer and the pebbles are more suitable for mound construction as a result of the erosion process. (Western Ecological, 2025).

Based on the above assessment, the proposed clearing may disturb a roost for the ghost bat and Pilbara Leaf-nosed bat. It is considered that these impacts can be managed through conditioning a restricted zone around the adit. Non-critical fauna habitat exists for other fauna species, however impacts can be managed through minimising extent of clearing and slow directional clearing to allow fauna to move into adjacent vegetation.

Conditions

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

- no clearing within the restricted area shown in Figure 1 and Schedule 1 of CPS 11184/1
- avoid, minimise and reduce the impacts and extent of clearing
- undertake slow, progressive one-directional clearing to allow terrestrial fauna to move into adjacent habitat ahead of the clearing activity
- watercourse management to avoid riparian vegetation

3.3. Relevant planning instruments and other matters

The clearing permit application was advertised on 3 October 2025 by the Department of Mines, Petroleum and Exploration inviting submissions from the public. No submissions were received in relation to this application.

There is one native title claim (WCD2015/003 - Puutu Kunti Kurrama People and Pinikura People #1 and #2 (over the area under application (DPLH, 2025). This have been registered determined by the Federal Court on behalf of the claimant groups. 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 is one registered Aboriginal Sites of Significance within the application area (DPLH, 2025). It is the applicant's responsibility to comply with the Aboriginal Heritage Act 1972 in relation to any disturbance of this area.

It is noted that the proposed clearing may impact on the ghost bat and Pilbara Leaf-nosed bat which are protected matters under the *Environment Protection and Biodiversity Conservation Act 1999* (the EPBC Act). The proponent may be required to refer the project to the (Commonwealth) Department of Climate Change, Energy, the Environment and Water for environmental impact assessment under the EPBC Act. The proponent is advised to contact the Department of Climate Change, Energy, the Environment and Water for further information regarding notification and referral responsibilities under the EPBC Act. It is noted that in response to requests for information associated with the Mining Development and Closure Proposal for this project, the applicant has advised that they do not consider referral is required (Black Cat Syndicate, 2025).

Other relevant authorisations required for the proposed land use include:

- A Mining Development and Closure Proposal approved under the *Mining Act 1978*

A Mining Development and Closure Proposal (Reg ID: 500675) has been submitted for this project.

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
During concurrent assessment of this permit and Black Cat (Paulsens) Pty Ltd's Mining Proposal (Registration ID: 500675) for the Belvedere Gold, it was noted that the disturbance footprint requested under the Mining Proposal was less than the area requested under the clearing permit.	Applicant noted that the amount of clearing must be consistent with that set in the Mining Proposal but their preference to maintain the area requested under the clearing application as this allows for future expansion supported by amending the Mining Proposal without amending the clearing permit. This is acceptable, however requires assessment and conditioning of the full application area.
Flora and Vegetation survey provided in support of the application identified a relatively new hybrid taxa of <i>Senna Sp.</i> While assessment indicates that the extent and number of this hybrid is unlikely to be constrained to the application area, a precautionary approach should be taken to restrict the number of individuals cleared via inclusion of a condition in the permit (refer to section 3.2.1)	Applicant agreed with the proposed condition to limit number of hybrid individuals cleared.
Fauna survey provided in support of the application indicated presence of <i>Macroderma gigas</i> (Ghost Bat) and <i>Rhinonictoris aurantia</i> (Pilbara Leaf-nosed Bat) within the application area. Calls from both species were recorded inside an old adit, indicating potential roosting. Management of impacts to these species is also being assessed under the Mining Development and Closure Proposal for the project. Applicant was advised that this would need to be finalised so that this assessment could be finalised	Applicant noted this and provided shapefile of where no clearing would be undertaken, this has been conditioned in the permit.

Appendix B. Site characteristics

B.1. Site characteristics

Characteristic	Details
Local context	<p>The area proposed to be cleared part of an expansive tract of native vegetation in the extensive land use zone of Western Australia. It is surrounded by the landscape of the Hamersley sub-bioregion of the Pilbara Bioregion (GIS Database).</p> <p>Aerial imagery indicates the local area within a five kilometre radius appears generally uncleared (excluding minor unsealed roads) with the exception of the Paulsens Gold Operation immediately to the north of the application area (GIS Database). The application area is within the Mount Stuart and Wyloo Pastoral leases, with the Wyloo Homestead approximately eight kilometres to the south of the application area (GIS Database).</p>
Ecological linkage	Based on aerial imagery, the application area does not form part of any formal or informal ecological linkages (GIS Database).
Conservation areas	According to available databases, the nearest conservation area or environmentally sensitive area is Kookhabinna Gorge, which is listed as a nationally important wetland. This gorge is approximately 48.3 kilometres to the south-west of the application area (GIS Database).
Vegetation description	<p>The application area occurs within the Hamersley subregion of the Pilbara (PIL03) (GIS Database). The vegetation of the application area is mapped as the following Beard vegetation associations (GIS Database):</p> <ul style="list-style-type: none"> 103: Shrub-steppe; Hummock grassland with scattered shrubs or mallee <i>Triodia</i> spp., <i>Acacia</i> spp., <i>Grevillea</i> sp., <i>Eucalyptus</i> sp. (approx. 52 hectares) 157: Grass-steppe; Hummock grassland with <i>Triodia</i> sp. (approx. 233 hectares) <p>Flora and vegetation surveys were conducted over the application area in October 2024 and March 2025 by Anders Environmental Consulting (AEC) and recorded the following vegetation associations within the application area (Anders Environmental Consulting, 2025):</p> <p>VT1: <i>Acacia bivenosa</i>, <i>A. synchronicia</i> and <i>A. xiphophylla</i> tall open shrubland over <i>Triodia epactia</i> and <i>T. wiseana</i> low sparse hummock grassland over <i>Cenchrus ciliaris</i> and <i>Neurachne muelleri</i> low sparse tussock grassland.</p> <p>VT2: <i>Acacia citrinoviridis</i> low open woodland over <i>A. bivenosa</i>, <i>A. pyrifolia</i> and <i>Melaleuca glomerata</i> mid open shrubland over <i>Cenchrus ciliaris</i> and <i>C. setiger</i> low tussock grassland.</p> <p>VT3: <i>Acacia xiphophylla</i> tall sparse shrubland over <i>A. bivenosa</i> and <i>A. synchronicia</i> mid open shrubland over low hummock grassland.</p>

Characteristic	Details
	<p>VT4: <i>Acacia arida</i>, <i>A. bivenosa</i> and <i>Senna artemisioides</i> subsp. <i>oligophylla</i> x <i>helmsii</i> mid sparse shrubland over <i>Triodia wiseana</i> low hummock grassland over <i>Aristida contorta</i> and <i>Enneapogon caerulescens</i> low sparse tussock grassland.</p> <p>VT5: <i>Eucalyptus victrix</i> mid open woodland over <i>Acacia citrinoviridis</i> and <i>A. synchronicia</i> tall open shrubland over <i>Cenchrus ciliaris</i> and <i>C. setiger</i> low tussock grassland.</p> <p>VT6: <i>Acacia synchronicia</i>, <i>A. trachycarpa</i> and <i>Eremophila longifolia</i> tall open shrubland over <i>Triodia epactia</i> low open hummock grassland over <i>Cenchrus ciliaris</i> low open tussock grassland.</p>
Vegetation condition	<p>The <i>Flora and Vegetation Survey – Belvedere Mine</i> (Anders Environmental Consulting, 2025) indicate the vegetation within the proposed clearing area varied from completely degraded to excellent (Trudgen, 1991) condition, described as:</p> <ul style="list-style-type: none"> • Excellent: Pristine or nearly so, no obvious signs of damage caused by human activities since European settlement. <p>to</p> <ul style="list-style-type: none"> • 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. <p>The full Trudgen (1991) condition rating scale is provided in Appendix D.</p> <p>Review of data for the Anders Environmental Consulting (2025) flora and vegetation survey provided within Index of Biodiversity Surveys for Assessments pack ref IBSA-2025-0331 shows the following summary of vegetation condition within the permit application area.</p> <ul style="list-style-type: none"> • Excellent: approximately 171 hectares • Very Good: approximately 38 hectares • Good: approximately 36 hectares • Degraded: approximately 20 hectares • Completely degraded: approximately 18 hectares
Climate and landform	<p>The climate of the application area is semi-arid to tropical with an annual rainfall average of approximately 312 millimetres recorded at Paraburdoo Aero (Station number:007185) (BoM, 2025).</p> <p>The application area and surrounds have elevations ranging from 170 to 350 metres Australian Height Datum (AHD) (GIS Database).</p> <p>The application area is mapped as being within the Hamersley Plateaux Zone, which is described as ‘Hills and dissected plateaux (with some stony plains and hardpan wash plains) on sedimentary and volcanic rocks of the Hamersley Basin’ (GIS Database).</p>
Soil description	<p>The application area overlays two soil units (GIS Database) mapped as</p> <ul style="list-style-type: none"> • Paraburdoo system (map unit symbol: 285Pa): Basalt derived stony gilgai plains and stony plains supporting snakewood and mulga shrublands with spinifex, chenopods and tussock grasses • Rocklea system (map unit symbol 285Rk): Basalt hills, plateaux, lower slopes and minor stony plains supporting hard spinifex and occasionally soft spinifex grasslands with scattered shrubs
Land degradation risk	<p>Interrogation of the data for the individual soil groups forming mapping units 285Pa and 285Rk (GIS Database) indicates, that of the seven soil groups forming these units, six of them have a high to moderate potential for erodibility along with poor to very poor stability.</p> <p>This aligns with findings of the <i>Belvedere Soil Characterisation Report 2025</i> prepared by Botanica Consulting (2025b) as part of the Mining Proposal for the Belvedere Gold Project which noted that “Overall, all soil types will be susceptible to both water and wind erosion because of their poor cohesion, and weak structural development, high sand content, low salinity and low organic carbon. This tendency will be countered however by the high proportion of coarse materials in many samples (Botanica, 2025a).</p>
Waterbodies	<p>The desktop assessment and aerial imagery indicated that three minor, non-perennial watercourses transect the area proposed to be cleared (GIS Database). The <i>Flora and Vegetation Survey – Belvedere Mine</i> (Anders Environment Consulting, 2025) states that the creek lines have been degraded by cattle activity.</p>
Hydrogeography	<p>The application area is not mapped within a proclaimed public drinking water source area (GIS Database). The area is mapped within the Pilbara Groundwater Area, proclaimed under the</p>

Characteristic	Details
	<i>Rights in Water Irrigation Act 1914</i> . The mapped groundwater salinity is 500-1,000 milligrams per litre total dissolved solids (GIS Database).
Flora	<p>There are no records of threatened or priority significant flora within the application and none were identified by field survey undertaken in support of this clearing permit application (Anders Environment Consulting, 2025; GIS Database). The desktop assessment by Anders Environment Consulting identified 56 'conservation-significant flora (e.g. Vulnerable or Priority 1) species within 50 kilometres of the application area.</p> <p>Six weed species were recorded within the survey area, none of these are declared pests under the <i>Biosecurity and Agricultural Management Act 2007</i> or listed as a Weed of National Significance (Anders Environment Consulting, 2025).</p> <p>The flora survey Anders Environment Consulting (2025) also identified a hybrid species, <i>Senna artemisioides</i> subsp. <i>oligophylla</i> × <i>helmsii</i> within the survey and application areas. Further information is provided in Appendix B.3 and section 3.2.1.</p>
Ecological communities	No threatened ecological communities listed under the EPBC Act or BC Act or priority ecological communities occurred within the survey area (Anders Environmental Consulting, 2025). Three priority ecological communities occur within 50 kilometres of the application area (Anders Environmental Consulting, 2025). Further information is provided in Appendix B.5.
Fauna	<p>A total of 16 conservation significant species (including priority species) were identified during the desktop review by Western Ecological as part of their <i>Basic and Targeted Fauna Survey</i> (Western Ecological, 2025) in support of the application. Of these, 11 species are considered as either 'recorded', 'possible' or 'unlikely' to occur in the survey area, based on location of the database record, habitats present in the survey area, and importantly the species ecology. (Western Ecological, 2025). Field survey recorded 64 species with seven species of reptile, 45 species of birds, 12 species of mammals (with eight of these being microbats and two being introduced/feral fauna), no amphibians were recorded (Western Ecological, 2025).</p> <p>Further information is provided in Appendix B.4 and section 3.2.2.</p>
Fauna habitat	Western Ecological (2025) identified four broad fauna habitat types plus disturbed areas across the application area. Further information is provided in Appendix B.4 – Table 2.

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 - Pilbara	614,056.046	613,923.16	~99	30,626.10	4.98
Beard vegetation associations - State					
103	614,596.51	614,463.81	~99	30,626.10	4.98
157	502,728.56	449,311.84	~99	91,077.64	18.12
Beard vegetation associations - Bioregion					
103	614,056.46	613,923.76	~99	30,626.10	4.99
157	199,832.17	198,409.23	~99	11,584.76	5.80

Government of Western Australia (2019)

B.3. Flora analysis table

The desktop assessment by Anders Environment Consulting identified 56 'conservation-significant flora (e.g. Vulnerable or Priority 1) species within 50 kilometres of the application area. Of these, two were identified as having a high likelihood of occurrence within the application area, with a further six having a medium likelihood. The likelihoods did not change following survey (Anders Environmental Consulting, 2025).

Species	Conservation status	Flowering time	Recorded distance from survey area	Habitat	Likelihood pre survey	Likelihood post survey
<i>Eremophila magnifica</i> subsp. <i>velutina</i>	Priority 3	August to September	30 km	Skeletal soils over ironstone. Summits.	Medium	Medium
<i>Glycine falcata</i>	Priority 3	May or July	50 km	Black clayey sand. Along drainage depressions in crabhole plains on river floodplains.	Medium	Medium
<i>Indigofera rivularis</i>	Priority 3	May or July to September	7 km	Creeks, floodplains.	High	High
<i>Ptilotus mollis</i>	Priority 4	May or September	30 km	Stony hills and screes.	Medium	Medium
<i>Rhynchosia bungarensis</i>	Priority 4	May to December	27 km	Pebbly, shingly coarse sand amongst boulders. Banks of flow line in the mouth of a gully in a valley wall.	Medium	Medium
<i>Sida</i> sp. Hamersley Range (K. Newbey 10692)	Priority 3	May or August to October	29 km	Slopes and summits, base of breakaways.	Medium	Medium
<i>Solanum</i> sp. Red Hill (S. van Leeuwen et al. PBS 5415)	Priority 3	March and July to August	29 km	Pisolite outcrops, mesas, and breakaways.	Medium	Medium
<i>Solanum</i> sp. W Hamersley Range (S. Colwill & B. Duncan LCR99-01)	Priority 1	July	16 km	Creeks and gorges.	High	High
<i>Triodia pisoliticola</i>	Priority 3	-	22 km	Mesas, rocky hills, breakaways.	Medium	Medium

Anders Environmental Consulting (2025)

Additionally, a likely new hybrid species was identified during the field survey by Anders Environmental Consulting.

Species name	Conservation status ¹	Total individuals recorded in survey area	Total individuals in local/regional area ²	Total individuals to be cleared ³	Percentage of individuals to be cleared
<i>Senna artemisioides</i> subsp. <i>oligophylla</i> × <i>helmsii</i>	NA	12	12	2	25%

Species name	Conservation status ¹	Total individuals recorded in survey area	Total individuals in local/regional area ²	Total individuals to be cleared ³	Percentage of individuals to be cleared
--------------	----------------------------------	---	---	--	---

Notes

1 – Not formally recognised within Department of Biodiversity, Conservation and Attraction Florabase, so therefore not currently listed as a priority species.

2- Based on available information, the number identified in the Anders Environmental Consulting survey represents the total number known to date, though unlikely to be constrained to the application area in terms of total extent or population number.

3- Number to be cleared is based on the layout provided in the Mining Proposal for the Belvedere Gold Project (Botanica 2025b)

B.4. Fauna analysis tables

Table 1: Listed Conservation Significant Fauna - recorded, possible or unlikely to occur

Species name	Conservation status		Distance of closest record to application area (km)	Likelihood rating (Western Ecological, 2025)	Are surveys adequate to identify? [Y, N, N/A]
	WA	EPBC			
Reptiles					
<i>Notoscincus butleri</i> lined soil-crevice skink	P4	-	38	Possible	Y
<i>Anilius ganei</i> Gane's blind snake	P1	-	21.5	Possible	Y
<i>Liasis olivaceus barroni</i> Pilbara olive python	Vu	Vu	32	Unlikely	Y
Birds					
<i>Apus pacificus</i> fork-tailed swift	Mi	Mi	Within	Recorded in database	Y
<i>Falco hypoleucos</i> grey falcon	Vu	Vu	36	Unlikely	Y
<i>Falco peregrinus</i> peregrine falcon	OS	-	24	Possible	Y
<i>Pezoporus occidentalis</i> Night Parrot	CrE	En	>60	Unlikely	Y
Mammals					
<i>Dasyurus hallucatus</i> northern quoll	En	En	5.5	Possible	Y
<i>Macroderma gigas</i> ghost bat	Vu	Vu	Within	Recorded during survey	Y
<i>Rhinonicteris aurantia</i> Pilbara Leaf-nosed bat	Vu	Vu	Within	Recorded during survey	Y
<i>Pseudomys chapmani</i> western pebble-mound mouse	P4	-	5.5	Unlikely	Y

Western Ecological (2025)

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

Western Ecological (2025) Likelihood Ratings

- Recorded: Recorded during the field survey or from database records in the survey area
- Likely: Suitable habitat is present in the study area and the study area is in the species' known distribution
- Possible: Limited or no suitable habitat is present in study area, but is nearby. The species has good dispersal abilities and is known from the general area
- Unlikely: No suitable habitat is present in study area but is nearby, the species has poor dispersal abilities, but is known from the general area; or suitable habitat is present, however, the study area is outside of the species' known distribution.

Table 2: Fauna habitat types

Broad habitat type	Extent in the survey area	Summary of Western Ecological assessment
Spinifex Low Hills	243.25 ha (61.24%)	<ul style="list-style-type: none"> No boulder fields and only a few small rockpiles, cracks and crevices that would be unsuitable for <i>Dasyurus hallucatus</i> denning. Lower slopes are unlikely to be suitable for the construction of pebble-mounds for the <i>Pseudomys chapmani</i> as the stones are mostly too large and angular

Broad habitat type	Extent in the survey area	Summary of Western Ecological assessment
Stony Plain	50.21 ha, 12.64%	<ul style="list-style-type: none"> No suitable threatened species habitat No hollows, logs and limited leaf litter, but there are some grasses that would provide habitat for small reptiles such as geckos and skinks.
Minor Drainage line	49.43 ha, 12.44%	<ul style="list-style-type: none"> Soils are sandy-loam but still relatively compact, however, they are soft enough for burrowing reptiles such as dragons and goannas Some small hollows are present but limited and there is some woody debris that would provide habitat for small fauna, particularly reptiles No rock pools where water might permanently persist or at least remain for relatively long periods of time and therefore this habitat type is unsuitable for <i>Liasis olivaceus baronni</i> Impacted by cattle
Clay Plain	42.81 ha, 10.78%	<ul style="list-style-type: none"> There are no hollows, logs and limited leaf litter that would provide habitat for small reptiles such as geckos and skinks. Impacted by cattle
Disturbed	11.52 ha, 2.90%	<ul style="list-style-type: none"> Not assessed as being habitat

(Western Ecological, 2025)

Table 3: Target Species – not recorded

Species	Summary of Western Ecological assessment
<i>Liasis olivaceus baronni</i> (Pilbara Olive Python)	<ul style="list-style-type: none"> No Olive Pythons were recorded during the survey and none were recorded on the camera traps despite 2,493 nights of camera trap effort. There are no escarpments or gorges in the survey area and consequently no rock pools where water might permanently persist or at least remain for relatively long periods of time and no large watercourses. Therefore the Olive Python is considered 'Unlikely to occur' in the survey area.
<i>Pezoporus occidentalis</i> (Night Parrot)	<ul style="list-style-type: none"> No Night Parrot calls were recorded on the three SM4 units that were placed out in the survey area. Further to this none were recorded on the camera traps despite 2,493 nights of camera trap effort. Given the lack of suitable habitat in the survey area and the absence of nearby records despite considerable survey effort, the Night Parrot is considered 'Unlikely to occur'.
<i>Dasyurus hallucatus</i> (Northern Quoll)	<ul style="list-style-type: none"> No Northern Quolls were recorded during the survey and none were recorded on the camera traps despite 2,493 nights of camera trap effort. Habitat in the survey area appears to be marginal for the Northern Quoll, as overall, there are no large suitable rock piles and rock outcropping for denning, there are no gorges i.e., there is little ruggedness in the Spinifex Low Hills habitat. And there are no large trees such as Eucalypts with hollows large enough to be used as a den site. Consequently, there is no denning habitat for this species. However, this species could potentially forage in the area as it is relatively mobile. Therefore the Northern Quoll is considered as 'Possibly occurring'.
<i>Pseudomys chapmani</i> (Western Pebble-mound Mouse)	<ul style="list-style-type: none"> No pebble-mounds were recorded during the survey and no animals were recorded on the camera traps despite 2,493 nights of camera trap effort. The lower slopes in the survey area are unlikely to be suitable for the construction of pebble-mounds as the stones are mostly too large and angular. Therefore this species is considered 'Unlikely to occur'.

(Western Ecological, 2025)

B.5. Ecological community analysis table

Community name	Conservation status	Suitable habitat features? [Y/N]	Suitable vegetation type? [Y/N]	Suitable soil type? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)	Are surveys adequate to identify? [Y, N, N/A]
<i>Triodia pisolitica</i> Assemblages	P3	No	No	No	29	162	Y
Brockman Iron cracking clay communities	P1	No	No	Yes	49	135	Y
Scoop Land System	P3	No	No	Yes	43	6	Y

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

Appendix C. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
<p><u>Principle (a):</u> "Native vegetation should not be cleared if it comprises a high level of biodiversity."</p> <p><u>Assessment:</u></p> <p>The flora composition and vegetation types within the application area are typical of the region and not considered unusually diverse, however habitat does exist for two priority flora species along with the presence of a newly identified hybrid species (Anders Environmental Consulting, 2025).</p>	Not likely to be at variance	Yes <i>Refer to Section 3.2.1, above.</i>
<p><u>Principle (b):</u> "Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna."</p> <p><u>Assessment:</u></p> <p>The area proposed to be cleared contains foraging and roosting habitat for conservation significant two bat species. Non-critical habitat may be present for other conservation species.</p>	At variance	Yes <i>Refer to Section 3.2.2, above.</i>
<p><u>Principle (c):</u> "Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."</p> <p><u>Assessment:</u></p> <p>The area proposed to be cleared does not contain records of or suitable habitat for threatened flora (Anders Environmental Consulting 2025).</p>	Not likely to be at variance	No
<p><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."</p> <p><u>Assessment:</u></p> <p>No threatened or priority ecological communities are present within the application area (GIS Database).</p>	Not likely to be at variance	No
Environmental value: significant remnant vegetation and conservation areas		
<p><u>Principle (e):</u> "Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared."</p> <p><u>Assessment:</u></p> <p>The vegetation proposed to be cleared is not considered to be part of a significant ecological linkage in the local area or represent a significant remnant of native vegetation in an area that has been extensively cleared.</p>	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
<p><u>Principle (h):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.”</i></p> <p><u>Assessment:</u></p> <p>Given the distance to the nearest conservation area is approximately 48.3 kilometres (GIS Database), the proposed clearing not likely to have an impact on the environmental values of conservation areas.</p>	Not likely to be at variance	No
Environmental value: land and water resources		
<p><u>Principle (f):</u> <i>“Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.”</i></p> <p><u>Assessment:</u></p> <p>No permanent watercourses or wetlands are mapped within the application area (GIS Database). Three perennial creek lines are shown transecting the application area, the <i>Flora and Vegetation Survey – Belvedere Mine</i> (Anders Environmental Consulting, 2025) describes these as being degraded due to cattle activity. However, as these areas also form suitable habitat for priority flora species and foraging habitat for bats, a condition to where practicable, restrict clearing in these areas is considered to be warranted.</p>	At variance	No
<p><u>Principle (g):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.”</i></p> <p><u>Assessment:</u></p> <p>Soils within the application area potentially moderately to highly susceptible to wind and water erosion. Noting the extent of the application area and the condition of the vegetation, the proposed clearing may have a locally appreciable impact on land degradation. Controls will need to be implemented to manage this aspect.</p>	At variance	No
<p><u>Principle (i):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.”</i></p> <p><u>Assessment:</u></p> <p>Given there are no permanent water courses, wetlands or Public Drinking Water Sources within 50 kilometres of the application area, the proposed clearing is unlikely to impact surface or ground water quality (GIS Database).</p>	Not likely to be at variance	No
<p><u>Principle (j):</u> <i>“Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.”</i></p> <p><u>Assessment:</u></p> <p>The extent of clearing relative to the regional climate (BOM, 2025) and topography (GIS Database) suggest that the proposed clearing is unlikely to contribute to increased incidence or intensity of flooding.</p> <p>Given topography and hydrology of the area, the proposed clearing unlikely to contribute to waterlogging.</p>	Not likely to be at variance	No

Appendix D. Vegetation condition rating scale

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

Considering its location, the scale below was used to measure the condition of the vegetation proposed to be cleared. This scale has been extracted from 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.

Condition	Description
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.
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 E. Sources of information

E.1. GIS datasets

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

- 10 metre contours (DPIRD-073)
- Clearing Instruments Activities (Areas Approved to Clear) (DWER-076)
- Clearing Instruments Conditions (Areas Subject to Conditions) (DWER-077)
- Clearing Instruments Proposals (Areas Applied to Clear) (DWER-075)
- Clearing Regulations - Environmentally Sensitive Areas (DWER-046)
- Clearing Regulations - Schedule One Areas (DWER-057)
- Contaminated Sites Database (DWER-059)
- Contaminated Sites Database - Restricted (DWER-073)
- Directory of Important Wetlands in Australia - Western Australia (DBCA-045)
- EPA Redbook Recommended Conservation Reserves 1976-1991 (DBCA-029)
- Groundwater Salinity Statewide (DWER-026)
- IBRA Vegetation Statistics
- IBSA Survey Details (DWER-118)
- Native Title (Determination) (LGATE-066)
- Native Title (Fed Court) (LGATE-005)
- Native Title (ILUA) (LGATE-067)
- Native Title (NNTT) (LGATE-004)
- Native Vegetation Extent (DPIRD-005)
- Pre-European Vegetation (DPIRD-006)
- Public Drinking Water Source Areas (DWER-033)
- Ramsar Sites (DBCA-010)
- Referral - Permit Application Not Required (DWER-117)
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Mapping - Best Available (DPIRD-027)
- Townsites (LGATE-248)
- WA Now Aerial Imagery
- WRIMS - Groundwater Areas (DWER-085)
- WRIMS - Groundwater Resources (DWER-084)
- WRIMS - Surface Water Areas (DWER-082)
- WRIMS - Surface Water Subareas (DWER-080)

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

- Anders Environmental Consulting. (2025). Flora and vegetation survey: Belvedere Mine (Version 2.0). Prepared for Black Cat Syndicate.
- Bat Call WA (2021a) A review of ghost bat ecology, threats and survey requirements. Report prepared for the Department of Agriculture, Water and the Environment, Canberra. Available from: <https://www.dcceew.gov.au/sites/default/files/documents/review-ghostbat-ecology-threats.pdf>.
- Bat Call WA (2021b) A review of Pilbara leaf-nosed bat ecology, threats and survey requirements. Report prepared for the Department of Agriculture, Water and the Environment, Canberra. Available from: <https://www.dcceew.gov.au/sites/default/files/documents/review-pilbara-leaf-nosed-bat-ecology-threats.pdf>.
- Black Cat (Paulsens) Pty Ltd (2025) Belvedere Project application for clearing permit within Mining Leases M08/196 and M08/222 and Miscellaneous Licence 08/015. Prepared by Black Cat (Paulsens) Pty Ltd.
- Black Cat Syndicate (2025) Response #1 to DMPE requested further information- 13 November 2025, November 2025
- Black Cat Syndicate (2026) Response #2 to DMPE requested further information – 13 November 2025, January 2026
- Botanica Consulting. (2025a). *Belvedere Gold Project: Mining proposal – Underground mining operation (Revision 1A)*. Prepared for Black Cat (Paulsens) Pty Ltd
- Botanica Consulting. (2025b). *Belvedere Gold Project: Soil characterisation report 2025*. Prepared for Black Cat Syndicate.
- Bullen, R.D. (2023) Pilbara leaf-nosed (PLNb) and Ghost bat (PGb) Significance Update. Presentation to DBCA, DMIRS and DWER, June 8, 2023. Kensington, WA.
- Bureau of Meteorology (BoM) (2025) Bureau of Meteorology Website – Climate Data Online, Weather Station 007185. Bureau of Meteorology. <https://reg.bom.gov.au/climate/data/> (Accessed January 2026).
- Cogger, H.G (2014) Reptiles and Amphibians of Australia: *Seventh Edition*. CSIRO Publishing, Collingwood, Victoria
- 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.
- Cramer, V.A., Armstrong, K.N., Bullen, R.D., Cross, S.L., Gibson, L., Hanrahan, N., Knuckey, C.G., Ottewell, K., Reiffer, S., Ruykys, L., Shaw, R.E., Thavornkanlapachai, R., Thompson, S.A., Wild, S., van Leeuwen, S. (2022) Research priorities for the ghost bat (*Macroderma gigas*) in the Pilbara region of Western Australia. Australian Mammalogy.
- Department of the Environment (2016) *EPBC Act referral guideline for the endangered northern quoll, Commonwealth of Australia*. Available from: <https://www.dcceew.gov.au/sites/default/files/documents/referral-guideline-northern-quoll.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 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 January 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) (2014) WA Environmental Offsets Guidelines. https://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/WA%20Environmental%20Offsets%20Guideline%20August%202014.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>
- Keighery, B.J. (1994) Bushland Plant Survey: A Guide to Plant Community Survey for the Community. Wildflower Society of WA (Inc). Nedlands, Western Australia.
- Northover, A., Palmer, R., Burbidge, A.H., Pearson, D., Dziminski, M., Ottewell, K., Prada, D., Umbrello, L., and Gibson, L. (2023) Summary of knowledge for six faunal species that are Matters of National Environmental Significance in the Pilbara, Western Australia. Department of Biodiversity, Conservation and Attractions, Perth. Available from: CPS 11184/1

https://www.wa.gov.au/system/files/2023-08/summary-of-knowledge-for-six-faunal-species-that-are-mnes-in-the-pilbara_final-report.pdf

- Randell, B.R. (1998). *Senna*. In: Cowan, R.S. (ed.), *Flora of Australia*, Vol. 12: Mimosaceae (excluding *Acacia*); Caesalpiniaceae, pp. 89–138. CSIRO Publishing, Melbourne.
- Threatened Species Scientific Committee (TSSC) (2016) Conservation Advice *Macroderma gigas* (ghost bat). Department of the Environment, Canberra. <https://www.environment.gov.au/biodiversity/threatened/species/pubs/174-conservation-advice-05052016.pdf>.
- 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.
- Van Vreeswyk, A.M.E., Payne, A.L., Leighton, K.A. and Hennig, P. (2004) An inventory and condition survey of the Pilbara Region, Western Australia. Technical Bulletin No. 92. Department of Agriculture, South Perth, 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 January 2026).
- Western Ecological (2025). *Basic and targeted fauna survey – Belvedere Project*. Prepared for Black Cat Syndicate.
- Wilson, P.G. (2021) Progress towards resolution of the Indigofera monophylla complex (Fabaceae: Faboideae). *Telopea; Journal of Plant Systematics* (24: 311-317). The Royal Botanic Gardens and Domain Trust., New South Wales.
- Wilson, S. and Swan, G. (2021) *A complete guide to reptiles of Australia: Sixth Edition*. Reed New Holland, Sydney, 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.