



Clearing Permit Decision Report

1. Application details and outcomes

1.1. Permit application details

Permit number:	10130/1
Permit type:	Purpose Permit
Applicant name:	IGO Newsearch Pty Ltd
Application received:	23 March 2023
Application area:	0.76 hectares
Purpose of clearing:	Mineral Exploration
Method of clearing:	Mechanical Removal
Tenure:	Exploration Licence 80/4608
Location (LGA area):	Shire of Halls Creek
Colloquial name:	Osmond Valley Exploration

1.2. Description of clearing activities

IGO Newsearch Pty Ltd (IGO) proposes to clear up to 0.76 hectares of native vegetation within a boundary of approximately 8.3 hectares, for the purpose of mineral exploration (IGO, 2023). The project is located approximately 20.8 kilometres south-east of Warmun, within the Shire of Halls Creek (GIS Database).

The application is to allow for mineral exploration access tracks and two diamond drill pads, for two exploration diamond drill holes (IGO, 2023). IGO have also applied for a clearing permit within adjacent areas for two temporary camp sites under CPS 10173/1.

1.3. Decision on application and key considerations

Decision:	Grant
Decision date:	27 June 2023
Decision area:	0.76 hectares of native vegetation

1.4. Reasons for decision

This clearing permit application was made in accordance with section 51E of the *Environmental Protection Act 1986* (EP Act) and was received by the Department of Mines, Industry Regulation and Safety (DMIRS) on 23 March 2023. DMIRS advertised the application for a public comment for a period of 21 days, and no submissions were received.

In making this decision, the Delegated Officer had regard for the site characteristics (Appendix A), relevant datasets (Appendix D), supporting information provided by the applicant including the results of a flora and vegetation survey, the clearing principles set out in Schedule 5 of the EP Act (Appendix C), proposed avoidance and minimisation measures (Section 3.1), relevant planning instruments and any other matters considered relevant to the assessment (Section 3.3).

The assessment identified that the proposed clearing may result in:

- the potential introduction and spread of weeds into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values;
- impacts to conservation significant flora;
- potential impacts to riparian vegetation and maintain surface water flow; and
- potential land degradation.

After consideration of the available information, as well as the applicant's minimisation and mitigation measures (see Section 3.1), the Delegated Officer determined the proposed clearing is unlikely to lead to long-term adverse impacts on 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;

- undertake slow directional clearing to allow fauna to move into adjacent vegetation ahead of the clearing activity which will minimise impact to individuals;
- avoid impacts to the ephemeral drainage line, and consequently on surface water flow;
- staged clearing – the purpose for which the clearing is authorised is enacted within 3 months of the authorised clearing being undertaken;
- pre-clearance survey for conservation flora.

1.5. Site map

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

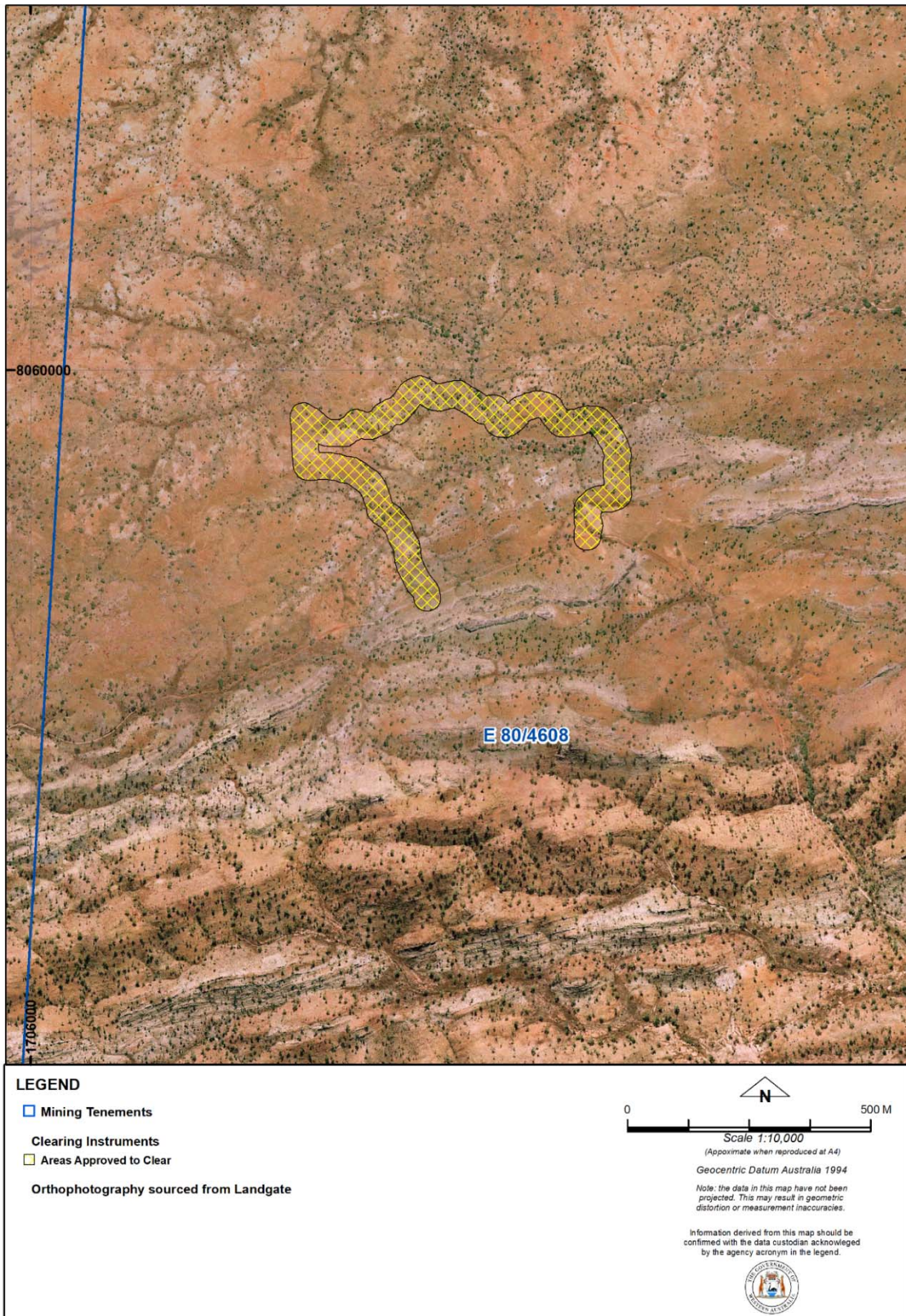


Figure 1. Map of the application area. The yellow area indicates the area within which conditional authorised clearing can occur under the granted clearing permit.

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 (see Section 1.4), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

- the precautionary principle
- the principle of intergenerational equity
- the principle of the conservation of biological diversity and ecological integrity.

Other legislation of relevance for this assessment include:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Conservation and Land Management Act 1984* (WA) (CALM Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Mining Act 1978* (WA)

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2014)
- *Procedure: Native vegetation clearing permits* (DWER, October 2021)
- 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

Evidence was submitted by the applicant, demonstrating that avoidance and mitigation measures such as those listed below will be undertaken:

- existing tracks and fence lines and firebreaks will be used wherever possible to limit damage to vegetation;
- priority flora will be avoided where possible;
- vehicle access will only occur in periods of dry soil conditions;
- vegetation providing fauna habitat such as trees with significant hollows, will be avoided at all times;
- all vehicles will undergo full weed and seed wash down prior to entry; and
- vehicles will travel at reduced speeds (IGO, 2023).

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 (see 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 and flora). 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 Principles (a)

Assessment

One flora and vegetation field survey was carried out in June 2021 by Ecologia Environment. This survey was undertaken outside the primary survey season for flora and vegetation surveys in the Northern botanical province (Ecologia Environment, 2021). The survey was primarily conducted by describing the vegetation at 35 sample sites accessed by helicopter within the 2,673 hectare study area (Ecologia Environment, 2021). A total 77 vascular flora taxa, representing 23 families and 57 genera were recorded in the greater survey area during the field survey (Ecologia Environment, 2021). No Threatened flora or priority flora were recorded during the flora and vegetation survey, however 16 conservation significant flora may potentially occur within the application area (Ecologia Environment, 2021; GIS Database).

The following 16 conservation significant flora species have been recorded within the local area and may potentially occur within the application area (Ecologia Environment, 2021; GIS Database):

Acacia smeringa, Priority 1, is an erect, viscid shrub, growing to one metre high and can be found inhabiting shallow rock soils (Western Australian Herbarium, 1998-). The species is known from five locations from the WA Herbarium from the Central Kimberley and Northern Kimberley Interim Biogeographic Regionalisation from Australia (IBRA) regions (Western Australian Herbarium, 1998-). No Priority flora were recorded within the nearby sample sites during the flora and vegetation survey, however, this species has been recorded within 40 kilometres of the application area and suitable habitat is present, therefore individuals of this species may occur within the application area (Ecologia Environment, 2021; GIS Database). Any impacts to this species would be significant and therefore will be managed

through a flora management condition requiring pre-clearance surveys to be undertaken and a 10 metre buffer applied around any identified individuals.

Adiantum hispidulum var. *hispidulum*, Priority 2, is a rhizomatous, perennial, herb or fern, growing 0.15-0.4 metres high and can be found inhabiting crevices in laterite rocks (Western Australian Herbarium, 1998-). The species is known from four locations from the WA Herbarium from the Northern Kimberley and Ord Victoria Plain IBRA regions (Western Australian Herbarium, 1998-). No Priority flora were recorded within the nearby sample sites during the flora and vegetation survey, however, this species has been recorded within 20 kilometres of the application area and suitable habitat is present, therefore individuals of this species may occur within the application area (Ecologia Environment, 2021; GIS Database). Any impacts to this species would be significant and therefore will be managed through a flora management condition requiring pre-clearance surveys to be undertaken and a 10 metre buffer applied around any identified individuals.

Boronia jucunda, Priority 1, is a slender, aromatic shrub, growing to 0.7 metres high and can be found inhabiting quartzite in rocky areas in open eucalypt woodland (Western Australian Herbarium, 1998-). The species is known from seven locations from the WA Herbarium from the Central Kimberley, Northern Kimberley and Ord Victoria Plain IBRA regions (Western Australian Herbarium, 1998-). No Priority flora were recorded within the nearby sample sites during the flora and vegetation survey, however, this species has been recorded within 10 kilometres of the application area and suitable habitat is present, therefore individuals of this species may occur within the application area (Ecologia Environment, 2021; GIS Database). Any impacts to this species would be significant and therefore will be managed through a flora management condition requiring pre-clearance surveys to be undertaken and a 10 metre buffer applied around any identified individuals.

Boronia minutipinna, Priority 2, is a shrub growing to 0.5 metres high and can be found inhabiting sand amongst boulders on plateau (Western Australian Herbarium, 1998-). The species is known from two locations from the WA Herbarium from the Ord Victoria Plain IBRA region (Western Australian Herbarium, 1998-). No Priority flora were recorded within the nearby sample sites during the flora and vegetation survey, however, this species has been recorded within 10 kilometres of the application area and suitable habitat is present, therefore individuals of this species may occur within the application area (Ecologia Environment, 2021; GIS Database). Any impacts to this species would be significant and therefore will be managed through a flora management condition requiring pre-clearance surveys to be undertaken and a 10 metre buffer applied around any identified individuals.

Cyperus flaccidus, Priority 2, is an annual grass-like or herb sedge, growing 0.1-0.2 metres high and can be found inhabiting moist habitats (Western Australian Herbarium, 1998-). The species is known from two locations from the WA Herbarium from the Northern Kimberley and Ord Victoria Plain IBRA regions (Western Australian Herbarium, 1998-). No Priority flora were recorded within the nearby sample sites during the flora and vegetation survey, however, this species has been recorded within 40 kilometres of the application area and suitable habitat is present, therefore individuals of this species may occur within the application area (Ecologia Environment, 2021; GIS Database). Any impacts to this species would be significant and therefore will be managed through a flora management condition requiring pre-clearance surveys to be undertaken and a 10 metre buffer applied around any identified individuals.

Dicarpidium sp. Purnululu (K.A. Menkhorst 766), Priority 2, is a spreading shrub growing to 0.3 metres high, and is known from one location from the WA Herbarium which was recorded inhabiting sandstone pavement within the Ord Victoria Plain IBRA region (Western Australian Herbarium, 1998-). No Priority flora were recorded within the nearby sample sites during the flora and vegetation survey, however, this species has been recorded within 40 kilometres of the application area and suitable habitat is present, therefore individuals of this species may occur within the application area (Ecologia Environment, 2021; GIS Database). Any impacts to this species would be significant and therefore will be managed through a flora management condition requiring pre-clearance surveys to be undertaken and a 10 metre buffer applied around any identified individuals.

Euploca uniflora, Priority 1, is a herb known from seven locations from the WA Herbarium which has been previously recorded in open woodland, open quartzite, undulating rocky plateau and on the lower slopes of quartzite hills within the Central Kimberly, Ord Victoria Plain and Victoria Bonaparte IBRA regions (Western Australian Herbarium, 1998-). No Priority flora were recorded within the nearby sample sites during the flora and vegetation survey, however, this species has been recorded within 10 kilometres of the application area and suitable habitat is present, therefore individuals of this species may occur within the application area (Ecologia Environment, 2021; GIS Database). Any impacts to this species would be significant and therefore will be managed through a flora management condition requiring pre-clearance surveys to be undertaken and a 10 metre buffer applied around any identified individuals.

Glycine pullenii, Priority 3, is a climber with trailing stems which can be found inhabiting sand plain in open woodland (Western Australian Herbarium, 1998-). The species is known from six locations from the WA Herbarium from the Central Kimberley and Ord Victoria Plain IBRA regions (Western Australian Herbarium, 1998-). No Priority flora were recorded within the nearby sample sites during the flora and vegetation survey, however, this species has been recorded within 20 kilometres of the application area and suitable habitat is present, therefore individuals of this species may occur within the application area (Ecologia Environment, 2021; GIS Database). Any impacts to this species would be significant and therefore will be managed through a flora management condition requiring pre-clearance surveys to be undertaken and a 10 metre buffer applied around any identified individuals.

Goodenia crenata, Priority 3, is a prostrate rosette herb growing to 0.1 metre high and can be found inhabiting flat sandplains and sandstone outcrops (Western Australian Herbarium, 1998-). The species is known from 12 locations from the WA Herbarium from the Central Kimberley, Ord Victoria Plain and Tanami IBRA regions (Western Australian Herbarium, 1998-). No Priority flora were recorded within the nearby sample sites during the flora and vegetation survey, however, this species has been recorded within 40 kilometres of the application area and suitable habitat is

present, therefore individuals of this species may occur within the application area (Ecologia Environment, 2021; GIS Database). Any impacts to this species would be significant and therefore will be managed through a flora management condition requiring pre-clearance surveys to be undertaken and a 10 metre buffer applied around any identified individuals.

Grevillea miniata, Priority 4, is a spreading to erect shrub or tree, growing 1.8-5 metres high and can be found inhabiting skeletal sandy soils or sandy loam over quartzite or sandstone on cliffs or rocky slopes, sometimes along watercourses (Western Australian Herbarium, 1998-). The species is known from 33 locations from the WA Herbarium from the Central Kimberley, Ord Victoria Plain and Victoria Bonaparte IBRA regions (Western Australian Herbarium, 1998-). No Priority flora were recorded within the nearby sample sites during the flora and vegetation survey, however, this species has been recorded within 10 kilometres of the application area and suitable habitat is present, therefore individuals of this species may occur within the application area (Ecologia Environment, 2021; GIS Database). The application area is not considered significant to this species and clearing of 0.76 hectares of native vegetation will not likely lead to a significant impact to the species.

Hibiscus squarulosus, Priority 1, is a shrub growing to three metres high and can be found inhabiting sand, sandstone beside watercourses and creek beds (Western Australian Herbarium, 1998-). The species is known from four locations from the WA Herbarium from the Ord Victoria Plain IBRA region (Western Australian Herbarium, 1998-). No Priority flora were recorded within the nearby sample sites during the flora and vegetation survey, however, this species has been recorded within 10 kilometres of the application area and suitable habitat is present, therefore individuals of this species may occur within the application area (Ecologia Environment, 2021; GIS Database). Any impacts to this species would be significant and therefore will be managed through a flora management condition requiring pre-clearance surveys to be undertaken and a 10 metre buffer applied around any identified individuals.

Leptospermum madidum subsp. *sativum*, Priority 3, is a shrub or tree, growing 1.5-8 metres high and can be found inhabiting sandy soils along watercourses and sandstone gorges (Western Australian Herbarium, 1998-). The species is known from eight locations from the WA Herbarium from the Central Kimberley and Ord Victoria Plain IBRA regions (Western Australian Herbarium, 1998-). No Priority flora were recorded within the nearby sample sites during the flora and vegetation survey, however, this species has been recorded within 10 kilometres of the application area and suitable habitat is present, therefore individuals of this species may occur within the application area (Ecologia Environment, 2021; GIS Database). Any impacts to this species would be significant and therefore will be managed through a flora management condition requiring pre-clearance surveys to be undertaken and a 10 metre buffer applied around any identified individuals.

Micraira sp. Purnululu (M.D. Barrett & R.L. Barrett 1507), Priority 1, is a stilt-rooting, spreading perennial that has been previously recorded on shallow sand and large sandstone pavements (Western Australian Herbarium, 1998-). The species is known from 11 locations from the WA Herbarium from the Ord Victoria Plain and Victoria Bonaparte IBRA regions (Western Australian Herbarium, 1998-). No Priority flora were recorded within the nearby sample sites during the flora and vegetation survey, however, this species has been recorded within 20 kilometres of the application area and suitable habitat is present, therefore individuals of this species may occur within the application area (Ecologia Environment, 2021; GIS Database). Any impacts to this species would be significant and therefore will be managed through a flora management condition requiring pre-clearance surveys to be undertaken and a 10 metre buffer applied around any identified individuals.

Pentalepis trichodesmoides subsp. *incana*, Priority 1, is an upright herb that has been previously recorded on skeletal soils, sand and loam within stony grounds and long watercourses (Western Australian Herbarium, 1998-). The species is known from seven locations from the WA Herbarium from the Ord Victoria Plain IBRA region (Western Australian Herbarium, 1998-). No Priority flora were recorded within the nearby sample sites during the flora and vegetation survey, however, this species has been recorded within 20 kilometres of the application area and suitable habitat is present, therefore individuals of this species may occur within the application area (Ecologia Environment, 2021; GIS Database). Any impacts to this species would be significant and therefore will be managed through a flora management condition requiring pre-clearance surveys to be undertaken and a 10 metre buffer applied around any identified individuals.

Solanum carduiforme, Priority 2, is an erect, prickly, clonal perennial herb or shrub, growing 0.1-1 metre high and can be found inhabiting clayey sand or sandstone (Western Australian Herbarium, 1998-). The species is known from seven locations from the WA Herbarium from the Ord Victoria Plain IBRA region (Western Australian Herbarium, 1998-). No Priority flora were recorded within the nearby sample sites during the flora and vegetation survey, however, this species has been recorded within 40 kilometres of the application area and suitable habitat is present, therefore individuals of this species may occur within the application area (Ecologia Environment, 2021; GIS Database). Any impacts to this species would be significant and therefore will be managed through a flora management condition requiring pre-clearance surveys to be undertaken and a 10 metre buffer applied around any identified individuals.

Tephrosia sp. Mistake Creek (A.C. Beauglehole 54424), Priority 3, is a shrub which can be found growing along minor flowlines, raised floodplains and on creek flats (Western Australian Herbarium, 1998-). The species is known from 10 locations from the WA Herbarium from the Dampierland, Ord Victoria Plain and Victoria Bonaparte IBRA regions (Western Australian Herbarium, 1998-). No Priority flora were recorded within the nearby sample sites during the flora and vegetation survey, however, this species has been recorded within 10 kilometres of the application area and suitable habitat is present, therefore individuals of this species may occur within the application area (Ecologia Environment, 2021; GIS Database). Any impacts to this species would be significant and therefore will be managed through a flora management condition requiring pre-clearance surveys to be undertaken and a 10 metre buffer applied around any identified individuals.

Conclusion

Based on the above assessment, the proposed clearing will result in the potential removal of priority flora. For the reasons set out above, it is considered that the impacts of the proposed clearing on flora can be managed by a flora management condition.

Conditions

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

- 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
- to undertake pre-clearance surveys to identify and avoid Threatened and Priority flora.

3.2.2. Biological values (fauna) - Clearing Principle (b)

Assessment

The fauna survey undertaken in June 2021 did not identify any Threatened, Priority or Specially Protected fauna within the survey area (Ecologia Environment, 2021). At 45 sample sites within the local area, 47 vertebrate fauna species were recorded during the survey including six mammals (four introduced), 35 birds and six reptiles (Ecologia Environment, 2021).

The following three broad habitat types were identified within the application area and are considered generally common at a local and regional scale:

- **Low Hills:** This habitat type consists of low, undulating hills with scattered eucalypts and isolated low shrubs over grassy plains with stony substrates. Low Hills habitat within the survey area provides refugia and foraging opportunities for birds, reptiles and mammals;
- **Drainage Line/River/Creek:** This habitat supports minor and major creek lines as well as drainage lines with scattered eucalypts over tussock grasses. During the survey, several creek lines were inundated, providing seasonal habitat for migratory birds, waterfowl, ducks and fish; and
- **Rocky Hills:** Rocky Hills encompass boulders and crevices which provide shelter, denning and roosting habitat for mammals and reptiles. Within the survey area, this habitat type was comprised of rocky hills and outcrops with breakaways and crevices which may provide refugia for small mammals and bat species (Ecologia Environment, 2021).

Seven conservation fauna species may potentially occur within the application area:

Erythrura gouldiae (Gouldian finch), Endangered, is sparsely distributed across northern Australia between the Kimberley and north-central Queensland and has a total population estimated at less than 2,500 individuals (DCCEEW, 2023). This species inhabits open woodland that are dominated by *Eucalypt* trees and support a ground cover of *Sorghum* and other grasses (DCCEEW, 2023). No individuals of this species were recorded during the fauna survey, however this species has been recorded on 14 occasions within 50 kilometres of the application area (Ecologia Environment, 2021). As suitable habitat is present within the application area, this species may possibly occur. The clearing of 0.76 hectares of native vegetation is not likely to lead to a significant impact to this species, however impacts to individuals can be managed by placing a slow directional clearing and fauna spotter conditions on the permit.

Falco hypoleucos (grey falcon), Vulnerable, is a medium-sized raptor species endemic to mainland Australia (DCCEEW, 2023). The species occurs in arid and semi-arid Australia and is mainly found where annual rainfall is less than 500 millimetres (DCCEEW, 2023). *Falco hypoleucos* occurs in a variety of habitat and frequents timbered lowland plains, particularly acacia shrublands that are crossed by tree-lined water courses, the species has been observed hunting in treeless areas and frequents tussock grassland and open woodland (DCCEEW, 2023). This species may intermittently overfly the application area or utilise the habitat whilst foraging, however the clearing of 0.76 hectares of native vegetation will not likely lead to a significant impact and impacts can be managed by placing a slow directional clearing and fauna spotter conditions on the permit.

Falco peregrinus (peregrine falcon), Other Specially Protected Species, is one of the most widespread birds in the world and occurs across most of Australia (DCCEEW, 2023). The species inhabits cliffs, coastal habitats, rivers, wooded water courses, lakes and urban environments (DCCEEW, 2023). No individuals were recorded during the survey, however, this species has been recorded within 50 kilometres from the application area, suggesting that they may use the application area as part of a larger home range (GIS Database). The clearing of 0.76 hectares of native vegetation will not likely lead to a significant impact to this species and impacts can be managed by placing a slow directional clearing and fauna spotter conditions on the permit.

Leggadina lakedownensis (Northern short-tailed mouse), Priority 4, is a short-tailed mouse occurring across northern Australia, from Cape York to the Pilbara, with one population of Thevenard Island (DCCEEW, 2023). The species, which remain in burrows during day hours, is known to inhabit sandy soils and cracking clays (DCCEEW, 2023). As this species has been recorded within 2.5 kilometres of the application area and suitable habitat is present, this species may potentially occur. The impacts to individuals of this species can be managed by placing a slow directional clearing and fauna spotter conditions on the permit.

Dasyurus hallucatus (Northern quoll), Endangered, formerly occurred across northern Australia from Western to south-east Queensland (DCCEEW, 2023). Its distribution has declined, especially in the more arid parts of its range, with extant populations occurring in the Pilbara, Kimberley, parts of the Northern Territory and near-coastal Queensland

(DCCEEW, 2023). This species habitat generally encompasses some form of rocky area for denning purposes with surrounding vegetated habitats used for foraging and dispersal (DCCEEW, 2023). Although this species has not been recorded within 50 kilometres of the application area, the area does provide suitable habitat and falls within the known distribution of the species, therefore individuals of this species may potentially occur within the application area (Ecologia Environment, 2021; GIS Database). The impacts to individuals of this species can be managed by placing a slow directional clearing and fauna spotter conditions on the permit.

Petropseudes dahli (rock ringtail possum), Priority 3, have been recorded across the dry tropics of Australia from north-west Queensland in the vicinity of Lawn Hill, along the southern shore of the Gulf of Carpentaria and across the top end of the Northern Territory to the western Kimberley Ranges in Western Australia (Hoser, 2020). The species is known to be confined to the rocky regions within these locations (Hoser, 2020). One individual of this species was recorded within 10 kilometres of the application area in 1989 (GIS Database). The application area contains suitable habitat for this species, however the area is not considered significant to the species and clearing of 0.76 hectares of native vegetation will not likely lead to a significant impact to the conservation status of this species.

Wyulda squamicaudata (scaly-tailed possum), Priority 4, is found in north-western Australia, where it is restricted to the Kimberley (DCCEEW, 2023). This species inhabits areas with trees and rocks in the broken sandstone country of savannah woodlands in hot tropics (DCCEEW, 2023). One individual of this species was recorded within 50 kilometres of the application area (GIS Database). The application area contains suitable habitat for this species, however the area is not considered significant to the species and clearing of 0.76 hectares of native vegetation will not likely lead to a significant impact to the conservation status of this species.

Conclusion

Based on the above assessment, the proposed clearing will result in loss of potential habitat for a number of conservation significant fauna species. For the reasons set out above, it is considered that the impacts of the proposed clearing on fauna habitats can be managed by implementing fauna management conditions.

Conditions

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

- slow directional clearing to allow fauna to move into adjacent vegetation ahead of the clearing activity which will minimise impact to individuals;
- avoid, minimise and reduce the impacts and extent of clearing.

3.3. Relevant planning instruments and other matters

The clearing permit application was advertised on 7 April 2023 by the Department of Mines, Industry Regulation and Safety inviting submissions from the public. No submissions were received in relation to this application.

There is one native title claim (Purnulu - WAD6007/1998) over the area under application (DPLH, 2023). This claim has been registered with the National Native Title Tribunal on behalf of the claimant group. However, the exploration 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, 2023). 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 Programme of Work approved under the *Mining Act 1978*.

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

End

Appendix A. Site characteristics

A.1. Site characteristics

Characteristic	Details
Local context	The project is located approximately 20.8 kilometres south-east of Warmun, within the Shire of Halls Creek (GIS Database). The area proposed to be cleared is part of an expansive tract of native vegetation in the extensive land use zone of Western Australia and is surrounded by similar native vegetation (Ecologia Environment, 2021; GIS Database). The proposed clearing area is located within the Eastern Kimberley region of Western Australia, situated within the Ord Victorian Interim Biogeographic Regionalisation for Australia (IRBA) region (Ecologia Environment, 2021; GIS Database).
Ecological linkage	According to available databases, the application area does not contain any known or mapped ecological linkages (GIS Database).
Conservation areas	The application area is located within the Purnululu National Park (Register of National Estate) which was inscribed on the World Heritage List for its outstanding universal natural heritage values (GIS Database).
Vegetation description	<p>The vegetation of the application area is broadly mapped as the following Beard vegetation association:</p> <ul style="list-style-type: none"> 91: Hummock grasslands, sparse tree steppe; snappy gum over soft spinifex (GIS Database). <p>A flora and vegetation survey was conducted over the application area by Ecologia during June, 2021. The following vegetation associations were recorded within the application area (Ecologia Environment, 2021):</p> <ul style="list-style-type: none"> W03: <i>Corymbia</i>, <i>Eucalyptus</i> low open woodland. <i>Eucalyptus brevifolia</i>, <i>Corymbia opaca</i> open low woodland; +/- <i>Acacia colei</i>, +/- <i>Cochlospermum fraseri</i> tall open shrubland; <i>Acacia lycopodiifolia</i> low open shrubland; <i>Triodia pungens</i>, +/- <i>Triodia wiseana</i> hummock grassland; W04: <i>Eucalyptus</i> low open woodland. <i>Eucalyptus brevifolia</i> low open woodland; +/- <i>Acacia colei</i>, +/- <i>Cochlospermum fraseri</i> tall open shrubland; <i>Acacia lycopodiifolia</i> +/- <i>Tephrosia rosea</i> open shrubland; +/- <i>Cymbopogon ambiguus</i>, +/- <i>Themeda triandra</i>, <i>Triodia wiseana</i> tussock/hammock grassland; and W06: <i>Lophostemon</i>, <i>Eucalyptus</i> tall open woodland. <i>Lophostemon grandiflorus</i> subsp. <i>riparius</i> +/- <i>Eucalyptus camaldulensis</i> open woodland; <i>Acacia colei</i>, +/- <i>Bauhinia cunninghamii</i>, <i>Terminalia canescens</i> tall shrubland; <i>Carissa lanceolata</i> shrubland; +/- <i>Cynodon convergens</i>, <i>Cyperus vaginatus</i> grass/sedgeland.
Vegetation condition	<p>The vegetation survey indicate the vegetation within the proposed clearing area is in 'Very Good' 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. '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. <p>The full Trudgen (1991) condition rating scale is provided in Appendix C.</p>
Climate and landform	The climate of the region (Kimberley) is tropical monsoonal climate with a warm, dry season and a wet season with an average annual rain fall of 860.6 millimetres (BoM, 2023).
Soil description	<p>The soils of the application area are broadly mapped as the following soil types:</p> <ul style="list-style-type: none"> 312Od5E: O'Donnell granitic rises subsystem. Gently undulating to rolling rises on granite. Red or brown sandy duplexes with minor stony soils and occasional outcrop; and 314Do5Q: Dockrell rises subsystem. Gently undulating to rolling rises (9-30 m relief) on metamorphic, sedimentary and volcanic rocks. Yellow/brown shallow sandy soils, stony soils and bare rock (DPIRD, 2023).
Land degradation risk	<p>The application area falls within the O'Donnell and Dockrell Land Systems (DPIRD, 2023).</p> <ul style="list-style-type: none"> The O'Donnell Land System is described as stoney undulating country with scattered hills and loamy skeletal soils. Gently sloping low interfluves, scattered rocky hills and ridges with restricted hill-footslopes. The interfluves and drainage floors have moderate susceptibility to erosion. The Dockrell Land System described as ridges and hills on metamorphic rocks with skeletal soils supporting snappy gum, bloodwood or box low woodlands over hard spinifex or upland tall grass. Landforms are mainly ridges with outcrops of shallow, micaceous sandy soils and valley plains with shallow brownish sands and loams over red clay, commonly high in rock fragments. This rough hill system has a very low susceptibility to erosion.

Characteristic	Details
Waterbodies	The desktop assessment and aerial imagery indicated that one minor non-perennial watercourse transects the northern section of the application area (GIS Database).
Hydrogeography	The application area is not mapped within a Public Drinking Water Source Area (PDWSA) (GIS Database). The proposed area is located within the Canning-Kimberley Groundwater Area (GIS Database).
Flora	The flora survey undertaken by Ecologia Environment did not identify any conservation significant flora species within the application area or the greater survey area (Ecologia Environment, 2021). Based on suitable habitat and historical records, 16 conservation significant flora species could potentially occur within the application area (GIS Database).
Ecological communities	The application area is not located within a Threatened or Priority Ecological Community (Ecologia Environment, 2021; GIS Database).
Fauna	No Threatened, Priority or Specially Protected fauna have previously been recorded within the application area and no significant fauna species were recorded during the fauna survey (Ecologia Environment, 2021). Seven conservation species may potentially occur within the application area (see Appendix A.4). The following three broad habitat types were identified within the application area: <ul style="list-style-type: none"> • Low Hills: This habitat type consists of low, undulating hills with scattered eucalypts and isolated low shrubs over grassy plains with stony substrates. Low Hills habitat within the survey area provides refugia and foraging opportunities for birds, reptiles and mammals; • Drainage Line/River/Creek: This habitat supports minor and major creek lines as well as drainage lines with scattered eucalypts over tussock grasses. During the survey, several creek lines were inundated, providing seasonal habitat for migratory birds, waterfowl, ducks and fish; • Rocky Hills: Rocky Hills encompass boulders and crevices which provide shelter, denning and roosting habitat for mammals and reptiles. Within the survey area, this habitat type was comprised of rocky hills and outcrops with breakaways and crevices which may provide refugia for small mammals and bat species (Ecologia Environment, 2021).

A.2. Vegetation extent

	Pre-European area (ha)	Current extent (ha)	Extent Remaining %	Current extent in all DBCA managed land (ha)	Current proportion (%) of pre-European extent in all DBCA Managed Lands
IBRA Bioregion Ord Victoria Plain	5,497,881.46	5,493,144.00	99.91	940,518.57	17.11
Beard vegetation associations - State (Western Australia)					
Veg Assoc No. 91	438,282.66	437,621.56	99.85	83,113.50	18.96
Beard vegetation associations - Bioregion (Ord Victoria Plain)					
Veg Assoc No. 91	168,408.21	168,408.21	100.00	83,113.50	49.35

Government of Western Australia (2019)

A.3. Flora analysis table

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

Species name	Conservation status	Suitable habitat features? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)
<i>Acacia clavisetia</i>	P3	N	<10	10
<i>Acacia smeringa</i>	P1	Y	<40	5
<i>Acacia zatrichota</i>	P2	N	<20	2
<i>Adiantum hispidulum</i> var. <i>hispidulum</i>	P2	Y	<40	4

Species name	Conservation status	Suitable habitat features? [Y/N]	Distance of closest record to application area (km)	Number of known records (total)
<i>Blumea pungens</i>	P2	N	<20	9
<i>Boronia jucunda</i>	P1	Y	<10	7
<i>Boronia minutipinna</i>	P2	Y	<10	2
<i>Colocasia esculenta</i> var. <i>aquatilis</i>	P3	N	<20	21
<i>Cucumis</i> sp. Bastion Range (A.A. Mitchell et al. AAM 10710)	P1	N	<20	11
<i>Cyperus flaccidus</i>	P2	Y	<40	2
<i>Dicarpidium</i> sp. Purnululu (K.A. Menkhorst 766)	P2	Y	<20	1
<i>Doodia caudata</i>	P2	N	<40	1
<i>Eriachne imbricata</i>	P2	N	<20	2
<i>Euploca uniflora</i>	P1	Y	<10	7
<i>Fimbristylis sieberiana</i>	P3	N	<40	29
<i>Glycine falcata</i>	P3	N	<40	14
<i>Glycine pullenii</i>	P3	Y	<20	6
<i>Goodenia crenata</i>	P3	Y	<40	12
<i>Grevillea miniata</i>	P4	Y	<10	33
<i>Grevillea psilantha</i>	P2	N	<20	12
<i>Hibiscus squarulosus</i>	P1	Y	<10	4
<i>Leichhardtia racemosa</i>	P1	N	<10	2
<i>Leptospermum madidum</i> subsp. <i>sativum</i>	P3	Y	<10	8
<i>Lindernia eremophiloides</i>	P2	N	<40	4
<i>Micraira</i> sp. Purnululu (M.D. Barrett & R.L. Barrett 1507)	P1	Y	<20	11
<i>Pentalepis trichodesmoides</i> subsp. <i>incana</i>	P1	Y	<20	7
<i>Solanum carduiforme</i>	P2	Y	<40	7
<i>Stephania japonica</i> var. <i>japonica</i>	P2	N	<20	4
<i>Synostemon rigidulus</i>	P3	N	<20	9
<i>Taenitis pinnata</i>	P2	N	<20	6
<i>Tephrosia</i> sp. Mistake Creek (A.C. Beaughole 54424)	P3	Y	<10	10
<i>Triodia bunglensis</i>	P2	N	<20	9
<i>Triumfetta aspera</i>	P2	N	<40	1

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

A.4. Fauna analysis table

Species name	Common name	Conservation status	Suitable habitat features? [Y/N]	Distance of closest record to application area (km)
<i>Charadrius veredus</i>	oriental plover	MI	N	<40
<i>Erythrura gouldiae</i>	Gouldian finch	EN	Y	<40
<i>Falco hypoleucos</i>	grey falcon	VU	Y	<10
<i>Falco peregrinus</i>	peregrine falcon	OS	Y	<10

Species name	Common name	Conservation status	Suitable habitat features? [Y/N]	Distance of closest record to application area (km)
<i>Leggadina lakedownensis</i>	Northern short-tailed mouse	P4	Y	<10
<i>Dasyurus hallucatus</i>	Northern quoll	EN	Y	>50
<i>Petropseudes dahli</i>	rock ringtail possum	P3	Y	<10
<i>Plegadis falcinellus</i>	glossy ibis	MI	N	<40
<i>Wyulda squamicaudata</i>	scaly-tailed possum	P4	Y	<40

T: threatened, CR: critically endangered, EN: endangered, VU: vulnerable, P: priority, OS: Other Specially Protected

Appendix B. 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 area proposed to be cleared contains a floristic composition which is broadly typical of the eastern Kimberley region and for the landforms present, no taxa were potentially new species or otherwise anomalous (Ecologia Environment, 2021). Twenty-six Priority flora species may potentially occur within the application area (GIS Database).</p>	May 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 may contain foraging habitat for several conservation significant fauna species.</p>	May be 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>There are no known records of Threatened flora within the application area (GIS Database). Flora surveys of the application area did not record any species of Threatened flora (Ecologia Environment, 2021).</p> <p>The vegetation associations within the application area are common and widespread within the region (Ecologia Environment, 2021; GIS Database), and the vegetation proposed to be cleared is unlikely to be necessary for the continued existence of any species of Threatened flora.</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>There are no known Threatened Ecological Communities (TECs) located within the application area and the flora and vegetation survey did not identify any TECs (Ecologia Environment, 2021; 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 application area falls within the Ord Victoria Plains Bioregion of the Interim Biogeographic Regionalisation for Australia (IBRA) (GIS Database). Approximately more than 99% of the pre-European vegetation still exists in the IBRA Ord Victoria Plains Bioregion (Government of Western Australia, 2019). The application area is broadly mapped as Beard vegetation association 91, approximately more than 99% of</p>	Not at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
the pre-European extent of this vegetation association remains uncleared at both the state and bioregional level (Government of Western Australia, 2019).		
<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>The application area is located within Purnululu National Park (Register of National Estate) which was inscribed on the World Heritage List for its outstanding universal natural heritage values (GIS Database). Despite the area being on the Register of National Estate for Indigenous heritage and natural values, it is considered that the proposed clearing will not significantly impact on the environmental values of the area. Following the cessation of exploration activities and rehabilitation undertaken by the proponent, the proposed activities are not expected to significantly impact on the conservation values of the Purnululu National Park.</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>There are no permanent watercourses or wetlands within the area proposed to be cleared (GIS Database). Given one minor non-perennial water course (drainage line) transects application area, the proposed clearing may lead to an impact on- or off-site hydrology and water quality (GIS Database). Impacts to the drainage line can be managed through a watercourse management condition.</p>	May be 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>The application area falls within the O’Donnell and Dockrell Land Systems, these land systems have a low to high susceptibility to erosion if cleared of vegetation (DPIRD, 2023). Land degradation can be managed through a staged clearing condition.</p>	May be 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 no permanent water courses / Public Drinking Water Sources Areas are recorded within 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>There are no permanent water courses or waterbodies within the application area (GIS Database). Seasonal drainage lines are common in the region and temporary localised flooding may occur briefly following heavy rainfall events. However, the proposed clearing is unlikely to increase the incidence or intensity of natural flooding events.</p>	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.
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. Sources of information

D.1. GIS databases

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

- 10 Metre Contours (DPIRD-073)
- Aboriginal Heritage Places (DPLH-001)
- Bush Forever (Regional Scheme) (DPLH-022)
- Clearing Regulations – Schedule One Areas (DWER-057)
- DBCA – Lands of Interest (DBCA-012)
- DBCA Legislated Lands and Waters (DBCA-011)
- Directory of Important Wetlands in Australia – Western Australia (DBCA-045)
- Environmentally Sensitive Areas (DWER-046)
- Flood Risk (DPIRD-007)
- Groundwater Salinity Statewide (DWER-026)
- Hydrographic Catchments – Catchments (DWER-028)
- Hydrography – Inland Waters – Waterlines
- Hydrography, Linear (DWER-031)
- Hydrological Zones of Western Australia (DPIRD-069)
- IBRA Vegetation Statistics
- Local Planning Scheme – Zones and Reserves (DPLH-071)
- Native Title (ILUA) (LGATE-067)
- Pre-European Vegetation Statistics
- Interim Ramsar Sites (DBCA-010)
- Regional Parks (DBCA-026)
- Remnant Vegetation, All Areas
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Land Quality – Flood Risk (DPIRD-007)
- Soil Landscape Land Quality – Phosphorus Export Risk (DPIRD-010)
- Soil Landscape Land Quality – Subsurface Acidification Risk (DPIRD-011)
- Soil Landscape Land Quality – Water Erosion Risk (DPIRD-013)
- Soil Landscape Land Quality – Water Repellence Risk (DPIRD-014)
- Soil Landscape Land Quality – Waterlogging Risk (DPIRD-015)
- Soil Landscape Land Quality – Wind Erosion Risk (DPIRD-016)
- Soil Landscape Mapping – Best Available (DPIRD-027)
- Soil Landscape Mapping – Rangelands (DPIRD-064)
- WA Now Aerial Imagery

Restricted GIS Databases used:

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

- Threatened Ecological Communities and Priority Ecological Communities (Buffers)

D.2. References

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- Department of Climate Change, Energy, the Environment and Water (DCCEEW) (2023) Species Profile and Threats Database (SPRAT). Available from <http://www.environment.gov.au/cgi-bin/sprat/public/sprat.pl> (Accessed 12 June 2023).
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- Department of Planning, Lands and Heritage (DPLH) (2023) Aboriginal Heritage Inquiry System. Department of Planning, Lands and Heritage. <https://espatial.dplh.wa.gov.au/AHIS/index.html?viewer=AHIS> (Accessed 31 May 2023).
- Department of Primary Industries and Regional Development (DPIRD) (2023) NRInfo Digital Mapping. Department of Primary Industries and Regional Development. Government of Western Australia. URL: <https://dpiird.maps.arcgis.com/apps/webappviewer/index.html?id=662e8cbf2def492381fc915aaf3c6a0f> (Accessed 31 May 2023).
- Department of Primary Industries and Regional Development (DPIRD) (2023) Advice received in relation to Clearing Permit Application CPS 10130/1. Office of the Commissioner of Soil and Land Conservation, Department of Primary Industries and Regional Development, Western Australia, May 2023.
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- Environmental Protection Authority (EPA) (2020) Technical Guidance – Terrestrial Fauna Surveys. Available from: https://www.epa.wa.gov.au/sites/default/files/Policies_and_Guidance/2020.09.17%20-%20EPA%20Technical%20Guidance%20-%20Vertebrate%20Fauna%20Surveys%20-%20Final.pdf
- Government of Western Australia (2019) 2018 Statewide Vegetation Statistics incorporating the CAR Reserve Analysis (Full Report). Current as of March 2019. WA Department of Biodiversity, Conservation and Attractions. <https://catalogue.data.wa.gov.au/dataset/dbca-statewide-vegetation-statistics>
- IGO (2023) Clearing permit application form, CPS 10130/1, received 23 March 2023.
- 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.
- Western Australian Herbarium (1998-) FloraBase - the Western Australian Flora. Department of Biodiversity, Conservation and Attractions, Western Australia. <https://florabase.dpaw.wa.gov.au/> (Accessed 12 June 2023).

4. Glossary

Acronyms:

BC Act	<i>Biodiversity Conservation Act 2016</i> , Western Australia
BoM	Bureau of Meteorology, Australian Government
DAA	Department of Aboriginal Affairs, Western Australia (now DPLH)
DAFWA	Department of Agriculture and Food, Western Australia (now DPIRD)
DCCEEW	Department of Climate Change, Energy, the Environment and Water, Australian Government
DBCA	Department of Biodiversity, Conservation and Attractions, Western Australia
DER	Department of Environment Regulation, Western Australia (now DWER)
DMIRS	Department of Mines, Industry Regulation and Safety, Western Australia
DMP	Department of Mines and Petroleum, Western Australia (now DMIRS)
DoEE	Department of the Environment and Energy (now 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> (Federal Act)

GIS	Geographical Information System
ha	Hectare (10,000 square metres)
IBRA	Interim Biogeographic Regionalisation for Australia
IUCN	International Union for the Conservation of Nature and Natural Resources – commonly known as the World Conservation Union
PEC	Priority Ecological Community, Western Australia
RIWI Act	<i>Rights in Water and Irrigation Act 1914</i> , Western Australia
TEC	Threatened Ecological Community

Definitions:

{DBCA (2019) Conservation Codes for Western Australian Flora and Fauna. Department of Biodiversity, Conservation and Attractions, Western Australia};-

T Threatened species:

Listed by order of the Minister as Threatened in the category of critically endangered, endangered or vulnerable under section 19(1), or is a rediscovered species to be regarded as threatened species under section 26(2) of the *Biodiversity Conservation Act 2016* (BC Act).

Threatened fauna is that subset of ‘Specially Protected Fauna’ listed under schedules 1 to 3 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for Threatened Fauna.

Threatened flora is that subset of ‘Rare Flora’ listed under schedules 1 to 3 of the *Wildlife Conservation (Rare Flora) Notice 2018* for Threatened Flora.

The assessment of the conservation status of these species is based on their national extent and ranked according to their level of threat using IUCN Red List categories and criteria as detailed below.

CR Critically endangered species

Threatened species considered to be “*facing an extremely high risk of extinction in the wild in the immediate future, as determined in accordance with criteria set out in the ministerial guidelines*”.

Listed as critically endangered under section 19(1)(a) of the BC Act in accordance with the criteria set out in section 20 and the ministerial guidelines. Published under schedule 1 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for critically endangered fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for critically endangered flora.

EN Endangered species

Threatened species considered to be “*facing a very high risk of extinction in the wild in the near future, as determined in accordance with criteria set out in the ministerial guidelines*”.

Listed as endangered under section 19(1)(b) of the BC Act in accordance with the criteria set out in section 21 and the ministerial guidelines. Published under schedule 2 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for endangered fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for endangered flora.

VU Vulnerable species

Threatened species considered to be “*facing a high risk of extinction in the wild in the medium-term future, as determined in accordance with criteria set out in the ministerial guidelines*”.

Listed as vulnerable under section 19(1)(c) of the BC Act in accordance with the criteria set out in section 22 and the ministerial guidelines. Published under schedule 3 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for vulnerable fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for vulnerable flora.

Extinct Species:

EX Extinct species

Species where “*there is no reasonable doubt that the last member of the species has died*”, and listing is otherwise in accordance with the ministerial guidelines (section 24 of the BC Act).

Published as presumed extinct under schedule 4 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018* for extinct fauna or the *Wildlife Conservation (Rare Flora) Notice 2018* for extinct flora.

EW Extinct in the wild species

Species that “*is known only to survive in cultivation, in captivity or as a naturalised population well outside its past range; and it has not been recorded in its known habitat or expected habitat, at appropriate seasons, anywhere in its past range, despite surveys over a time frame appropriate to its life cycle and form*”, and listing is otherwise in accordance with the ministerial guidelines (section 25 of the BC Act).

Currently there are no threatened fauna or threatened flora species listed as extinct in the wild. If listing of a species as extinct in the wild occurs, then a schedule will be added to the applicable notice.

Specially protected species:

Listed by order of the Minister as specially protected under section 13(1) of the BC Act. Meeting one or more of the following categories: species of special conservation interest; migratory species; cetaceans; species subject to international agreement; or species otherwise in need of special protection.

Species that are listed as threatened species (critically endangered, endangered or vulnerable) or extinct species under the BC Act cannot also be listed as Specially Protected species.

MI

Migratory species

Fauna that periodically or occasionally visit Australia or an external Territory or the exclusive economic zone; or the species is subject of an international agreement that relates to the protection of migratory species and that binds the Commonwealth; and listing is otherwise in accordance with the ministerial guidelines (section 15 of the BC Act).

Includes birds that are subject to an agreement between the government of Australia and the governments of Japan (JAMBA), China (CAMBA) and The Republic of Korea (ROKAMBA), and fauna subject to the *Convention on the Conservation of Migratory Species of Wild Animals* (Bonn Convention), an environmental treaty under the United Nations Environment Program. Migratory species listed under the BC Act are a subset of the migratory animals, that are known to visit Western Australia, protected under the international agreements or treaties, excluding species that are listed as Threatened species.

Published as migratory birds protected under an international agreement under schedule 5 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

CD

Species of special conservation interest (conservation dependent fauna)

Fauna of special conservation need being species dependent on ongoing conservation intervention to prevent it becoming eligible for listing as threatened, and listing is otherwise in accordance with the ministerial guidelines (section 14 of the BC Act).

Published as conservation dependent fauna under schedule 6 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

OS

Other specially protected species

Fauna otherwise in need of special protection to ensure their conservation, and listing is otherwise in accordance with the ministerial guidelines (section 18 of the BC Act).

Published as other specially protected fauna under schedule 7 of the *Wildlife Conservation (Specially Protected Fauna) Notice 2018*.

P

Priority species:

Possibly threatened species that do not meet survey criteria, or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of priority for survey and evaluation of conservation status so that consideration can be given to their declaration as threatened fauna or flora.

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

Assessment of Priority codes is based on the Western Australian distribution of the species, unless the distribution in WA is part of a contiguous population extending into adjacent States, as defined by the known spread of locations.

P1

Priority One - Poorly-known species

Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, e.g. agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under immediate threat from known threatening processes. Such species are in urgent need of further survey.

P2

Priority Two - Poorly-known species

Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, e.g. national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation. Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements and appear to be under threat from known threatening processes. Such species are in urgent need of further survey.

P3

Priority Three - Poorly-known species

Species that are known from several locations, and the species does not appear to be under imminent threat, or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat. Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. Such species are in need of further survey.

P4 Priority Four - Rare, Near Threatened and other species in need of monitoring

(a) Rare. Species that are considered to have been adequately surveyed, or for which sufficient knowledge is available, and that are considered not currently threatened or in need of special protection but could be if present circumstances change. These species are usually represented on conservation lands.

(b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for vulnerable but are not listed as Conservation Dependent.

(c) Species that have been removed from the list of threatened species during the past five years for reasons other than taxonomy.

Principles for clearing native vegetation:

- (a) Native vegetation should not be cleared if it comprises a high level of biological diversity.
- (b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna.
- (c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.
- (d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.
- (e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.
- (f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.
- (g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.
- (h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.
- (i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.
- (j) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.