Department of Mines, Petroleum and Exploration

GOVERNMENT OF WESTERN AUSTRALIA

Clearing Permit Decision Report

1. Application details and outcomes

1.1. Permit application details

Permit number:	10989/1
Permit type:	Purpose Permit
Applicant name:	Northern Star Resources Limited
Application received:	17 March 2025
Application area:	580 hectares
Purpose of clearing:	Mineral production and associated activities
Method of clearing:	Mechanical Removal
Tenure:	Mining Leases 28/7, 28/70, 28/76, 28/84, 28/92, 28/374, 28/375 Miscellaneous Licence 28/72
Location (LGA area):	City of Kalgoorlie-Boulder
Colloquial name:	Kurnalpi Gold Mine Project

1.2. Description of clearing activities

Northern Star Resources Limited proposes to clear up to 580 hectares of native vegetation within a boundary of approximately 1,442.2 hectares, for the purpose of mining related infrastructure (Northern Star, 2025a). The project is located approximately 75 kilometres north-east of Kalgoorlie within the City of Kalgoorlie-Boulder (GIS Database).

The application is to allow for an open pit gold mining operation that will supplement ore feed, and act as a satellite operation to Carouse Dam Project, located approximately 40 kilometres north-east of the Kurnalpi Gold Mine Project (Northern Star, 2025b).

1.3. Decision on application and key considerations

Decision:	Grant
Decision date:	24 March 2026
Decision area:	580 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 A), relevant datasets (Appendix E), 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 B), proposed avoidance and minimisation measures (Section 3.1), relevant planning instruments and any other matters considered relevant to the assessment (Section 3.3).

The assessment identified that the proposed clearing may result in:

- the potential introduction and spread of weeds into adjacent vegetation, which could impact on the quality of the adjacent vegetation and its habitat values;
- the loss of native vegetation that is suitable habitat for malleefowl *(Leipoa ocellata*); and
- potential land degradation in the form of erosion.

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

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

- avoid, minimise to reduce the impacts and extent of clearing;
- take hygiene steps to minimise the risk of the introduction and spread of weeds;
- 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;
- undertake inspections for active Malleefowl mounds and placement of appropriate buffers; and
- restricted clearing of critical Malleefowl habitat.

1.5. Site map

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

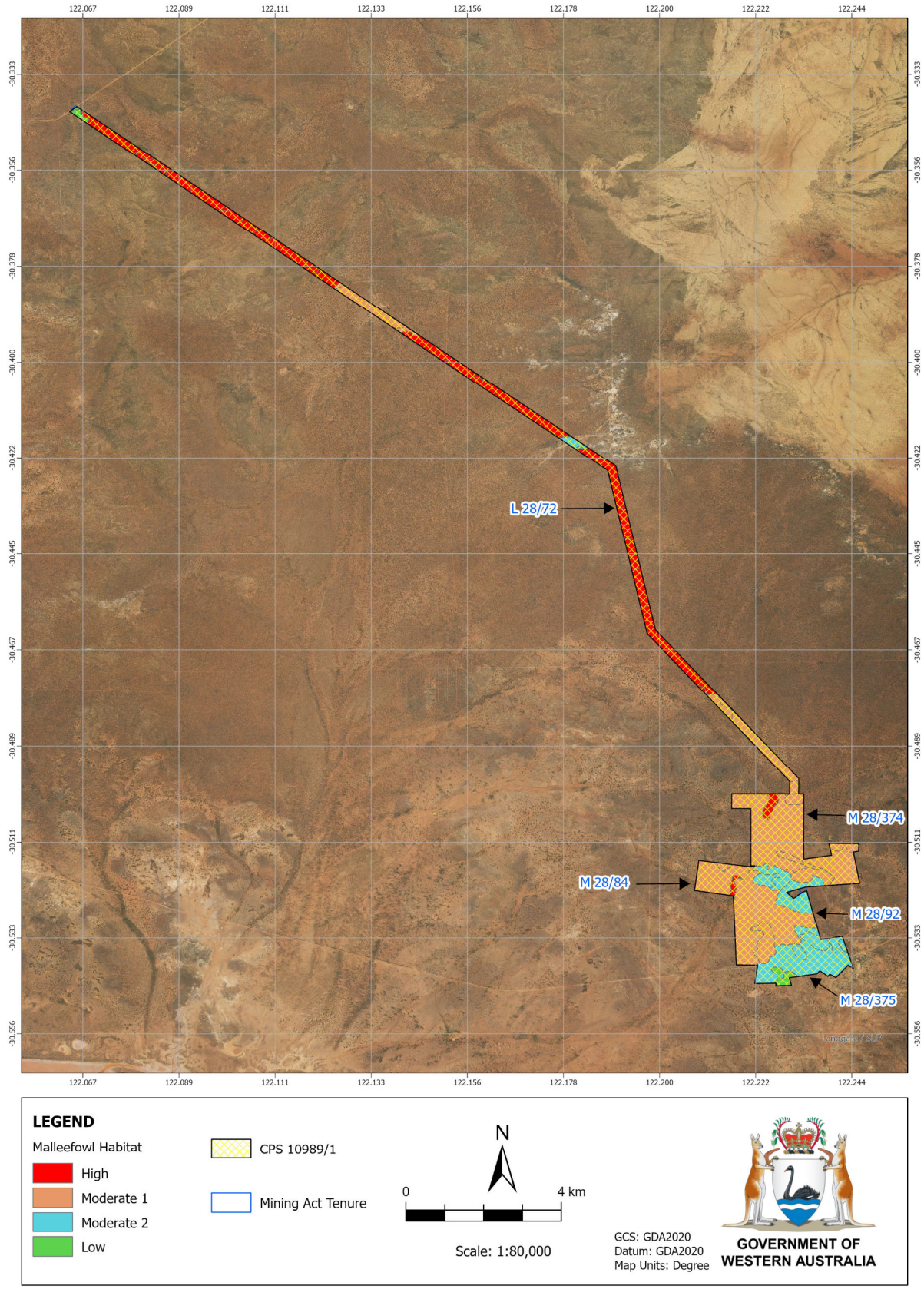

Figure 1. Map of the application area overlaying Malleefowl habitat. The yellow cross-hatched area indicates the area within which conditional authorised clearing can occur under the granted clearing permit.

2. Legislative context

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

In addition to the matters considered in accordance with section 51O of the EP Act (Section 1.4), the Delegated Officer has also had regard to the objects and principles under section 4A of the EP Act, particularly:

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

Other legislation of relevance for this assessment include:

- *Biodiversity Conservation Act 2016* (WA) (BC Act)
- *Conservation and Land Management Act 1984* (WA) (CALM Act)
- *Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)
- *Mining Act 1978* (WA)
- *Rights in Water and Irrigation Act 1914* (RIWI Act)

The key guidance documents which inform this assessment are:

- *A guide to the assessment of applications to clear native vegetation* (DER, December 2014)
- Technical guidance – *Flora and Vegetation Surveys for Environmental Impact Assessment* (EPA, 2016b)
- Technical guidance – *Terrestrial Fauna Surveys for Environmental Impact Assessment* (EPA, 2016a)
- 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 (Northern Star, 2025b), demonstrating that the following avoidance and mitigation measures will be implemented:

- Project design to avoid Malleefowl nesting mounds and minimise the area of clearing within suitable habitat, as far as practicable, to facilitate the Project.
- Utilisation of existing tracks and disturbance from past exploration activities conducted in the area, particularly for the design of the haul road.
- Route selection for the proposed haul road to minimise clearing of vegetation associated with ephemeral drainage channels.
- Multiple lifts of the waste rock dumps to reduce the overall footprint and the amount of clearing required.
- Native vegetation clearing will be rehabilitated in accordance with mine closure obligations under the *Mining Act 1978*.
- Pre-clearance inspections will be undertaken to ensure no new Malleefowl mounds are present within the proposed clearing footprint.
- Existing disturbed areas will be utilised where practicable to minimise additional impacts to fauna and habitat.
- Clearing activities will be carried out in accordance with the conditions of the approved permit, and internal Ground Disturbance Permit procedures.
- Clearing areas will be delineated in the field with survey pegs and/or flagging tape.
- An internal clearing register will be implemented to record the amount of clearing undertaken and report the cumulative total.
- Suitable fauna habitat elements (i.e. logs, large trees) will be avoided and preserved where practicable or removed to be reused in rehabilitation activities.
- Vehicles will remain on established tracks and roads.
- All personnel will undertake a site induction.

The Delegated Officer was satisfied that the applicant has made a reasonable effort to avoid and minimise potential impacts of the proposed clearing on environmental values.

3.2. Assessment of impacts on environmental values

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

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

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

Assessment

Botanica Consulting carried out a reconnaissance flora/vegetation and basic fauna assessment (1,591 hectare survey area) on 30 November 2021 and identified 145 vascular flora taxa representing 71 genera across 29 families (Botanica, 2022) (Appendix D). Based on vegetation and associated landforms identified during the flora and vegetation assessment, eight broad scale terrestrial fauna habitats were identified as occurring within the survey area (Botanica, 2022). The three fauna habitat types

recorded (*Acacia* shrubland (62.9%), Open *Eucalyptus* woodland (31.6%) and Open *Acacia* shrubland (31.6%)) represent suitable Malleefowl habitat (Phoenix, 2023).

A habitat assessment and targeted Malleefowl survey (covering 1,002 hectares) of Miscellaneous Licence L 28/072 was conducted from 14 – 18 November 2022 (Phoenix, 2023) (Appendix D). This, along with basic fauna survey data from Botanica Consulting (2022) and the results of mound verification completed by Northern Star, classified the habitat suitability within the application as the following:

- High suitability habitat: characterised by dense vegetation that provides screening and is defined as primary nesting, foraging, and dispersal habitat that is regarded as habitat critical for the survival of the species.
- Moderate suitability habitat: can be split into two subcategories based on the habitat attributes:
    - 1. suitable for foraging, dispersal, and may contain marginally suitable breeding habitat depending on the combination of the environmental variables.
    - 2. suitable for foraging and dispersal (not suitable for breeding).
- Low suitability habitat: does not contain enough habitat features for it to be considered suitable for breeding, however it may still be used for dispersal and occasional foraging.

The assessment identified approximately 392.13 hectares of high suitability habitat, 846.91 hectares of Moderate 1 suitable habitat, 331.26 hectares of Moderate 2 suitable habitat and 20.51 hectares of Low suitable habitat within the application area (Phoenix, 2025).

The proponent has committed to reducing their impacts to habitat of high suitability and has proposed to clear up to 59.66 hectares of high suitability habitat, 380.18 hectares of Moderate 1 suitable habitat, 139.62 hectares of Moderate 2 suitable habitat and 0.54 hectares of Low suitable habitat within the application area (Northern Star, 2026).

Table 1: Proposed impacts to malleefowl habitat within CPS 10989/1 application area.

Malleefowl Suitability	Area within the application area (hectares)	Proposed area to be cleared under CPS 10989/1 (hectares)
High	392.08	59.66
Moderate 1	761.40	380.18
Moderate 2	268.45	139.62
Low	20.13	0.54
Total	**1,442.06**	**580**

Suitable habitat for Malleefowl appears to be much more abundant in the northern half of the application area (Botanica, 2022; Phoenix, 2023). Suitable habitat in the application area is contiguous with that outside in most directions; there is particularly good connectivity to the north and northwest (Northern Star, 2025b). Vegetation south of the survey area is typically sparser and more open. The survey area intersects a large contiguous patch of suitable (non-mosaic) habitat that covers approximately 31,615 hectares of the surrounding area and extends approximately seven kilometres south west and 11 kilometres north east of the survey area (Northern Star, 2025b).

Malleefowl mounds in various stages were recorded in 15 locations, of these eight were found within the application area (Phoenix, 2025). The proponent has committed to avoiding all mounds and has designed the haulage road to avoid these areas (Northern Star, 2026).

Conclusion

Based on the above assessment, the proposed clearing will result in impacts to Malleefowl (*Leipoa ocellata*) habitat. For the reasons set out above, it is considered that the impacts of the proposed clearing can be managed to be environmentally acceptable.

Conditions

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

- Slow directional clearing to allow malleefowl to move into adjacent vegetation ahead of the clearing activity will minimise impact to individuals.
- Inspection for active Malleefowl mounds and placement of appropriate buffers.
- Restricted clearing within critical Malleefowl habitat.

3.3. Relevant planning instruments and other matters

The clearing permit application was advertised on 24 June 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 (Kakarra Part A (Part A) - WAD297/2020) over the area under application (DPLH, 2026). This claim has been determined by the Federal Court on behalf of the claimant group. The mining tenure has been granted in accordance with the future act regime of the *Native Title Act 1993* and the nature of the act (i.e. the proposed clearing activity) has been provided for in that process, therefore, the granting of a clearing permit is not a future act under the *Native Title Act 1993*.

There are no registered Aboriginal Sites of Significance within the application area (DPLH, 2026). It is the proponent's responsibility to comply with the *Aboriginal Heritage Act 1972* and ensure that no Aboriginal Sites of Significance are damaged through the clearing process.

It is noted that the proposed clearing may impact on Malleefowl (*Leipoa ocellata*) habitat, which are a protected matter 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.

Other relevant authorisations required for the proposed land use include:

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

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

End

Appendix A. Site characteristics

A.1. Site characteristics

Characteristic	Details
Local context	The application area proposed to be cleared is part of an expansive tract of native vegetation within the extensive land use zone of Western Australia (GIS Database). The area is located within the Eastern Murchison subregion of the Murchison Interim Biogeographic Regionalisation for Australia (IBRA) bioregion (GIS Database). The Eastern Murchison subregion primary land uses include pastoralism (Northern Star, 2025b). The application area is located adjacent to existing mining operations and includes previously disturbed areas (GIS Database).
Ecological linkage	The application area is not known to be an important ecological linkage (GIS Database).
Conservation areas	There are no conservation areas in the vicinity of the application area (GIS Database). The nearest Department of Biodiversity Conservation and Attractions managed land is the Bullock Holes Timber Reserve which is located approximately 25 kilometres west of the application area (GIS Database).
Vegetation description	The vegetation of the application area is broadly mapped as the following Beard vegetation association: • 20: Low woodland; mulga mixed with *Allocasuarina cristata* and *Eucalyptus* sp. (GIS Database). A flora and vegetation survey was conducted over the application area by Botanic Consulting during November, 2021. The following ten vegetation associations were recorded within the application area (Botanica, 2022): • **CLP-AFW1**: Low woodland of *A. aneura* over mixed low scrub and dwarf scrub of *Ptilotus obovatus* (14%); • **SP-CW1**: Low woodland of Casuarina pauper over mixed low scrub and dwarf scrub of *Ptilotus obovatus* (3%); • **RH-EW1**: Low woodland of *E. lesouefii* over low scrub of *Maireana sedifolia* (16%); • **OD-MW1**: Low woodland of *E. loxophleba* subsp. *lissophloia*. over low scrub of *Ptilotus obovatus* (1%); • **CLP-MW1**: Low woodland of *E. salmonophloia/E. salubris* over open mallee of *E. oleosa* and mixed low scrub (32%); • **RH-AW1**: Open low woodland of *A. aneura* over scrub of *A.* sp. narrow phyllode/A. quadrimarginea (7%); • **CLP-EW2**: Open low woodland of *E. salmonophloia* over low scrub of *Atriplex nummularia/Maireana sedifolia* (16%); • **CLP-MW2**: Open mallee of *E. oleosa* over low woodland of *A. aneura* and scrub of *A.* sp. narrow phyllode (5%); • **SLP-MW1**: Open tree mallee of *E. horistes/E. concinna* over low scrub of *Westringia cephalantha/Grevillea oncogyne* and hummock grass of *Triodia scariosa* (5%); and • **CLP-EW1**: Open woodland of *Eucalyptus salubris/ E. transcontinentalis* over *Eremophila scoparia* shrubland (2%).
Vegetation condition	The vegetation survey (Botanica, 2022) and aerial imagery indicates the vegetation within the proposed clearing area is in Completely Degraded to Good (Trudgen, 1991) condition. The full Trudgen (1991) condition rating scale is provided in Appendix C.
Climate and landform	The climate of the Eastern Murchison subregion is characterised as semi-arid (Botanica, 2022). The area experiences an average rainfall of 265.7 millimetres (BoM, 2025).
Soil description	The soils within the application area are mapped as: • Cundlegum Land System: Low weathered granitoid breakaways with kaolinised, stony alluvial plains (fans), supporting eucalypt woodlands and halophytic shrublands; • Deadman Land System: Calcareous plains supporting acacia, black oak and mallee shrublands/woodlands adjacent to salt lake systems; • Graves system: Basalt and greenstone rises and low hills supporting eucalypt woodlands with prominent saltbush and bluebush understoreys; • Gumland system: Extensive pedeplains supporting eucalypt woodlands with halophytic and non-halophytic shrub understoreys; • Helag system: Hardpan plains and central drainage tracts with mulga shrublands and minor chenopod shrublands; • Illaara system: Plains with ironstone gravel or calcrete mantles supporting eucalypt woodlands and mulga-casuarina shrublands; • Kirgella Land System: Extensive sandplain, with scattered granite outcrop, supporting mainly spinifex hummock grasslands and mulga and mallee woodlands; and • Moriarty system: Low greenstone rises and stony plains supporting chenopod shrublands with patchy eucalypt overstoreys (DPIRD, 2026).

Characteristic	Details
Land degradation risk	The soils present within the application area have the following land degradation risks: • Cundlegum Land System: Footslopes generally have soils that are highly susceptible to water erosion; alluvial plains and drainage tracts are moderately susceptible. • Deadman Land System: Generally not susceptible to erosion. • Graves system: Stony mantles and moderately dense vegetation mean this land system is generally not prone to erosion, unless the protective mantle is disturbed, which most often occurs with construction of exploration tracks and drill pads. • Gumland system: Alluvial plains, drainage tracts and foci (units 3, 4 and 5) are susceptible to erosion if perennial shrub cover is substantially reduced, as are footslopes (unit 1) if protective mantles are disturbed. • Helag system: Alluvial plains are susceptible to water erosion in areas where perennial shrub cover is substantially reduced or the soil surface is disturbed. Diversion of sheetwash by tracks and gullies can initiate erosion and cause water starvation and consequent loss of vigour in vegetation downslope. • Illaara system: This land system is generally not susceptible to erosion. • Kirgella Land System: Lack of slope, sandy soils and dense vegetation make most of this land system resistant to erosion. • Moriarty system : Slopes of low rises without protective stone mantles, alluvial plains and narrow drainage tracts are moderately susceptible to water erosion, particularly if perennial shrub cover is substantially reduced or the soil surface is disturbed (Pringle et al., 1994).
Waterbodies	There are several minor ephemeral watercourses that transect the application area, however there are no permanent water surface features within the application area (GIS Database). Lake Yindarlgooda is located approximately seven kilometres south of the application area (GIS Database).
Hydrogeography	The application area is not mapped within a proclaimed Public Drinking Water Area (GIS Database). The area is mapped within the Goldfields Groundwater Area, proclaimed under the Rights in Water Irrigation (RIWI) Act (GIS Database).
Flora	No threatened flora have been recorded within the application area (Botanica, 2022; GIS Database). Seventeen priority flora species have been recorded within 50 kilometres of the application area, none have been recorded within the application area (Botanica, 2022).
Ecological communities	The application area is not located within any known or mapped Threatened Ecological Community (TEC) (Botanica, 2022; GIS Database).
Fauna	One conservation significant fauna species, Malleefowl (*Leipoa ocellata*) – Vulnerable – has been recorded within the application area (Botanica, 2022; GIS Database).
Fauna habitat	Botanica (2022) identified the following fauna habitats within the application area: • Eucalyptus woodland on clay-loam plain (41%); • Eucalyptus woodland on rocky hillslope (16%); • Eucalyptus mallee woodland on clay-loam plain (14%); • Acacia woodland on clay-loam plain (14%); • Acacia low woodland on rocky hillslope (7%); • Eucalyptus mallee woodland on sandy-loam plain (5%); • Casuarina woodland on sandplain (3%); • Eucalyptus mallee woodland in open depression (1%); and • Cleared (0.4%).

A.2. Vegetation extent

	Pre-European area (ha)	Current extent (ha)	Extent remaining (%)	Current extent in all DBCA managed land (ha)	Current extent in all DBCA Managed Land (proportion of pre-European extent) (%)
IBRA Bioregion Murchison	28,120,586.77	28,044,823.42	99.73	2,185,987.96	7.77
Beard vegetation associations - State					
Veg Assoc No. 20	1,295,103.39	1,292,474.58	99.80	250,985.57	19.38
Beard vegetation associations - Bioregion					
Veg Assoc No. 20	1,174,259.17	1,171,630.81	99.78	181,845.19	15.49

Government of Western Australia (2019)

A.1. Flora analysis table

With consideration for the site characteristics set out above, relevant datasets (see Appendix E.1), and biological survey information (Botanica, 2022; Harewood, G, 2013; Western Australian Herbarium, 1998-; GIS Database), impacts to the following conservation significant flora and fauna required further consideration.

Species name	Conservation status	Distance of closest record to application area (km)	Suitable habitat features? [Y/N]	Number of known records (total)
Eremophila arachnoides subsp. *tenera*	P3	<17	Y	18
Hysterobaeckea ochropetala subsp. *cometes*	P3	<3	Y	29
Ptilotus rigidus	P1	<12	Y	21
Thryptomene eremaea	P2	<11	Y	13

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

A.2. Fauna analysis table

Species name	Common Name	Conservation status	Distance of closest record to application area (km)	Suitable habitat features? [Y/N]
Amytornis textilis textilis	western grasswren	P4	<32	N
Calidris acuminata	sharp-tailed sandpiper	MI	<49	N
Calidris ferruginea	curlew sandpiper	CR	<49	N
Calidris ruficollis	red-necked stint	MI	<43	N
Charadrius cucullatus	hooded plover, hooded dotterel	P4	<37	N
Falco peregrinus	peregrine falcon	OS	<7	Y
Leipoa ocellata	malleefowl	VU	0	Y
Tringa nebularia	common greenshank	MI	<29	N

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

Appendix B. Assessment against the clearing principles

Assessment against the clearing principles	Variance level	Is further consideration required?
Environmental value: biological values		
Principle (a): *"Native vegetation should not be cleared if it comprises a high level of biodiversity."* Assessment: Botanica Consulting carried out a reconnaissance flora and vegetation survey across the application area and identified 145 vascular flora taxa representing 71 genera across 29 families (Botanica, 2022). A reconnaissance flora and vegetation survey was undertaken of the surrounding areas and recorded a total of 18 families, 31 genera and 83 taxa (Botanica, 2018) (Appendix D). No threatened or priority flora species have been recorded within the application area (Botanica, 2018; 2022; GIS Database). There are no priority or ecological communities within the application area and the vegetation communities present also occur within the surrounding bioregion. No weeds listed as Weeds of National Significance or Declared Pests under the *Biosecurity and Agriculture Management Act 2007* (BAM Act) were recorded in the survey area (Botanica, 2018; 2022).	Not likely to be at variance	No
Principle (b): *"Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna."* Assessment: Suitable habitat occurs for conservation significant fauna (Phoenix, 2023; Northern Star 2025b; GIS Database).	At variance	Yes *Refer to Section 3.2.2, above.*

Assessment against the clearing principles	Variance level	Is further consideration required?
Principle (c): *"Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora."* Assessment: 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 (Botanica, 2022; GIS Database).	Not likely to be at variance	No
Principle (d): *"Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a threatened ecological community."* Assessment: There are no known Threatened Ecological Communities (TECs) located within the application area and the flora and vegetation survey did not identify any TECs (Botanica, 2022; GIS Database).	Not likely to be at variance	No
Environmental value: significant remnant vegetation and conservation areas		
Principle (e): *"Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared."* Assessment: The extent of the native vegetation in the local area is consistent with the national objectives and targets for biodiversity conservation in Australia (Commonwealth of Australia, 2001). The vegetation proposed to be cleared is not considered to be part of a significant ecological linkage in the local area.	Not at variance	No
Principle (h): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area."* Assessment: Given the distance to the nearest conservation area, the proposed clearing is not likely to have an impact on the environmental values of nearby conservation areas (GIS Database).	Not likely to be at variance	No
Environmental value: land and water resources		
Principle (f): *"Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland."* Assessment: No permanent watercourses are present within the application area (GIS Database). There are several ephemeral watercourses that traverse through the application area. Potential impacts to riparian vegetation may be minimised through the implementation of a vegetation management and staged clearing condition.	At variance	No
Principle (g): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation."* Assessment: The application area is situated within eight Land Systems, some of which may be susceptible to water and wind erosion. Due to the large area of native vegetation proposed to be cleared (580 hectares), potential land degradation impacts as a result of the proposed clearing may be minimised by the implementation of a staged clearing condition.	May be at variance	No
Principle (i): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water."* Assessment: Given no significant watercourses, wetlands or 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).	Not likely to be at variance	No

Assessment against the clearing principles	Variance level	Is further consideration required?
Principle (j): *"Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding."* Assessment: There are no permanent watercourses 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.	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. Biological survey information excerpts

Figure 1: Botanica Consulting (2022) Reconnaissance Flora and Basic Fauna Assessment Survey Area (blue polygon).

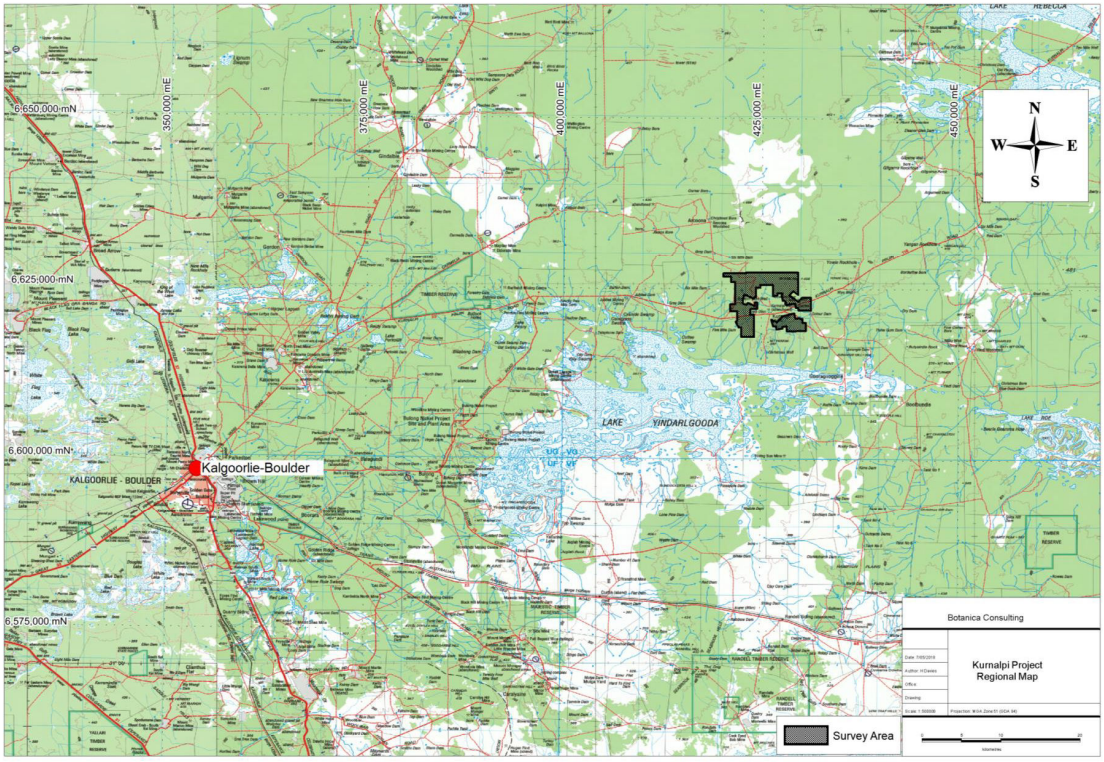

Figure 2: Botanica Consulting (2018) Reconnaissance Flora & Fauna Kurnalpi Project Survey Area (black polygon).

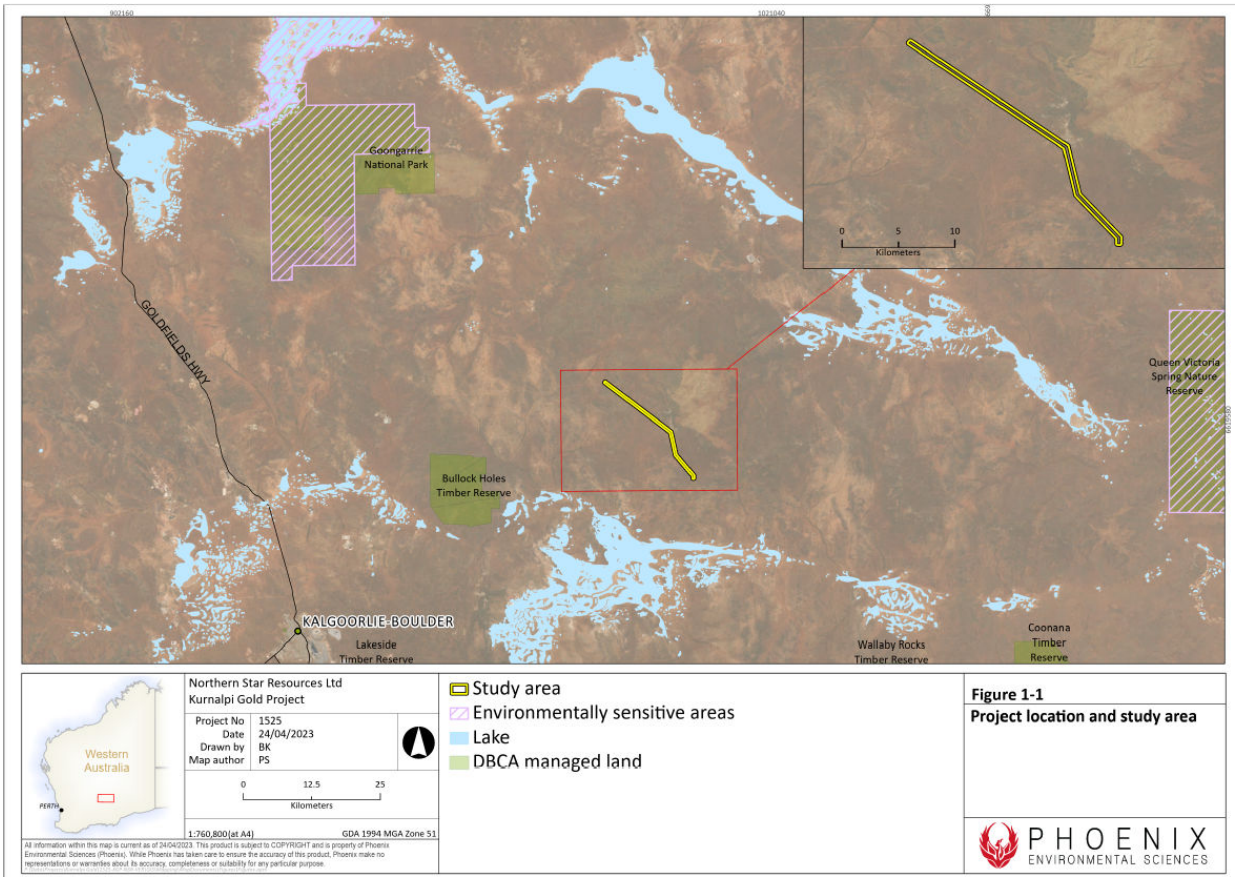

Figure 3: Phoenix Environmental Sciences (2023) Malleefowl Habitat Assessment and Targeted Survey for Miscellaneous Licence L28/072 Survey Area (yellow polygon).

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)
- Cadastre (Polygon) (LGATE-217)
- Clearing Instruments Proposals (Areas Applied to Clear) (DWER-075)
- Clearing Regulations - Environmentally Sensitive Areas (DWER-046)
- Clearing Regulations - Schedule One Areas (DWER-057)
- DBCA - Lands of Interest (DBCA-012)
- DBCA - Legislated Lands and Waters (DBCA-011)
- DBCA Fire History (DBCA-060)
- 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
- Local Government Area (LGA) Boundaries (LGATE-233)
- Localities (LGATE-234)
- Native Title (Determination) (LGATE-066)
- Native Vegetation Extent (DPIRD-005)
- Pre-European Vegetation (DPIRD-006)
- Public Drinking Water Source Areas (DWER-033)
- RIWI Act, Groundwater Areas (DWER-034)
- RIWI Act, Surface Water Areas and Irrigation Districts (DWER-037)
- Soil Landscape Mapping - Best Available (DPIRD-027)
- Soil Landscape Mapping - Rangelands (DPIRD-063)
- Townsites (LGATE-248)
- WRIMS - Groundwater Areas (DWER-085)
- WRIMS - Surface Water Areas (DWER-082)

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)

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4. Glossary

Acronyms:

BC Act	*Biodiversity Conservation Act 2016,* Western Australia
BoM	Bureau of Meteorology, Australian Government
DAA	Department of Aboriginal Affairs, Western Australia (now DPLH)

DAFWA	Department of Agriculture and Food, Western Australia (now DPIRD)
DCCEEW	Department of Climate Change, Energy, the Environment and Water, Australian Government
DBCA	Department of Biodiversity, Conservation and Attractions, Western Australia
DEMIRS	Department of Energy, Mines, Industry Regulation and Safety (now DMPE)
DER	Department of Environment Regulation, Western Australia (now DWER)
DMIRS	Department of Mines, Industry Regulation and Safety, Western Australia (now DMPE)
DMP	Department of Mines and Petroleum, Western Australia (now DMPE)
DMPE	Department of Mines, Petroleum and Exploration
DoEE	Department of the Environment and Energy (now DCCEEW)
DoW	Department of Water, Western Australia (now DWER)
DPaW	Department of Parks and Wildlife, Western Australia (now DBCA)
DPIRD	Department of Primary Industries and Regional Development, Western Australia
DPLH	Department of Planning, Lands and Heritage, Western Australia
DRF	Declared Rare Flora (now known as Threatened Flora)
DWER	Department of Water and Environmental Regulation, Western Australia
EP Act	*Environmental Protection Act 1986*, Western Australia
EPA	Environmental Protection Authority, Western Australia
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (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	*Rights in Water and Irrigation Act 1914*, Western Australia
TEC	Threatened Ecological Community

Definitions:

DBCA (2023) Conservation Codes for Western Australian Flora and Fauna. Department of Biodiversity, Conservation and Attractions, Western Australia:

Threatened species

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

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

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

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

CR **Critically endangered species**

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

Listed as critically endangered under section 19(1)(a) of the BC Act in accordance with the criteria set out in section 20 and the ministerial guidelines.

EN **Endangered species**

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

Listed as endangered under section 19(1)(b) of the BC Act in accordance with the criteria set out in section 21 and the ministerial guidelines.

VU **Vulnerable species**

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

Listed as vulnerable under section 19(1)(c) of the BC Act in accordance with the criteria set out in section 22 and the ministerial guidelines.

Extinct species

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

EX **Extinct species**

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

EW **Extinct in the wild species**

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

Currently there are no threatened fauna or threatened flora species listed as extinct in the wild.

Specially protected species

SP **Specially protected species**

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

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

MI **Migratory species**

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

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

CD **Species of special conservation interest (conservation dependent fauna)**

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

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

OS **Other specially protected species**

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

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

Priority species

P **Priority species**

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

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

Species that may possibly be threatened species that do not meet the criteria for listing under the BC Act because of insufficient survey or are otherwise data deficient, are added to the Priority Fauna or Priority Flora Lists under Priorities 1, 2 or 3. These three categories are ranked in order of prioritisation for survey and evaluation of conservation status so that consideration can be given to potential listing as threatened.

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

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

P1 **Priority One - Poorly-known species – known from few locations, none on conservation lands**

Species that are known from one or a few locations (generally five or less) which are potentially at risk. All occurrences are either: very small; or on lands not managed for conservation, for example, agricultural or pastoral lands, urban areas, road and rail reserves, gravel reserves and active mineral leases; or otherwise under threat of habitat destruction or degradation.

Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements for threatened listing and appear to be under immediate threat from known threatening processes. These species are in urgent need of further survey.

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

Species that are known from one or a few locations (generally five or less), some of which are on lands managed primarily for nature conservation, for example, national parks, conservation parks, nature reserves and other lands with secure tenure being managed for conservation.

Species may be included if they are comparatively well known from one or more locations but do not meet adequacy of survey requirements for threatened listing and appear to be under threat from known threatening processes. These species are in urgent need of further survey.

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

Species that are known from several locations and the species does not appear to be under imminent threat or from few but widespread locations with either large population size or significant remaining areas of apparently suitable habitat, much of it not under imminent threat.

Species may be included if they are comparatively well known from several locations but do not meet adequacy of survey requirements and known threatening processes exist that could affect them. These species need further survey.

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

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

(b) Near Threatened. Species that are considered to have been adequately surveyed and that are close to qualifying for vulnerable but are not listed as a conservation dependent specially protected species.

(c) Species that have been removed from the list of threatened species or lists of conservation dependent or other specially protected species, during the past five years for reasons other than taxonomy.

(d) Other species in need of monitoring.

Principles for clearing native vegetation:

(a) Native vegetation should not be cleared if it comprises a high level of biological diversity.

(b) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of, a significant habitat for fauna.

(c) Native vegetation should not be cleared if it includes, or is necessary for the continued existence of, threatened flora.

(d) Native vegetation should not be cleared if it comprises the whole or a part of, or is necessary for the maintenance of a threatened ecological community.

(e) Native vegetation should not be cleared if it is significant as a remnant of native vegetation in an area that has been extensively cleared.

(f) Native vegetation should not be cleared if it is growing in, or in association with, an environment associated with a watercourse or wetland.

(g) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause appreciable land degradation.

(h) Native vegetation should not be cleared if the clearing of the vegetation is likely to have an impact on the environmental values of any adjacent or nearby conservation area.

(i) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause deterioration in the quality of surface or underground water.

(j) Native vegetation should not be cleared if the clearing of the vegetation is likely to cause, or exacerbate, the incidence or intensity of flooding.